The Auditor-General
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2015–16 Major Projects Report

Department of Defence

Australian National Audit Office

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Australian National Audit Office

Canberra ACT

28 February 2017

Dear President and Speaker

The Australian National Audit Office has undertaken a review of the status of selected major Defence equipment acquisition projects, as at 30 June 2016, as presented by the Department of Defence. The review was conducted in accordance with the authority contained in the *Auditor-General Act 1997*. I present the report of this review, titled the *2015–16 Major Projects Report*, to the Parliament.

Following its presentation and receipt, the report will be placed on the Australian National Audit Office's website—http://www.anao.gov.au.

Yours sincerely

Grant Hehir
Auditor-General

The Honourable the President of the Senate
The Honourable the Speaker of the House of Representatives
Parliament House
Canberra ACT

AUDITING FOR AUSTRALIA

The Auditor-General is head of the Australian National Audit Office (ANAO). The ANAO assists the Auditor-General to carry out his duties under the *Auditor-General Act 1997* to undertake performance audits, financial statement audits and assurance reviews of Commonwealth public sector bodies and to provide independent reports and advice for the Parliament, the Australian Government and the community. The aim is to improve Commonwealth public sector administration and accountability.

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The Major Projects Report

1. Major Defence equipment acquisition projects (Major Projects) continue to be the subject of parliamentary and public interest. This is due to their high cost and contribution to national security, and the challenges involved in completing them within the specified budget and schedule, and to the required capability.

2. The Australian National Audit Office (ANAO) has reviewed 26 of Defence's Major Projects in this ninth report (2014–15: 25). The objective of the report is '...to improve the accountability and transparency of Defence acquisitions for the benefit of Parliament and other stakeholders.'[1]

3. The Capability Acquisition and Sustainment Group (CASG) within the Department of Defence (Defence), manages the process of bringing new capabilities into service.[2] In 2015–16 CASG provided support to the Australian Defence Force (ADF) through the acquisition and sustainment of required military equipment and supplies[3], and expended some $6.8 billion on major and minor capital acquisition projects.[4]

4. The February 2016 Defence White Paper established the Government's priorities for future capability investment for the next 20 years and provided for additional spending of over $29 billion across the next decade. More recently, the Minister for Defence Industry announced an investment of $195 billion over the next decade, for building Defence capability.[5]

Major Projects selected for review

5. Major Projects are selected for review, based on the criteria included in the *2015–16 Major Projects Report (MPR) Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit (JCPAA).[6] They represent a selection of the most significant Major Projects managed by Defence.

6. The total approved budget for the Major Projects included in this report is approximately $62.7 billion, covering nearly 58 per cent of the budget within the Approved Major Capital Investment Program of $107.4 billion.[7] The selected projects and their approved budgets are listed in Table 1, below.

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1 Joint Committee of Public Accounts and Audit, Report 458, *Review of the 2014–15 Defence Materiel Organisation Major Projects Report*, May 2016, Foreword, p. vii.

2 Defence describes CASG's role as 'purchases and maintains military equipment and supplies in the quantities and to the service levels that are required by Defence and approved by the Government'. Department of Defence, *Defence Annual Report 2015–16, Volume One, Performance, governance and accountability*, p. 14.

3 ibid.

4 ibid., Volume Two, Audited financial statements, p. 33.

5 The Minister for Defence Industry, the Hon. Christopher Pyne MP, *National Defense Industrial Association Conference Speech*, 7 October 2016.

6 The *2015–16 Major Projects Report Guidelines* were endorsed by the JCPAA in October 2015 and are included in **Part 4** of this report.

7 Based on information provided to the ANAO by the Directorate of Capital Investment Program, Department of Defence.

Table 1: 2015–16 MPR projects and approved budgets at 30 June 2016 [1, 2]

Project Number (Defence Capability Plan)	Project Name (on Defence advice)	Defence Abbreviation (on Defence advice)	Approved Budget $m
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter	16 738.4
SEA 4000 Phase 3	Air Warfare Destroyer Build	AWD Ships	9 120.8
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System	P-8A Poseidon	5 519.9
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters	3 773.9
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	3 556.5
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk	3 520.4
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	3 465.6
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships	3 092.9
AIR 87 Phase 2	Armed Reconnaissance Helicopter	ARH Tiger Helicopters	2 033.0
AIR 5402	Air to Air Refuelling Capability	Air to Air Refuel	1 821.7
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter	1 434.5
LAND 116 Phase 3	Bushmaster Protected Mobility Vehicle	Bushmaster Vehicles	1 250.7
LAND 121 Phase 3A	Field Vehicles and Trailers	Overlander Light	1 017.7
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT[3]	911.4
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2B	678.6
AIR 9000 Phase 5C	Additional Medium Lift Helicopters	Additional Chinook	642.4
JP 9000 Phase 7	Helicopter Aircrew Training System	HATS[3]	487.6
JP 2072 Phase 2A	Battlespace Communications System	Battle Comm. Sys. (Land)	464.6
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms	456.0
SEA 1439 Phase 4A	Collins Replacement Combat System	Collins RCS	450.6
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	Hw Torpedo	429.7
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	421.4
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S	411.7
SEA 1448 Phase 2A	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2A	386.8
LAND 75 Phase 4	Battle Management System	BMS[3]	372.8
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	237.9
Total 26			**62 697.5**

Note 1: Once a project is selected for review, it remains within the portfolio of projects under review until the JCPAA endorses its removal, normally once it has met the capability requirements of Defence.

Note 2: Wedgetail and Battle Comm. Sys. were removed from the MPR program in 2015–16.

Note 3: Additional MRTT, HATS and BMS are included in the MPR program for the first time in 2015–16.

Source: See the Project Data Summary Sheets in **Part 3** of this report.

Report objective and scope

7. The objective of this report is to provide the Auditor-General's independent assurance over the status of the selected Major Projects. The status of the selected Major Projects is reported in the *Statement by the Secretary of Defence* and the Project Data Summary Sheets (PDSSs) prepared by Defence. Assurance from the ANAO's review is conveyed in the *Independent Assurance Report* by the Auditor-General.

8. The following forecast information is excluded from the scope of the ANAO's review:

- Section 1.2 Current Status—Materiel Capability Delivery Performance and Section 4.1 Measures of Materiel Capability Delivery Performance;
- Section 1.3 Project Context—Major Risks and Issues and Section 5 – Major Risks and Issues; and
- forecast dates where included in each PDSS.

Accordingly, the *Independent Assurance Report* by the Auditor-General does not provide any assurance in relation to this information. However, material inconsistencies identified in relation to this information, are required to be considered in forming the conclusion.

9. The exclusions to the scope of the review noted above, are due to a lack of Defence systems from which to provide complete and accurate evidence[8], in a sufficiently timely manner to facilitate the review. This has been an area of focus of the JCPAA over a number of years[9], and it is intended that all components of the PDSSs will eventually be included within the scope of the ANAO's review.

10. Separate to the formal review, the ANAO has undertaken an analysis of key elements of the PDSSs—including cost, schedule, progress towards delivery of required capability, project maturity, and risks and issues. Longitudinal analysis across these key elements of projects, over time, has also been undertaken.

11. Defence provides further insights and context in its commentary and analysis—although this is not included within the scope of the ANAO's review.

Review methodology

12. The ANAO has reviewed the PDSSs as a ***priority assurance review*** under section 19A(5) of the *Auditor-General Act 1997*. The criteria to conduct the review are provided by the Guidelines, and include whether Defence has procedures in place designed to ensure that project information and data was recorded in a complete and accurate manner, for all 26 projects.

13. The review included an assessment of the systems and controls, including the governance and oversight in place, to ensure appropriate project management. The ANAO also sought representations and confirmations from senior management and industry in relation to the status of the Major Projects in this report.

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8 For example, Defence project risk management records can be managed in spreadsheets, where the risk to the completeness and accuracy of records is too high to be included within the scope of the review.

9 JCPAA Report 458, *Review of the 2014–15 Defence Materiel Organisation Major Projects Report*, May 2016, Recommendation 2, p. xii.

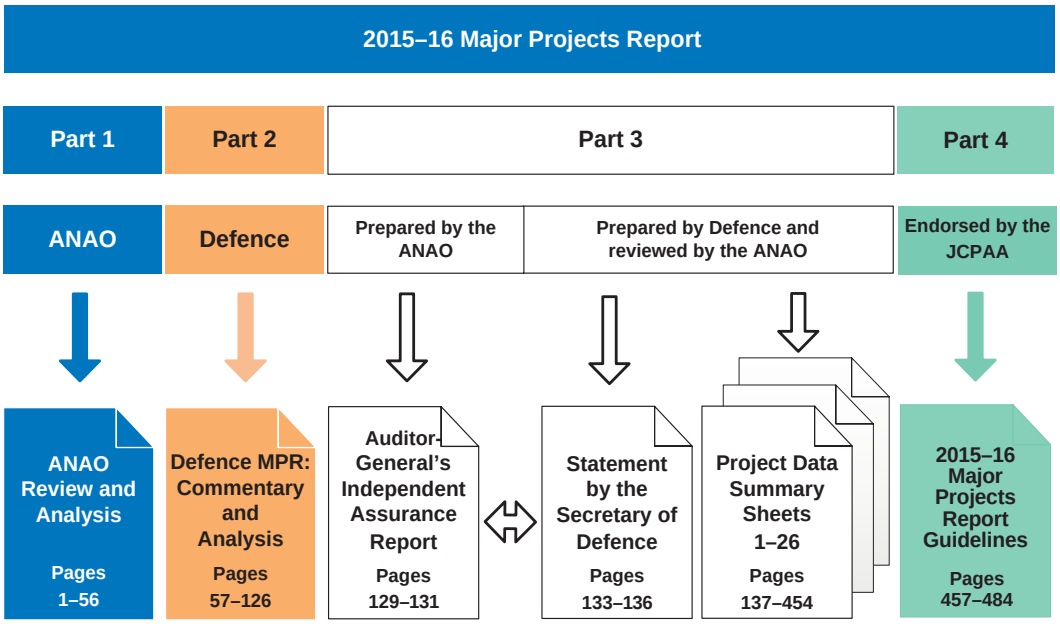
Report structure

14. The report is organised into four parts:

- **Part 1** comprises the ANAO's review and analysis (pp. 1–56);
- **Part 2** comprises Defence's Commentary, Analysis and Appendices (not included within the scope of the *Independent Assurance Report* by the Auditor-General) (pp. 57–126);
- **Part 3** incorporates the *Independent Assurance Report* by the Auditor-General, the *Statement by the Secretary of Defence*, and the PDSSs prepared by Defence as part of the assurance review process (pp. 127–454); and
- **Part 4** reproduces the 2015–16 MPR Guidelines endorsed by the JCPAA, which provide the criteria for the compilation of the PDSSs by Defence and the ANAO's review (pp. 455–484).

Figure 1, below, depicts the four parts of this report.

Figure 1: 2015–16 Report structure



Note: To assist in conducting inter-report analysis, the presentation of data in the PDSSs remains largely consistent and comparable with the 2014–15 MPR.

Project Data Summary Sheets

15. The PDSSs include unclassified information on project performance, prepared by Defence. As projects appear in the MPR for multiple years, changes to the PDSS from the previous year are depicted in bold orange text.

16. Each PDSS comprises:

- Project Header: including name; capability and acquisition type; approval dates; total approved and in-year budgets; stage; complexity; and an image;

- Section 1—Project Summary: including description; current status, financial assurance and contingency statement; context, including background, uniqueness, major risks and issues; and other current sub-projects;
- Section 2—Financial Performance: including budgets and expenditure; variances; and major contracts in place (in addition to quantities delivered as at 30 June 2016);
- Section 3—Schedule Performance: providing information on design development; test and evaluation; and forecasts and achievements against key project milestones, including Initial Materiel Release (IMR), Final Materiel Release (FMR)[10], Initial Operational Capability (IOC) and Final Operational Capability (FOC)[11];
- Section 4—Materiel Capability Delivery Performance: provides a summary of Defence's assessment of its expected delivery of key capabilities, the extent to which milestones were achieved, and a description of the constitution of each key milestone;
- Section 5—Major Risks and Issues: outlines the major risks and issues of the project and remedial actions undertaken for each;
- Section 6—Project Maturity: provides a summary of the project's maturity, as defined by Defence, and a comparison against the benchmark score;
- Section 7—Lessons Learned: outlines the key lessons that have been learned at the project level (further information on lessons learned by Defence are included in Defence's Appendix 5); and
- Section 8—Project Line Management: details current project management responsibilities within Defence.

Overall outcomes

Statement by the Secretary of Defence

17. The *Statement by the Secretary of Defence* was signed on 15 February 2017. The Secretary's statement provides his opinion that the PDSSs for the 26 selected projects '… comply in all material respects with the Guidelines and reflect the status of the projects as at 30 June 2016.'

18. The Secretary also 'acknowledge[s] the difference of view between Defence and the ANAO in relation to the AIR 87 Phase 2 – Armed Reconnaissance Helicopter (Tiger) and the JP2048 Phase 3 LHD Landing Craft (LLC)'. Further detail is provided in paragraphs 20 to 24 below (see Conclusion by the Auditor-General).

19. In addition, the *Statement by the Secretary of Defence* details significant events occurring post 30 June 2016, which materially impact the projects included in the report, and which should be read in conjunction with the individual PDSSs. These include AWD Ships, P-8A

10 IMR and FMR are milestones that [Defence utilises to] mark the completion and release of acquisition project supplies required to support the achievement of Initial Operational Release and FOC respectively. They are defined in the MAA [Materiel Acquisition Agreement]. Department of Defence, Defence Instructions (General), DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, November 2012, Annex B, pp. B2–B3.

11 IOC and FOC are the points when the first or final subset of a capability system that can be operationally employed is realised. They are capability states endorsed at project approval at Second Pass, and reported as having been reached by the Capability Manager. ibid.

Poseidon, LHD Ships, ARH Tiger Helicopters, Battlefield Airlifter, Bushmaster Vehicles, Overlander Light, Additional MRTT, Battle Comm. Sys. (Land), Maritime Comms, Collins RCS, Collins R&S, BMS, and LHD Landing Craft.

Conclusion by the Auditor-General

20. The Auditor-General was unable to provide an unqualified *Independent Assurance Report* as a number of matters were identified, in the course of the ANAO's review, that resulted in the qualification of progress and performance as reported in two Project Data Summary Sheets (PDSSs).

21. The Guidelines define a project as the acquisition or upgrade of Specialist Military Equipment. The Guidelines provide that the scope of Defence reporting includes the performance of selected major equipment acquisitions and associated sustainment activities, where applicable.

22. The ARH Tiger Helicopters PDSS has been prepared on the basis of the Defence acquisition project[12], which is narrower than the scope established in the Guidelines.

- The Project Financial Assurance Statement in Section 1.2 of the PDSS reports that sufficient funding is available to complete the acquisition project. The statement does not address the significant caveats, capability deficiencies and obsolescence issues identified in the declaration of FOC, in April 2016.[13] Additional funding for these elements would need to be provided separately to the acquisition project, the amount of which is unable to be quantified.
- The project maturity score in Section 6.1 of the PDSS reports a total of 67 out of a maximum of 70 (95.7 per cent) at the end of the acquisition project. Noting the significant caveats, capability deficiencies and obsolescence issues at FOC, this score does not accurately or completely represent the project's maturity as at 30 June 2016.

23. In addition, the following material inconsistencies have been identified in the forecast information:

- Section 4.1 in the ARH Tiger Helicopters PDSS reports that materiel capability delivery performance is at 99.8 per cent, indicating that there is a high degree of confidence that materiel capability performance will be met. Expert analysis commissioned by Defence indicates that the program will remain incapable of fully meeting expectations relating to reliability, availability, maintainability and rate of effort.[14]
- Section 4.1 in the LHD Landing Craft PDSS reports that materiel capability delivery performance is at 99 per cent, indicating that there is a high degree of confidence that materiel capability performance will be met. Evidence to support the estimated 99 per cent was not available during the review.

12 An acquisition project can be closed at Defence's discretion.

13 The caveats, capability deficiencies and obsolescence issues were discussed in ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, pp. 25–33 and pp. 50–53.

14 Department of Defence, *Houston Review into Army Aviation*, April 2016.

24. With the exception of the matters above, the Auditor-General concluded that '…nothing has come to my attention that causes me to believe that the information in the 26 Project Data Summary Sheets in Part 3 (PDSSs) and the *Statement by the Secretary of Defence*, excluding the forecast information, has not been prepared in all material respects in accordance with the *2015–16 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit.'

25. Additionally, in 2015–16, a number of administrative issues were observed in the course of the ANAO's review, as summarised below:

- non-compliance with corporate guidance resulting in inconsistent approaches taken to contingency allocation (Section 1 of the PDSS). See further explanation in paragraphs 1.36 to 1.40;
- a lack of oversight, non-compliance with corporate guidance and the use of spreadsheets[15] in the management of risks and issues (Section 5 of the PDSS). See further explanation in paragraphs 1.42 to 1.45;
- outdated policy guidance for the project maturity framework[16] (Section 6 of the PDSS). See further explanation in paragraphs 1.46 to 1.52; and
- differences in the methodology applied in the cost per flying hour calculation reported in the Project Financial Assurance Statement in the ARH Tiger Helicopters PDSS (Section 1 of the PDSS) compared with previous evidence provided to the ANAO by Defence. See further explanation in paragraphs 1.53 to 1.56.

ANAO's analysis of project performance

26. As discussed, the ANAO has undertaken an analysis of key elements of the Defence PDSSs—including cost, schedule, progress towards delivery of required capability, project maturity, risks and issues, and in particular, longitudinal analysis across these key elements of projects over time. Table 2, below, provides: summary data on Defence's progress toward delivering the capabilities for the Major Projects covered in this report; and compares current data against that reported in previous editions of the MPR. This section also contains a summary analysis of the three principal components of project performance: cost, schedule and capability.

15 Spreadsheets lack formalised change/version control and reporting, increasing the risk of error. See paragraph 1.43 for further detail.

16 The project maturity framework outlined in the Department of Defence, Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, September 2010, is a methodology used to quantify the maturity of projects as they progress through the acquisition life cycle.

Table 2: Summary longitudinal analysis

	2013–14 MPR	2014–15 MPR	2015–16 MPR
Number of Projects	30	25	26
Total Approved Budget	$59.4 billion	$60.5 billion	$62.7 billion
Total Expenditure Against Total Approved Budget	$28.9 billion (48.6 per cent)	$29.0 billion (48.0 per cent)	$29.4 billion (46.9 per cent)
Total In-year Expenditure Against In-year Budget	$3.3 billion (98.7 per cent)	$4.8 billion (96.8 per cent)	$3.9 billion (91.2 per cent)
Total Budget Variation since Second Pass Approval	$16.8 billion (28.3 per cent)	$18.5 billion (30.6 per cent)	$22.8 billion (36.3 per cent)
In-year Approved Budget Variation	$12.8 billion (21.5 per cent)	$2.9 billion (4.9 per cent)	$4.9 billion (7.8 per cent)
Total Schedule Slippage [1, 2]	1 115 months (36 per cent)	768 months (28 per cent)	708 months (26 per cent)
Average Schedule Slippage per Project	38 months	31 months	28 months
In-year Schedule Slippage [3]	205 months (7 per cent)	41 months (2 per cent)	42 months (1 per cent)
Total Project Maturity [4]	1 726 / 2 100 (82 per cent)	1 401 / 1 750 (80 per cent)	1 479 / 1 820 (81 per cent)
Total Reported Risks and Issues [5, 6]	129	129	123
Expected Capability (Defence Reporting)			
• High level of confidence of delivery (Green)	96 per cent	97 per cent	99 per cent
• Under threat, considered manageable (Amber)	4 per cent	3 per cent	1 per cent
• Unlikely to be met (Red)	0 per cent	0 per cent	0 per cent [7]

Refer to paragraphs 26 to 42 in **Part 1** of this report.

Note 1: The data for the 26 Major Projects in the 2015–16 MPR compares the data from projects in the 2014–15 MPR and 2013–14 MPR.

Note 2: Slippage refers to the difference between the original government approved date and the current forecast date. These figures exclude schedule reductions over the life of the project.

Note 3: Based on the 26 repeat projects from the 2012–13 MPR, 23 repeat projects from the 2013–14 MPR and 23 repeat projects from the 2014–15 MPR respectively.

Note 4: The figures represent the total of the reported maturity scores for all 26 projects, divided by the total benchmark maturity score.

Note 5: The figures represent the combined number of open high and extreme risks and issues reported in the PDSSs across all projects. Risks and issues may be aggregated at a strategic level.

Note 6: The grey section of the table is excluded from the scope of the ANAO's ***priority assurance review***, due to a lack of systems from which to obtain complete and accurate evidence in a sufficiently timely manner to facilitate the review.

Note 7: Defence has advised that Joint Strike Fighter will not deliver one element of capability at FOC (which equates to approximately one per cent). However, across all 26 Major Projects this percentage rounds to zero per cent.

Cost

27. Cost management is an ongoing process in Defence's administration of the Major Projects. While all projects reported that they could continue to operate within the total approved budget of $62.7 billion, AWD Ships received a Real Cost Increase[17] of $1.2 billion in July 2015. In addition, ARH Tiger Helicopters was provided a heavily caveated Final Operational Capability (FOC) and has not yet delivered all of the capabilities required. Delivery of outstanding requirements is being transferred from acquisition to sustainment management within CASG, without a detailed costing of remaining acquisition elements being provided in the PDSS.

28. The approved budget for Major Projects included in this MPR has increased by $22.8 billion (36.3 per cent) since Second Pass Approval, as detailed in Table 3, below. However, as the MPR predominantly focusses on the approved capital budget, the ongoing costs of Project Offices (acquisition), training, replacement capability, etc., are not reported here.

Table 3: Budget variation post Second Pass Approval by variation type [1, 2]

Project	Variation	Explanation	Year	Amount $b
MRH90 Helicopters	Scope increase/budget transfers	34 additional aircraft	2005–06	2.4
Bushmaster Vehicles	Scope increases	715 additional vehicles	2007–08, 2011–12 and 2012–13	0.8
Joint Strike Fighter	Scope increase	58 additional aircraft	2013–14	10.5
Overlander Medium/Heavy	Scope increase/budget transfers	Real Cost Increase	2013–14	0.7
AWD Ships	Real Cost Increase/budget transfers	Real Cost Increase of $1.2b offset by $0.1b transfer for facilities in 2014	2013–14 and 2015–16	1.1
P-8A Poseidon	Scope increase	Four additional aircraft	2015–16	1.3
Other	Scope increase/budget transfers (net)	Other scope changes and transfers	Various	(2.5)
	Sub-total			14.3
	Price Indexation – materials and labour (net) (to July 2010) [3]			4.1
	Exchange Variation – foreign exchange (net) (to 30 June 2016)			4.4
	Total			**22.8**

Note 1: Variations greater than $500 million are included in this table. For the breakdown of in-year variation, refer to Table 9 of this report.

Note 2: The Government indicated in the [Defence] 2016 Integrated Investment Plan that Defence will commence spending some $500–$750 million remediating and upgrading ARH Tiger Helicopters in 2017.[18]

Note 3: Prior to 1 July 2010, projects were periodically supplemented for price indexation, whereas the allocation for price indexation is now provided for on an out-turned basis at Second Pass Approval.

Source: ANAO analysis of the 2015–16 PDSSs.

17 Real Cost Increases [are] attributed to any negotiated Foreign Military Sales or commercial contracts, where funds have been approved by government to increase the Project's budget: excluding 'Scope' changes attributable to changes in requirements by Defence and government; 'Transfers' which occur when a portion of the budget and corresponding scope is transferred to or from another approved project or sustainment product in Defence; and 'Budgetary Adjustments' made to account corrections resulting from foreign exchange or indexation accounting estimation errors.

18 ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, p. 53.

Schedule

29. Delivering Major Projects on schedule remains an ongoing challenge for Defence[19]; affecting when the capability is made available for operational release and deployment by the Australian Defence Force, as well as the cost of delivery.[20]

30. The total schedule slippage for the 26 selected Major Projects, as at 30 June 2016, is 708 months (2014–15: 768 months) when compared to the initial schedule. This represents a 26 per cent (2014–15: 28 per cent) increase since approval. Table 4 below includes details of in-year and total schedule slippage by project. While the table shows a one per cent in-year slippage for 2015–16, the removal of completed projects (Wedgetail and Battle Comm. Sys.) has removed 102 months of slippage. The reduction in total schedule slippage in 2015–16 therefore predominantly reflects projects with accumulated schedule slippage exiting the review.

Table 4: Schedule slippage from original planned Final Operational Capability

Project	In-year (months)	Total (months)	Project	In-year (months)	Total (months)
Joint Strike Fighter	0	2	Additional MRTT	0	0
AWD Ships	0	34	ANZAC ASMD 2B	0	57
P-8A Poseidon	0	0	Additional Chinook	0	0
MRH90 Helicopters	0	60	HATS	0	0
Growler	0	0	Battle Comm. Sys. (Land) [3]	4	8
MH-60R Seahawk	0	0	Maritime Comms	0	0
Overlander Medium/Heavy	3	5	Collins RCS	0	109
LHD Ships	11	11	Hw Torpedo	0	63
ARH Tiger Helicopters [1]	3	82	UHF SATCOM [2, 3]	0	0 [2]
Air to Air Refuel	2	64	Collins R&S	0	99
Battlefield Airlifter [3]	15	24	ANZAC ASMD 2A	0	72
Bushmaster Vehicles	0	0	BMS [4]	N/A	N/A
Overlander Light	0	9	LHD Landing Craft	4	9
			Total (months)	**42**	**708**
			Total (per cent)	**1**	**26**

Note 1: FOC for ARH Tiger Helicopters was declared with caveats. That is, not all capabilities required by government were delivered by the project.

Note 2: UHF SATCOM has not reported any delays to FOC, but reports delays of 49 months to Final Materiel Release. See the UHF SATCOM PDSS in **Part 3** of this report.

Note 3: These projects have been identified by Defence as continuing to underperform (see paragraph 1.15 in **Part 1**).

Note 4: BMS does not have IOC or FOC milestones. These are linked to Work Packages B-D which are yet to receive government approval. Work Package A is currently a work in progress.

Source: ANAO analysis of the 2015–16 PDSSs.

31. Platform availability has contributed to the slippage experienced within some projects. For example, the submarine programs have been impacted by changes to docking schedules,

19 See Defence's analysis on page 90 in **Part 2** of this report.

20 M Thomson, Australian Strategic Policy Institute, *Indexation, inflation and the cost of defence projects*, 25 June 2015, available from <http://www.aspistrategist.org.au/indexation-inflation-and-the-cost-of-defence-projects/> [accessed 9 September 2016].

following government commissioned reviews. Significant delays have also been experienced by those projects with the most developmental content: AWD Ships, MRH90 Helicopters, ARH Tiger Helicopters, Air to Air Refuel and ANZAC ASMD 2B.

32. Table 5, below, provides details of total schedule slippage by project, for projects that have exited the MPR. Compared to the 708 months total schedule slippage for the current 26 Major Projects, the 13 projects which have exited the MPR have reported accumulated schedule slippage of 537 months, as at their respective exit dates. Again, schedule slippage was more pronounced in projects with the most developmental content.

Table 5: Schedule slippage for projects which have exited the MPR

Project	Total (months)	Project	Total (months)
Wedgetail (Developmental)	78	Armidales (Australianised MOTS)	45
Super Hornet (MOTS)	0	SM-2 Missile (Australianised MOTS)	26
Hornet Upgrade (Australianised MOTS)	39	155mm Howitzer (MOTS)	7
C-17 Heavy Airlift (MOTS)	0	Stand Off Weapon (Australianised MOTS)	37
FFG Upgrade (Developmental)	132	Battle Comm. Sys. (Australianised MOTS)	24
Next Gen Satellite [1] (MOTS)	0	C-RAM (MOTS)	2
HF Modernisation (Developmental)	147		
Total			**537**

Note 1: Next Gen Satellite shows slippage in Figure 8, which related to the final capability milestones at the time. By the time it reached FOC, a new final capability milestone had been introduced and slippage was reduced.

Source: PDSSs in published Major Projects Reports and ANAO analysis.

33. Additional ANAO analysis (refer to Figure 7, on page 44) has compared project slippage against the Defence classification of projects as Military Off-The-Shelf (MOTS), Australianised MOTS or developmental.[21] These classifications are a general indicator of the difficulty associated with the procurement process. This analysis highlights, prima facie, that the more developmental in nature a project is, the more likely it will result in project slippage, as well as demonstrating one of the advantages of selecting MOTS acquisitions.[22]

34. Figure 8 (on page 45) provides analysis of projects either completed, or removed from the MPR review, and shows that a focus on MOTS acquisitions has assisted in reducing schedule slippage. Figure 8 was requested by the JCPAA in May 2014.[23]

35. Longitudinal analysis indicates that while the reasons for schedule slippage vary, it primarily reflects the underestimation of both the scope and complexity of work, particularly for Australianised MOTS and developmental projects (see page 100 in **Part 2**).

21 See Table 2 in **Part 2** of this report for Defence classifications.

22 Off-The-Shelf (OTS): Hardware or software that already exists, is in service with one or more other customers for an equivalent purpose and requires no, or minimal, change. Sometimes expressed as COTS (Commercial Off-The-Shelf) or MOTS (Military Off-The-Shelf). Department of Defence, *Defence Capability Development Manual*, July 2015, Part 1, Glossary, p. 8.

23 JCPAA Report 442, Review of the 2012–13 Defence Materiel Organisation Major Projects Report, May 2014, Recommendation 5, p. 31.

Capability

36. The third principal component of project performance examined in this report is progress towards the delivery of capability required by government. While the assessment of expected capability delivery by Defence is outside the scope of the Auditor-General's formal review conclusion, it is included in the analysis to provide an overall perspective of the three principal components of project performance.

37. The Defence PDSSs report that 25 projects in this year's report will deliver all of their key capability requirements. Defence's assessment indicates that some elements of the capability required may be 'under threat', but that the risk is 'manageable'. The three project offices experiencing challenges with expected capability delivery (2014–15: one) are ARH Tiger Helicopters, Collins R&S and LHD Landing Craft. One project office (Joint Strike Fighter) is unable to deliver all of the required capability by FOC.

38. Defence's presentation of capability delivery performance in the PDSSs is a forecast and therefore has an element of uncertainty. The ANAO has developed an additional measure of the status of current capability delivery progress to assist the Parliament—Capability Delivery Progress—which is a tally of the capability delivered as at 30 June 2016, as reported by Defence. Tables 6 and 7 below provide two worked examples of the ANAO's methodology, utilising the performance information provided in the relevant PDSS.

Table 6: Capability Delivery Progress assessment – AWD Ships

Capability elements as per Section 4.2 of the PDSS	No. of elements approved	No. of elements delivered at 30 June 2016	Comments
All three *Hobart* Class Ship Systems with up to Category 5 (sea acceptance) trials, testing and certification completed.	3	0	No ships have been delivered to date.
Initial sustainment arrangements in place to support IOC.	1	0	Initial sustainment arrangements are not yet in place.
Training of the *Hobart* Class Systems for the commissioning crew to support IOC.	1	0	Training has not been completed
All sustainment arrangements in place to provide materiel support to the *Hobart* Class.	1	0	Final sustainment arrangements are not yet in place.
Total (number)	**6**	**0**	
Total (per cent)	**100**	**0**	

Source: PDSSs in published Major Projects Reports and ANAO analysis.

Table 7: Capability Delivery Progress assessment – Bushmaster Vehicles

Capability elements as per Section 4.2 of the PDSS	No. of elements approved	No. of elements delivered at 30 June 2016	Comments
Commencement of delivery of full rate production for Production Period 1 (PP1) vehicles.	1	1	All PP1 vehicles have been completed.
Completion of vehicle deliveries for all five production periods as detailed in Section 1.1. FMR is scheduled for September 2016.	1 015	1 007	Only eight vehicles were outstanding at 30 June 2016.
Total (number)	**1 016**	**1 008**	
Total (per cent)	**100**	**99**	

Source: PDSSs in published Major Projects Reports and ANAO analysis.

39. Table 8 below, summarises expected capability delivery as at 30 June 2016 – as reported by Defence and using the ANAO capability delivery progress measure.

Table 8: Capability delivery

Expected Capability (Defence Reporting)	2013–14 MPR (%)	2014–15 MPR (%)	2015–16 MPR (%)	Capability Delivery Progress (ANAO Analysis)	2015–16 MPR (%)	2015–16 MPR (%) Adjusted [3]
High Confidence (Green)	96	97	99	Delivered	67	44
Under Threat, considered manageable (Amber)	4	3	1	Not yet delivered	33	54
Unlikely (Red)	0	0	0 [1]	Not delivered at FOC [2]	0	2
Total	**100**	**100**	**100**	**Total**	**100**	**100**

Note 1: Defence has advised that Joint Strike Fighter will not deliver one element of capability at FOC, of a total of 79 elements required for the project (which equates to approximately one per cent). However, across all 26 Major Projects this percentage rounds to zero.

Note 2: In addition, ARH Tiger Helicopters had six elements not delivered at FOC, of a total of 29 elements required for the project. However, as there is a total of 26 141 elements across all 26 Major Projects, these percentages round to zero.

Note 3: Excluding the five projects with the largest number of elements for delivery (i.e. Overlander Medium/Heavy, Bushmaster Vehicles, Overlander Light, Battle Comm. Sys. (Land), and BMS), results in an increase to the proportion of capability 'not yet delivered' to 54 per cent (from 33 per cent) and 'not delivered at FOC' to two per cent (from zero per cent). These five projects disproportionately weight the calculation of Capability Delivery Progress due to a large number of physical elements for delivery. These five projects represent 25 715 deliverables out of a total of 26 141 deliverables for all 26 Major Projects.

Source: PDSSs in published Major Projects Reports and ANAO analysis.

40. The ARH Tiger Helicopters platform was provided a heavily caveated FOC and Defence faces significant risks and issues in relation to delivering the remaining capabilities.[24] It is also impacted by significant technological obsolescence, related to delays in delivery, which impact future use. The impact of these issues has not translated into Defence's assessment of future capability delivery performance, although it could reasonably be assumed to have a long term effect on capability. Refer to paragraphs 17 to 24 for further detail.

41. Similarly, the results of trials for the LHD Landing Craft project[25] highlight that there remain significant issues to be addressed prior to project conclusion. These issues are not disclosed in the Defence PDSS as significantly impacting on the delivery of expected capability. This is reflective of the optimism of Defence's capability delivery assessments and reporting. Refer to paragraph 23 for further detail.

42. In addition to reporting on expected capability delivery, Defence has continued the practice of including declassified information on settlement actions for projects. Prior settlements for projects within this report related to MRH90 Helicopters, LHD Ships, ARH Tiger Helicopters, Air to Air Refuel and Maritime Comms. In 2015–16, two project offices also reported receiving goods and services as a result of liquidated damages. These are LHD Ships[26] and Air to Air Refuel.[27]

24 Defence has subsequently advised that the caveat relating to the Electronic Warfare Self-Protection System has been remediated. FOC over the caveat remains pending from Chief of Army.

25 Relating to the ability of the LHD Landing Craft to carry loads as heavy as the Abrams tanks and other similar vehicles, as discussed at the JCPAA Hearing held 17 March 2016.

26 See the LHD Ships PDSS (Section 1.2 Current Status—Schedule Performance) in **Part 3** of this report.

27 See the Air to Air Refuel PDSS (Section 1.2 Current Status—Cost Performance (In-year)) in **Part 3** of this report.

1. The Major Projects Review

1.1 This chapter provides an overview of the review's scope and approach, as implemented by the Australian National Audit Office (ANAO), for the review of the 26 Project Data Summary Sheets (PDSSs) prepared by the Department of Defence (Defence). This chapter also provides the results of the Major Projects Report (MPR) review.

Review scope and approach

1.2 In 2012 the Joint Committee of Public Accounts and Audit (JCPAA) identified the review of the PDSSs as a ***priority assurance review***, under section 19A(5) of the *Auditor-General Act 1997*. This provided the ANAO with full access to the information gathering powers under the Act. The ANAO's review of the individual project PDSSs, which are reproduced in **Part 3** of this report, was conducted in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the Australian Auditing and Assurance Standards Board.

1.3 The following forecast information is excluded from the scope of the ANAO's review: capability delivery, risks and issues, and forecast dates. These exclusions are due to the lack of Defence systems from which to provide complete and accurate evidence[28], in a sufficiently timely manner to complete the review. Accordingly, the *Independent Assurance Report* by the Auditor-General does not provide any assurance in relation to this information. However, material inconsistencies identified in relation to this information, are required to be considered in forming the conclusion.

1.4 The ANAO's work is appropriate for the purpose of providing an *Independent Assurance Report* in accordance with ASAE 3000. However, the review of individual PDSSs is not as extensive as individual performance and financial statements audits conducted by the ANAO, in terms of the nature and scope of issues covered, and the extent to which evidence is required by the ANAO. Consequently, the level of assurance provided by this review, in relation to the 26 major Defence equipment acquisition projects (Major Projects), is less than that provided by the ANAO's program of audits.[29]

1.5 Separately, the ANAO undertakes analysis of key elements of the PDSSs and examines systemic issues and provides longitudinal analysis for the 26 projects reviewed.

1.6 The review was conducted in accordance with the *ANAO Auditing Standards* at a cost to the ANAO of approximately $2.0 million.

28 Refer to footnote 8.

29 See ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, for further detailed information on this project.

Review methodology

1.7 The ANAO's review of the information presented in the individual PDSSs included examination and assessment of:

- the governance and oversight in place to ensure appropriate project management;
- an assessment of the systems and controls that support project financial management, risk management, and project status reporting, within Defence;
- an examination of each PDSS and the documents and information relevant to them;
- a review of relevant processes and procedures used by Defence in the preparation of the PDSSs;
- interviews with persons responsible for the preparation of the PDSSs and management of the projects;
- analysis of project information, for example, cost and schedule variances;
- taking account of industry contractor comments provided on draft PDSS information;
- assessing the assurance by Defence managers attesting to the accuracy and completeness of the PDSSs;
- examination of the representations by the Chief Finance Officer supporting the project financial assurance and contingency statements, and the independent third-party assessment of the project financial assurance statements (commissioned by Defence);
- examination of confirmations, provided by the Capability Managers, relating to each project's progress toward Initial Materiel Release (IMR) and Final Materiel Release (FMR), and Initial Operational Capability (IOC) and Final Operational Capability (FOC); and
- examination of the '*Statement by the Secretary of Defence*', including significant events occurring post 30 June, and management representations by the Secretary of Defence.

1.8 The ANAO's review of PDSSs also focused on project management and reporting arrangements contributing to the overall governance of Major Projects. These included:

- developments in acquisition governance (Chapter 1 in **Part 1**, below);
- the financial framework, particularly as it applies to the project financial assurance and contingency statements, and managing project budgets in the out-turned budget environment (Section 2 of the PDSSs);
- schedule management and test and evaluation processes (Section 3 of the PDSSs);
- capability assessments, including Defence statements of the likelihood of delivering key capabilities (Section 4 of the PDSSs);
- the ongoing review of the implementation of the Enterprise Risk Management Framework, and major risk and issue data (Section 5 of the PDSSs); and
- the project maturity framework and reporting and the systems in place to support the provision of this data (Section 6 of the PDSSs).

1.9 This review informed the ANAO's understanding of the systems and processes supporting the PDSSs for the 2015–16 review period, and highlighted issues in those systems and processes that warrant attention.

Developments in acquisition governance

1.10 Consistent with previous years, key developments in acquisition governance processes are covered in the ANAO's review in order to inform the planning process. As might be anticipated, while some initiatives are mature, others require further progress prior to achieving their intended impact.

Gate Review Boards

1.11 First introduced in 2008, the Gate Review (acquisition) process[30] was designed to provide the Defence Senior Executive with assurance that all identified risks for a project are manageable, and that costs and schedule are likely to be under control prior to a project passing through the various stages of its life cycle. Eight years since inception, the Gate Review process continues to evolve, including the introduction of Gate Reviews for sustainment in 2013–14. The process is also set to introduce a contestability function, to focus on project business cases prior to government approval.

1.12 In July 2016, Defence has advised that Gate Reviews would henceforth be referred to as *Independent Assurance Reviews*[31], and that corporate policies and procedures were being updated for the revised processes under development for the modified Capability Life Cycle. Twenty of the Gate Reviews conducted during 2015–16 related to 19 of the projects included in this report[32], and formed key corroborative evidence for the ANAO's review.[33]

Projects of Concern

1.13 First established in 2008, the Projects of Concern (PoC) process was implemented to focus the attention of the highest levels of government, Defence and industry on remediating problem projects. The process has continued to play an important, although limited role, across the portfolio of MPR projects. The last PoC summit was in December 2015, involving the Minister and the contractors involved in the projects concerned. As at 30 June 2016, two MPR projects were continuing projects of concern:

30 ANAO Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, June 2012, paragraph 13, pp. 15–16, found that while Defence had improved the effectiveness of the program, there remained opportunities for further improvement and rigour.

31 These reviews are not carried out within frameworks issued by the Australian Auditing and Assurance Standards Board.

32 Gate Reviews were conducted for: Joint Strike Fighter, AWD Ships, Poseidon, MRH90 Helicopters, Growler, MH-60R Seahawk, Overlander Medium/Heavy, LHD Ships, Air to Air Refuel, Battlefield Airlifter, Bushmaster Vehicles, Overlander Light, Additional MRTT, HATS, Maritime Comms, UHF SATCOM, Collins R&S, BMS and LHD Landing Craft. Twelve projects had reviews scheduled for late 2016. LHD Landing Craft was also subject to a Sustainment review. Two projects (ANZAC ASMD 2B and ANZAC ASMD 2A) were not expected to undergo reviews in 2016.

33 The ANAO notes that Defence has not disclosed the six month delay to IMR for the AWD Ships project as recommended in the Gate Review held in December 2015, or the six to nine month delay to FMR for the MRH90 Helicopters project as assessed in the Gate Review held in December 2015.

- AWD Ships, a project of concern since June 2014, due to increasing commercial, schedule and cost risks, including difficulties and delays in shipbuilding; and
- MRH90 Helicopters, a project of concern since November 2011, due to technical issues preventing the achievement of milestones on schedule.

Quarterly Performance Report

1.14 The Quarterly Performance Report (QPR) introduced in 2014, aims to provide senior stakeholders within government and Defence with a clear and timely understanding of emerging risks and issues in the delivery of capability to the Australian Defence Force end-users.[34] Defence has advised that the report is provided to the Minister for Defence and the Minister for Defence Industry on a quarterly basis, with future reports expected to cover the broader remit of the Capability Acquisition and Sustainment Group (CASG) deliverables, post First Principles Review implementation.

1.15 In 2015–16, further to the two MPR projects of concern noted above, the April to June 2016 QPR also identified three MPR projects for continuing underperformance[35]:

- Battlefield Airlifter, due to contractor manufacturing changes arising from the US Air Force leaving the C-27J program (a risk known at Second Pass Approval), which has impacted the availability of aircraft for Royal Australian Air Force training and testing;
- Battle Comm. Sys. (Land), due to the delays in achieving design acceptance, which has impacted on the forecast dates for FMR and FOC; and
- UHF SATCOM, due to issues with the modification of Commercial Off-The-Shelf software (an element of the project now considered developmental).

1.16 The ongoing issues highlighted above for Battlefield Airlifter, Battle Comm. Sys. (Land) and UHF SATCOM align with the results of the ANAO's review. Delays to progress have impacted the delivery schedule of the three projects (see Table 4, on page 12).

Joint Project Directives and Materiel Acquisition Agreements

1.17 The longstanding issue for Defence in maintaining complete and accurate records of government approvals for Major Projects, led to the introduction of Joint Project Directives (JPDs) (from March 2010).[36] The implementation of JPDs is intended 'to provide an appropriately declassified means of promulgating Cabinet and Ministerial approvals'.[37] JPDs are used to inform

34 Department of Defence, Quarterly Performance Report, April to June 2016, p. 6.

35 Defence has advised that underperforming projects are projects that do not necessarily require remediation, however, would benefit from closer attention from senior Defence management, to manage their unique challenges or opportunities more effectively.

36 Joint Project Directive: A project-specific directive issued by the Secretary of the Department of Defence and the Chief of [the] Defence Force to the nominated Capability Manager or Project Realisation Manager and other involved action addresses, detailing the basis of project approval and assigning overall responsibility, authority and accountability for realisation of the capability system to an in-service state. Department of Defence, *Defence Capability Development Manual*, July 2015, Part 1, Glossary, p. 6.

37 Senate Standing Committee on Foreign Affairs, Defence and Trade, Additional Estimates Hearing, 23 February 2011, Questions Taken On Notice, answer to Question W21.

internal documentation such as Materiel Acquisition Agreements (MAAs)[38] between CASG and the Service Chiefs.[39]

1.18 However, the initiative started slowly, with Defence taking over two years to begin to produce the first JPDs.[40] Further, JPDs are regularly finalised after the MAAs they are intended to inform and, as a result, care is required to ensure that JPDs properly reflect the relevant government decision, and that MAAs are appropriately aligned with the relevant JPD.[41]

1.19 Each of the 14 MPR projects approved from 1 March 2010, have completed a JPD.[42] However, the ANAO requires access to original approval documents to validate the requirements of projects. At this time, validation by internal Defence documentation is not always possible.

1.20 The ANAO will continue to take JPDs into account in its review program in future years. However, the extent to which they can be relied upon will be dependent on the completeness and accuracy of JPDs, in relation to recording the detail of government approvals.

1.21 In July 2016 Defence advised that as part of a current review process, Program Delivery Agreements (PDAs) are being developed to replace the existing MAAs and Materiel Sustainment Agreements (MSAs). PDAs will be a higher level document (reviewed annually) that combine the MAA and MSA for each program.

Business systems rationalisation

1.22 Defence's business systems rationalisation is aimed at consolidating processes and systems in order to provide a more manageable system environment.[43] CASG has advised that it is making progress in this area. The Monthly Reporting System, which provides much of the data for the PDSSs, is to be replaced by the Project Status Review for acquisition, and the Sustainment Performance Management System for sustainment. Defence's advice is that these are reporting tools and that the intention is to rely on interfaces with existing systems, such as Open Plan Professional (OPP – the scheduling tool), rather than create another 'system'. As these applications will not be fully implemented until 2017–18, the ANAO will review the progress of their implementation during the next reporting period.

38 Materiel Acquisition Agreement: An agreement that states in concise terms what services and products the Capability Acquisitions and Sustainment Group (as supplier) will deliver, for how much and when, in support of unapproved and approved Major and Minor Capital Equipment projects. Department of Defence, *Defence Capability Development Manual*, July 2015, Part 1, Glossary, p. 7.

39 For further information on Joint Project Directives see ANAO Report No.6 2013–14, *Capability Development Reform*, October 2013, paragraphs 11.1 to 11.54, pp. 219–232.

40 ANAO Report No.6 2013–14, *Capability Development Reform*, October 2013, paragraph 11.53, p. 232.

41 ibid., paragraph 11.54, p. 232.

42 Joint Strike Fighter (Stage 2), P-8A Poseidon, Growler, MH-60R Seahawk, Overlander Medium/Heavy, Battlefield Airlifter, Bushmaster Vehicles, Overlander Light, Additional MRTT, HATS, Battle Comm. Sys. (Land), Maritime Comms, BMS and LHD Landing Craft.

43 Business system weaknesses, such as project offices having inconsistent record keeping and methods of tracking project progress were highlighted by the Committee in JCPAA Report 442, *Review of the 2012–13 Defence Materiel Organisation Major Projects Report*, May 2014, paragraph 3.116, p. 39.

Results of the review

1.23 The following sections outline the results of the ANAO's review, which inform the overall conclusion in the *Independent Assurance Report* by the Auditor-General for 2015–16.

Financial framework

1.24 The project financial assurance statement was introduced in the 2011–12 Major Projects Report and the contingency statements were introduced for the first time in the 2013–14 report. Together, they are aimed at providing greater transparency over projects' financial status, following the move to out-turned budgeting in 2010. The contingency statement also reports on the use of contingency funding to mitigate project risks.

1.25 For the first time in 2014–15, the ANAO included the project financial assurance statements within the scope of the *Independent Assurance Report* by the Auditor-General. This reflected the increased level of confidence sought by stakeholders in the accuracy and completeness of the related disclosures.

1.26 Prior to 1 July 2010, projects were periodically supplemented for price indexation, whereas the allocation for price indexation is now provided for on an out-turned basis at Second Pass Approval.[44] This change in supplementation policy has meant that price indexation can be an ongoing risk for projects, and is required to be managed individually, by each project office.

1.27 In effect, projects which slip past original delivery dates must now access contingency funding where pre-calculated indexation is insufficient. Previously, the separation and reporting of yearly indexation funding from other budget components allowed for greater transparency and fewer risks for project offices to manage.[45]

1.28 A project's total approved budget comprises:

- the programmed budget, which covers the project's approved activities, for both contractual and limited departmental aspects of each project. The programmed budget includes amounts specified for the financial years in which they are to be spent as well as amounts which are as yet unallocated to specific years; and
- the contingency budget, which is established to provide adequate budget to cover the inherent cost, schedule and technical risks involved in managing complex acquisitions.[46]

1.29 In 2015–16, the ANAO reviewed the financial framework as it applied to managing project budgets and expenditure, including contingency, in the out-turned budget environment, as well as the project financial assurance and contingency statements.

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44 Out-turning a project budget takes into account the planned increases in overall Defence spending due to inflationary pressures. JCPAA Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, Appendix C, p. 46.

45 M Thomson, Australian Strategic Policy Institute, *Indexation, inflation and the cost of defence projects*, 25 June 2015, available from <http://www.aspistrategist.org.au/indexation-inflation-and-the-cost-of-defence-projects/> [accessed 9 September 2016].

46 Department of Defence, Defence Materiel Manual Project, DMM (PROJ) 1-0-001, *DMO Project Management Manual*, April 2012, Chapter 7 – Cost Management, paragraph 7.1.5, p. 39.

Project financial assurance statement

1.30 The project financial assurance statement was added to the PDSSs to provide readers with an articulation of a project's financial position in relation to delivering project capability and to provide transparency in regard to the extent to which there is 'sufficient remaining budget for the project to be completed'.[47]

1.31 In 2015–16 financial risks and their outcomes are as follows:

- the AWD Ships project office[48] was provided an additional $1.2 billion Real Cost Increase in July 2015;
- the ARH Tiger Helicopters PDSS does not recognise any shortfall in project funding. The Government's Defence Integrated Investment Plan released on 25 February 2016, acknowledges that 'the Tiger has had a troubled history – essential upgrades are programmed to maintain the capability's effectiveness', and that starting in 2017 Defence plans to spend some $500-$750 million remediating and upgrading the Tiger[49];
- the Battlefield Airlifter project office disclosed a cost risk for contracts yet to be executed; and
- the ANZAC ASMD 2B project office continued to recognise that available funding may be insufficient as contracted indices escalation may be greater than the approved project budget.

1.32 Defence has continued to subject a sample of project financial assurance statements to an independent third-party agreed-upon procedures engagement. The third party agreed-upon procedures engagement supports Defence in assessing the project financial assurance statements.

1.33 Projects selected for the 2015–16 third-party engagement, in support of the financial assurance statement assurance process, included:

- additional procedures—ARH Tiger Helicopters and Battlefield Airlifter; and
- standard procedures—Overlander Light, Collins RCS and LHD Landing Craft.

1.34 Defence advised that the third-party engagement 'found no adverse factual findings that would indicate any issues with the [project financial assurance statements] PFAS for the five selected projects'. It also identified an exception against one project (ARH Tiger Helicopters), relating to the inability to 'agree the budget values in the latest Project Plan/OPP [Open Plan Professional][50] to the budget values included in the most recent Additional Estimates process'.

1.35 In conclusion, for the 2015–16 Major Projects Report, the Chief Finance Officer's representation letter to the Secretary on the project financial assurance statements was unqualified, noting the one adverse finding mentioned above. The project financial assurance

47 JCPAA Report 436, Review of the 2011–12 Defence Materiel Organisation Major Projects Report, May 2013, paragraph 3.4, p. 14.

48 The AWD Ships project was also the subject of an ANAO performance audit. See ANAO Report No.22 2013–14, *Air Warfare Destroyer Program*, March 2014, for further detailed information on this project.

49 ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, p. 53.

50 Defence scheduling software.

statement is restricted to the current financial contractual obligations of Defence for these projects, including the result of settlement actions and the receipt of any liquidated damages; and current known risks and estimated future expenditure as at 30 June 2016.

Contingency statements and contingency management

1.36 The purpose of the project contingency budget is 'to provide adequate budget to cover the inherent risk of the in-scope work of the project'.[51] Defence policy requires project offices to maintain a contingency budget log to identify and track components of the contingency budget.[52]

1.37 PDSSs are required to include a statement regarding the application of contingency funds during the year, if applicable, as well as disclosing the risks mitigated by the application of those contingency funds. Defence's Project Risk Management Manual (PRMM version 2.4, page 110) requires that contingency be applied for identified risk mitigation activities which have been assessed as being cost effective and representing value for money.

1.38 The seven project offices which had contingency funds applied in 2015–16 were AWD Ships (indexation funding shortfall), MRH90 Helicopters (crash rescue helicopter service, replacement Mission Management System, and establishment of support contracts), Overlander Light (Command Post Mobile module installation kit), ANZAC ASMD 2A and 2B (gain share and radar test set), Additional Chinook (Australian-based maintenance training system and crashworthy seating solution), and BMS (instructional support, vehicle movement for installation activities, and offer definition and improvement activities).

1.39 The ANAO's examination of the contingency statements as at 30 June 2016 also highlighted that:

- the clarity of the relationship between contingency application and identified risks has improved. Of the 25 project offices that have a formal contingency allocation[53], only four projects (Growler, Bushmaster Vehicles, Additional Chinook and BMS) did not explicitly align their contingency log with their risk log, by including risk identification numbers as required by PRMM version 2.4;
- the method for applying contingency varied, with 23 project offices using the 'expected costs' of the risk treatment (as required by PRMM version 2.4), and the remaining two (HATS and Maritime Comms) using a proportionate allocation of the likelihood of the risk eventuating (the method outlined in PRMM version 2.2); and
- there were 12 project offices that did not meet all the requirements of PRMM version 2.4 in terms of keeping a record of review of contingency logs, however, the ANAO observed that the information required could be located in other documents.

1.40 Non-compliance with PRMM version 2.4 has resulted in inconsistent approaches taken to the management of contingency.

51 Department of Defence, DMM (PROJ) 11-0-002, *DMO Project Risk Management Manual 2013*, July 2013, Chapter 9 – Management of Contingency Budgets in DMO Acquisition Projects, p. 108.

52 The manual requires that the Project Contingency Budget Log is kept up to date for the proper overall management of risk and that it is submitted for internal review at Additional and Budget estimates.

53 The Collins R&S project does not have a formal contingency allocation.

Enterprise Risk Management Framework

1.41 While major risks and issues data in the PDSSs remains out of scope of the *Independent Assurance Report* by the Auditor-General, the ANAO will continue to work with Defence to bring risks and issues into the scope of future MPR reviews. However, the following is provided for an overall perspective of how risks and issues are managed within the selected Major Projects.

1.42 In 2015–16, the ANAO again examined project offices' risk and issue logs, which are created and maintained utilising spreadsheets and/or Predict! software.[54] Overall, the issues with risk management that the ANAO observed related to:

- variable compliance with corporate guidance, for example, three out of 26 Major Projects did not update their Risk Management Plan in line with PRMM version 2.4;
- the visibility of risks and issues when a project is transitioning to sustainment;
- the frequency with which risk and issue logs are reviewed to ensure risks and issues are appropriately managed in a timely manner, and accurately reported to senior management;
- risk management logs and supporting documentation of variable quality, particularly where spreadsheets are being used[55]; and
- lack of quality control resulting in inconsistent approaches in the recording of issues within Predict!.

1.43 Defence's use of spreadsheets as a primary form of record for risk management, is a high risk approach. Spreadsheets lack formalised change/version control and reporting, increasing the risk of error. This can make spreadsheets unreliable corporate data handling tools, as accidental or deliberate changes can be made to formulae and data, without there being a record of when, by who, and what change was made. Overall, of the 26 project offices, 15 utilise spreadsheets[56] as their primary risk management tool and 11 utilise Predict!.

1.44 While some project offices will experience greater challenges with risks and issues administration—project complexity, scale and timing—it is important that Defence ensure that risk management systems and processes are used appropriately. This is particularly important for higher cost developmental projects.

1.45 In this context, the Joint Strike Fighter project is an example where the project has developed a hierarchical view of risks (due to the number), which are summarised in the project's PDSS at a strategic level. As supported by the project's Risk Management Plan (finalised July 2016), the project's primary risk management tool is Predict! with strategic risks managed separately in spreadsheets.

Project maturity framework

1.46 Project Maturity Scores have been a feature of the Major Projects Report since its inception in 2007–08. The *DMO Project Management Manual 2012*, defined a maturity score as:

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54 Predict! is a risk management tool used by Defence to manage risks and issues.

55 Spreadsheets lack formalised change/version control and reporting, increasing the risk of error.

56 The 15 projects are: MRH90 Helicopters, Growler, MH-60R Seahawk, ARH Tiger Helicopters, Air to Air Refuel, Battlefield Airlifter, Additional MRTT, ANZAC ASMD 2B, Additional Chinook, HATS, Battle Comm. Sys. (Land), UHF SATCOM, Collins R&S, ANZAC ASMD 2A and BMS.

> The quantification, in a simple and communicable manner, of the relative maturity of capital investment projects as they progress through the capability development and acquisition life cycle.[57]

1.47 Maturity scores are a composite indicator, cumulatively constructed through the assessment and summation of seven different attributes. The attributes are: Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, and Operations and Support, which are assessed on a scale of one to 10.[58] Comparing the maturity score against its expected life cycle gate benchmark provides internal and external stakeholders with a useful indication of a project's progress.

1.48 The ANAO has previously raised inconsistency in the application of Project Maturity Scores as an issue. Instances of this have reduced in recent reviews and the ANAO considers that with the guidance available, assigning a maturity score is a repeatable process.

1.49 The policy guidance underpinning the attribution of maturity scores would benefit from a review for internal consistency and relationship to Defence's contemporary business. For example, allocating approximately 50 per cent of the maturity score at Second Pass Approval, regardless of acquisition type, is often inconsistent with the proportion of project budget expended, and the remaining work required in order to deliver the project.

1.50 Further, the existing project maturity score model does not always effectively reflect a project's progress during the often protracted build phase, particularly for developmental projects. During this phase it can be expected that maximum expenditure will occur, and that many risks will be realised, some of which will only emerge as test and evaluation activities are pursued through to acceptance into operational service. For example, the ARH Tiger Helicopters project has significant capability deficiencies and obsolescence issues at FOC, however the maturity score does not accurately represent the project's maturity as at 30 June 2016. Refer to paragraphs 17 to 24 for further detail.

1.51 The policy guidance underpinning maturity scores was due for review in September 2012.[59] Last year, the ANAO was advised that while work had occurred to review the guidance, the release of the First Principles Review meant that the guidance would require further consideration. This is due to occur once the redesign of the Capability Life Cycle, in line with the direction of the First Principles Review, has been completed.

1.52 The JCPAA has recently re-affirmed its interest in the maturity score framework, recommending 'that the Department of Defence work with the Australian National Audit Office to review and revise Defence's policy regarding Project Maturity Scores in time for the new approach to be implemented in the next Major Projects Report.'[60] An updated policy has not yet been provided to the ANAO for input.

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57 Department of Defence, DMM (PROJ) 1-0-001, *DMO Project Management Manual 2012*, April 2012, Glossary, p. 75.

58 See Appendix 3 in **Part 2** of this report and footnote 16 for further detail.

59 Department of Defence, DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, September 2010, p. 9, with a stated 24 month review period.

60 JCPAA Report 458, *Defence Major Projects Report (2014-15)*, May 2016, Recommendation 3, p. 50.

Cost per flying hour

1.53 Cost per flying hour is a metric widely used by military services for use in contract management and performance comparisons across aviation platforms. In the case of the ARH Tiger Helicopters information presented in the PDSS, there is no consistent calculation methodology to support the calculations provided.

1.54 The ARH Tiger Helicopters PDSS reports a cost per flying hour of $39 825 for 2013–14. Calculations previously provided by Defence for the purposes of an ANAO performance audit[61] indicated a cost per flying hour of $43 026 for 2013–14. This information was provided by project office finance staff. Defence advised that the difference between the two figures ($9.7 million) equates to $3 201 per flying hour (when divided by the achieved rate of effort) and is predominantly comprised of Full Flight Mission Simulator upgrades ($6.7 million) and Electronic Warfare Mission Support System Technical Services ($1.3 million).

1.55 The ANAO also noted Defence advice to Airbus in May 2014 of a cost per flying hour of $41 000 for 2013–14.[62] In a Sustainment Gate review held in March 2015 on the ARH Weapon System, 'the Board recognised the CEO's cost per flying hour calculation [based on dividing the annual sustainment budget by the actual flying hours] was a simple figure to emphasis[e] to Airbus the magnitude of the Commonwealth's concern and to demand a new and much lower figure be achieved by 2017/18.'

1.56 Defence should define an appropriate calculation methodology that can be applied consistently to better support comparisons over time and across Defence's aviation platforms.

61 ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, p. 46.
62 This advice was provided in correspondence to Airbus Helicopters from the CEO DMO, 29 May 2014.

2. Analysis of Projects' Performance

2.1 Performance information is important in the management and delivery of major Defence equipment acquisition projects (Major Projects). It informs decisions about the allocation of resources, supports advice to government, and enables stakeholders to assess project progress.

2.2 Project performance has been the subject of many of the reviews of the Department of Defence (Defence), and a consistent area of focus of the Joint Committee of Public Accounts and Audit (JCPAA) since the first Major Projects Report (MPR). This chapter progresses previous Australian National Audit Office (ANAO) analysis over project performance.

Project performance analysis by the ANAO

2.3 The ANAO utilises three key performance indicators to analyse the major dimensions of projects' progress and performance. These indicators are the:

- percentage of budget expended (Budget Expended)—which measures the total expenditure as a percentage of the total current budget;
- percentage of time elapsed (Time Elapsed)—which measures the percentage of time elapsed from original approval to the forecast Final Operational Capability (FOC)[63]; and
- percentage of key materiel capabilities delivered[64] (Capability Delivery Progress)—which measures the total capability elements delivered as a percentage of the total capability elements across all Major Projects.

2.4 The ANAO has previously utilised Defence's prediction of expected final capability, as reported in Section 4.1 of each Project Data Summary Sheet (PDSS). For the first time this year, the ANAO has derived an indicator for 'Capability Delivery Progress', which aims to show the current capability delivered, in terms of capability elements included within the agreed Materiel Acquisition Agreements (MAAs). These performance indicators are measured in percentage terms, to enable comparisons between projects of differing scope, and to provide a view across the selected projects of progress and performance.

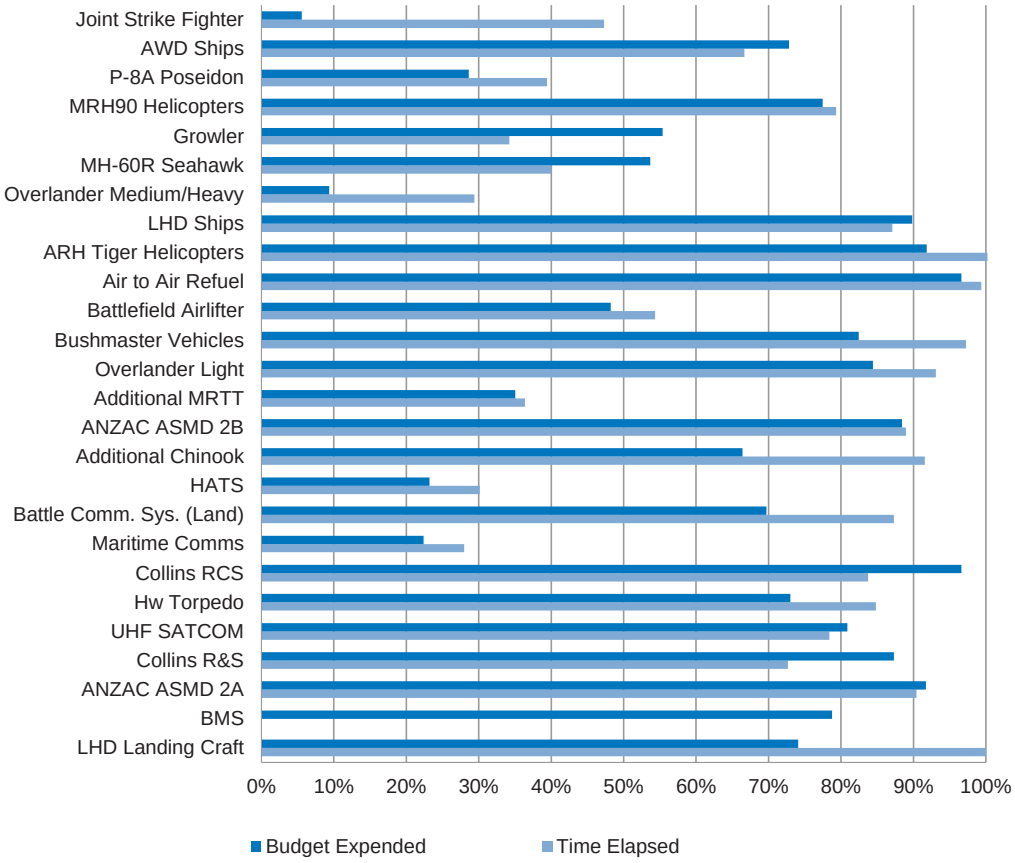
2.5 The following sections of this chapter provide analysis relating to the three principal components of project performance. This includes in-year information, longitudinal analysis and the results of project progress for the year-ended 30 June 2016. The first piece of analysis, in Figure 2 below, sets out each project's Budget Expended and Time Elapsed.[65]

63 Refer to footnote 10 for the definition of IMR and FMR milestones, and footnote 11 for the definition of IOC and FOC milestones.

64 See paragraphs 2.47 to 2.54 for further explanation.

65 A project's budgeted cost and schedule data is at 30 June 2016, and may differ from originally approved budgets and schedules.

Figure 2: Budget Expended and Time Elapsed



Note: BMS does not have IOC or FOC milestones. These are linked to Work Packages B-D which are yet to receive government approval. Work Package A is currently a work in progress.

Source: ANAO analysis of the 2015–16 PDSSs.

2.6 Figure 2 shows that for most projects (21 of 26), Budget Expended is broadly in line with, or lagging, Time Elapsed.[66] This relationship is generally expected in an acquisition environment predominantly based on milestone payments. However, due to the varying complexity, stages and acquisition approaches across the portfolio of projects, further analysis of these simple performance measures is required to provide an overall picture of key variances.

2.7 Where Budget Expended is significantly lagging Time Elapsed the project schedule may be at risk, i.e. expenditure lags may indicate delays in milestone achievement. However, for the five projects where the Budget Expended is approximately 20 per cent less than the Time Elapsed, in only two cases (Overlander Medium/Heavy and LHD Landing Craft) this is the direct

66 A project's budget expended is cash based. In cases where pre-payments have been made, but have not been expensed/amortised, cash paid by a project will be greater than the accrued expenditure.

result of schedule delays. The remaining cases reflect either ongoing development or reduced costs, as detailed below:

- Joint Strike Fighter (Budget Expended six per cent, Time Elapsed 47 per cent)—a large scope increase ($10.5 billion) for the purchase of additional aircraft was approved in April 2014, with the project yet to enter into main production contracts, as aircraft development continues;
- Overlander Medium/Heavy (Budget Expended nine per cent, Time Elapsed 29 per cent, based on the current (LAND 121 Phase 3B) project approval)[67]—initial delays in contractor engagement have resulted in the project remaining in an early stage of delivery, reflected by the project continuing to undertake design reviews;
- Additional Chinook (Budget Expended 66 per cent, Time Elapsed 92 per cent)—the variance reflects cost savings achieved through the integration of a number of previously post production modifications (including some of the Australian Defence Force (ADF) unique modifications) on the production line and progressive price reductions in the Foreign Military Sales (FMS) case;
- Battle Comm. Sys. (Land) (Budget Expended 70 per cent, time elapsed 87 per cent)— the variance reflects the remaining budget as the project approaches completion, with Defence advising that the majority of these funds are to be re-allocated to other projects; and
- LHD Landing Craft (Budget Expended 74 per cent, Time Elapsed 100 per cent)—the variance reflects the remaining budget as the project approaches completion. However, while the PDSS continued to report June 2016 as the FOC date, it also anticipates a delay to FOC due to an outstanding trial at 30 June 2016.

2.8 Where Budget Expended leads Time Elapsed the project budget may be at risk, i.e. expenditure increases may indicate real cost increases. However, for the four projects where Budget Expended leads Time Elapsed by more than 10 per cent, the actual reasons are related either to early procurement of major equipment, due to production timing, or schedule delays caused through platform availability, as detailed below:

- Growler (Budget Expended 55 per cent, Time Elapsed 34 per cent)—most of the expenditure on equipment is in line with aircraft production in advance of training. All aircraft have now been manufactured, but are yet to be accepted by Defence;
- MH-60R Seahawk (Budget Expended 54 per cent, Time Elapsed 40 per cent)—23 of 24 aircraft have been accepted as at June 2016. The variance is caused by the time between final aircraft delivery and FOC, with this period being used to test and integrate a

67 Originally, the Medium/Heavy capability was to be acquired through the LAND 121 Phase 3 project, which was initially reported in the 2009–10 MPR. The LAND 121 Phase 3 project substantially sought to acquire what was later split into the two LAND 121 3A and LAND 121 3B projects. The original FOC date for the LAND 121 Phase 3 project was December 2019. The LAND 121 3B project now anticipates FOC occurring in June 2023, 3 years and 6 months later. Reporting in the MPR is based on the latter LAND 121 3B government project approval parameters, and does not include the delay that is contained in the LAND 121 Phase 3 to LAND 121 Phase 3B transition.

number of ADF mission system options and modify Navy vessels to operate with the MH-60R Seahawk; and

- Collins RCS (Budget Expended 97 per cent, Time Elapsed 84 per cent) and Collins R&S (Budget Expended 87 per cent, Time Elapsed 73 per cent) projects—most of the materiel has been acquired and expenditure undertaken. In addition, originally planned installation dates have been extended based on submarine availability, reducing the proportion of total Time Elapsed.

2.9 In each case, the performance information highlights projects requiring further attention. This is to ensure that surplus funds are returned to the Defence budget for re-allocation in a timely manner, the timing of key deliverables remains in focus, or planning focuses on bringing together all elements in a timely manner, as equipment is delivered.

Cost performance analysis

Sustainment reporting in the Major Projects Report

2.10 Historically, the majority of projects within the MPR have not been required to disclose significant detail in relation to sustainment activity to meet the requirements of the MPR Guidelines. However, the practice of providing caveated achievement of IOC or FOC provides for advancement through the process of acceptance into operational service, notwithstanding known shortcomings.

2.11 The practice of issuing caveated milestones will require Defence to exercise appropriate judgement for the capability disclosures within the MPR, in order to provide project PDSSs that provide an accurate depiction of performance to readers of the PDSS. Additionally, the ANAO will need to monitor and report on projects 'in sustainment', as projects complete tasks defined, and funded, for delivery in acquisition.

- For example, the ARH Tiger Helicopters acquisition received caveated FOC and requires additional funding to address outstanding issues. The ANAO's recent performance audit[68] identified that the funding required to remediate the ARH Tiger Helicopters was beyond the scope of the already approved $2 033.0 million for the project. Expert analysis commissioned by Defence indicates that the issues arising from the developmental nature of the ARH Tiger Helicopter platform and sub-optimal sustainment arrangements will endure.[69]

2.12 The JCPAA has endorsed retention of the ARH Tiger Helicopters acquisition in the MPR for review in 2016–17.

68 The caveats, capability deficiencies and obsolescence issues were discussed in ANAO Report No.11 2016–17, Tiger—Army's Armed Reconnaissance Helicopter, September 2016, pp. 25–33 and pp. 50–53. See also paragraph 1.31 in **Part 1** of this report.

69 Department of Defence, *Houston Review into Army Aviation*, April 2016.

Budget Expended and Project Maturity

2.13 Figure 3, below, sets out each project's Budget Expended against Project Maturity[70] and shows that Budget Expended lags Project Maturity for the majority of projects (20 of 26). This relationship is expected for two reasons:

- in an acquisition environment predominantly based on milestone payments, projects will typically develop confidence in delivering their scope through testing and demonstration, ahead of formal acceptance of milestone achievement (and expenditure of budget); and
- where there is a larger proportion of Military Off-The-Shelf (MOTS) projects. MOTS products are generally in-service with other military forces, and will generally have benefited from significant development and testing, prior to selection by Defence.

2.14 Budget Expended lags Project Maturity with a variance of 20 per cent or more in 10 projects. As expected, these projects are classified as either MOTS or Australianised MOTS, except Joint Strike Fighter, which is expected to be classified as MOTS by the time of aircraft delivery. There are no instances where Budget Expended leads Project Maturity by 20 per cent or more.

2.15 The variances are, in part, the result of Defence's project maturity framework attributing approximately 50 per cent of total Project Maturity at Second Pass Approval (the main investment decision by government).[71] This reduces the value of project maturity assessments during the early stages of acquisition.

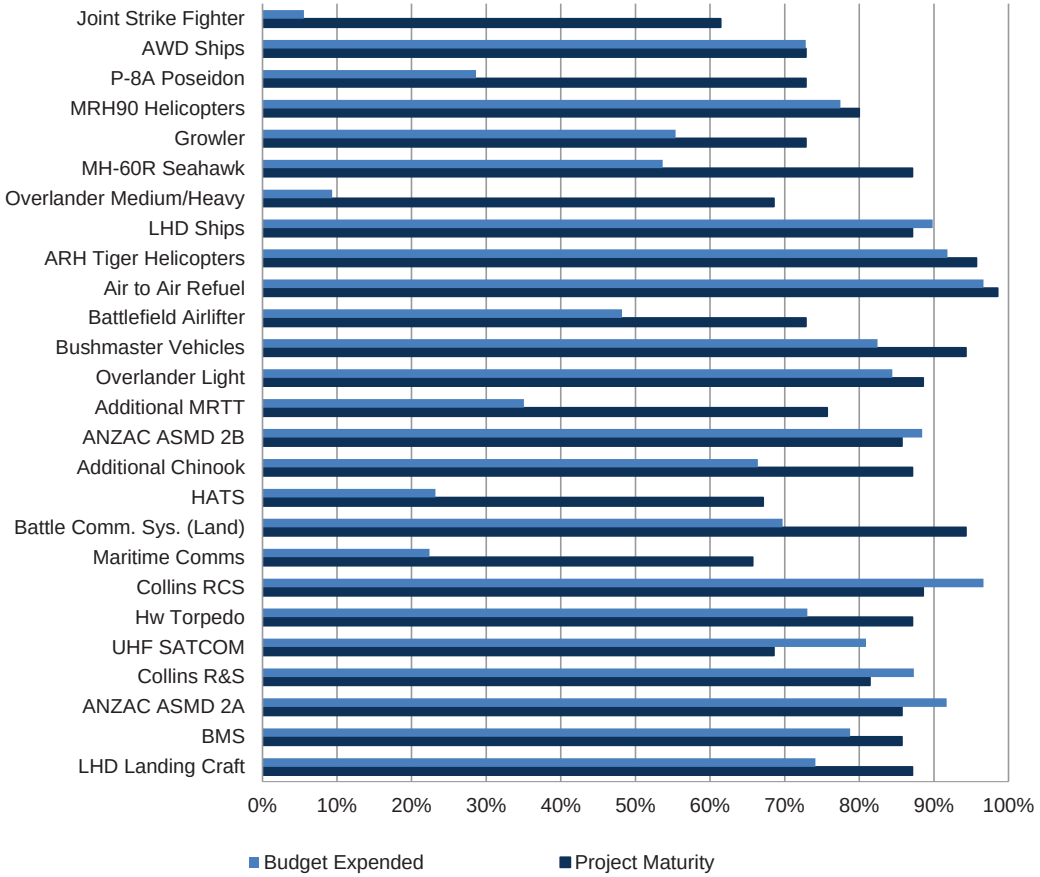
2.16 Defence's focus on typically lower risk MOTS acquisitions in recent years, has assisted in meeting schedule timelines across projects.[72] Analysis of the available performance information highlights that the selection of MOTS projects assists in reducing risk during project acquisition, where Project Maturity is more advanced at Second Pass Approval than developmental projects.

70 The JCPAA has recommended that a capacity to publish Project Maturity Scores be maintained [by Defence] until they are no longer required by the JCPAA. JCPAA Report 442, *Review of the 2012–13 Defence Materiel Organisation Major Projects Report*, May 2014, Recommendation 8, p. 39.

71 The JCPAA has recommended that Defence work with the ANAO to review and revise their policy regarding Project Maturity Scores. JCPAA Report 458, *Defence Major Projects Report (2014–15)*, May 2016, pp. 49–50.

72 See paragraphs 2.31 to 2.35 and Figure 8 for more information. However, acceptable MOTS solutions may not always be available.

Figure 3: Budget Expended and Project Maturity



Note: ANZAC ASMD 2B's Project Maturity is based on the progress of the lead ship, not on the current eight ship program.

Source: ANAO analysis of the 2015–16 PDSSs.

Second Pass Approval and 30 June 2016 approved budget

2.17 Figure 4, below, compares each project's approved budget at Second Pass Approval and its approved budget at 30 June 2016.

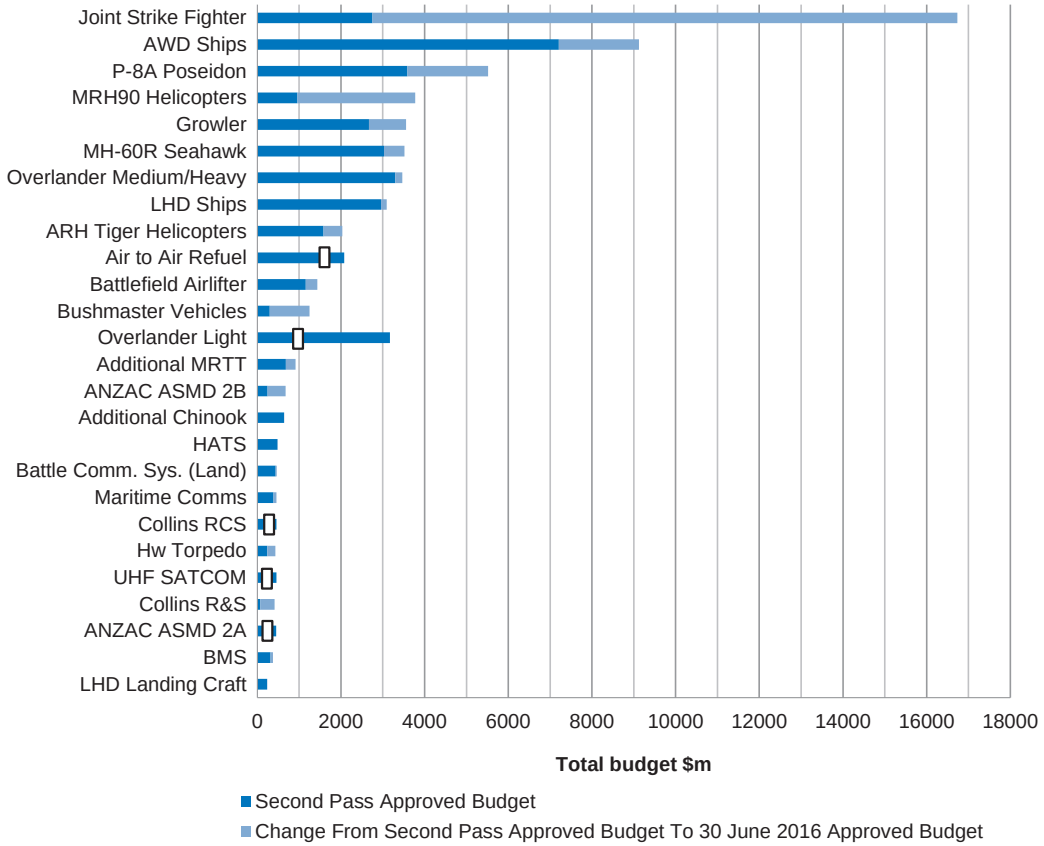
2.18 The total budget for the 26 projects at 30 June 2016 was $62.7 billion, a net increase of $22.8 billion, when compared to the approved budget at Second Pass Approval of $39.9 billion (detailed analysis of this variance is included in Table 3).

2.19 Figure 4 indicates relative budget variations from Second Pass Approval of $500 million or more for six projects. The list below describes the components of these variations:

- Joint Strike Fighter—increase of $14.0 billion, comprising $10.5 billion for 58 additional aircraft in 2013–14, $3.1 billion for exchange rate variation and $0.4 billion for price indexation;
- AWD Ships—increase of $1.9 billion, comprising $1.2 billion for a Real Cost Increase[73] in July 2015 to complete the project, $1.2 billion for price indexation, offset by a $0.3 billion decrease for exchange rate variation and a $0.1 billion decrease for transfers to facilities projects in 2013–14[74];
- P-8A Poseidon—increase of $1.9 billion, comprising $1.3 billion for four additional aircraft in 2015–16 and $0.6 billion for exchange rate variation;
- MRH90 Helicopters—increase of $2.8 billion, comprising $2.4 billion for 34 additional aircraft in 2005–06 and other minor scope changes, $0.7 billion for price indexation, offset by a $0.2 billion decrease for exchange rate variation[75];
- Growler—increase of $888.4 million, comprising $955.7 million for exchange rate variation, $200.6 million in 2014–15 for the Mobile Threat Training Emitter System and weapons, offset in 2015–16 by a $267.9 million decrease for transfers to facilities projects and the return to the Defence budget of surplus funds for re-allocation; and
- Bushmaster Vehicles—increase of $955.7 million, comprising $832.2 million for 715 additional vehicles in 2007–08 (437 vehicles), 2011–12 (70 vehicles) and 2012–13 (208 vehicles) and other minor scope changes, $124.6 million for price indexation, offset by a $1.1 million decrease for exchange rate variation.

73 See Note 3 of Figure 4, below, for further information.
74 The components for this project do not add up to $1.9 billion due to rounding differences.
75 The components for this project do not add up to $2.8 billion due to rounding differences.

Figure 4: Projects' Second Pass Approval and 30 June 2016 approved budget ($m)



Note 1: ▯ indicates that the budget for the project at 30 June 2016 is less than the original budgeted cost. However, for Overlander Light this reflects a transfer of $2.2 billion to Overlander Medium/Heavy on separation of the original project into two phases in December 2011.

Note 2: The Second Pass Approval amount for the Overlander Medium/Heavy project includes a Real Cost Increase of $0.7 billion, which was provided as part of the revised Second Pass Approval in July 2013.

Note 3: On 22 May 2015, the Minister for Defence and the Minister for Finance announced there would be further delays to the delivery of the Air Warfare Destroyers and an additional $1.2 billion would be required to complete the project. The budget increase was incorporated into the approved project budget as at 30 June 2016.

Source: ANAO analysis of the 2015–16 PDSSs.

Budget performance

2.20 The following figures and tables illustrate the budget performance for the 26 selected projects by way of:

- in-year budget variations by project (see Table 9); and
- expenditure forecasting performance against actual expenditure for 2015–16 (see Figure 5).

In-year budget variance analysis

2.21 Table 9, below, sets out the in-year budget variations for each project. Overall, the approved budget for the projects as at 30 June 2016 increased by $4 923.1 million, or 8.8 per cent, compared to their approved budget as at 30 June 2015. This was driven by net real increases of $2 409.9 million, and exchange rate variation increases of $2 512.8 million.

2.22 Real Variations[76] primarily reflect changes in the scope of projects, transfers between projects for approved equipment/capability and budgetary adjustments such as administrative savings decisions. In 2015–16, there were four projects with Real Variations:

- AWD Ships—variation of $1 199.5 million reflecting the Real Cost Increase to complete the project[77];
- P-8A Poseidon—variation of $1 295.4 million reflecting the approval of an additional four aircraft;
- Growler—variation of -$267.9 million reflecting the transfer of funding for facilities and the return to the Defence budget of surplus funds for re-allocation; and
- Additional MRTT—variation of $182.9 million reflecting interim approval to incorporate an enhanced communications capability for long-range government transport.

2.23 Exchange rate variations can result from projects' exposure to foreign currencies and movements in foreign exchange rates against the Australian dollar.[78] Budget adjustments aim to maintain the relative buying power of the project budget. Movements in the US dollar and the Euro are the main influences. Projects with larger movements in foreign exchange in 2015–16 included:

- Joint Strike Fighter—$1 557.2 million, or 10.3 per cent increase in budget;
- P-8A Poseidon—$246.7 million, or 6.2 per cent increase in budget;
- Growler—$293.0 million, or 8.3 per cent increase in budget; and
- MH-60R Seahawk—$111.9 million, or 3.3 per cent increase in budget.

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76 Real Variations include 'Scope' changes attributable to changes in requirements by Defence and government; 'Transfers' which occur when a portion of the budget and corresponding scope is transferred to or from another approved project or sustainment product in Defence; 'Budgetary Adjustments' made to account corrections resulting from foreign exchange or indexation accounting estimation errors; 'Real Cost Increases', attributed to any negotiated Foreign Military Sales or commercial contracts, where funds have been approved by government to increase the Project's budget; and 'Real Cost Decreases', attributed to any negotiated Foreign Military Sales or commercial contracts, where funds have been handed back to the Defence portfolio.

77 See Note 3 of Figure 4, above, for further information.

78 Australian Government arrangements for foreign exchange variation involve 'no win/no loss' supplementation. As a matter of policy, unless specifically approved, individual entities are not permitted to 'hedge' against foreign exchange risk.

Table 9: In-year (2015–16) budget variations by project

Project	Approved Budget 2014–15 $m	Approved Budget 2015–16 $m	In-year Exchange Variation $m	In-year Real Variation $m	Total Variance $m	Total Variance (per cent)
Joint Strike Fighter [1]	15 181.1	16 738.4	1 557.2	-	1 557.3	10.3
AWD Ships	7 891.1	9 120.8	30.2	1 199.5	1 229.7	15.6
P-8A Poseidon	3 977.8	5 519.9	246.7	1 295.4	1 542.1	38.8
MRH90 Helicopters	3 747.5	3 773.9	26.4	-	26.4	0.7
Growler	3 531.4	3 556.5	293.0	(267.9)	25.1	0.7
MH-60R Seahawk	3 408.5	3 520.4	111.9	-	111.9	3.3
Overlander Medium/Heavy	3 387.6	3 465.6	78.0	-	78.0	2.3
LHD Ships	3 091.0	3 092.9	1.9	-	1.9	0.1
ARH Tiger Helicopters	2 032.7	2 033.0	0.3	-	0.3	-
Air to Air Refuel	1 822.3	1 821.7	(0.6)	-	(0.6)	-
Battlefield Airlifter	1 369.2	1 434.5	65.3	-	65.3	4.8
Bushmaster Vehicles	1 250.5	1 250.7	0.2	-	0.2	-
Overlander Light	1 015.7	1 017.7	2.0	-	2.0	0.2
Additional MRTT	-	911.4	46.5	182.9	229.4	25.2
ANZAC ASMD 2B	678.6	678.6	-	-	-	-
Additional Chinook	633.8	642.4	8.6	-	8.6	1.4
HATS	-	487.6	13.7	-	13.7	2.8
Battle Comm. Sys. (Land)	461.9	464.6	2.7	-	2.7	0.6
Maritime Comms	442.1	456.0	13.9	-	13.9	3.1
Collins RCS	450.4	450.6	0.2	-	0.2	-
Hw Torpedo [1]	427.9	429.7	1.7	-	1.8	0.4
UHF SATCOM [1]	420.4	421.4	0.8	-	1.0	0.2
Collins R&S	411.7	411.7	-	-	-	-
ANZAC ASMD 2A	386.8	386.8	-	-	-	-
BMS	-	372.8	10.5	-	10.5	2.8
LHD Landing Craft	236.2	237.9	1.7	-	1.7	0.7
Total	56 256.2	62 697.5	2 512.8	2 409.9	4 923.1	8.8

Note 1: The Total Variance and components for this project do not add due to rounding differences.

Source: ANAO analysis of the 2014–15 and 2015–16 PDSSs.

In-year forecast and actual expenditure

2.24 Accurately forecasting and managing budget expenditure is an important element in the management of a portfolio of projects. Figure 5, below, sets out the expenditure forecasting performance of each project against actual expenditure in 2015–16. In total, actual expenditure for the 26 projects at 30 June 2016 was $3.9 billion, against an initial (PBS) forecast expenditure of $4.9 billion, a mid-year (PAES) forecast of $4.2 billion, and a final forecast of $4.3 billion (Final Plan, approved during May 2016). The main factors contributing to the variances were changes to delivery and payment schedules, and foreign exchange fluctuations.[79]

2.25 Figure 5 highlights that notable in-year underspends occurred in the following projects:

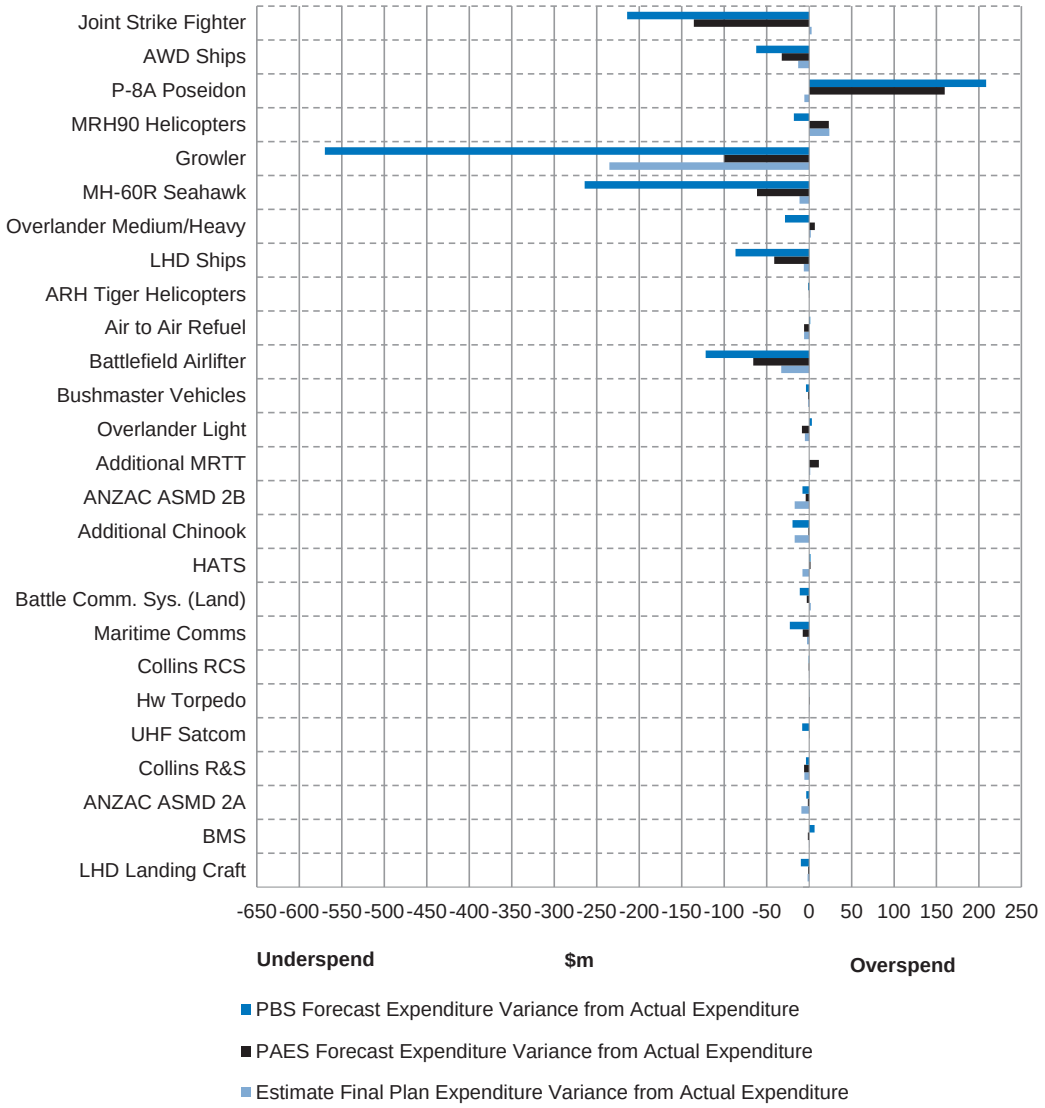
- Joint Strike Fighter (expenditure of $248.9 million compared to $463.0 million PBS, $384.6 million PAES and $246.0 million Final Plan estimates)—the variance was primarily due to delays in United States Government contracting processes and the unpredictability of F-35 Joint Program Office invoicing;
- AWD Ships (expenditure of $683.3 million compared to $745.5 million PBS, $715.6 million PAES and $696.1 million Final Plan estimates)—the variance was primarily due to delays, resulting in the reprogramming of Alliance and Program Management Office deliverables as part of the AWD Reform Program;
- Growler (expenditure of $320.0 million compared to $889.8 million PBS, $419.5 million PAES and $555.0 million Final Plan estimates)—the variance was due to payments for Aircraft production and Airborne Electronic Attack Kits being brought forward to 2014–15 from 2015–16. In addition, there were lower March and no June 2016 FMS payments due to lower billing forecasts from the United States Government;
- MH-60R Seahawk (expenditure of $282.2 million compared to $546.2 million PBS, $343.5 million PAES and $293.5 million Final Plan estimates)—the variance was due to payments for some MH-60R Seahawk helicopters being brought forward to 2014–15 from 2015–16. In addition, there was a reduction in the termination liability (deposit) required against the FMS case (funds released for use), and a reduction in expected expenditure based on updated United States Government billing forecasts;
- LHD Ships (expenditure of $59.1 million compared to $145.7 million PBS, $100.2 million PAES and $65.2 million Final Plan estimates)—the variance was primarily due to the delay in production and testing milestones after ship acceptance; and
- Battlefield Airlifter (expenditure of $108.7 million compared to $230.4 million PBS, $174.4 million PAES and $141.5 million Final Plan estimates)—the variance was due to delays associated with aircraft production, ordering of spare parts and contracting for training devices, including a flight simulator.

2.26 There was only one notable in-year overspend, relating to the P-8A Poseidon project (expenditure of $925.8 million compared to $717.3 million PBS, $766.3 million PAES and

79 Foreign exchange movement in the US dollar was from 77 to 74 cents. Movement in the Euro was from 69 to 67 Euro cents.

$931.5 million Final Plan estimates). The variance was due to the acceleration of FMS payments for the aircraft and the associated foreign exchange impacts due to earlier aircraft acquisition.

Figure 5: In-year (2015–16) projects' forecast expenditure performance compared to actual expenditure ($m)



Sources: ANAO analysis of the 2015–16 PDSSs and Defence Portfolio Budget Statements.

Schedule performance analysis

2.27 Defence data continues to show that schedule performance is a key issue in delivering and sustaining equipment.[80] Project schedule slippage can effectively introduce or exacerbate an existing capability gap, or require an extension to the planned withdrawal date for those platforms being replaced.[81] Additionally, projects which experience schedule slippage may result in platforms being delivered with significant obsolescence issues, for example ARH Tiger Helicopters.[82]

Time Elapsed and Project Maturity

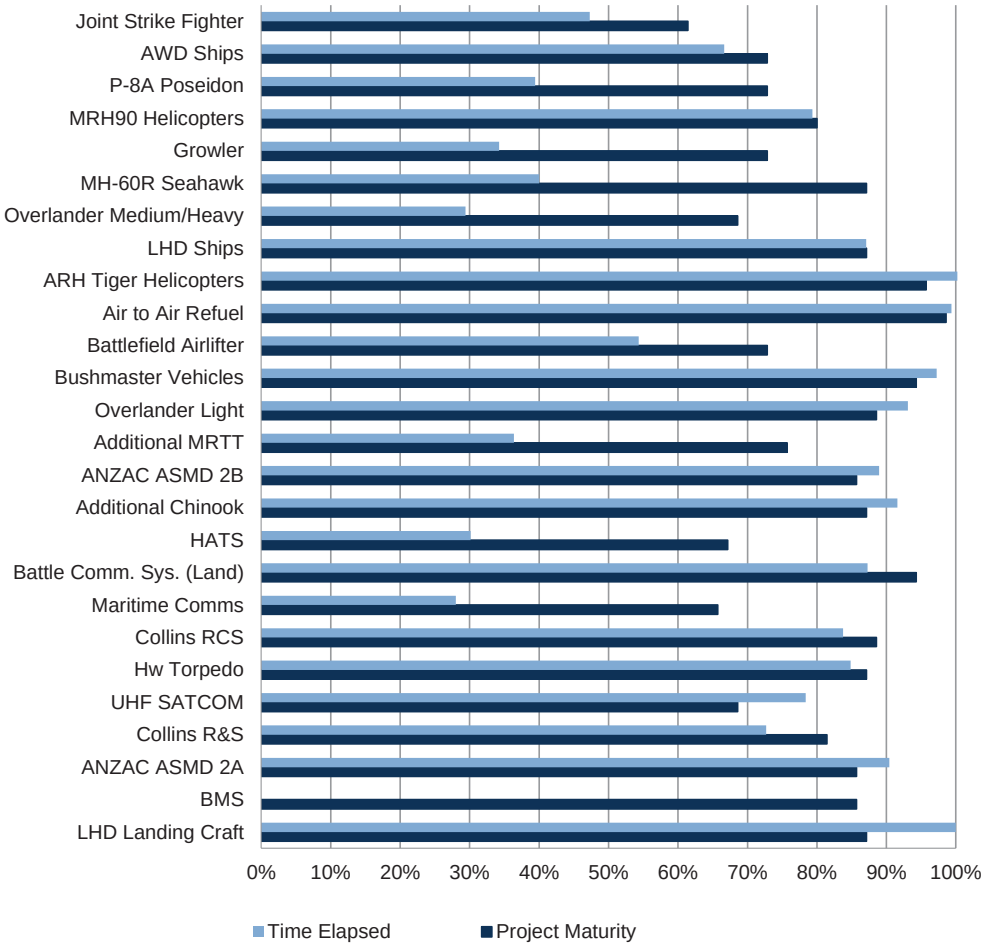
2.28 Figure 6, below, sets out each project's Time Elapsed against Project Maturity.[83] Time Elapsed lags Project Maturity for 16 of 26 projects. The 16 projects are classified as either MOTS or Australianised MOTS, except Joint Strike Fighter, which is expected to be classified as MOTS by the time of aircraft delivery.

2.29 For the seven projects where Time Elapsed lags Project Maturity by 20 per cent or more, this reflects projects at an early stage of their acquisition and awaiting significant amounts of their major equipment to be constructed and delivered. The exception to this is MH-60R Seahawk, where the majority of equipment has been delivered but the project needs to test and integrate a number of ADF Mission System Options and modify Navy vessels to operate with the MH-60R Seahawk.

2.30 For the nine projects where Time Elapsed leads Project Maturity, there were no instances where this difference was significant (20 per cent or more).

80 See Table 2 in **Part 1** of this report.
81 Extensions to planned withdrawal dates may involve additional costs relating to the maintenance and servicing of equipment.
82 See ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, for further detailed information on this project.
83 Refer to footnote 70 for more detail.

Figure 6: Time Elapsed and Project Maturity



Note 1: ANZAC ASMD 2B's Project Maturity is based on the progress of the lead ship, not on the current eight ship program.

Note 2: BMS does not have IOC or FOC milestones. These are linked to Work Packages B-D which are yet to receive government approval. Work Package A is currently a work in progress.

Source: ANAO analysis of the 2015–16 PDSSs.

Schedule slippage and acquisition type by approval date

2.31 Figure 7, below, illustrates the total schedule slippage since Second Pass Approval for the 26 selected projects. It also depicts the acquisition type and places projects in order of government approval. Figure 8 illustrates the total schedule slippage for the 13 projects that have exited the review.

2.32 Figures 7 and 8 show that the continued focus on MOTS and Australianised MOTS acquisitions is, prima facie, contributing to a reduction in schedule slippage in the Major Projects portfolio. However, it is not always possible to acquire the necessary capability in this manner, and decisions on whether to undertake developmental projects should be considered on a risk basis.

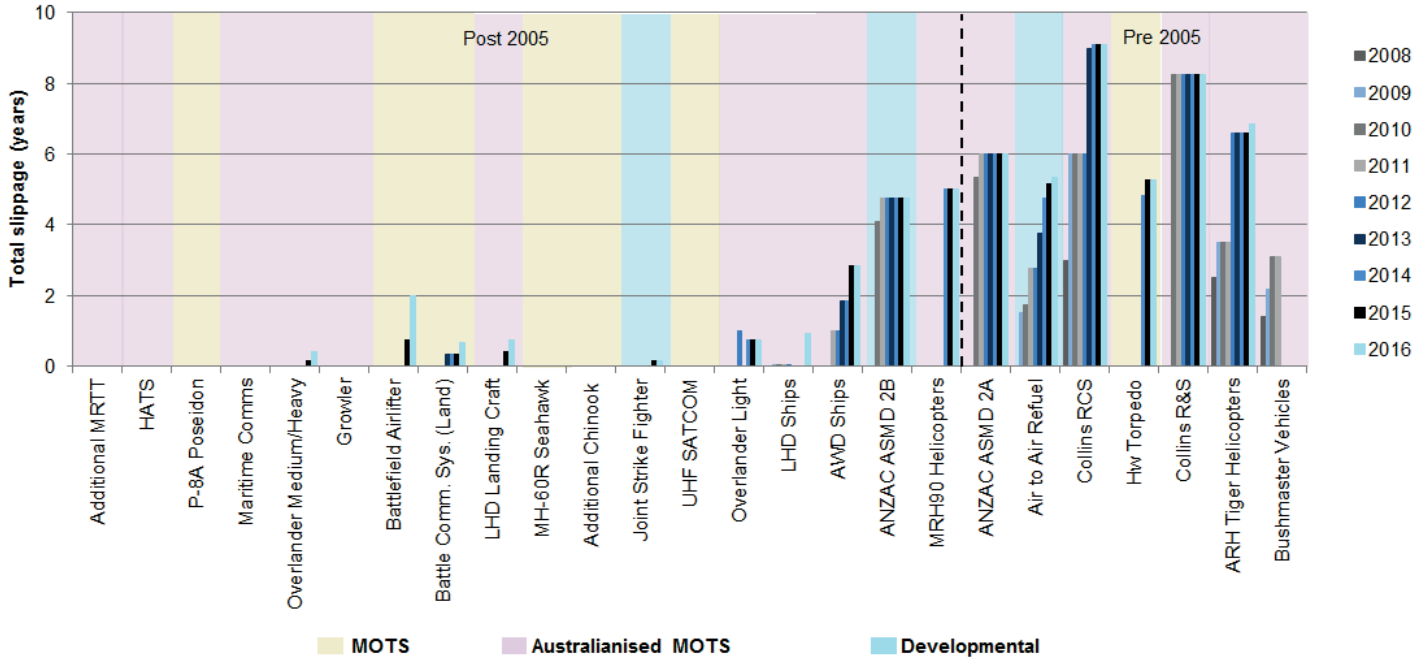
2.33 The *2008 Audit of the Defence Budget* (Pappas Review) identified technical risk as the largest source of post Second Pass Approval schedule slippage for 'post Kinnaird' projects[84], and also observed that schedule slippage causes cost escalation.[85] The challenge of gaining a full understanding of the complexities of developmental aspects of projects at Second Pass Approval, is evident by the extent of slippage over time.

2.34 Figures 7 and 8 illustrate that older projects, which achieved Second Pass Approval prior to 2005, have experienced the most slippage. These projects tended to be more developmental (complex) in nature and typically experienced schedule slippage in the past, and have often continued to do so. This demonstrates an ongoing trend of slippage in historically late projects, which is more pronounced in older projects. This trend is also visible, but less prominent, in newer projects.

2.35 While it is not possible to predict the full extent of slippage a project will experience, this analysis has been provided to highlight changes since Kinnaird. Seven post Kinnaird and six pre Kinnaird projects have exited the MPR. Total slippage of the seven post Kinnaird projects is 5.7 years. Total slippage of the six pre Kinnaird projects is 38.9 years. Five of the seven post Kinnaird projects were MOTS acquisitions and all of the six pre Kinnaird acquisitions were Australianised MOTS or Developmental.

84 M Kinnaird, Defence Procurement Review 2003, August 2003.
85 G Pappas, Department of Defence, *2008 Audit of the Defence Budget*, April 2009, p. 76.

Figure 7: Current Major Projects—Total slippage post Second Pass Approval and acquisition type by approval date (years)



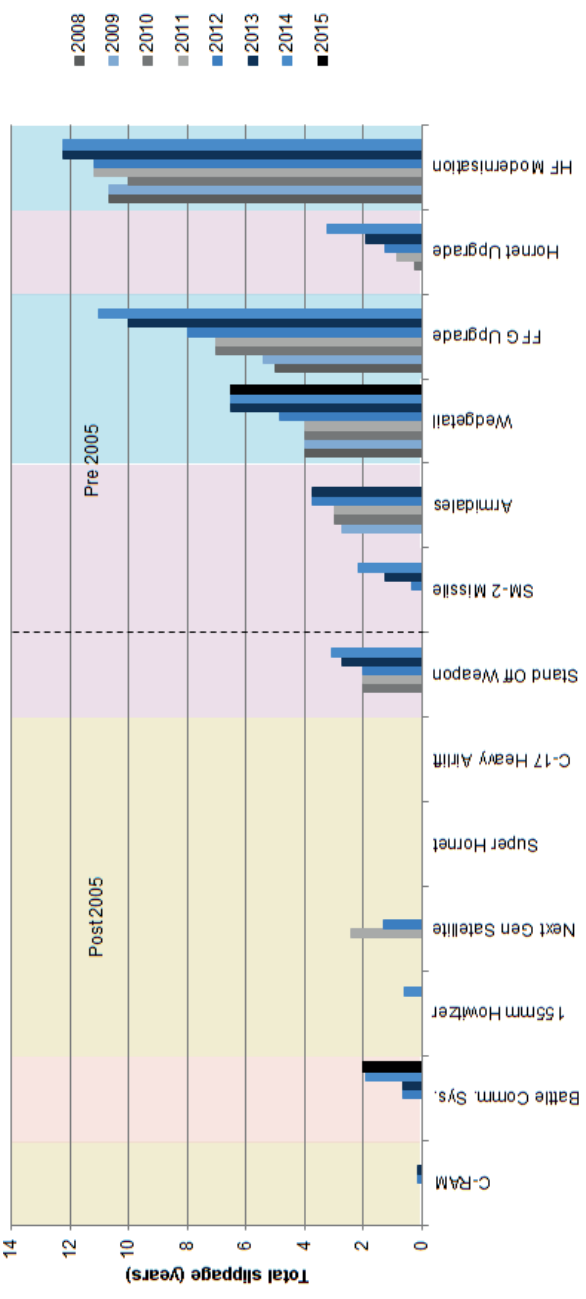
Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates.

Note 2: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's analysis is Production Period Five.

Note 3: BMS is not included in this analysis as it does not have IOC or FOC milestones. These are linked to Work Packages B-D which are yet to receive government approval. Work Package A is currently a work in progress.

Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Figure 8: Exited Major Projects—Total slippage post Second Pass Approval and acquisition type by approval date (years)



Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates.

Note 2: This does not include AIR 5376 Phase 3.2 Hornet Refurb, which exited in 2012, as this project did not introduce a new capability and did not have an FOC date.

Note 3: The slippage shown for Next Gen Satellite related to the final capability milestones at the time. By the time it reached FOC, a new final capability milestone had been introduced which reduced this slippage.

Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Schedule performance

2.36 The figures and tables that follow illustrate:

- the original and 30 June 2016 forecasts for achieving FOC;
- in-year schedule changes to achieving FOC;
- total schedule slippage across the Major Projects; and
- total slippage according to a project's Second Pass Approval date.

Original and 30 June 2016 Final Operational Capability forecasts

2.37 Figure 9, below, presents information on the selected projects' original and 30 June 2016 forecasts for achieving FOC. The total schedule slippage for the 26 Major Projects to date is 708 months compared to the initial prediction when approved by government. This represents a 26 per cent increase on the approved schedule.[86] Of the 26 projects in the 2015–16 report, 16 have experienced schedule slippage.

2.38 Total schedule slippage across the Major Projects was 708 months in 2015–16. This is 60 months lower than the figure of 768 months reported in the 2014–15 report. The difference is due to projects with accumulated schedule slippage exiting the review at the end of 2014–15 (total of 102 months from Wedgetail and Battle Comm. Sys.), partially offset by in-year schedule slippage (42 months).

2.39 The reasons for schedule slippage often require a deep understanding of project technical elements and a realistic assessment of the capacity of the private sector to deliver in the expected timeframe. A project office's ability to gain access to the platform for upgrading can also result in schedule delay (for example, the two Collins submarine projects and Hw Torpedo).[87]

2.40 A closer examination of the reasons for schedule slippage demonstrates the importance of initial assessments of project complexity. A key factor is whether a project is MOTS, Australianised MOTS or developmental.[88] Two projects, MRH90 Helicopters[89] and ARH Tiger Helicopters[90], were originally misclassified as MOTS. The projects were reclassified by Defence to Australianised MOTS (i.e. more developmental) subsequent to Second Pass Approval. Both projects have experienced extended schedule slippage.

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86 In instances where a Major Project has multiple segments/capabilities with separate Final Operational Capability (FOC) dates, the ANAO has used the project's current lead/main capability FOC for calculating schedule performance. Defence's approach is to use the final FOC date for a project listed in the 2015–16 PDSSs. These approaches, both valid, led to a small difference in the calculated percentage by which the Major Projects' total schedule has slipped for the 2015–16 MPR (ANAO—26 per cent; Defence—24.1 per cent).

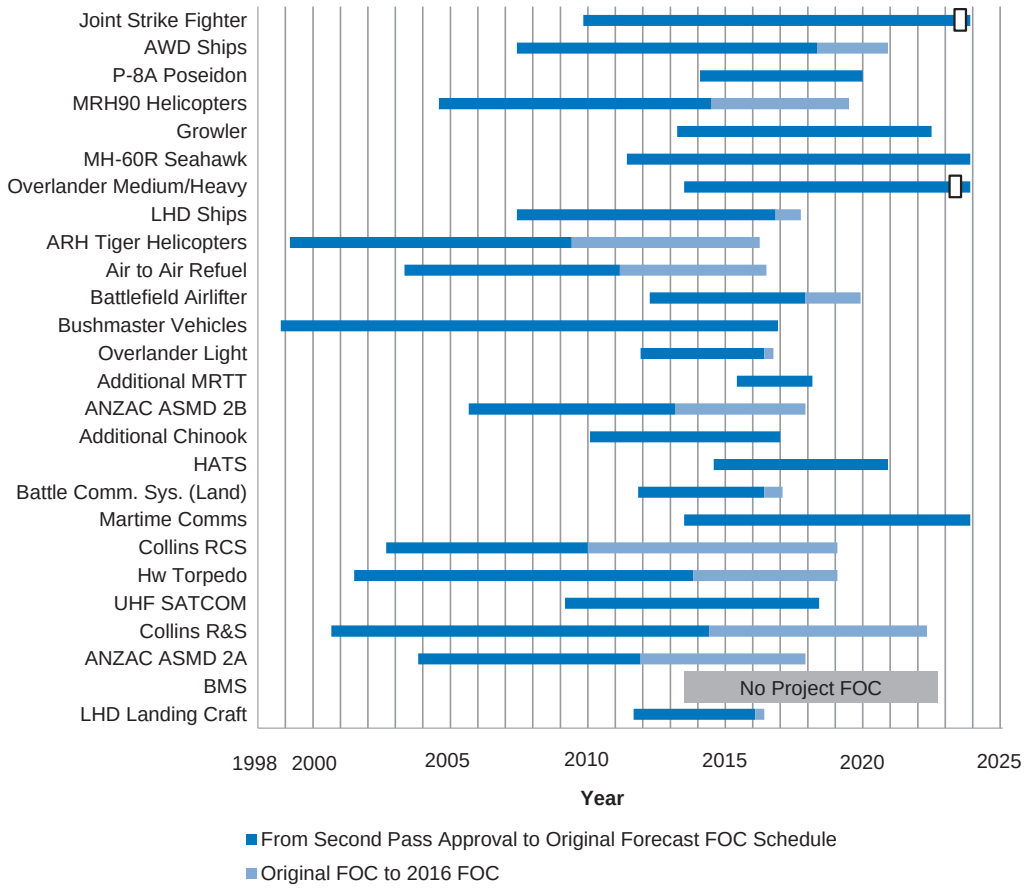
87 See the Collins RCS, Hw Torpedo and Collins R&S PDSSs in **Part 3** of this report.

88 ANAO Report No.6 2013–14, *Capability Development Reform*, October 2013, paragraphs 9.1 to 9.4, pp. 198–199.

89 Further information on MRH90 Helicopters can be found in ANAO Reports No.48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, June 2009, pp. 84, 90 and 133; No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, June 2012, pp. 86–87 and pp. 130–133; and No.52 2013–14, *Multi-Role Helicopter Program*, June 2014.

90 Refer to footnote 82 for more detail.

Figure 9: Projects' original and 30 June 2016 FOC forecasts



Note 1: ▯ indicates that the forecast FOC date for the project at 30 June 2016 is earlier than the original FOC date.

Note 2: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's Major Projects Report analysis is Production Period Five.

Note 3: BMS does not have IOC or FOC milestones. These are linked to Work Packages B-D which are yet to receive government approval. Work Package A is currently a work in progress.

Source: ANAO analysis of the 2015–16 PDSSs.

In-year schedule performance

2.41 In 2015–16, there was schedule slippage of 42 months in the forecast achievement of FOC across the 26 Major Projects. In-year project performance, measured by slippage over the last 12 months, may not reflect the project trend. However, Figure 10 below, shows recovery of previously reported slippage for one project, and that two projects anticipate delivery ahead of the original schedule:

- Joint Strike Fighter—currently expects to achieve FOC in October 2023, two months ahead of the original schedule based on current assessments of aircraft delivery;
- AWD Ships—currently expects to achieve FOC in December 2020, 31 months later than originally planned, but three months ahead of the 2014–15 forecast schedule. This is due to the delivery of the final two ships being brought forward under the AWD Reform program; and
- HATS—currently expects to achieve FOC in September 2020, three months ahead of the original schedule.

2.42 In-year schedule slippage occurred for the following seven projects[91] (the explanation provided, drawn from the 2015–16 PDSSs, may also include the reasons for prior slippage):

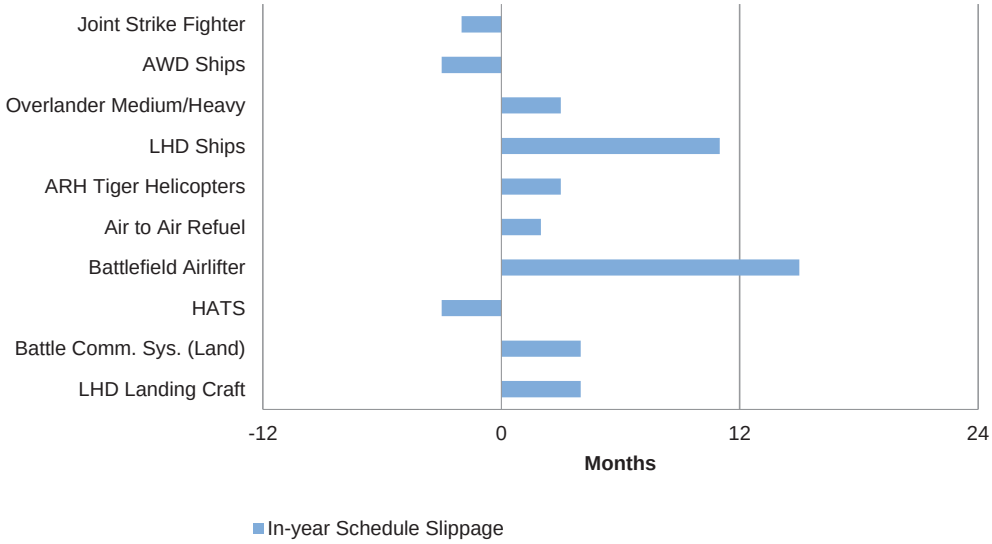
- Overlander Medium/Heavy—there has been a delay of three months, however the project expects to achieve FOC in June 2023, six months ahead of the reapproved schedule[92];
- LHD Ships—the delay of 11 months is related to the availability of both ships to demonstrate their ability to conduct various operational scenarios;
- ARH Tiger Helicopters—the slippage reflects the delayed sign off of the caveated FOC, which occurred in April 2016 rather than January 2016[93];
- Air to Air Refuel—there was a delay to the approval of FOC due to the finalisation of activities from the Airworthiness Board meeting in March 2016;
- Battlefield Airlifter—delays resulting from aircraft production setbacks, the acquisition of mature training system devices and delays to approvals for construction of facilities. In addition, government agreed to delay FOC to December 2019 and redefine FOC to exclude the flight simulator;
- Battle Comm. Sys. (Land)—the delay of four months is due to the need to clarify the forecast dates for Final Materiel Release and FOC after Full Design Acceptance is achieved; and
- LHD Landing Craft—further delays resulting from the need to reschedule test and evaluation trials to the second half of 2016.

91 In the *Statement by the Secretary of Defence* in **Part 3** of this report, the Secretary also makes reference to additional information on achieved milestone dates for Battlefield Airlifter, Bushmaster Vehicles, Overlander Light, Collins RCS and LHD Landing Craft.

92 Refer to footnote 67 for more detail.

93 Refer to footnote 82 for more detail.

Figure 10: In-year (2015–16) schedule changes to achieving FOC



Note: Defence's PDSSs indicate that 15 of the 26 Major Projects Report projects did not record changes to their Final Operational Capability dates this year.

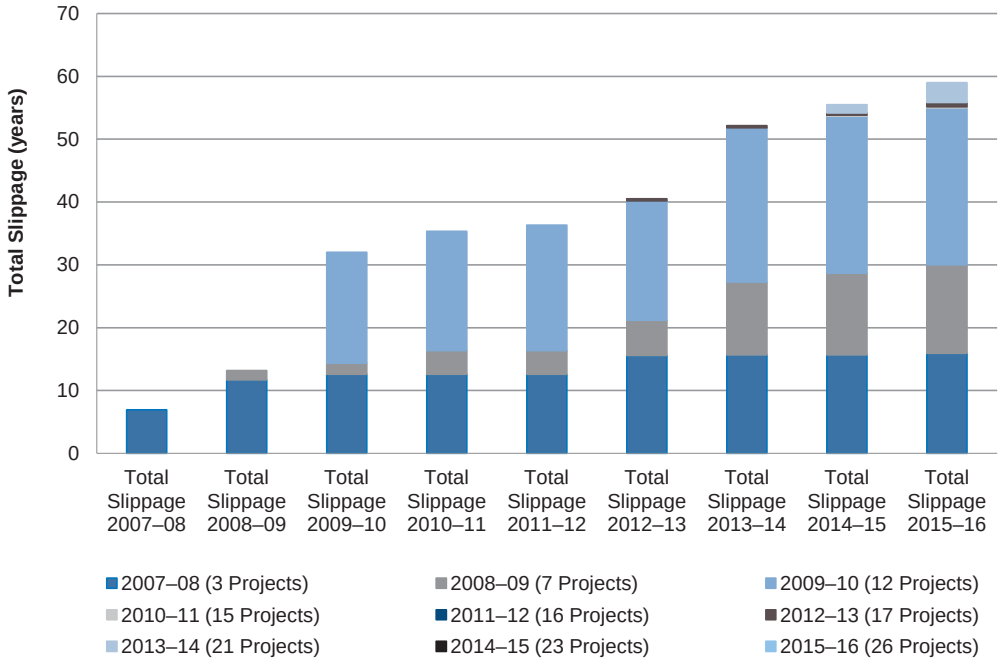
Source: ANAO analysis of the 2015–16 PDSSs.

Longitudinal schedule performance

2.43 Figure 11, below, shows the accumulated schedule slippage over time of the Major Projects included in the MPR reports from 2007–08 to 2015–16.[94] Table 10 provides the details of the specific projects included in the analysis. The figure shows that 27.0 per cent (15.9 years or 191 months) of the total schedule slippage across the Major Projects covered in the 2015–16 report (59.0 years or 708 months) is made up of the slippage from the three remaining projects reported in the 2007–08 report.

2.44 Further disaggregation according to a project's Second Pass Approval date in Table 11, on page 52, shows that 69 per cent (2014–15: 73 per cent) of the total schedule slippage across the 2015–16 Major Projects is made up of projects approved prior to July 2005.

Figure 11: Longitudinal schedule slippage across years for projects in the 2015–16 MPR (in years)



Note 1: The total schedule slippage in 2015–16 across the 26 projects is 708 months. Additional MRTT and HATS, which are new to this year's Major Projects Report, have not experienced schedule slippage against FOC according to Defence's PDSSs. BMS, also new to this year's Major Projects Report, does not have IOC or FOC milestones. These are linked to Work Packages B-D which are yet to receive government approval. Work Package A is currently a work in progress.

Note 2: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's analysis is Production Period Five.

Source: ANAO analysis of the PDSSs in published Major Projects Reports.

94 Tables 4 and 5, on pages 12 and 13 respectively, report on the slippage for each project that has been in the MPR since 2007–08.

Table 10: Projects included in Figure 11 analysis by Major Projects Report

Project	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Joint Strike Fighter				✓	✓	✓	✓	✓	✓
AWD Ships		✓	✓	✓	✓	✓	✓	✓	✓
P-8A Poseidon								✓	✓
MRH90 Helicopters		✓	✓	✓	✓	✓	✓	✓	✓
Growler							✓	✓	✓
MH-60R Seahawk					✓	✓	✓	✓	✓
Overlander Medium/Heavy							✓	✓	✓
LHD Ships		✓	✓	✓	✓	✓	✓	✓	✓
ARH Tiger Helicopters	✓	✓	✓	✓	✓	✓	✓	✓	✓
Air to Air Refuel		✓	✓	✓	✓	✓	✓	✓	✓
Battlefield Airlifter							✓	✓	✓
Bushmaster Vehicles	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overlander Light			✓	✓	✓	✓	✓	✓	✓
Additional MRTT									✓
ANZAC ASMD 2B			✓	✓	✓	✓	✓	✓	✓
Additional Chinook				✓	✓	✓	✓	✓	✓
HATS									✓
Battle Comm. Sys. (Land)						✓	✓	✓	✓
Maritime Comms								✓	✓
Collins RCS	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hw Torpedo			✓	✓	✓	✓	✓	✓	✓
UHF SATCOM				✓	✓	✓	✓	✓	✓
Collins R&S			✓	✓	✓	✓	✓	✓	✓
ANZAC ASMD 2A			✓	✓	✓	✓	✓	✓	✓
BMS									✓
LHD Landing Craft							✓	✓	✓

Source: ANAO analysis of the PDSSs in published Major Projects Reports.

Table 11: Project slippage by project approval

Project	No. of months between Approval and Original FOC date	No. of months between Approval and 30/6/16 FOC date	No. of months slippage between Original FOC and 30/6/16 FOC date
Projects Approved pre July 2005			
ARH Tiger Helicopters	123	205	82
Air to Air Refuel	94	158	64
Bushmaster Vehicles	217	217	0
Collins RCS	88	197	109
Hw Torpedo	148	211	63
Collins R&S	165	260	99 [1]
ANZAC ASMD 2A	97	167	72 [1]
Sub Total – Projects Approved pre July 2005	**932**	**1 415**	**489** [1]
Percentage of Total – Projects Approved pre July 2005	**35%**	**42%**	**69%**
Projects Approved post July 2005			
Joint Strike Fighter	169	167	2 [1]
AWD Ships	131	162	34 [1]
P-8A Poseidon	71	71	0
MRH90 Helicopters	119	179	60
Growler	111	111	0
MH-60R Seahawk	150	150	0
Overlander Medium/Heavy	125	119	5 [1]
LHD Ships	113	124	11
Battlefield Airlifter	68	92	24
Overlander Light	54	58	9 [1]
Additional MRTT	33	33	0
ANZAC ASMD 2B	90	145	57 [1]
Additional Chinook	83	83	0
HATS	76	73	0 [1]
Battle Comm. Sys. (Land)	55	63	8
Maritime Comms	125	125	0
UHF SATCOM	111	111	0
BMS [2]	N/A	N/A	N/A
LHD Landing Craft	53	57	9 [1]
Sub Total – Projects Approved post July 2005	**1 737**	**1 923**	**219** [1]
Percentage of Total – Projects Approved post July 2005	**65%**	**58%**	**31%**
Total – All Projects With Slippage	**2 669**	**3 338**	**708** [1]

Note 1: These figures do not add horizontally due to the exclusion of schedule reductions over the life of the project.

Note 2: BMS does not have IOC or FOC milestones. These are linked to Work Packages B-D which are yet to receive government approval. Work Package A is currently a work in progress.

Source: ANAO analysis of the 2015–16 PDSSs.

Capability performance analysis

2.45 Defence defines capability as the power to achieve a desired operational effect in a nominated environment, within a specified time, and to sustain that effect for a designated period.[95] An operational effect is achieved by combining the eight Fundamental Inputs to Capability: personnel; organisation; collective training; major systems; supplies; facilities and training areas; support; and command and management[96], and undertaking designated operations.

2.46 In acquiring Defence platforms and systems, a range of documentation (including capability definition, operational concept, function and performance specification, and test concept documents) is developed, which establishes the detailed requirements/performance attributes to be achieved.

2.47 Since the 2009–10 MPR, capability reporting has been based on Defence's prediction of the final capability that would be achieved on the basis of deliverables and/or activities completed. This assessment of capability performance (Expected Capability) was measured against the Materiel Release Milestones (MRMs) and Completion Criteria specified in each project's Materiel Acquisition Agreement (MAA). As the ANAO has previously noted, this data involved '…making certain assumptions in forecasting achievements and is therefore subjective in approach…'.[97]

2.48 For example, for the LHD Landing Craft project, Defence has predicted and reported that 99 per cent of elements of capability have a 'high level of confidence of delivery'. Defence consequently reflected a predominantly 'green' pie chart graphic in the PDSS. However, as reported to the JCPAA on 17 March 2016 during public hearings, trials to test 'the ability to transport a M1A1 Main Battle Tank' are required prior to the achievement of Final Operational Capability.[98]

- Subsequent trials conducted in May 2016 were unsuccessful. Carrying the M1A1 on the LHD Landing Craft requires the operation of the craft in an overload state. In consideration of the unsuccessful trials, the PDSS depicts that one per cent of capability for the LHD Landing Craft is 'under threat, considered manageable (Amber)', based on a 'professional assessment of what the residual risk to the delivery of capability is'. Empirical evidence to support the estimated 99 per cent was not available during the review.

2.49 Over time, the JCPAA has sought the use of a more robust measure of capability performance. For example, in JCPAA Report 442, the Committee recommended:

95 Defence Instructions (General), DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, November 2012, Annex B, p. B1.

96 Source 1: Department of Defence, *Defence Capability Development Manual*, July 2015, Part 1, Chapter 2, pp. 1–2.
Source 2: Department of Defence, DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, November 2012, paragraph 1, p. 1.

97 ANAO Report No.17 2010–11, *2009–10 Major Projects Report*, November 2010, p. 35.

98 *Official Committee Hansard,* Joint Committee of Public Accounts and Audit Hearing, 17 March 2016, p. 5.

Recommendation 7:

To improve the robustness of capability performance information, that the Australian National Audit Office and Defence Materiel Organisation consult as necessary and propose amendments to Section 5.1 and 1.2 in the 2014-15 MPR Guidelines, to:

- Apply a more objective method to assessing capability performance; and
- Distinguish capability achieved from capability yet to be achieved, capability unlikely to be achieved, and capability exceeded.

ANAO and DMO should provide a specific proposal to the Committee preferably by the end of August 2014 in line with submission of the 2014-15 MPR Guidelines.[99]

2.50 Defence has not developed this measure, reporting that the difficulties relate to the varied nature of projects being managed, the inherent subjectivity of the content, and the lack of a system that tracks at a sufficient level of detail the progress of inputs to capability.[100]

2.51 Noting with concern the ANAO's assessment that delivery of capability estimates were in some cases overly optimistic, the Committee recommended that Defence further review the procedure for development of expected capability estimates.[101]

2.52 Following this recommendation, Defence has not developed an alternative method of capability assessment which would enable an improvement in capability reporting in the MPR.

Modified method of capability reporting

2.53 In light of the above, the ANAO has developed a measure of key materiel capabilities delivered (Capability Delivery Progress). This presents a current assessment of the capability delivered which differs from Defence's prediction of final capability. The information used in forming the ANAO's assessment is primarily based on Section 4.2 of the PDSS, which sets out the capability elements required to achieve Initial Materiel Release and Final Materiel Release, combined with other information in the PDSS reporting the delivery of equipment/achievement of these requirements toward FOC.

2.54 Noting that a system of capability reporting with a robust methodology applicable to materiel acquisition does not exist within Defence, the information presented below is a more meaningful reflection of project progress than an end-state prediction.

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99 JCPAA Report 442, Review of the 2012–13 Defence Materiel Organisation Major Projects Report, May 2014, pp. 37–39.

100 Source 1: Ms S McKinnie, *Official Committee Hansard,* Joint Committee of Public Accounts and Audit Hearing, 27 February 2015, p. 10.
Source 2: Mr H Dunstall, *Official Committee Hansard*, Joint Committee of Public Accounts and Audit Hearing, 27 February 2015, p. 10.
Source 3: The CEO DMO Mr Warren King advised the JCPAA that 'Landing on a method to have an easily auditable statement of what the capability is that we have delivered is really a complex issue and still there is, I think, work to be done'. Commonwealth of Australia, JCPAA, *Defence major projects report 2012–13*, 20 March 2014, pp. 1–3.

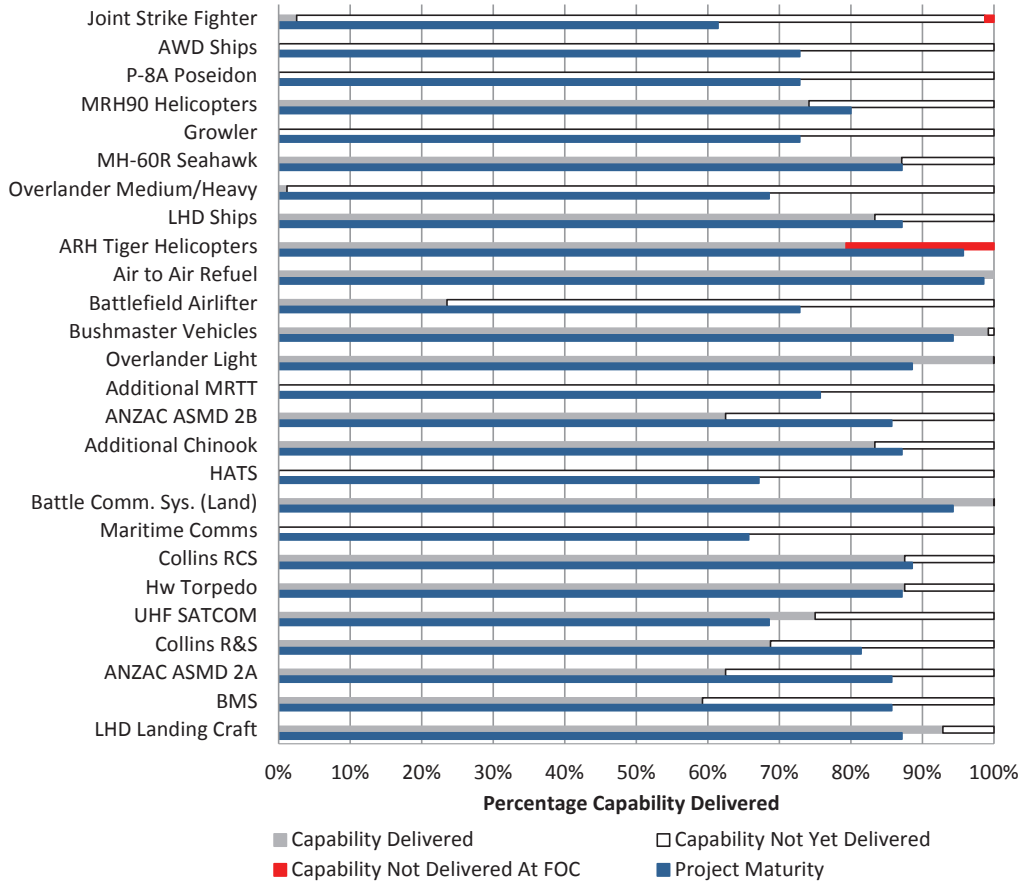
101 JCPAA Report 458, *Defence Major Projects Report (2014-15)*, May 2016, pp. 48–49.

Capability Delivery Progress and Project Maturity

2.55 Figure 12, at page 55, sets out each project's Capability Delivery Progress against Project Maturity.[102] It shows that Capability Delivery Progress lags Project Maturity for the majority of projects (19 of 26). This relationship is expected as projects will typically develop confidence in the ability to deliver their scope and capability through testing and demonstration of capability components (for example, design reviews and acceptance tests) prior to delivery of the majority of equipment.

2.56 Figure 12 also shows that Capability Delivery Progress lags Project Maturity by 20 per cent or more in 12 projects, and for nine of these, Capability Delivery Progress lags by 50 per cent or more.

Figure 12: Project snapshot—Capability Delivery Progress and Project Maturity



Note: ANZAC ASMD 2B's Project Maturity is based on the progress of the lead ship, not on the current eight ship program.

Source: ANAO analysis of the 2015–16 PDSSs.

102 Refer to footnote 70 for more detail.

2.57 As noted in paragraph 2.15, Defence's project maturity framework attributes approximately 50 per cent of total project maturity at Second Pass Approval.[103] These differences further indicate that Defence's project maturity framework is not appropriately structured to assign project maturity progress throughout the project life cycle, particularly within the acquisition phase, which is predominantly the longest and most expensive component.

2.58 Figure 12 also highlights a continuing issue with the level of specification of capability elements. For the projects that show little or no Capability Delivery Progress, this can be attributed to Defence's high level description of requirements in the capability elements. This indicates that it would be worthwhile for Defence to undertake additional work to track project progress. In respect to the six projects that show no capability delivery at 30 June 2016, progress is as follows:

- AWD Ships—the first ship has been launched in preparation for sea trials and the remaining two ships are in advanced stages of construction;
- P-8A Poseidon—design reviews are complete and aircraft production is underway;
- Growler—most design reviews have been completed and all aircraft have been produced, however all aircraft reside in the United States and are pending acceptance from the United States Government;
- Additional MRTT—all design reviews have been completed and aircraft acquired, however, conversion activities and subsequent delivery are yet to be completed;
- HATS—this project is at an early stage and continues to work through design reviews and deficiencies discovered during testing of the flight simulator; however three of the 15 training helicopters have been completed and are pending acceptance from the contractor; and
- Maritime Comms—this project is progressing through design reviews prior to commencing ship installations.

2.59 Further, Figure 12 indicates that:

- six projects are still to deliver any of their capability (refer to paragraph 2.58 for detail);
- 15 projects are still to deliver part of their capability;
- one project, Air to Air Refuel, has delivered all of its capability and has achieved FOC;
- two projects, Overlander Light and Battle Comm. Sys. (Land), have delivered essentially all of their capability with only minor items remaining before achievement of FOC;
- one project, Joint Strike Fighter, will not deliver one element at FOC (as advised by Defence); and
- one project, ARH Tiger Helicopters, has not delivered all of its intended capability at FOC.

103 Refer to footnote 71 for more detail.

Part 2. Defence Major Projects Report

How projects are selected for this report

The Department of Defence Major Projects Report is produced annually. Inclusion of projects in the report is based on the projects which are included in the Integrated Investment Program (previously the Defence Capability Plan). Defence proposes the inclusion of projects based on the below criteria and they are provided to the Joint Committee of Public Accounts and Audit (JCPAA) for endorsement. The inclusion of projects in the MPR is subject to the following criteria:

- only be admitted one year after the Year of Decision (Second Pass Approval)
- have a total approved project budget greater than $150 million
- have at least three years of asset delivery remaining
- have at least $50 million or 10 per cent (whichever is greater) of the budget remaining over the next two years.

A maximum of five new projects can be included in any one year.

How projects are removed from this report

Similarly, Defence proposes projects for removal from this report which are provided to the JCPAA for endorsement.

Projects are removed from the report based on achievement of Final Operational Capability or on a post-Final Materiel Release risk assessment of the timely achievement of FOC and subject to the following criteria:

- outstanding deliverables, post-Final Materiel Release, against the relevant Materiel Acquisition Agreement (MAA) and/or Joint Project Directive (JPD)
- remaining schedule, post-Final Materiel Release, against the relevant MAA and/or JPD
- remaining budget, post-Final Materiel Release, against the relevant MAA and/or JPD
- remaining project risks and issues
- Capability Manager's assessment, including overall risk rating and the extent to which this risk rating relates to the Capability Acquisition and Sustainment Group responsibilities.

The 2015-16 MPR Guidelines are reproduced in Part 4 of the 2015-16 Major Projects Report.

What is in this report

Secretary's Foreword outlining achievements and challenges in 2015-16.

Progress with implementation of the First Principles Review.

Overview and analysis of the selected major projects performance against the Government's approved budget, schedule and scope.

Six appendices covering:

- Defence organisational structure
- acquisition categories
- project maturity scores
- list of projects that have been removed from the report since its inception
- lessons learned from projects that have been removed from the report
- glossary of terms.

Secretary's Statement.

Project Data Summary Sheets for each project included in Part 3 of the Major Projects Report that comprise a description of the project and its current status and cost performance; schedule and materiel capability performance; major risks and issues; financial performance; project maturity scores; lessons learned and project line management.

Readers of previous year's reports will note that this report has been restructured reflecting the new integrated and holistic approach to Defence acquisition generated by implementation of the First Principles Review.

Secretary's Foreword

Defence major acquisition projects and Defence expenditure in general, continues to be the subject of significant parliamentary and public interest.

The Major Projects Report is produced annually in the interests of transparency and accountability. It provides a snapshot of the progress on some of the most expensive and complex acquisition projects.

The 2015-16 year has been one of challenge and change for the major project environment with recommendations of the First Principles Review (FPR) being implemented alongside business as usual activities.

The establishment of the Capability, Acquisition and Sustainment Group (CASG), the 2016 Defence White Paper, the Integrated Investment Program, the Defence Industry Policy Statement and the introduction of the Capability Life Cycle, have all had a significant impact on the process for planning, acquiring and maintaining Defence capability.

The Defence White Paper has set out the Government's priorities for future capability investment over the next 20 years and signals the Government's intention to increase the Defence budget to two per cent of Australia's gross domestic product by 2020-21.

This will considerably increase the acquisition workload for the foreseeable future and will see the Defence budget increase from $32.3 billion in 2016-17 to $59.1 billion by 2025-26.

The increase in budget will enable a substantial modernisation program, necessitating a large increase in acquisition workload in coming years.

Benefits are already flowing from changes recommended by the FPR and it is expected that full implementation of the FPR will be achieved in 2017.

At 30 June 2016 CASG was managing 175 major capital equipment acquisition projects in support of the Australian Defence Force with an average value of $613.7 million.

Having met the required capability, 17 major capital equipment acquisition projects were closed during the 2015-16 financial year. On average, they were delivered seven per cent under the approved budget.

This is the ninth Major Projects Report and 26 projects are being reviewed with 23 projects having been carried over from last year.

Three projects have been added and two have been removed having achieved Final Operational Capability.

The projects reported on this year have a combined total approved budget of $62.7 billion and a total in-year budget of $4.3 billion.

Of note in the 2015-16 financial year are the following projects events:

- AIR 7000 Phase 2 Maritime Patrol Aircraft (Boeing P-8A Poseidon) - In February 2016 Government approved the acquisition of an additional four RAAF P-8A aircraft.
- AIR 9000 Phase 2 Multi-Role Helicopter – The project achieved a number of capability milestones including: first Operational Capability (Land) in September 2015, second and third Operational Capability (Amphibious) in December 2015, and the second Operational Capability (Land) in March 2016.
- AIR 5402 Air to Air Refuelling Capability - The KC-30A capability has been contractually accepted and delivered to Air Force with Final Materiel Release achieved in May 2016 and Final Operational Capability declared in July 2016.
- AIR 8000 Phase 2 Battlefield Airlift (Caribou Replacement) - In May 2016 Government agreed to delay Final Operational Capability to
- AIR 9000 Phase 5C Additional Medium Lift Helicopters - Initial Operational Capability was declared by Chief of Army in April 2016.
- AIR 9000 Phase 7 Helicopter Aircrew Training System - The first three helicopters were delivered to Boeing in Nowra in March 2016.
- SEA 1448 Phase 2A/B ANZAC Anti Ship Missile Defence (ANZAC ASMD 2A and 2B) - Materiel Release was achieved for the fourth ship HMAS Warramunga in October 2015 and the fifth ship HMAS Ballarat in May 2016.

This report also addresses the recommendations of the JCPAA Report 458.

The Chiefs of the Navy, Army and Air Force, and the Chief Information Officer as well as our major contractors involved in each project have reviewed the relevant project data and their views have been considered in finalising this report.

I would like to take the opportunity to thank the Auditor-General, Mr Grant Hehir, and his staff for their contribution to the overall report. I also commend the various Defence staff in bringing this report together.

Dennis Richardson
Secretary
Department of Defence
9 February 2017

Implementing the First Principles Review

The 2015 First Principles Review (FPR) recommended substantial change across Defence to address the problem of a proliferation of structures, processes and systems with unclear accountabilities that were adversely affecting outcomes.

The Government agreed to 75 of the 76 recommendations and many of these significantly impact the major project business environment.

Implementation of recommendations of the FPR began in July 2015 with the disbandment of the Defence Materiel Organisation and the establishment of the Capability Acquisition and Sustainment Group (CASG) within the Department of Defence. A Department of Defence organisational structure diagram can be found at Appendix 1.

CASG has responsibility for developing and delivering integrated project plans that encompass all Fundamental Inputs to Capability including: major systems, personnel, collective training, supplies, facilities and training areas, organisation support, command and management and industry.[104]

The Capability Acquisition and Sustainment Group's objectives are to:

- acquire and sustain strategically aligned, affordable and safe military equipment for Defence, which allows Defence to perform its mission of defending Australia and its national interests
- partner with industry and integrate Fundamental Inputs to Capability on behalf of Capability Mangers to meet Government objectives including support to operations.[105]

In February 2016, the Government released the 2016 Defence White Paper, accompanied by the Integrated Investment Program and Defence Industry Policy Statement.

The Integrated Investment Program replaced the Defence Capability Plan and brings together all capability-related investments, including:

- platforms and systems

104 Recognising industry as an FIC ensures that Defence considers the capabilities and capacity of these businesses and helps match new capability requirements to the business best suited to deliver it.
105 Source Portfolio Budget Statements 2016-17, Budget Related Paper No. 1.4A, Defence Portfolio

- Defence estate, such as Australian Defence Force bases, facilities and training areas
- information and communications technology
- science and technology
- workforce planning, training and deployment.

The White Paper outlines the Government's intention to increase the Defence budget to two per cent of Australia's gross domestic product by 2020-21.

This will see the Defence budget increase from $32.3 billion in 2016-17 to $59.1 billion by 2025-26, enabling a substantial modernisation program and necessitating a large increase in acquisition workload in coming years.

Another key change was the introduction of the Capability Life Cycle in April 2016.

The Capability Life Cycle is the end-to-end process for planning, acquiring and maintaining Defence capability. Key attributes include:

- a more centralised direction and explicit alignment with strategic guidance
- an ongoing Force Design process rather than episodic reviews
- strong arm's-length contestability to improve the quality of advice
- earlier and better interaction with external stakeholders both government and industry
- increased accountability for Capability Managers
- the tailoring of project investment, approval and execution pathways
- streamlined tailored processes and documentation.

Integral to the new Capability Life Cycle is the Smart Buyer decision-making framework which enables project sponsors and integrated project teams to identify key project risks and use that risk analysis to develop tailored project execution strategies.

These tailored execution strategies form a central part of the project business case and are revalidated at subsequent approval points.

The Smart Buyer framework was approved for implementation in May 2016 and there will be a managed transition of projects and processes into the new model, commencing with those projects being considered at Gate 0.

Also integral to the Capability Life Cycle is contestability.

Contestability is an independent decision support function set up in the Defence Strategic Policy and Intelligence Group to provide arm's-length contestability for capability and other investment proposals.

It helps ensure that the force structure, portfolio of capability investments and individual projects deliver the Government's policy objectives and strategic needs, as directed in the Defence White Paper and the Integrated Investment Program.

The level of contestability undertaken on a program or project will be proportional based on the assessed risk of the program or project.

The highest priority remains delivering the forward work program to implement the Integrated Investment Program and effective support to Ministers, the National Security Committee of Cabinet, the Secretary and Chief of the Defence Force, and the Investment Committee.

Response to the JCPAA review

In May 2016 the JCPAA released their review of the ANAO Report No.16, 2015-16, *2014-15 Major Projects Report*.[106]

Their aim was to assess the overall content, accessibility and transparency of the information provided and, in addition, specific details of individual projects. The Committee made four recommendations.

Recommendation 1 Noting the importance of clear roles, responsibilities, accountabilities and lifecycle management processes, the Committee recommends that the Department of Defence publish the outcomes from Recommendation 2:11[107] of the First Principles Review as soon as practicable and that a summary of this information be included in the next Major Projects Report.

Response Agree: Defence will publish the outcome of the First Principles Review recommendation 2.11 once it is completed which is scheduled for March 2017.

Recommendation 2

To ensure consistency with project level risk information and to improve reliability, the Committee recommends that the Department of Defence review the procedure for development of expected capability estimates for future Major Projects Reports.

Response Agree. Expected capability estimates are currently presented in graph form in Section 4.1 of the Project Data Summary Sheets of the Major Projects Report. Defence acknowledges the limitations of this section of the Project Data Summary Sheets and the process associated with developing these estimates.

Both the Capability Estimates and Maturity Score Graphs will be reviewed to align with the new Capability Life Cycle and Smart Buyer processes. These reforms are currently being refined and progressively implemented. Defence has met with the Australian National Audit Office and advised them it was unlikely any changes would be made in time for the 2016-17 Major Project

106 Report 458, Defence Major Projects Report (2014-15) Review of Auditor-General Reports No 16 (2015-16) Joint Committee of Public Accounts and Audit May 2016

107 That Defence make, 'significant investment to develop an operational framework [Business Framework] which comprehensively explains how the organisation operates and the roles and responsibilities within it; detailing the life cycle management processes which provide project and engineering discipline to manage complex materiel procurement from initiation to disposal; and reviewing architecture to reinforce accountability at all levels and bringing together information upon which good management decisions can be made'.

Review. Defence has engaged, Mr Roger Howick, a contractor from Assuritas Pty Ltd, to develop a more appropriate methodology to support the presentation of the Maturity Score Graphs.

Recommendation 3

The Committee recommends that the Department of Defence work with the Australian National Audit Office to review and revise their policy regarding Project Maturity Scores in time for the new approach to be implemented in the next Major Projects Report.

Response Agree. Both the Capability Estimates and Maturity Score Graphs will be reviewed to align with the new Capability Life Cycle and Smart Buyer processes. These reforms are currently being refined and progressively implemented. Defence has met with the Australian National Audit Office and advised them it was unlikely any changes would be made in time for the 2016-17 Major Project Review. Defence has engaged, Mr Roger Howick, a contractor from Assuritas Pty Ltd, to develop a more appropriate methodology to support the presentation of the Maturity Score Graphs.

Recommendation 4

The Committee recommends that Defence conduct a review of the Air Warfare Destroyer (AWD) contractual arrangements, examining the distribution of liabilities for project problems. The report should examine:

- how much each alliance partner lost or was liable for when the project ran over budget; and
- what lessons have been learned from the AWD experience in terms of future contractual arrangements and how these lessons have been incorporated into the standard practices of Defence to help mitigate such issues arising in the future.

A report on that review should be provided to the Committee within 6 months of the tabling of this Committee report.

Response Agree. A review of the contractual arrangements for the AWD has been undertaken by Defence Audit and Fraud Control Division. This review details the distribution of liabilities for program performance. The key contractual lessons from the AWD Program have been incorporated into relevant guidance documentation.

A full response to this recommendation has been provided to the JCPAA.

Support and review activities

A number of other activities support the work of CASG, helping to ensure the efficient and effective delivery of acquisition and sustainment projects.

Cost estimation and management

Robust cost estimation is essential to improve management of the Integrated Investment Plan and capability delivery and sustainment.

Defence is undertaking a number of initiatives to improve cost estimation across major equipment acquisition projects.

The FPR Implementation Committee has agreed that Defence should move to a Total Cost of Ownership model for Integrated Investment Program projects.

A Total Cost of Ownership model seeks to capture the full cost of ownership throughout the life of an asset or system, and this approach is supported by five past reviews including the *Kinnaird Review* (August 2003) and the more recent *Black Review* (2011).

The complexity of Total Cost of Ownership models lies in consistently and correctly identifying, capturing and attributing individual components of cost.

Defence's proposed model breaks down costs as follows:

- acquisition costs for the asset or system
- cost of financing the asset or system, if applicable
- cost of bringing equipment or systems into service
- operating costs over the life of the asset
- sustainment costs of the assets
- cost of disposal of the asset at the end of its useful life.

In developing project estimates, the Total Cost of Ownership model will use parametric and analogous costing as the basis for estimation.

Under this model, tender quality cost will substitute for parametric and analogous costing.

Independent Assurance Reviews

Independent Assurance Reviews, formerly known as CASG Gate Reviews, are an internal assurance process intended to improve project outcomes and ensure Defence can provide high quality and reliable advice to the Defence Senior Leadership Group and Government regarding the health and outlook of major capital projects.

Defence senior executives, along with highly experienced external members, chair Independent Assurance Review Boards to provide a collegiate assessment of project performance and planning against the Government approved business case.

An assurance review for an acquisition project will normally be scheduled to occur in the lead up to key decision points or major project milestones, although one may also be scheduled in response to direction received from Government or Defence management.

In 2017, trials of combined Independent Assurance Reviews and Capability Manager Gate Reviews will be held to examine the feasibility of combining the considerations of both review types.

Information and communications technology

CASG continues to work closely with the Chief Information Officer Group (CIOG) which is responsible for delivering information and communications technology infrastructure and services for Defence.

The focus this year has been on the rationalisation and consolidation of systems and reporting artefacts to achieve a single, trusted, source of truth in project and product reporting.

Performance analysis

Defence major projects are inherently more complex and difficult to deliver than average industry projects.[108]

Commonly they are large budget acquisitions which may take many years to achieve the required capability and some are developing new capability and require advanced technical development.

In Report 442[109], the JCPAA noted the range of issues that can impact the completion of Defence projects. These include:

- schedule delays induced by budgetary constraints
- new equipment presenting multiple integration challenges
- sourcing and keeping an appropriately skilled workforce
- overestimation of the technical maturity of projects by contractors
- underestimation of the technical requirements of new equipment by contractors
- problems in installing and testing new or upgraded equipment due to the unavailability of in-service equipment
- the increasing demands of certification and regulatory requirements
- the availability of intellectual property to ensure that systems can be enhanced and improved into the future.

In this environment CASG managed 175 major capital equipment acquisition projects with an average value of $613.7 million at 30 June 2016.

17 major capital equipment acquisition projects were closed during the year having met the required capability, on average, seven per cent under the approved budget. [110]

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108 Helmsman Complexity Study http://www.helmsman-international.com/wp-content/uploads/Comparison-Project-Complexity.pdf
Defence Materiel Organisation Major Project Schedule Benchmarking: Comparing Defence Project Performance with Commercial Industry IPA Report 2012

109 Report 442, Inquiry into the 2012-13 Defence Materiel Organisation Major Project Report, JCPAA, May 2014

110 Seasprite also closed in the 2015-16 financial year after disposal of airframes and Penguin Missiles following project cancellation in 2008 with over $900m spent.

This report provides information on the progress of 26 projects as endorsed by the JCPAA.

23 projects have been carried over from last year's report.

Three projects are new inclusions in this report:

- JP (AIR) 9000 Phase 7 - the Helicopter Aircrew Training System—to prepare Navy and Army aircrew for conversion to operational aircraft
- LAND 75 Phase 4 - a Battlefield Management System—to increase and enhance the Army's networked force acquired under Land Phase 75 Phase 3.4
- AIR 7403 Phase 3 - Additional KC-30A Multi-role Tanker Transport—to acquire two A330-200 aircraft and convert them to KC-30A Multi-role Tanker Transport aircraft, and to further modify the second aircraft to provide enhanced communications capability in support of long-range international government transport.

Two projects have been removed from this reporting regime having Final Operational Capability approval:

- AIR 5077 Phase 3 - Airborne Early Warning and Control Aircraft
- LAND 75 Phase 3.4 - Battlefield Command Support System

There are two projects in this year's report that are being managed under the Projects of Concern regime:

- AIR 9000 Phase 2/4/6 - Multi-role Helicopter - The MRH90 is operational and was deployed to provide disaster relief to Fiji following Tropical Cyclone Winston. During this deployment, high levels of serviceability and performance were achieved. The Project is progressing well against its remediation objectives, but is still under schedule pressure to deliver a number of key operational capabilities including Electronic Warfare System, Fast Roping & Rappelling and Identification Friend or Foe Mode 4.
- SEA 4000 Phase 3 - the Air Warfare Destroyer Build - (also selected by the JCPAA for review of contractual arrangements and the distribution of liabilities as discussed earlier in

this report[111]). On 8 December 2015, the Minister for Finance and the Minister for Defence announced that Navantia SA had been selected to insert an experienced shipbuilding management team into ASC Shipbuilder and locate a design team in the Osborne shipyard. This insertion of expertise has had a positive impact on the project. Although efficiency is significantly below international best practice, there is confidence that the Air Warfare Destroyer Program will deliver the capability to Navy within the revised budget and schedule.

Appendix 4 lists all the projects that have been removed from the report since its inception, the reasons for their removal, and their expenditure to date at 30 June 2016.

For each project which has been removed, the lessons learned are included at Appendix 5.

Projects of Concern

Projects or sustainment activities identified as a Project of Concern have very significant technical, cost or schedule difficulties that are beyond the normal project team management.

As has been identified above two Projects of Concern are part of this reporting regime.

Entry to and exit from the list of Projects of Concern is decided by the Minister for Defence either at the recommendation of the Deputy Secretary, CASG or at the Minister's own instigation.

Projects are removed from the list through project remediation or project contract cancellation with the approval of the Minister.

Projects of Concern receive a higher level of oversight and management and undertake increased reporting to Government.

Since 2008, 23 projects, with a total value of $31.7 billion, have been managed in this way.

There are currently five active Projects of Concern with a total value of $13.9 billion at 30 June 2016.

In 2015-16, LAND 40 Phase 2 the Direct Fire Support Weapons project was removed after successful project remediation.

111 Report 458, Defence Major Projects Report (2014-15) Review of Auditor-General Reports No 16 (2015-16) Joint Committee of Public Accounts and Audit May 2016

Table 1: Projects of Concern at 30 June 2016

Project Name	Project Number	Date Added
Collins Class Submarine Sustainment	CN10[112]	November 2008
Multi-Role Helicopter	AIR 9000 Phase 2/4/6	November 2011
Mulwala Redevelopment Project	JP 2086 Phase 1	December 2012
Air Warfare Destroyer Build	SEA 4000 Phase 3	June 2014
Australian Defence Satellite Communications Terrestrial Enhancement	JP 2008 Phase 3F	September 2014

112 This is a sustainment product but is managed as a project of concern.

Materiel scope

Detail of the capital equipment assets to be delivered for projects, the materiel scope, is defined in the Materiel Acquisition Agreement, the Operational Concept Document and the Function and Performance Specification.

For security reasons this report cannot identify individual specifications for each of the projects.

However, each project data summary sheet has a percentage breakdown on how the project is tracking against its particular suite of capability elements and all the information in these sheets is supported by appropriate evidence.

A summary of the key characteristics of each project is presented in Table 2 and illustrates the variety, complexities and scale of the acquisitions.

Table: 2 Project characteristics

Project Number	Project	First reported in MPR of	Customer	Purpose of Capability[1]	Level of Development[2]	Acquisition Category[3]	Pre-/Post-Kinnaird[4]	Project Stage	Prime Systems Integrator
JP 2048 Phase 3	LHD Landing Craft	2013-14	Navy	Replacement	AMOTS	III	Post	Initial Materiel Release	Navantia
LAND 75 Phase 4	Battle Mangement System	2015-16	Army/Air Force	New	AMOTS	II	Post	Initial Materiel Release	Defence
SEA 1448 Phase 2A	Anzac ASMD 2A	2009-10	Navy	Upgrade	AMOTS	II	Pre	Initial Materiel Release	ANZAC Alliance
SEA 1439 Phase 3	Collins R&S	2009-10	Navy	Upgrade	AMOTS	III	Pre	Integration and Test	ASC
JP 2008 Phase 5A	UHF SATCOM	2010-11	Joint	Upgrade	MOTS	II	Post	Detailed Design Review	Intelsat
SEA 1429 Phase 2	Hw Torpedo	2009-10	Navy	Replacement	MOTS	III	Pre	Initial Materiel Release	US Government
SEA 1439 Phase 4A	Collins RCS	2007-08	Navy	Upgrade	AMOTS	IV	Pre	Initial Materiel Release	Defence
SEA 1442 Phase 4	Maritime Comms	2014-15	Navy	Upgrade	AMOTS	II	Post	Preliminary Design Review	Selex
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	2012-13	Joint	Replacement	MOTS	III	Post	Acceptance Into Service	Defence
JP 9000 Phase 7	HATS	2015-16	Navy/Army	Replacement	AMOTS	II	Post	Preliminary Design Review	Boeing Defence Australia
AIR 9000 Phase 5C	Additional Chinook	2010-11	Army	Replacement	MOTS	III	Post	Initial Materiel Release	US Government
SEA 1448 Phase 2B	Anzac ASMD 2B	2009-10	Navy	Upgrade	Developmental	I	Post	Initial Materiel Release	ANZAC Alliance
AIR 7403 Phase 3	Additional MRTT	2015-16	Air Force	New	AMOTS	III	Post	Integration and Test	Airbus Defence and Space
LAND 121 Phase 3A	Overlander Light	2009-10	Army	Replacement	AMOTS	II	Post	Initial Materiel Release	Defence
LAND 116 Phase 3	Bushmaster Vehicles	2007-08	Army/Air Force	Replacement	AMOTS	III	Pre	Final Materiel Release	Thales
AIR 8000 Phase 2	Battlefield Airlifter	2013-14	Air Force	Replacement	MOTS	II	Post	Integration and Test	US Government
AIR 5402	Air to Air Refuel	2008-09	Air Force	New	Developmental	II	Pre	MAA Closure	Airbus Defence and Space
AIR 87 Phase 2	ARH Tiger Helicopters	2007-08	Army	New	AMOTS	II	Pre	Acceptance Into Service	Airbus Group Australia Pacific
JP 2048 Phase 4A/4B	LHD Ships	2008-09	Joint	New	AMOTS	I	Post	Initial Materiel Release	BAE Systems Australia
LAND 121 Phase 3B	Overlander Medium/Heavy	2013-14	Army	Replacement	AMOTS	I	Post	Detailed Design Review	Defence
AIR 9000 Phase 8	MH-60R Seahawk	2011-12	Navy	Replacement	MOTS	II	Post	Initial Materiel Release	US Government
AIR 5349 Phase 3	Growler	2013-14	Air Force	New	AMOTS	II	Post	Detailed Design Review	US Government
AIR 9000 Phase 2/4/6	MRH90 Helicopters	2008-09	Army/Navy	Replacement	AMOTS	I	Post	Initial Materiel Release	Airbus Group Australia Pacific
AIR 7000 Phase 2B	P-8A Poseidon	2014-15	Air Force	Replacement	MOTS	II	Post	Detailed Design Review	US Government
SEA 4000 Phase 3	AWD Ships	2008-09	Navy	New	AMOTS	I	Post	Detailed Design Review	AWD Alliance
AIR 6000 Phase 2A/2B	Joint Strike Fighter	2010-11	Air Force	Replacement	Developmental	I	Post	Enter Contract	US Government

*** See appendices 2 for further information**

1 - 'New' - a capability that has not previously existed in the ADF; 'Replacement' – a current capability that is being replaced by more up to date technology or to respond to a changing threat; 'Upgrade' – an upgrade to existing capabilities.

2 - Appendix 2 has full definition of levels of development.
3 - The CASG's categorisation of projects that represent the complexity of the project on a sliding scale of I to IV with ACAT I representing the most complex projects.
4 - Provides an indication of whether the projects were initially developed under pre-or post Kinnaird reforms.

A capability in Defence terms is the power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period.

Materiel scope performance measures represent the key materiel capability performance attributes of a project, which, if not satisfied, could have a significant detrimental effect on the eventual suitability of equipment for operational service.

The subjective 'traffic light' assessment of each element is indicative of:

- green—a high level of confidence that the capability outcome sought will be met
- amber—the capability outcome being under threat but still considered manageable and able to be met
- red—at this stage, the capability outcome is unlikely to be fully met.

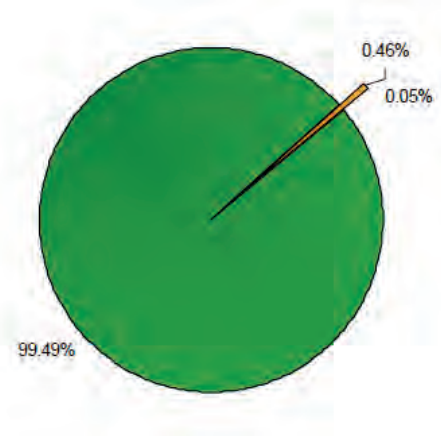
Materiel capability performance measures indicate the status of the materiel element of capability against the Final Materiel Release milestones at 30 June 2016. They are not necessarily indicative of each project's ultimate ability to deliver the final intended scope.

Performance in recent years has been strong and continues to improve further.

There are 241 performance measures, across the 26 projects in this year's report. Figure 4 shows that at 30 June 2016:

- 99.49 per cent of measures of effectiveness are likely to be met (green)
- 0.46 per cent of measures of effectiveness are under threat but manageable (amber)
- 0.05 per cent of measures of effectiveness are considered unlikely to be met (red).

Figure 4: Materiel capability performance measures for 2015-16



The 0.46 per cent reported as amber is due to SEA 1439 Phase 3—Collins Class Submarine Reliability and Sustainment, AIR 87 Phase 2—ARH Tiger Helicopters, and JP 2048 Phase 3 — Amphibious Watercraft Replacement.

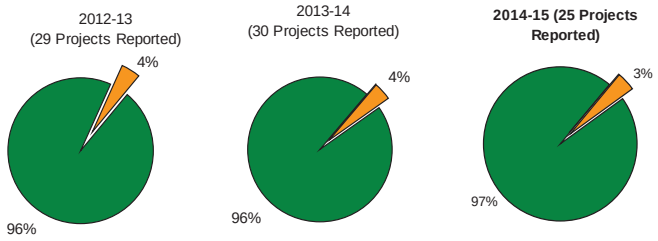
SEA 1439 Phase 3—Collins Class Submarine Reliability and Sustainment—a persistent defect in the Special Forces Exit and Re-Entry modification in HMAS Dechaineux was identified during the sea trials which lead to further investigation and minor redesign. This has impacted the Materiel Release of this capability.

AIR 87 Phase 2—ARH Tiger Helicopters— Chief of Army declared Final Operational Capability of the ARH capability in April 2016 with nine caveats, some of which are being managed by the Tiger sustainment organisation as applicable, with others being managed by the Capability Manager.

JP 2048 Phase 3—Amphibious Watercraft Replacement— Head Navy Capability has delayed Final Operational Capability due to rescheduling of Navy test and evaluation activities. This does not relate to outstanding materiel deliverables from CASG; it relates to integration of non-CASG Fundamental Inputs to Capability elements for the Amphibious capability.

The 0.05 per cent reported as red is due to AIR 6000 Phase 2A/2B—Joint Strike Fighter (JSF), as the project is unable to deliver the Maritime Strike Capability originally scoped at project approval, by FOC. Figure 5 illustrates the improving trend in materiel capability performance over the last three years, which has continued in the 2015-16 year.

Figure 5: Trends for materiel capability performance measures



Budget

The Defence Chief Finance Officer provides financial assurance that individual projects included in this report will deliver the remaining intended scope within approved project budgets.

When considering and approving budgets, the Government takes account of the estimated impact of inflation over the life of a project.

This forecasting of future inflation is known as 'out-turning'.

From 1 July 2010, all major Defence equipment acquisition projects have been managed using out-turned budgets.

At the time of project approval, project managers estimate the impact of indices tendered (or estimated) for the life of the project. These estimates are built into the project budget as part of the out-turning process.

An independent agreed-upon procedure was conducted on a sample of five of the 26 MPR projects and found no adverse factual findings that would indicate issues with the project financial assurance statements. This approach was supported by the ANAO.

The projects in this report are not necessarily representative of all Defence projects but they are the largest by budget at the time of inclusion and, as has already been noted, generally involve higher levels of complexity.

Table 3 lists the 26 projects by total approved budget from highest to lowest.

The total in-year budget (2015-16) for all the projects listed is $4.3 billion and the total approved budget is $62.7 billion.

These projects represent 15 per cent by number, of the projects in the approved major capital investment program and 61 per cent by value, so caution must be applied when extrapolating analysis to the entirety of Defence's acquisition effort.

Table 4 gives a summary of life-to-date budget approvals from Second Pass Approval to current budget including variables such as price indexation, foreign exchange and scope change impacts. Of note is the $1.2 billion real cost increase to SEA 4000 Phase 3 – Air Warfare Destroyer ships approved by Government in July 2015.

Table 3: List of 2015-16 selected projects by total approved budget

Project Number	Project Name	Project Name Abbreviation	2015-16 In-Year Budget $m	Total Approved Project Budget $m
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter	246.0	16738.4
SEA 4000 Phase 3	Air Warfare Destroyer Build	AWD Ships	696.1	9120.8
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System (Boeing P-8A Poseidon)	P-8A Poseidon	931.5	5519.9
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters	169.9	3773.9
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	555.0	3556.5
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk	293.5	3520.4
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	174.4	3465.6
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships	65.2	3092.9
AIR 87 Phase 2	Armed Reconnaissance Helicopter	ARH Tiger Helicopters	1.1	2033.0
AIR 5402	Air to Air Refuelling Capability	Air to Air Refuel	74.5	1821.7
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter	141.5	1434.5
LAND 116 Phase 3	Bushmaster Protected Mobility Vehicle	Bushmaster Vehicles	46.5	1250.7
LAND 121 Phase 3A	Field Vehicles and Trailers	Overlander Light	128.0	1017.7
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT	271.6	911.4
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	Anzac ASMD 2B	68.2	678.6
AIR 9000 Phase 5C	Additional Medium Lift Helicopters	Additional Chinook	60.6	642.4
JP 9000 Phase 7	Helicopter Aircrew Training System	HATS	76.2	487.6
JP 2072 Phase 2A	Battlespace Communications System	Battle Comm. Sys. (Land)	22.2	464.6
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms	51.0	456.0
SEA 1439 Phase 4A	Collins Replacement Combat System	Collins RCS	0.4	450.6
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	Hw Torpedo	7.6	429.7
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	3.0	421.4
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S	10.2	411.7
SEA 1448 Phase 2A	ANZAC Anti-Ship Missile Defence	Anzac ASMD 2A	30.9	386.8
LAND 75 Phase 4	Battle Management System	BMS	108.6	372.8
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	27.6	237.9
Total			**4261.3**	**62697.5**

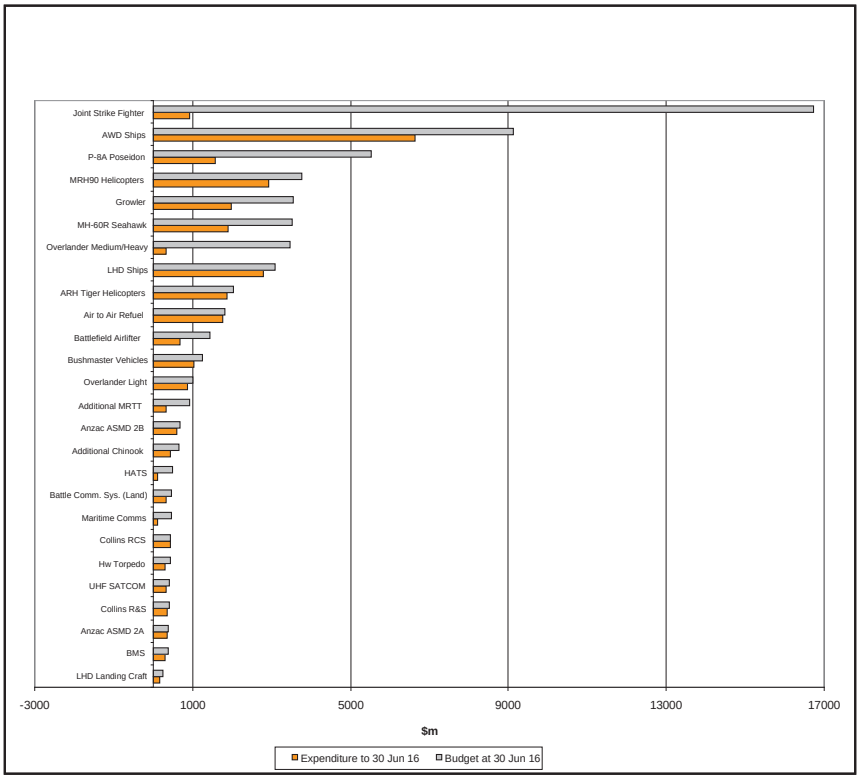
Table 4: Total budget status for each project

Project Number	Project	(a) Government Approved Budget $m	(b) Price Indexation $m	(c) Foreign Exchange Variation $m	(d) Scope Changes $m	(e) Transfers $m	(f) Budgetary Adjustments $m	(g) Budget Cost Savings $m	((f+g/a)) Net Variation %	(a+b+c+d+e+f+g) Current Budget $m
AIR 6000 Phase 2A/2B	Joint Strike Fighter	2751.6	351.0	3123.2	10515.4	0.0	-2.9	0.0	-0.1%	16738.4
SEA 4000 Phase 3	AWD Ships	7207.4	1173.2	-349.4	0.0	-109.9	1199.5	0.0	16.6%	9120.8
AIR 7000 Phase 2B	P-8A Poseidon	3637.4	20.5	626.1	1295.4	-38.0	0.0	-21.7	-0.6%	5519.9
AIR 9000 Phase 2/4/6	MRH90 Helicopters	957.2	679.8	-221.2	2597.1	-239.0	0.0	0.0	0.0%	3773.9
AIR 5349 Phase 3	Growler	1155.3	0.0	982.4	1686.7	0.0	-267.9	0.0	-23.2%	3556.5
AIR 9000 Phase 8	MH-60R Seahawk	3029.6	0.1	529.9	0.0	0.0	-39.2	0.0	-1.3%	3520.4
LAND 121 Phase 3B	Overlander Medium/Heavy	2549.2	0.0	204.2	28.0	0.0	684.2	0.0	26.8%	3465.6
JP 2048 Phase 4A/4B	LHD Ships	2923.9	428.4	-303.1	34.4	9.3	0.0	0.0	0.0%	3092.9
AIR 87 Phase 2	ARH Tiger Helicopters	1584.0	418.2	121.8	0.0	-84.3	-6.7	0.0	-0.4%	2033.0
AIR 5402	Air to Air Refuel	2076.6	484.1	-449.9	0.0	-135.5	-153.6	0.0	-7.4%	1821.7
AIR 8000 Phase 2	Battlefield Airlifter	1156.5	0.0	278.0	0.0	0.0	0.0	0.0	0.0%	1434.5
LAND 116 Phase 3	Bushmaster Vehicles	295.0	124.6	-1.1	832.2	0.0	0.0	0.0	0.0%	1250.7
LAND 121 Phase 3A	Overlander Light	3237.7	0.0	-33.5	362.7	-2549.2	0.0	0.0	0.0%	1017.7
AIR 7403 Phase 3	Additional MRTT	681.9	0.0	46.5	187.7	0.0	-4.8	0.0	0.6%	911.4
SEA 1448 Phase 2B	Anzac ASMD 2B	248.8	76.1	-9.7	214.7	148.7	0.0	0.0	0.0%	678.6
AIR 9000 Phase 5C	Additional Chinook	637.6	46.9	-42.1	0.0	0.0	0.0	0.0	0.0%	642.4
JP 9000 Phase 7	HATS	488.6	2.4	1.4	0.0	-4.8	0.0	0.0	0.0%	487.6
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	436.4	0.0	28.2	0.0	0.0	0.0	0.0	0.0%	464.6
SEA 1442 Phase 4	Maritime Comms	385.7	0.0	70.4	0.0	0.0	0.0	0.0	0.0%	456.0
SEA 1439 Phase 4A	Collins RCS	455.3	56.5	-59.5	0.0	-0.9	-0.8	0.0	-0.2%	450.6
SEA 1429 Phase 2	Hw Torpedo	238.1	99.4	-122.0	213.3	1.0	-0.2	0.0	-0.1%	429.7
JP 2008 Phase 5A	UHF SATCOM	460.9	18.0	-39.7	0.0	0.0	0.0	-18.0	-3.9%	421.4
SEA 1439 Phase 3	Collins R&S	72.0	74.4	-5.9	310.3	-38.3	-0.8	0.0	-1.1%	411.7
LAND 75 Phase 4	Battle Management System	319.0	0.0	45.3	8.5	0.0	0.0	0.0	0.0%	372.8
SEA 1448 Phase 2A	Anzac ASMD 2A	449.0	101.3	-3.6	0.0	-159.8	-0.1	0.0	0.0%	368.8
JP 2048 Phase 3	LHD Landing Craft	236.4	0.1	9.7	-0.7	-7.7	0.0	0.0	0.0%	237.9
	Total	**37671.1**	**4155**	**4426.4**	**18285.7**	**-3208.4**	**1406.7**	**-39.7**	**5.8%**	**62679.5**

One indicator of project progress is comparison of the total project budget and expenditure as shown in Figure 6.

However the percentage of budget spent is dependent on the characteristics of the project and the levels of early investment needed so the relationship between budget and progress does not necessarily match.

Figure 6: Comparison of total project budget and expenditure at 30 June 2016 ($m)



A summary of in-year project budget expenditure against the Portfolio Budget Statements and the Portfolio Additional Estimate Statements is shown in Table 5.

Seven projects had overspends during the year, the two largest by percentage variation being:

- JP 2072 Phase 2A—the Battlespace Communications System which had an overspend of 8.8 per cent ($2.0 million) due to the contractor achieving milestones ahead of schedule.

- AIR 9000 Phase 2,4 and 6 —the Multi-role Helicopter which had an overspend due to 14.2 per cent ($24.1 million) primarily due to net adjustments to payment phasing across the prime acquisition and full flight simulator contracts offset against foreign currency gains.

Nineteen projects had underspends during the year, the three largest by percentage variation being:

- SEA 1448 Phase 2A —the ANZAC Anti-ship Missile Defence which had an underspend of 29.3 per cent ($9.0 million) due to an inability to process a planned closing pain/gain share payment to industry participants
- SEA 1439 Phase 3—the Collins Class Submarine Reliability and Sustainment which had an underspend of 54.9 per cent ($5.6 million) driven by a lower than anticipated spend in the second year of the three-year performance period contract with ASC
- AIR5349 Phase 3—the EA-18G Growler Airborne Electronic Attack Capability which had an underspend of 42.3 per cent ($235.0 million) due to lower than expected Foreign Military Sales case payments for aircraft and AEA kits.

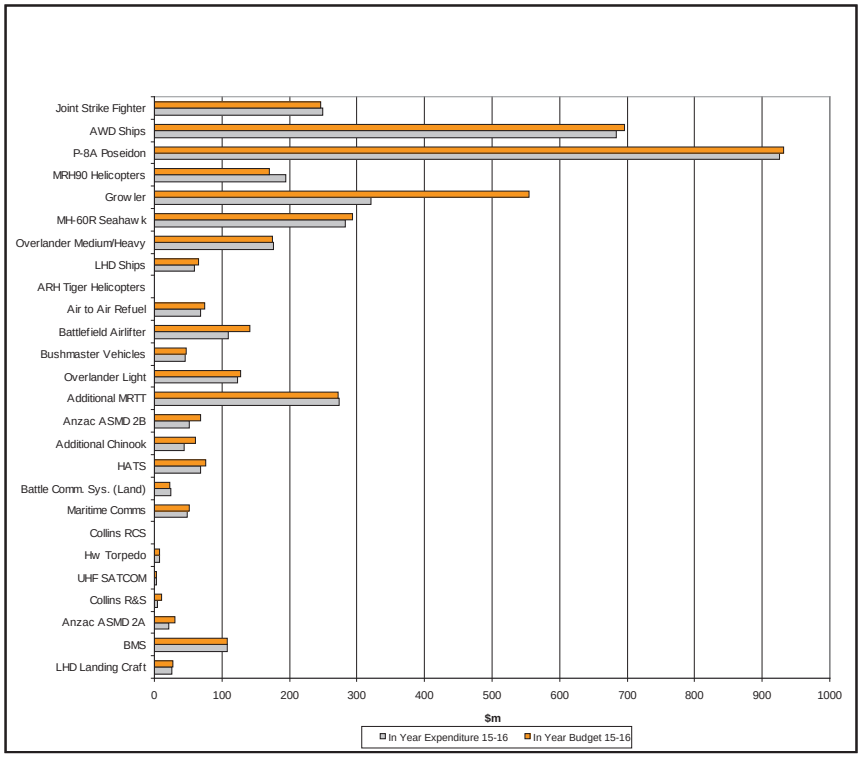
There was a total in-year budget underspend of $344.4 million against the 2015-16 Portfolio Budget Statements.

Table 5: Project in-year budget status

Project Number	Project	Portfolio Budget Statements $m	Portfolio Additional Estimate Statements $m	Final Plan $m	Actual Spend $m	Variation $m	Variation %
AIR 6000 Phase 2A/2B	Joint Strike Fighter	463	384.6	246.0	248.9	2.9	1.2%
SEA 4000 Phase 3	AWD Ships	745.5	715.6	696.1	683.3	-12.8	-1.8%
AIR 7000 Phase 2B	P-8A Poseidon	717.3	766.3	931.5	925.8	-5.7	-0.6%
AIR 9000 Phase 2/4/6	MRH90 Helicopters	211.8	170.8	169.9	193.9	24.1	14.2%
AIR 5349 Phase 3	Growler	889.8	419.5	555.0	320.0	-235.0	-42.3%
AIR 9000 Phase 8	MH-60R Seahawk	546.2	343.5	293.5	282.2	-11.3	-3.8%
LAND 121 Phase 3B	Overlander Medium/Heavy	204.6	169.5	174.4	176.3	1.9	1.1%
JP 2048 Phase 4A/4B	LHD Ships	145.7	100.2	65.2	59.1	-6.1	-9.4%
AIR 87 Phase 2	ARH Tiger Helicopters	2.2	1.2	1.1	1.1	0.0	0.0%
AIR 5402	Air to Air Refuel	67.3	74.5	74.5	68.6	-5.9	-7.9%
AIR 8000 Phase 2	Battlefield Airlifter	230.4	174.4	141.5	108.7	-32.8	-23.2%
LAND 116 Phase 3	Bushmaster Vehicles	49	46.6	46.5	45.4	-1.2	-2.5%
LAND 121 Phase 3A	Overlander Light	119.6	131.4	128.0	123.0	-5.0	-3.9%
AIR 7403 Phase 3	Additional MRTT	0	261.7	271.6	273.1	1.6	0.6%
SEA 1448 Phase 2B	Anzac ASMD 2B	59	55.4	68.2	51.3	-16.9	-24.7%
AIR 9000 Phase 5C	Additional Chinook	63	44.3	60.6	43.5	-17.1	-28.2%
JP 9000 Phase 7	HATS	66.8	66.6	76.2	68.4	-7.8	-10.2%
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	35.2	26.9	22.2	24.2	2.0	8.8%
SEA 1442 Phase 4	Maritime Comms	71.3	56.1	51.0	48.6	-2.4	-4.7%
SEA 1439 Phase 4A	Collins RCS	0.8	0.7	0.4	0.3	-0.1	-30.9%
SEA 1429 Phase 2	Hw Torpedo	7.1	6.6	7.6	7.5	-0.1	-1.3%
JP 2008 Phase 5A	UHF SATCOM	11.1	2.8	3.0	3.0	0.0	0.0%
SEA 1439 Phase 3	Collins R&S	8.4	10.5	10.2	4.6	-5.6	-54.9%
SEA 1448 Phase 2A	Anzac ASMD 2A	25.4	23.3	30.9	21.9	-9.0	-29.3%
LAND 75 Phase 4	Battle Management System	101.9	109.9	108.6	108.3	-0.3	-0.3%
JP 2048 Phase 3	LHD Landing Craft	35.5	27.1	27.6	25.9	-1.7	-6.2%
	Total	**4877.9**	**4190.0**	**4261.3**	**3916.9**	**-344.4**	**-8.1%**

Figure 7 depicts the in-year (2015-16) budget variations.

Figure: 7 Comparison of in-year budget and expenditure at 30 June 2016 ($m)



Contingency management

In keeping with standard commercial practice, budgets for major Defence capital investment programs are approved by Government with a contingency provision that varies between projects depending on the complexity and risk of the acquisition.

This allows project managers to proactively manage risk, and, when necessary, treat risk events that have materialised into issues.

Contingency funding provides a limited financial margin for project managers against inherent uncertainties, risks and unexpected events that may arise during the course of a project. It is especially important in Defence projects that typically have greater inherent risk, longer timeframes and are generally more complex than private sector projects.

Since the 2013-14 report, each project data summary sheet now includes advice on whether contingency has been applied to the project during the financial year, which is assured by the ANAO.

Across the life of the 26 projects in this year's report (that is, from November 1998 to June 2016), the aggregate amount of 'applied contingency' is approximately $1.5 billion. The term 'applied contingency' is the amount of contingency that a project has allocated against identified risks, rather then actually spent. This represents two per cent of the 26 projects combined project approval value ($62.7 billion).

The areas where risks have been retired using contingency include:

- systems development
- systems integration
- logistics and support
- schedule constraints
- project resourcing.

Defence has established a framework which provides full accountability and traceability of all management decisions related to the use of the project contingency budget.

Seven projects have applied contingency provisions in this financial year:

- SEA 1448 Phase 2A—ANZAC Anti-ship Missile Defence
- LAND 75 Phase 4—Battlefield Command Systems
- AIR 9000 Phase 5C—Additional Medium Lift Helicopters
- SEA 1448 Phase 2B—ANZAC Anti-ship Missile Defence
- LAND 121 Phase 3A—Overlander Vehicles
- AIR 9000 Phase 2,4 and 6—Multi-role Helicopter
- SEA 4000 Phase 3—Air Warfare Destroyer.

For further details on reasons for the application of contingency, please refer to the project data summary sheet for each project.

Schedule

Defence's analysis indicates that, while projects have been managed within approved scope and budgets, schedule performance, as identified in previous Major Project Reports, continues to be an issue but is improving.

The average Final Operational Capability schedule slippage of projects reviewed over the last five years has reduced from 30 per cent in 2011-12 to 24 per cent in 2015-16.

In 2010, Initial Material Release and Final Materiel Release were introduced as more appropriate milestones for measuring project schedule performance.

The project schedule status of the 26 projects in this year's report is shown in Table 6 from Second Pass Approval through to Final Materiel Release and Final Operational Capability.

Table 6: Project schedule status[113]

Project Number	Project	(a) 2nd Pass Approval	(b) Originally Estimated FMR	Forecast FMR at 30 June 15	(c) Forecast FMR at 30 June 16	(c-a)/(b-a) Variation Factor FMR	(d) Originally estimated FOC	Forecast FOC at 30 Jun 15	(e) Forecast FOC at 30 Jun 16	(e-a)/(d-a) Variation Factor
AIR 6000 Phase 2A/2B	Joint Strike Fighter	1/11/09	1/12/23	1/12/23	1/10/23	0.99	1/12/23	1/12/23	1/10/23	0.99
SEA 4000 Phase 3	AWD Ships	1/06/07	1/12/17	1/09/20	1/06/20	1.24	1/05/18	1/03/21	1/12/20	1.24
AIR 7000 Phase 2B	P-8A Poseidon	1/02/14	1/10/19	1/10/19	1/10/19	1.00	1/01/20	1/01/20	1/01/20	1.00
AIR 9000 Phase 2/4/6	MRH90 Helicopters	1/08/04	1/10/14	1/12/17	1/12/17	1.31	1/07/14	1/07/19	1/07/19	1.50
AIR 5349 Phase 3	Growler	1/04/13	1/07/22	1/07/22	1/07/22	1.00	1/07/22	1/07/22	1/07/22	1.00
AIR 9000 Phase 8	MH-60R Seahawk	1/06/11	1/12/23	1/12/23	1/12/23	1.00	1/12/23	1/12/23	1/12/23	1.00
LAND 121 Phase 3B	Overlander Medium/Heavy	1/07/13	1/12/22	1/07/22	1/12/22	1.00	1/12/23	1/03/23	1/06/23	0.95
JP 2048 Phase 4A/4B	LHD Ships	1/06/07	1/08/15	1/10/15	1/11/16	1.15	1/11/16	1/11/16	1/10/17	1.10
AIR 87 Phase 2	ARH Tiger Helicopters	1/03/99	1/07/12	1/03/14	1/03/14	1.12	1/06/09	1/01/16	1/04/16	1.67
AIR 5402	Air to Air Refuel	1/05/03	1/02/13	1/05/16	1/05/16	1.33	1/03/11	1/05/16	1/07/16	1.68
AIR 8000 Phase 2	Battlefield Airlifter	1/04/12	1/10/17	1/03/18	1/04/19	1.27	1/12/17	1/09/18	1/12/19	1.35
LAND 116 Phase 3	Bushmaster Vehicles	1/11/98	1/09/16	1/09/16	1/09/16	1.00	1/12/16	1/12/16	1/12/16	1.00
LAND 121 Phase 3A	Overlander Light	1/12/11	1/07/16	1/10/16	1/10/16	1.05	1/07/16	1/10/16	1/10/16	1.05
AIR 7403 Phase 3	Additional MRTT	1/06/15	1/03/18	-	1/03/18	1.00	1/03/18	-	1/03/18	1.00
SEA 1448 Phase 2B	Anzac ASMD 2B	1/09/05	1/07/17	1/10/17	1/09/17	1.01	1/03/13	1/10/17	1/10/17	1.61
AIR 9000 Phase 5C	Additional Chinook	1/02/10	1/01/17	1/01/17	1/01/17	1.00	1/01/17	1/01/17	1/01/17	1.00
JP 9000 Phase 7	HATS	1/08/14	1/12/18	-	1/12/18	1.00	1/12/20	-	1/09/20	0.96
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	1/11/11	1/09/16	1/08/16	1/12/16	1.05	1/06/16	1/10/16	1/02/17	1.15
SEA 1442 Phase 4	Maritime Comms	1/07/13	1/05/23	1/05/23	1/05/23	1.00	1/12/23	1/12/23	1/12/23	1.00
SEA 1439 Phase 4A	Collins RCS	1/09/02	1/01/16	1/10/18	1/10/18	1.21	1/12/10	1/02/19	1/02/19	1.99
SEA 1429 Phase 2	Hw Torpedo	1/07/01	1/11/13	1/10/18	1/10/18	1.40	1/11/13	1/02/19	1/02/19	1.42
JP 2008 Phase 5A	UHF SATCOM	1/03/09	1/03/14	1/07/18	1/04/18	1.82	1/06/18	1/06/18	1/06/18	1.00

113 Note: In the 2013 Government Approval of LAND 75 Phase 4 there is no Initial Operational Capability (IOC) and Final Operational Capability (FOC) linked to LAND 75 Phase 4 WP-A. IOC and FOC are linked to WP-B-D, which is the element of LAND 75 yet to be approved by Government.

SEA 1439 Phase 3	Collins R&S	1/09/00	1/10/22	1/08/22	1/08/22	0.99	1/06/14	1/05/22	1/05/22		1.58
SEA 1448 Phase 2A	Anzac ASMD 2A	1/11/03	1/07/17	1/10/17	1/09/17	1.01	1/12/11	1/10/17	1/10/17		1.72
LAND 75 Phase 4	BMS	1/08/13	1/06/17	-	1/06/17	1.00	N/A	-	N/A		N/A
JP 2048 Phase 3	LHD Landing Craft	1/09/11	1/02/16	1/02/16	1/06/16	1.07	1/02/16	1/02/16	1/06/16		1.07

Figure 8: Schedule from approval to current Final Materiel Release estimates

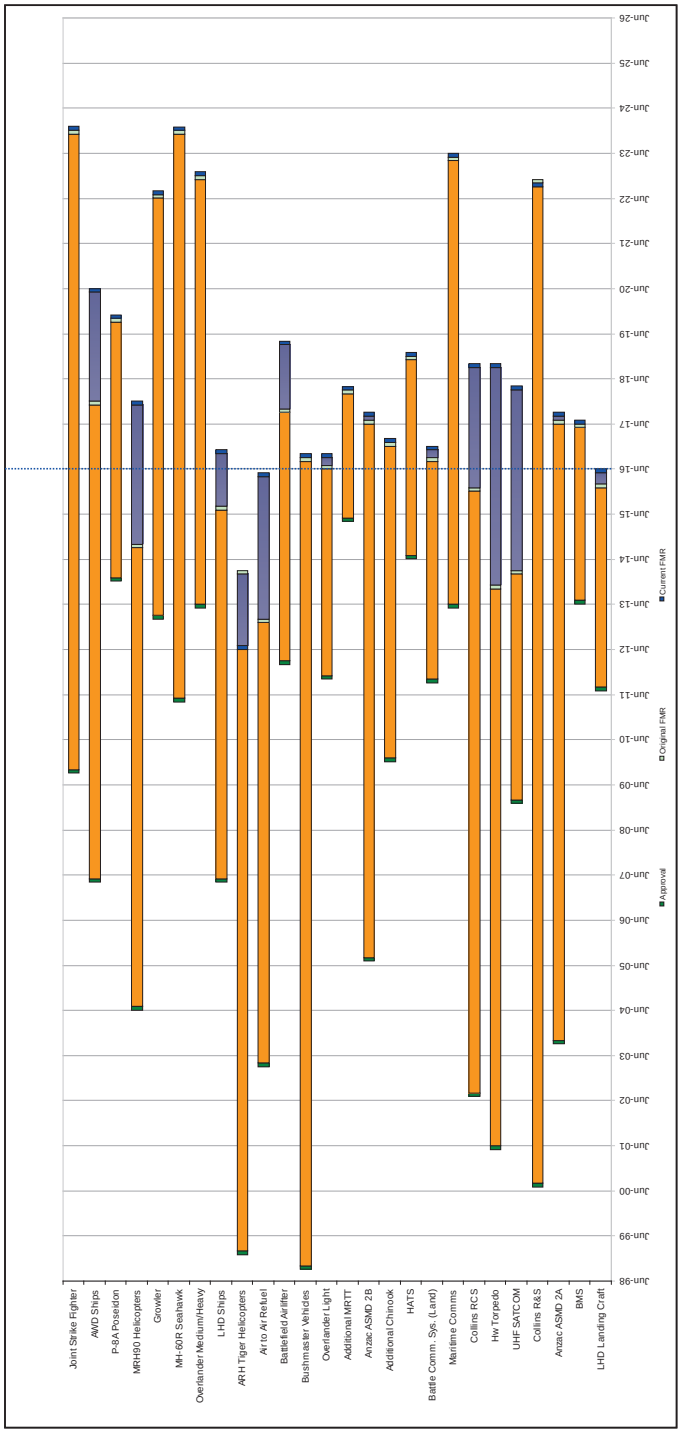


Figure 8 shows the original approval date, the original approved Final Materiel Release estimate and the forecast Final Materiel Release for each project at 30 June 2016.

Table 7 provides the estimated time between Final Materiel Release and Final Operational Capability. This period between Final Materiel Release and Final Operational Capability denotes the time required by Capability Managers to bring together all the Fundamental Inputs to Capability.

The following six projects are of note:

- AIR 5402—Air to Air Refuel— achieved Final Material Release in May 2016, with Final Operational Capability declared in July 2016.
- LAND 116 Phase 3—Bushmaster Vehicles—delivery of the projects 208 PP5 vehicles commenced in July 2013 and concluded in October 2016
- AIR 9000 Phase 5C—Additional Chinook—Initial Materiel Release was declared by CASG on 1 July 2015 and the Initial Operational Capability declaration was acknowledged by Chief of Army on 22 April 2016
- LAND 121 Phase 3A —Overlander Light—Final Materiel Release and Final Operational Capability milestones were achieved with caveats as scheduled in late 2016
- JP2048 Phase 3—LHD Landing Craft—Final Operational Test and Evaluation for the LHD/LLC interface trials occurred in May 2016 but were incomplete with a new trial date to be set that delayed Final Materiel Release to December 2016, and Final Operational Capability to mid-2017.
- Final Operational Capability was declared for the ARH Tiger Helicopters (AIR 87 Phase 2) in April 2016 by the Chief of Army with nine caveats, 82 months behind schedule of the original FOC forecast.

Table 7: Final Materiel Release and Final Operational Capability estimates as at 30 June 2016

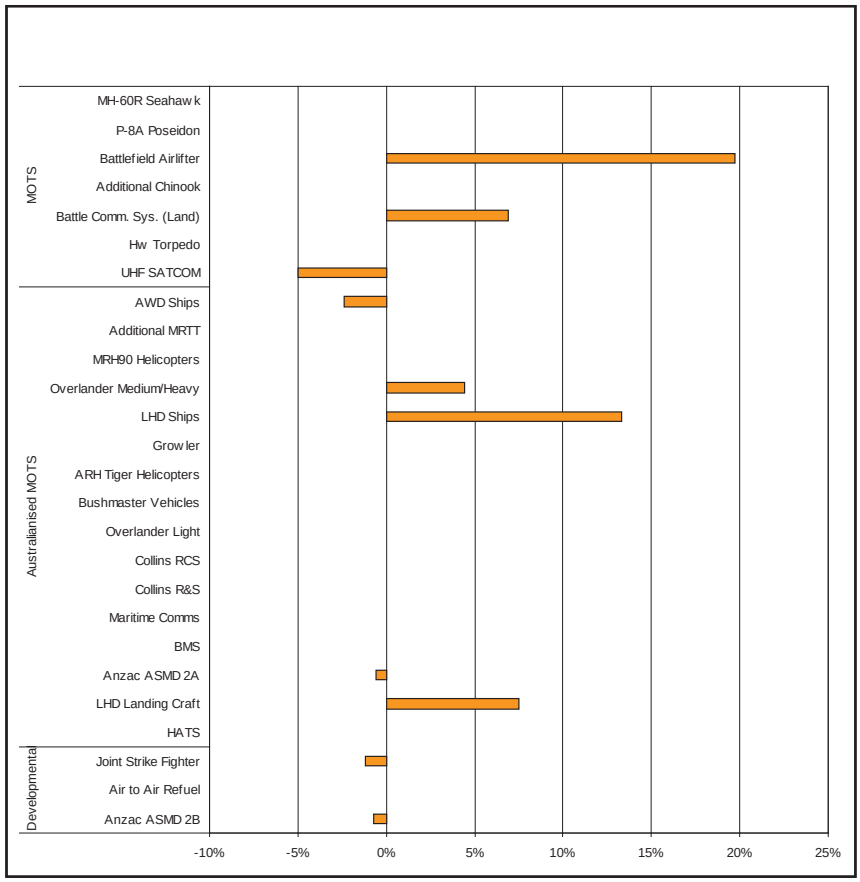
Project	Originally Estimated FMR	Estimated FMR (30 June 16)	Estimated FOC (30 June 16)	Variation between Original FMR and 30 June FOC (months)	Variation between 30 June FMR and 30 June FOC (months)
Joint Strike Fighter	Dec-23	Oct-23	Oct-23	-2	0
AWD Ships	Dec-17	Jun-20	Dec-20	36	6
P-8A Poseidon	Oct-19	Oct-19	Jan-20	3	3
MRH90 Helicopters	Oct-14	Dec-17	Jul-19	57	19
Growler	Jul-22	Jul-22	Jul-22	0	0
MH-60R Seahawk	Dec-23	Dec-23	Dec-23	0	0
Overlander Medium/Heavy	Dec-22	Dec-22	Jun-23	6	6
LHD Ships	Aug-15	Nov-16	Oct-17	26	11
ARH Tiger Helicopters	Jul-12	Mar-14	Apr-16	45	25
Air to Air Refuel	Feb-13	May-16	Jul-16	41	2
Battlefield Airlifter	Oct-17	Apr-19	Dec-19	26	8
Bushmaster Vehicles	Sep-16	Sep-16	Dec-16	3	3
Overlander Light	Jul-16	Oct-16	Oct-16	3	0
Additional MRTT	Mar-18	Mar-18	Mar-18	0	0
Anzac ASMD 2B	Jul-17	Sep-17	Oct-17	3	1
Additional Chinook	Jan-17	Jan-17	Jan-17	0	0
HATS	Dec-18	Dec-18	Sep-20	21	21
Battle Comm. Sys. (Land)	Sep-16	Dec-16	Feb-17	5	2
Maritime Comms	May-23	May-23	Dec-23	7	7
Collins RCS	Jan-16	Oct-18	Feb-19	37	4
Hw Torpedo	Nov-13	Oct-18	Feb-19	63	4
UHF SATCOM	Mar-14	Apr-18	Jun-18	51	2
Collins R&S	Oct-22	Aug-22	May-22	-5	-3
Anzac ASMD 2A	Jul-17	Sep-17	Oct-17	3	1
BMS	Jun-17	Jun-17	N/A	N/A	N/A
LHD Landing Craft	Feb-16	Jun-16	Jun-16	4	0

The in-year Final Materiel Release schedule variance by project type is shown in Figure 9 as a percentage of the total expected time to reach that milestone.

In 2015-16 10 projects reviewed their forecast Final Materiel Release dates, with five projects are reporting that they will achieve Final Materiel Release ahead of forecast.

The largest variance is 20 per cent for the Battlefield Airlifter (AIR 8000 Phase 2) which is, in part, due to delays in the production of Leonardo-Finmeccanica aircraft and associated activities. The revised schedule indicates Final Materiel Release is expected to be achieved by April 2019, (18 months behind schedule).

Figure 9: In-year (2015-16) Final Materiel Release schedule variance by project type



The total schedule variance for Final Materiel Release shows the variance as a percentage of the originally estimated duration of each project in this report.

The average Final Materiel Release variance for the 26 projects reviewed here at 30 June 2016 is 12 per cent.

Figure 10: Total project schedule variance life to date for Final Materiel Release

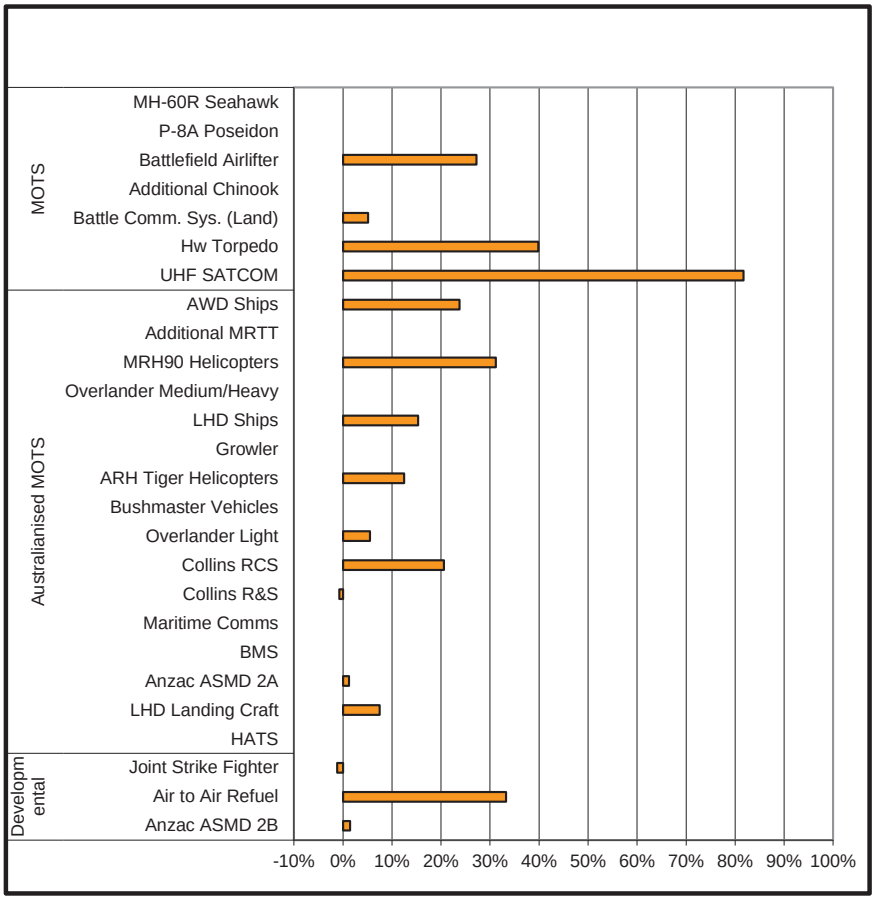
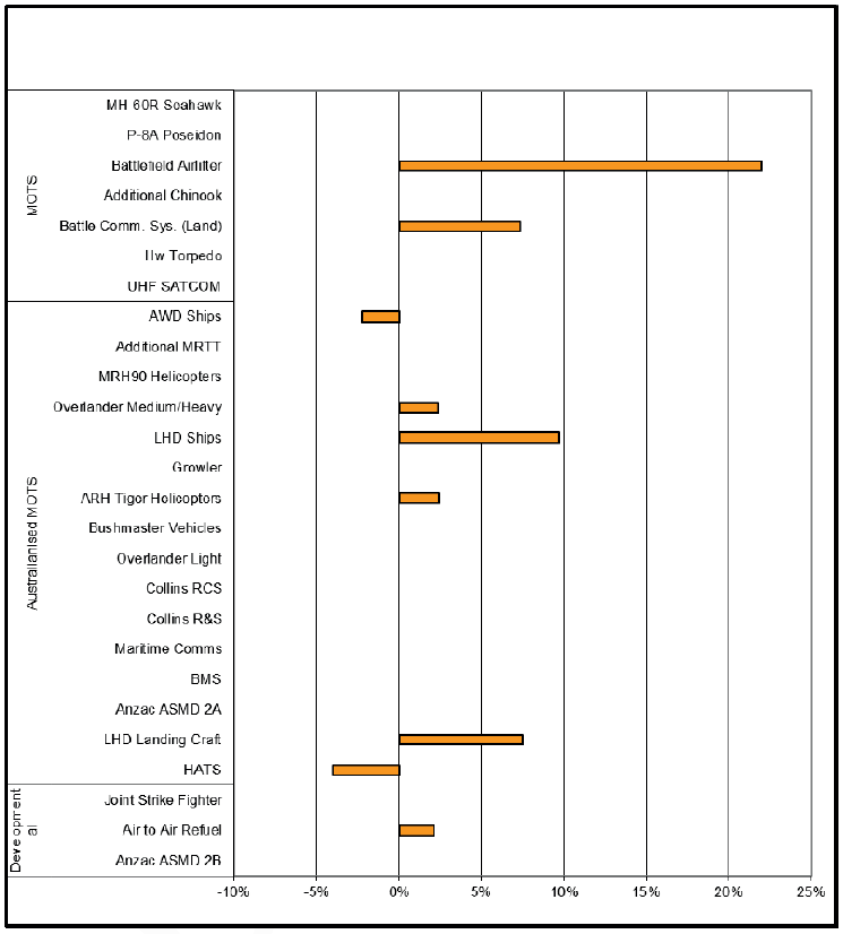


Figure 11 shows the in-year Final Operational Capability schedule variance by project type as a percentage of the 2015-16 project duration estimates.

Figure 11: In-year Final Operational Capability schedule variance by project type[114]



In 2015-16, ten projects reassessed their forecast Final Operational Capability date with seven pushing it out and three forecasting earlier achievement.

114 In Figure 12, in-year FOC schedule variance by project type, the Joint Strike Fighter is currently developmental in nature but should ultimately become MOTS when it enters production line delivery. Also, in the 2013 Government approval of LAND 75 Phase 4 there is no initial operational capability (IOC) and final operational capability (FOC) linked to LAND 75 Phase 4 WP-A. The IOC and FOC are linked to WP¬-B-D, which is the element of LAND 75 yet to be approved by Government.

Of these the greatest in-year variation was for the Battlefield Airlifter (AIR 8000 Phase 2) which adjusted its forecast by 22 per cent due to production delays for the Leonardo-Finmeccanica aircraft.

Figure 12 shows the total Final Operational Capability schedule variance as a percentage of the originally estimated duration for the project from government approval.

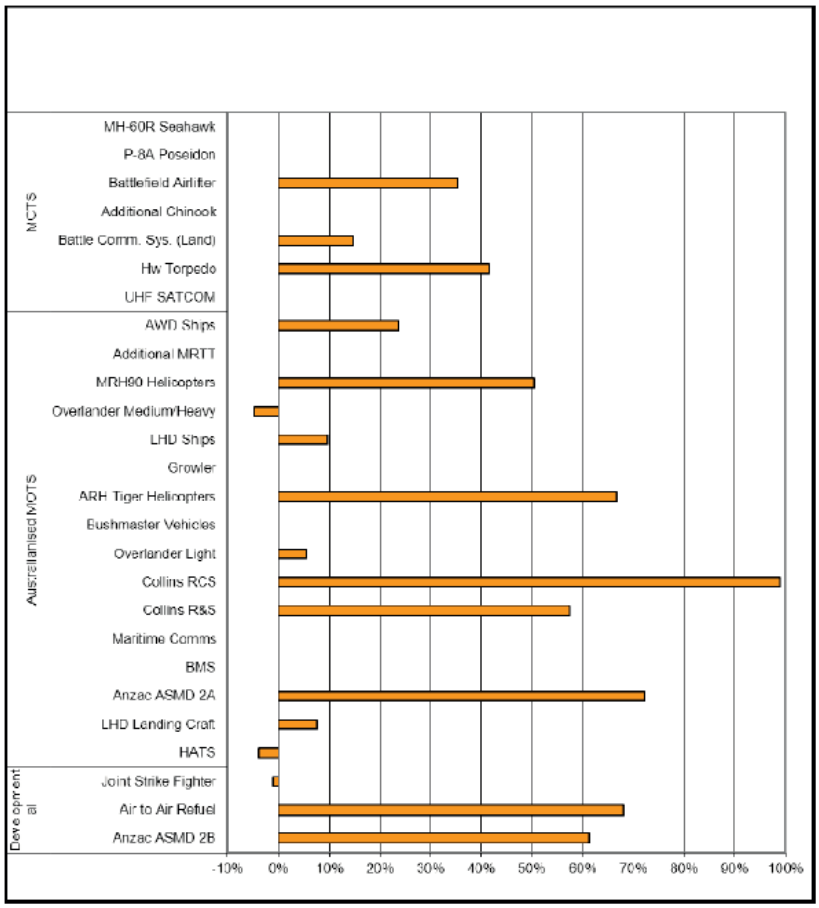
Generally, military off-the-shelf (MOTS) are more likely to be delivered on time than developmental or Australian military off-the-shelf projects.

The number of projects reporting a Final Operational Capability schedule variation of 50 per cent or greater decreased again this year from nine in last year's report to seven in this year's. They are:

- AIR 9000 Phase 2/4/6—the Multi-role Helicopter - ongoing technical difficulties have resulted in delays to the Final Material Release and Final Operational Capability milestones but a number of capability milestone have been declared and the Final Material Release and Final Operational Capability dates are under reviewed and expected to be clarified late 2016
- AIR 87 Phase 2—ARH Tiger Helicopters – Chief of Army declared Final Operational Capability in April 2016 with nine caveats which are being managed by Tiger Sustainment organisation in conjunction with the Capability Manager
- SEA 1439 Phase 3—Collins Replacement and Sustainability - delays are due to the Special forces Exit and re-entry modifications due to a persistent defect within the conning towers
- SEA 1439 Phase 4A—Collins RCS – Final Operational Capability date was set at project approval before the submarines full-cycle docking program had reached maturity. As a result, the RCS installation schedule has been delayed.
- SEA 1448 Phase 2A—ANZAC ASMD 2A and SEA 1448 Phase 2B—ANZAC ASMD 2B - recent achievements include the Materiel Release of the fourth ship HMAS Warramunga in October 2015 and the fifth ship HMAS Ballarat in May 2016. HMAS Parramatta and Toowoomba and the final ship HMAS Stuart are scheduled to have entered the program by the end of 2016.

- AIR 5402—Air to Air Refuel - Final Operational Capability was declared in July 2016.

Figure 12: Schedule variance for Final Operational Capability since Government approval, by project type



Schedule variance can be attributed to a number of factors shown in Table 8.

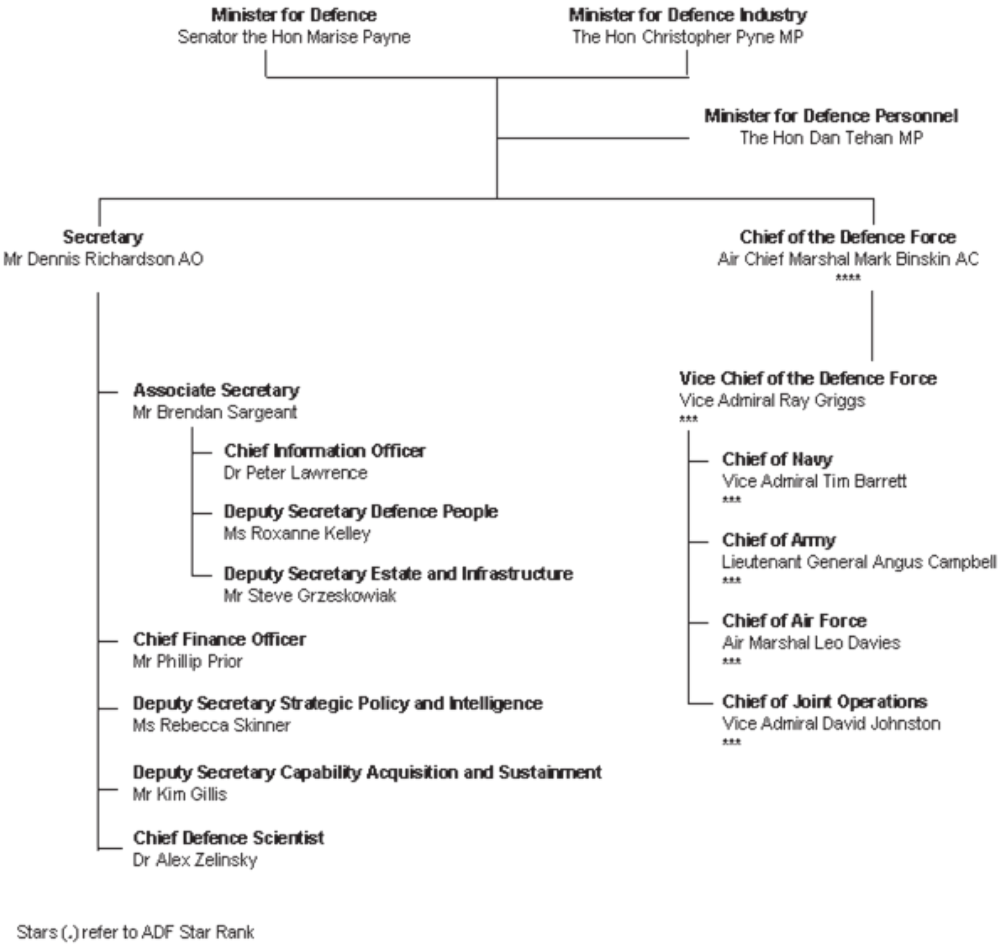
Developmental and Australian military off-the-shelf projects have higher levels of technical complexity and system integration risk. These risks increase the risk of schedule slippage as technical difficulties may be unforseen and require significant modifications resulting in delays.

Table 8: Additional attribution of schedule variance factors

Driver of schedule variance	Project
Platform availability	HW Torpedo
	Collins RCS
	Collins R&S
Industry capability/budget adjustments	AWD Ships
Technical complexity - underestimation by industry and/or Defence of the complexity of developmental and/or large scale integration projects.	LHD Ships
	Battlefield Airlifter
	Air to Air Refuel
	ARH Tiger Helicopters
	MRH90 Helicopter
Technical complexity and scope change	Anzac ASMD 2A
	Anzac ASMD 2B
Capability manager decisions	Battle Comm. Sys (Land)

Appendices

Appendix 1: Department of Defence organisation chart[115]



Stars (*) refer to ADF Star Rank

115 Correct at 03 February 2017

Appendix 2: Acquisitions categories

The Capability Acquisition and Sustainment Group (CASG) categorises its acquisition projects to enable it to differentiate between the complexities of business undertakings, focus management attention, provide a basis for professionalising its workforce and facilitate strategic workforce planning. Projects are graded into one of four acquisition categories (ACATs):

- ACAT I – These are major capital equipment acquisitions that are normally the ADF's most strategically significant. They are characterised by extensive project and schedule management complexity and very high levels of technical difficulty, operating, support and commercial arrangements
- ACAT II – These are major capital equipment acquisitions that are strategically significant. They are characterised by significant project and schedule management and high levels of technical difficulty, operating, support arrangements and commercial arrangements
- ACAT III – These are major or minor capital equipment acquisitions that have a moderate strategic significance to the ADF. They are characterised by the application of traditional project and schedule management techniques and moderate levels of technical difficulty, operating, support arrangements and commercial arrangements
- ACAT IV – These are major or minor capital equipment acquisitions that have a lower level of strategic significance to the ADF. They are characterised by traditional project and schedule management requirements and lower levels of technical difficulty, operating, support and commercial arrangements.

As the complexity of a project will vary over its life cycle, Defence reviews project acquisition categories at defined milestones between entry into the Integrated Investment Program and project completion.

The ACAT framework provides a recognised, consistent and repeatable methodology for categorising projects and aligning project managers' certified experience and competencies to the complexity and scale of projects under management. Project managers are assigned to acquisition projects on the basis that their Certified Professional Project Manager status is consistent with the project's ACAT level.

The ACAT level of a project is assessed against six project attributes:

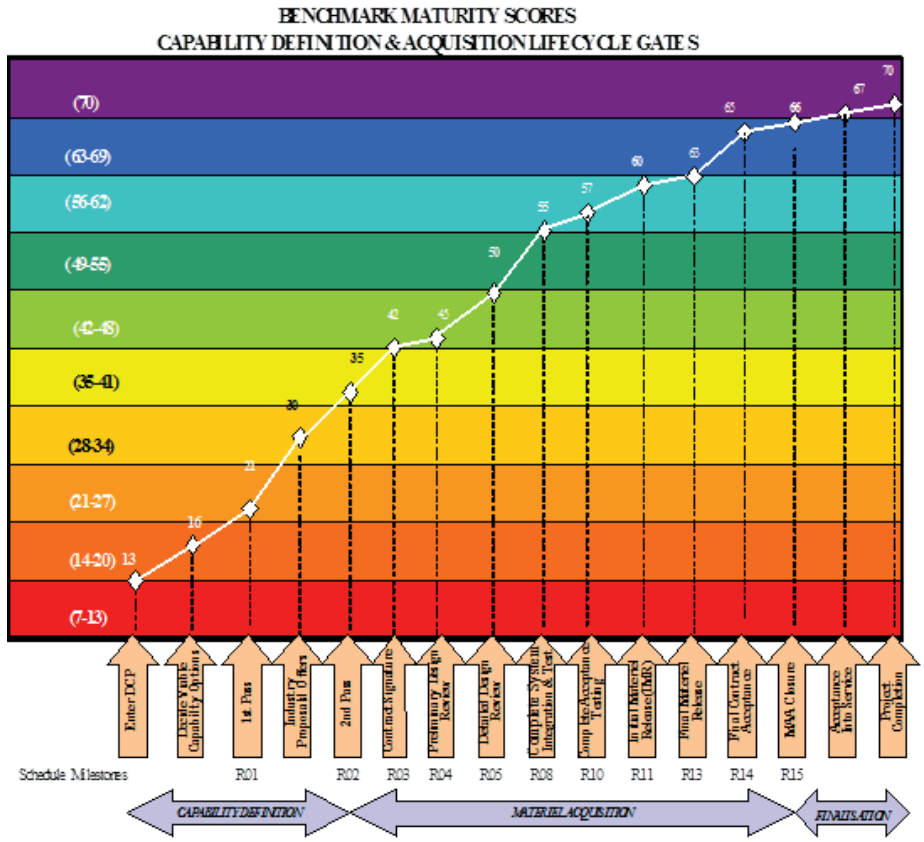
- acquisition cost, the approved budget for the project
- project management complexity, the complexity of project management necessary for its execution

- schedule complexity, the inherent complexity brought about by delivery pressures on the project
- technical difficulty, the complexities associated with technical undertakings such as design and development, assembly, integration, test and acceptance
- operation and support, the complexity associated with readying the organisation and environment in which the system will be operated, supported and sustained
- commercial experience, the readiness and capability of industry to develop, produce and support the required capability, and the complexity of the commercial arrangements being managed.

Appendix 3: Project Maturity

CASG's project maturity score quantifies the maturity of a project by way of a score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. This score is then compared against an ideal or benchmark score for that milestone. A project's maturity is assessed on 16 milestones across its lifecycle and for each of these milestones the ideal or benchmark condition is represented by a benchmark score as shown in Figure 1.

Figure 1 - Benchmark maturity scores



The project maturity score comprises a matrix of seven attributes:

- schedule
- cost
- requirement
- technical understanding

- technical difficulty
- commercial
- operations and support.

The project manager assesses the level of maturity that a project reaches at a particular milestone for each of these attributes on a scale of 1 to 10. Score assessment is made by selecting the most appropriate description that fits the question under the attributes columns.

Project maturity scores provide a means of communicating in a simple fashion an indicative 'as is' versus a 'should be' condition to inform decision making for each project. The scores are not precise and are not intended to enable exact comparisons across projects. Following is a description of the project maturity score attributes.

Project maturity score matrix

Attributes	Schedule	Cost	Requirements	Technical understanding	Technical difficulty	Commercial	Operation and support
Delivery performance							
Maturity Score	How are the IMR & FMR milestones tracking against project approval?	How well is the cost tracking against project approval?	How well are the requirements defined in the MAA being realised?	Defence's understanding of the technical solution and arrangements to operate and support the capability.	How well are the design and its validation coming along?	How well is industry performing?	How well prepared is the project to transition from Acquisition to Sustainment?
10	Achieved	Proven	Demonstrated	Fully understood	Proven	All delivered	Operational
9	Confident	Contingency remains	Tested	Transferred	Tested	Delivered	Transitioning
8	Acceptable	Confident	Designed	Arranged	Integrated	Delivering	Integrated
7	In tolerance	Within contingency	Acceptable	Needs understood	Designed	Manages risk	Being procured
6	Manageable	Negotiated	Contracted	Provided for	Planned	As Contracted	Defined
Process maturity							
Maturity score	How realistic is the schedule?	What is the quality of the project estimate?	How well are the requirements defined and understood?	How well are the solutions understood?	How difficult is to integrate the component parts?	Can industry deliver the solution?	Is the impact on the existing operating and support environment understood?
5	Confirmed	Pre- endorsed capability	Endorsed	Understood	Manageable	Offered	Planned
4	Understood	Industry tested	Documented	Feasible	Feasible	Industry proposals	Known
3	Feasible	Reasonable	Solution classes	Coalescing	Building blocks	Strategy developed	Issues understood
2	Drivers known	Plausible	Scenarios identified	Minimal	Conceptual	Possible	Conceivable
1	Speculative	Speculative	Deficiency	Not at all	Not defined	Not yet	Not identified

Project life cycle gates[116]	Represents	Benchmark maturity score
Enter Defence Integrated Investment Program	The stage at which a project is recommended to Government for inclusion in the Defence Integrated Investment Program	13
Decide viable capability options	The stage in the capability definition/ development process when 1st Pass options that will be put to Government are decided by Chief CDG	16
1st pass approval	The stage at which 1st Pass options to be put to Cabinet are endorsed by the Defence Integrated Investment Program Committee	21
Industry proposals/ offers	The stage at which formal responses from industry to a request for price or request for tender have been received and evaluated	30
2nd pass approval	The stage in the capability definition/development process when 2nd pass approval is sought from Cabinet	35
Contract signature	On completion of contract negotiations and on concluding contract signature of a contract that has maximum influence on the project	42
Preliminary design review(s)	On completion of system requirements reviews and when preliminary design reviews are completed	45
Detailed design review(s)	On completion of detailed design reviews	50
Complete system integration and test	On completion of verification and validation activities at the system and subsystem levels	55
Complete acceptance testing	On completion of all contractual acceptance testing and associated testing activities nominated in the Test and Evaluation Master Plan	57
Initial materiel release	Occurs when the materiel components that represents the CASG contribution to initial operational release are ready for transition to the capability manager	60
Final materiel release	Occurs when all the products and services within the MAA have been transitioned to the capability manager.	63
Final contract acceptance	On final acceptance as defined in the contract.	65
MAA closure	Occurs when all of the actions necessary to finalise the MAA have been completed, including completion of all financial transactions and records, completion of contracts and transfer of remaining fund.	66
Acceptance into service	The point at which the capability manager accepts the materiel system, supplies and services for employment in operational service[117]	67
Project completion	Project closure is achieved when the project is financially closed, support arrangements have been transitioned and all MAA requirements have been demonstrated and transitioned.	70

116 Defence is in the process of replacing this as the Capability Life Cycle implementation progresses. This will still be relevant for the historical data presented in the 2015-16 Major Projects Report

117 Where multiple elements of a mission system are involved (e.g. three surface combatants) this date represents Initial Operational Capability (IOC) of the initial Subset, including its associated operational support, i.e. when the IOC is achieved.

Appendix 4: List of projects removed from the Major Projects Report since its inception

Project Number	Project	First Reported in MPR	Last Reported in MPR	Level of Development	Government Approved Budget $m	Expenditure to date $m	Remaining Budget $m	FMR Achieved/ Forecast	FOC Achieved/ Forecast	Reason for Exit
AIR 5376 Phase 3.2	F/A 18 Hornet Upgrade Structural Refurbishment (Hornet Refurb)	2008-09	2010-11	Australianised MOTS	319.1	319.1	0.0	N/A	N/A	JCPAA Approval[1]
AIR 8000 Phase 3	C-17 Heavy Airlift	2008-09	2011-12	MOTS	1,518.6	1,421.9	96.8	Dec-11	Dec-11	FOC achieved
AIR 5349 Phase 1/2	Bridging Air Combat Capability	2008-09	2012-13	MOTS	3,673.7	3,022.1	651.6	Dec-12	Dec-12	FOC achieved
SEA 1444 Phase 1	Armidale Class Patrol Boat	2007-08	2012-13	Australianised MOTS	537.2	507.8	29.3	Nov-07	Oct-12	FOC achieved
LAND 19 Phase 7A	Counter-Rocket Artillery and Mortar	2011-12	2012-13	MOTS	266.5	186.1	80.4	Jan-13	Jan-13	FOC achieved
AIR 5376 Phase 2	F/A 18 Hornet Upgrade	2007-08	2013-14	AMOTS	1,882.6	1,662.0	220.7	Sept 12	Oct-14	FMR achieved
AIR 5418 Phase 1	Follow On Stand Off Weapon	2009-10	2013-14	AMOTS	319.6	284.2	35.3	Sept 13	Jan-14	FOC achieved
JP 2008 Phase 4	Next Generation SATCOM Capability	2009-10	2013-14	MOTS	869.5	569.1	300.4	Jun-14	Jul-15	FMR achieved
JP 2043 Phase 3A	High Frequency Modernisation	2007-08	2013-14	Developmental	580.2	481.5	98.7	Dec 16	Dec-16	JCPAA Approval[2]
LAND 17 Phase 1A	Artillery Replacement	2010-11	2013-14	MOTS	158.5	158.5	0.0	Sept 13	Oct-14	FMR achieved
SEA 1390 Phase 2.1	Guided Missile Frigate Upgrade Implementation	2007-08	2013-14	Developmental	1,454.4	1,374.7	79.7	Mar 16	Mar-16	JCPAA Approval[3]
SEA 1390 Phase 4B	SM-1 Missile Replacement	2010-11	2013-14	AMOTS	418.4	351.6	66.7	Feb 15	Jun-15	JCPAA Approval[4]
AIR 5077 Phase 3	Airborne Early Warning and Control Aircraft	2007-08	2014-15	Developmental	3,899.3	3,578.7	320.6	Feb 15	May-15	FOC achieved
LAND 75 Phase 3.4	Battlefield Command Support System	2010-11	2014-15	AMOTS	317.1	253.9	63.2	Mar-15	Apr-15	FOC achieved

1 Approval granted after project scope and budget were approved for transition to the in-service sustainment support system in 2010-11.

2 Approval granted in 2014 based on a risk assessment performed by the then DMO and endorsed by the Capability Manager, which concluded the overall risk rating for remaining work was low.

3 ibid.

4 ibid.

Appendix 5: Lessons Learned

The Joint Committee of Public Accounts and Audit recommended in *Report 442: Review of the 2009-10 Defence Materiel Organisation Major Projects Report*, that a lessons learned section for both the project level and the whole of organisation be included in the MPR for projects that have met the exit criteria.

The lessons learned at the project level, against a whole of organisation level category are listed below in a table format.

Lessons learned at the project level

Categories of systemic lessons	Project lesson	Project learned from
Resourcing	A reasonable presence of Australian Super Hornet Project Staff in the US is required to enable the Commonwealth adequate insight, influence and progress reporting of the USN and Boeing activities.	AIR5349 Phase 1 – Bridging Air Combat Capability
Resourcing	Personnel resourcing, especially continuity in Business and Finance staff, requires careful management in project wind-down leading to FOC as project reporting and accurate financial accounting remains obligatory and at the same magnitude. Australian Super Hornet Project Office suffered when the business and finance responsibilities were reassigned from the Project Office in Canberra to Tactical Fighter Systems Program Office 12 months before FOC without an associated transfer of personnel. Furthermore, the level of work to account for assets and inventory procured by the project and the finance resource that would be required following FMR was underestimated causing the processing of Assets Under Construction to be adversely affected. This was further exacerbated by increased governance required through the utilisation of Quality Assurance Rollout Assist. To overcome these deficiencies, finance and logistics resources are being shared within Tactical Fighter Systems Program Office.	AIR5349 Phase 1 – Bridging Air Combat Capability
Resourcing	The level of experience gained as a result of the Joint Standoff Weapon C-1 operational test and evaluation program has provided the DMO with the ability to streamline raise train sustain weapons test programs.	AIR 5349 Phase 2 – Bridging Air Combat Capability
Governance Resourcing	Integrated Product Teams: Integrated product teams for all project disciplines (engineering, logistics, commercial, test and evaluation, and display development) were established with members from all major stakeholders (Commonwealth, prime and sub contractors, US and Canadian Government representatives). These teams met formally on a regular basis and with significant issues being raised with the overarching	AIR 5376 Phase 2.1 – F/A-18 Hornet Upgrade

	management integrated product team. As well as ensuring progress towards a common goal, the teams enabled the implementation of many other project initiatives that relied on quick and honest communication between all parties.	
Resourcing	Sufficient resident project staff is important to ensure US Government and contractors understand our requirements and expectations.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
Resourcing	The DMO needs to work closely with Australian Small to Medium Enterprise (SME) companies to ensure the SME resourcing effort and engineering demands in executing Defence contracts is not underestimated.	JP 2008 Phase 4 – Next Generation SATCOM Capability
Resourcing	The need for industry to pay greater attention to adequately resourcing complex and highly developmental projects.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Resourcing Contract management	The need to provide adequate resources with sufficient lead-time to develop and execute the evaluation and negotiating phases for the in-service support component of a first of type capability.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Resourcing Governance	Applying greater workforce, management focus and governance to the definition, planning and execution of the Integrated Logistics Support and sustainment components of the project in keeping with their significant share of total system life-cycle costs.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Requirements management	Risks associated with requirements instability, software development and systems engineering were known at the time of contract signature but in the light of subsequent events were clearly not adequately addressed in pre-contract negotiations. The experience underlines the importance of having well-defined and stable requirements at contract award, and of contractors having sound systems engineering and software development processes.	JP2043 Phase 3A – High Frequency Modernisation
Requirements management	The accelerated procurement of major materiel is possible with off-the-shelf items currently in production, but the establishment of a sustainment solution is a challenge and requires early management oversight.	AIR 5349 Phase 1 – Bridging Air Combat Capability
Requirements management	Interface Control Documents are not always correct or may not have been interpreted correctly during host platform design.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
Requirements management	Failure at project inception to articulate, tailor and agree naval standards to be applied to a ship designed and built to commercial 'Classification Society' standards has resulted in considerable debate and potential cost increase.	SEA 1444 Phase 1 – Armidale Class Patrol Boat

Requirements management	The data generated by Defence Science Technological Organisation as part of the centre barrel test-to-destruction programme will result in a considerable cost saving to the project (due to a reduction in the number of aircraft requiring structural refurbishment programs 2) and an increased flexibility in aircraft modification induction dates.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment
Requirements management	Modifying an ageing weapon system such as the Hornet aircraft can present emergent work such as corrosion and cracking in the aircraft structure which must be rectified while the aircraft is disassembled. Adequate project contingency budget and schedule must be programmed to accommodate such uncertainties.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment
Requirements management Resourcing	Increased need for collaboration due to diverse systems integration. As DMO projects become heavily integrated and dependent on one another, such as interoperable battle management systems, the technical challenges to success become frequent. Close collaboration with the customer, supplier and related DMO projects, early in the process, is essential to understanding the interoperability requirements and developing suitable test plans and schedules that achieve the outcomes of the customer. Regular joint working groups are an excellent way to achieve this.	Land 17 Phase 1A – Artillery Replacement
Requirements management Resourcing	Close stakeholder engagement – whilst delivering a novel and technically complex system to Army, the project experienced a constantly changing environment in terms of customer requirements. In order to ensure the customer's needs are met through timely and accurate representation of requirements to suppliers, continuous face to face stakeholder engagement is essential. Regular working groups with both the customer and supplier are an excellent way to achieve this.	Land 17 Phase 1A – Artillery Replacement
Requirements management	Requirements and specifications must be well defined and agreed before contract signature. Where detailed specifications cannot be defined fully prior to contract signature, such as when systems definition and new design work must be undertaken within a developmental project phase, then the end capability requirements and priorities must be well defined and agreed.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Requirements management	Close liaison and communication with Navy stakeholders is required throughout the project life. Navy regulator engagement must be open and transparent from the project commencement to FOC so that the Navy Acceptance Certificate (T1338) residual issues/risks are well understood and easily accepted. Where capability delivered falls short of Navy customer initial expectations as agreed in the MAA, the process of securing concessions/agreement is needed to allow efficient and prompt project closure to avoid/limit inefficient use of resources.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade

Requirements management	For Network Centric Warfare (NCW) projects that have many interfaces and stakeholders, it is essential to have the requirements not only well understood, but to have these very well defined in the suite of Second Pass project approval documentation. This provided a solid foundation to build an executable contract, and helps guide stakeholder projects who are seeking interoperability with the BGC3.	LAND 75 Phase 3.4 – Battlefield Command Support System
Requirements management Contract management	Two stage contracting – Contract Development Agreements facilitate early positive engagement with the contractor, joint development of the resultant fixed price contract and establishes an effective and cooperative work environment	SEA 1390 Phase 4B – SM-1 Missile Replacement
Requirements management Contract management	For significant and high technological upgrades to major systems the acquirer (Commonwealth) acting as the Procurement Coordinator managing separate contracts directly with OEMs allows for better risk management, schedule control and influence on the quality of the contracted supplies.	SEA 1390 Phase 4B – SM-1 Missile Replacement
First of type equipment and off-the-shelf equipment	Weapons acquired under the scope of the project proved to be cost effective for the Commonwealth as the weapons were US Navy (USN) common and this also assisted in providing common integration and technical input from the USN.	AIR 5349 Phase 2 – Bridging Air Combat Capability
First of type equipment and off-the-shelf equipment	FMS is a good procurement vehicle when a US Program is truly MOTS. However, FMS provides little ability for DMO to manage capability and associated risk when the US program is less mature.	AIR 5349 Phase 2 – Bridging Air Combat Capability
First of Type Equipment	Stability of interfaces on ageing platforms may not be reliable, leading to an underestimation of integration complexity.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
First of type equipment	Host platform upgrades not required in the past may now be required, due to the minimum technical performance requirements of new systems to be integrated.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
First of type equipment	FMS is a good procurement vehicle when a US program is mature. However, FMS provides little ability for DMO to manage capability and associated risk when US program is less mature and the Commonwealth is the integrator of project outcomes.	AIR 5418 Phase 1 – Follow On Stand Off Weapon
First of type equipment	For a new or significantly modified design there will be a number of design changes emanating from initial sea trials. The aggressive delivery schedule for the Armidale Class Patrol Boat did not allow time for changes from initial sea trials to be built into the follow-on build boats prior to their construction. This resulted in an evolving design baseline throughout the production phase that was not stabilised until after delivery of the last boat. Consequently the redesign, build, test and acceptance aspects of boats built after the first of class became unnecessarily complicated, expensive and	SEA 1444 Phase 1 – Armidale Class Patrol Boat

	inefficient. Time should be allowed after the first (or second depending on the size of the class) boat build to conduct sea trials and modify and stabilise the design as appropriate prior to the main production run.	
First of type equipment Off-The-Shelf Equipment	Substantial development in the information technology field over the extended term of the project means that some elements of the system could now be delivered via off-the-shelf solutions or by other contemporary production, rather than attracting extended software development, thereby reducing risk, schedule and possibly cost. The proposed approach for capability development involving substantial software or software systems development over an extended period needs to be considered carefully to enable best use of emerging developments within appropriate risk, schedule and cost constraints.	JP2043 Phase 3A – High Frequency Modernisation
First of type equipment	Procurements that include significant change to software-intensive systems and complex system integration have many inherently high-risk activities, which must be analysed and appropriate risk mitigation processes applied. Such risks are often under-estimated in the planning phase.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
First of type equipment	In the context of pre-project planning, the need to better appreciate the effort involved in being a customer of a first-of type program.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of type equipment	Recognising the need for proactive risk management and the use of high-end risk management tools.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of type equipment	Appropriate investment in pre-contract work (such as an IDA phase) to better understand the technical risks, clarify Defence's appetite for it and adjust requirements, acquisition strategy and expectations.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of type equipment	Taking a colder, harder look at risk before contract signature.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of type equipment	Tempering the biases towards overoptimism and underestimation of risk by both industry and Defence, and making allowances for the biases and risks in the commitments made to government and the Capability Manager.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
First of type equipment	Accepting and accommodating the likelihood of incremental delivery of capability in developmental projects.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft

First of type equipment Requirements management	Major maritime software development should be incremental and delivery does not have to be aligned with the platform modification program.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Contract management	An acquisition strategy combining the acquisition and support of the fleet in one single contract rather than the traditional acquisition model followed by a separate support contract can lead to significant disputation and complications in closing out latent defects where the prime contractor is not also the builder. Invariably, once the capability is delivered and being operated and the contract is into the sustainment phase, there is a greater reluctance on the part of the prime contractor to progress rectification of build-related defects that may result in a cost to the contractor and disputation with the builder.	SEA 1444 Phase 1 – Armidale Class Patrol Boat
Contract management	The Armidale Class Patrol Boat In Service Support (ISS) contract is principally a 15 year fixed price contract with the option for a five year extension. Existing contract provisions provide no incentive to the contractor to improve or implement changes in the delivery of support activities that would deliver benefits/savings to both the contractor and the Commonwealth. In particular, there is no incentive to make savings over the life of the contract that would generate a reduction in the ISS fee. Incentives need to be built into contracts beyond the acquisition phase.	SEA 1444 Phase 1 – Armidale Class Patrol Boat
Contract management	Proactive Contract Management: Due to the incremental contracting nature of the project, joint and proactive contract management was essential. Regular commercial integrated product teams provided an effective vehicle to manage the prime integration contract with Boeing and FMS cases with the US Government.	AIR 5376 Phase 2 – F/A-18 Hornet Upgrade
Contract management	Participation in face to face financial working groups bi-annually resulted in significant financial savings under the WGS MOU. The cost associated with overseas travel was far outweighed by the financial savings and clarity of financial projections.	JP 2008 Phase 4 – Next Generation SATCOM Capability
Contract management	Best practice would suggest that for a capability acquisition that includes significant software development, a contract that allows for both fixed price elements as well as alternative cost structures which include appropriate controls, incentive and penalty models that can be applied to the highly developmental elements involving significant risk, may be appropriate. Milestone payments could be selected for those deliverables that have well defined objectives and the alternative payment method with incremental work packages could be applied to the software aspect of the project. This approach would require strict controls and metrics to limit the risk to the	JP2043 Phase 3A – High Frequency Modernisation

	Commonwealth.	
Contract Management	A proper balance needs to be kept between proper engineering processes and contractor-perceived commercial imperatives to minimise risk that unrealistic technical programs will actually result in delays to the overall schedule.	JP2043 Phase 3A – High Frequency Modernisation
Contract management	The contract schedule must be accepted by all parties as realistic and achievable from the outset. Each party must be committed to achievement of the schedule and aware of the consequences of non-achievement, plus any provisions for delay outside the contractor's control. The contract should contain: • milestones which enable the Commonwealth to unambiguously assess Contractor performance from the outset of the Contract; • with the exception of non-recurring engineering effort, payment of all or a substantial part of the contract price should be subject to achievement of clear project milestones; • milestones should reflect delivery of contracted requirements to the Commonwealth, not just reaching intermediate points on the timeline; • milestones which enable use of the equipment and supplies (such as Integrated Logistic System (ILS) and training) should be given similar weight as delivery of the equipment itself; • payment on achievement of milestones should be conditional on achievement of previously scheduled milestones; • payment of milestones should also be tied to remedies under the contract to allow the Commonwealth to seek redress; and • clear entitlements of the Commonwealth to access all contractor project data (including internal workforce planning data) so as to be able to make informed assessments if a milestone is not achieved.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Contract management	Implement a progressive acceptance methodology from the outset for all project data / documentation supplies and requirements acceptance objective quality evidence in order to progressively increase confidence of all stakeholders involved with regard to project outcomes.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Contract management	The establishment of commercial contracts were based entirely on deliverable items and artefacts (software build states and/or documentation in electronic format) and progress against agreed milestones. Payments were made on delivery acceptance and milestones achieved in accordance	SEA 1390 Phase 4B – SM-1 Missile Replacement

	with the contract. Reliance on Contract Earned Value Management requires considerable effort and expertise on the part of the Project authority to adequately assess contractor performance, and was not utilised or necessary to achieve 'value for money' project objectives.	
Contract management	Significant efficiencies were achieved for ease of handling, delivery, traceability and tracking of documents through electronic document delivery which was encouraged in all commercial contracts and the primary FMS case.	SEA 1390 Phase 4B – SM-1 Missile Replacement
Contract management	Better appreciating the challenges involved in contractor management in a complex developmental project.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Contract management	Early recognition of the need for proactive stakeholder engagement throughout the project.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Contract management	The project has a well defined contract with clear conditions of contract that provide flexibility where it is needed. In particular, parties to the contract can agree to changes to the GFM by accession rather than via a formal contract change proposal, which allows far greater agility in the management of GFM and GFE requirements.	LAND 75 Phase 3.4 – Battlefield Command Support System
Contract management	The project has formed a variety of contracts and sub-contracts with the Commercial Design Authorities for Army's platforms. There is a wide variety of Intellectual Property (IP) arrangements amongst the separate platform contracts. In the cases where the CoA has stronger IP rights these contracts have worked more effectively and at a lower overall cost. It is recommended for future platform projects that rights to the IP consistent with ownership are sought.	LAND 75 Phase 3.4 – Battlefield Command Support System
Contract management Schedule management	Improving governance to support a more disciplined consideration of strategic trade-offs between performance, cost and schedule post contract signature	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Contract management Schedule management	Accessibility requirements should be agreed, specified and documented early in the contracting process to minimise risk of incurring excusable delays when access to the system to be upgraded is constrained due to operational reasons.	JP2043 Phase 3A – High Frequency Modernisation
Contract management Schedule	Foreign Military Sales (FMS) Schedule planning – When factoring FMS related schedules, there is an inclination to schedule the acceptance of the case without allowing	LAND 19 Phase 7A – Counter-Rocket Artillery &

management	sufficient schedule float to accommodate potential delays. Often, there will be a delay post case acceptance whilst the US Government supporting office seeks to contract their suppliers - this delay could be some six to nine months in some instances. When negotiating lead times, it is essential to gain an understanding of the contracting and procurement processes of the source country.	Mortar
Contract management Schedule management First of Type Equipment	A fundamental issue to consider at the time of capability and project definition is how the capability should be acquired. If the project is developmental, then consideration should be given to methods other than a fixed price contract for achieving the capability. Contracts should include appropriate clauses that recognise the complexities of verifying and validating a software development project. Multi-platform upgrades should allow for implementation and testing/acceptance of the first platform without committing to a full class upgrade of all platforms. Conducting an upgrade of an existing capability concurrent with scheduled maintenance availability requires very detailed planning and careful consideration of the supporting contract clauses.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Contract management Requirements management	For very large developmental contracts, project managers must ensure that the contractor maintains sufficient focus and resourcing on documenting what is being delivered and how to use it (through ILS, configuration management and training). Milestones must be structured so that the contractor is not tempted to focus on equipment deliverables only. Payment for equipment milestones should be conditional on achievement of related ILS milestones. The contract should be clear on configuration management requirements of ILS products in an incremental delivery software development project. This should align to milestones and remedies in the contract.	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade
Contract management Requirements management	Objective acceptance criteria are required to ensure there is no scope for dispute as to whether the criteria have been met. Criteria for determining contractual achievement should support those criteria used by Defence for determining achievement by DMO of the measure of effectiveness in the MAA	SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade

Off-the-shelf equipment Requirements management Resourcing	Support arrangements – Accelerated Acquisitions. Whilst they deliver equipment quickly, Integrated Logistics Support considerations (e.g. Net Personnel and Operating Cost) can take considerable time when implemented retrospectively. Limitations to resources and costs need to be considered at the early stages of the project to enable robust planning.	LAND 19 Phase 7A – Counter-Rocket Artillery & Mortar
Off-the-shelf equipment Requirements management	Sole source relationships: In a sole source relationship, projects might consider the Commonwealth of Australia would lack leverage over suppliers when negotiating contractual outcomes due to the absence of supplier competition. In this case, early and strong face-to-face engagement between the project office and FMS staff in the US and Saab staff in Sweden assured professional and outcome focused relationships. Using other Defence establishments for training, using partner nations to leverage open source commercial information to gain a sense of value for money in Australia's circumstance, and holding the supplier's reputation for further business opportunities at risk from poor performance in the current project are options available to the Commonwealth when negotiating sole source contracts.	LAND 19 Phase 7A – Counter-Rocket Artillery & Mortar
Military off-the-shelf equipment	Considerable acceleration of the standard acquisition cycle is possible when the major supplies being procured are off-the-shelf production items. However, acceleration of establishment of support systems may be more difficult and should attract early management focus.	AIR 8000 Phase 3 – C17 Globemaster III Heavy Airlifter
Schedule management	Closely monitor the return of repairable parts for the production installation phase to ensure no delays are experienced during the rebuild of each aircraft being modified. The more severe action that could be taken is to direct that repairable parts are not removed during the aircraft modification. Close monitoring of modification kit holdings and subsequent timely procurement is required to ensure kit deficiencies do not arise impacting on production schedule.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment
Governance Schedule management	Joint Risk and Schedule Management – through the integrated product teams a common risk and schedule management methodology was implemented for the entire project. Boeing, as the prime integrator, provided a vehicle to manage both risk and schedule in a common framework. Pro-active management of risks was encouraged and many mitigation strategies, particularly in respect to display development, were implemented to avoid schedule delays.	AIR 5376 Phase 2 – F/A-18 Hornet Upgrade

Schedule management	Underestimating the length of time required and effort involved in undertaking these phases when applied to a complex, highly developmental system.	AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
Schedule management Resourcing Governance	International Traffic in Arms Regulations (ITAR) – as the number of ITAR controlled items being acquired by Defence increases, the need for close engagement with the Defence Export and Controls office and a detailed data management plan early in the project becomes essential. The movement and transfer of ITAR controlled items between countries and parties is governed by Technical Assistance Agreements and Third Party Retransfers, these documents are time consuming to develop with the US government and must be commenced early in the project.	Land 17 Phase 1A – Artillery Replacement
Governance	Considerable acceleration of the acquisition cycle for the WGS program necessitated a strengthening of the governance process to ensure lines of authority and responsibility were clear in the definition of business need and option analysis.	JP2008 Phase 4 – Next Generation SATCOM Capability
Governance	During the course of the program, it was found to be essential to continue with an expanded Integrated Project Team which had senior stakeholder representation of all groups involved, including projects delivering the platforms, technical regulatory agencies and the Capability Managers.	LAND 75 Phase 3.4 – Battlefield Command Support System
Governance	Considering the many stakeholder interfaces involved in the NCW programs (which this project is but one), the traditional PMSG forum was found to be insufficient and requiring a broader NCW program focus. As a result, higher level program management oversight, which involves all key stakeholder groups, including the Capability Manager, Capability Development Group and the DMO, has proven to be an essential management forum for the project.	LAND 75 Phase 3.4 – Battlefield Command Support System

Lessons learned for the whole organisation

The Department of Defence has undergone substantial change as a result of the findings and recommendations in the First Principles Review.

Key First Principles Review reform activities have incorporated organisational lessons learned in improving how Defence does business. Further details on these reform activities can be found in the section on implementing the First Principles Review, see page 65.

Appendix 6: Glossary

Acquisition Categories	See Appendix 1.
Additional Estimates	Where amounts appropriated at Budget time are required to change, the Parliament may make adjustments to portfolios through the Additional estimates process.
Capability	The power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period. Capability is generated by the Fundamental Inputs to Capability.
Capability manager	A capability manager (CM) has the responsibility to raise, train and sustain capabilities. In relation to the delivery of new capability or enhancements to extant capabilities through the Defence Integrated Investment Plan, CMs are responsible for delivering the agreed capability to the Government, through the coordination of the fundamental inputs to capability. Principal CMs are Chief of Navy (CN), Chief of Army (CA), Chief of Air Force (CAF).
Capital equipment	Substantial end items of equipment such as ships, aircraft, armoured vehicles, weapons, communications systems, electronics systems or other armaments that are additional to, or replacements for, items in the Defence inventory.
Contract change proposal	This is a formal written proposal by the Commonwealth or the contractor, prepared in accordance with the terms and conditions of the contract, to change the contract after the effective date. After agreement by the parties, the contract is amended in accordance with the processes established in the contract
Corporate governance	The process by which agencies are directed and controlled, and encompasses; authority, accountability, stewardship, leadership, direction and control.
Defence Procurement Review 2003 (Kinnaird Review)	In August 2003 the Defence Procurement Review 2003 published its findings on the problems associated with major Defence acquisition projects with the review being chaired by Mr Malcolm Kinnaird. This became known as the Kinnaird Review.
Firm price contract	A firm price contract is unalterable in all respects for the duration of the contract, except where the parties agree to a contract

	amendment which alters that contract price.
Foreign Military Sales	The US Department of Defense's Foreign Military Sales program facilitates sales of US arms, Defense services, and military training to foreign governments.
Forward Estimates	The level of proposed expenditure for future years (based on relevant demographic, economic and other future forecasting assumptions). The Government requires forward estimates for the following three financial years to be published in each annual Federal Budget paper.
Function and performance specification	A specification that expresses an operational requirement in function and performance terms. This document forms part of the Capability Definition Document.
Materiel Acquisition Agreement	An agreement between Defence and CASG which states in concise terms what services and products the will be delivered, for how much and when.
Memorandum of understanding (MOU)	A memorandum of understanding is a document setting out an agreement, usually between two government agencies.
Minor Capital Acquisition Project	A Defence project in which the proposed equipment falls within the definition of capital equipment but does not meet the criteria in the definition of a major project.
Off-the-shelf	A product that is available for purchase, which has been delivered to another military or government body or commercial enterprise.
Operational concept document	The primary reference for determining fitness-for-purpose of the desired capability to be developed. This document forms part of the Capability Definition Document.
Operational test and evaluation (OT&E)	Test and evaluation conducted under realistic operational conditions with representative users of the system, in the expected operational context, for the purpose of determining its operational effectiveness and suitability to carry out the role and fulfil the requirement that it was intended to satisfy.
Platforms	Refers to air, land, or surface or sub-surface assets that are discrete and taskable delements within the ADF.
Portfolio Budget	A document presented by the Minister to the Parliament to inform Senators and Members of the basis for Defence budget

Statement	appropriations in support of the provisions in Appropriation Bills 1 and 2. The statements summarise the Defence budget and provides detail of outcome performance forecasts and resources in order to justify agency expenditure.
Prime system integrator	The entity that has prime responsibility for delivering the mission and support systems.
Public Governance, Performance and Accountability Act 2013	*The Public Governance, Performance and Accountability Act 2013* came into effect on 1 July 2014 and superseded the *Financial Management and Accountability Act 1997*. It is a Commonwealth Act about the governance, performance and accountability of, and the use and management of public resources by, the Commonwealth, Commonwealth entities and Commonwealth companies, and for related purposes
Test concept document	The basis for the development of the Test and Evaluation Master Plan for a project, and is the highest level document that considers test and evaluation requirements within the capability systems' life-cycle. This document forms part of the Capability Definition Document.
Variable price contracts	Variable price contracts provide for the contractor to be paid a fixed fee for performance of the contract, subject to certain variations detailed in the contract. Variable price contracts may allow for variations in exchange rates, labour and/or material costs.

Part 3. Assurance by the Auditor-General and the Secretary of Defence

PRIORITY ASSURANCE REVIEW – SECTION 19A(5) OF THE *AUDITOR-GENERAL ACT 1997*

INDEPENDENT ASSURANCE REPORT
DEPARTMENT OF DEFENCE PROJECT DATA SUMMARY SHEETS

To the President of the Senate
To the Speaker of the House of Representatives

Qualified Conclusion

Based on the procedures I have performed and the evidence I have obtained, except for the effects of the matters described in the Bases for Qualified Conclusion paragraphs, nothing has come to my attention that causes me to believe that the information in the 26 Project Data Summary Sheets in Part 3 (PDSSs) and the *Statement by the Secretary of Defence*, excluding the forecast information, has not been prepared in all material respects in accordance with the *2015–16 Major Projects Report Guidelines* (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit.

The purpose of the Major Projects Report is to report on the performance of selected major Defence equipment acquisition projects (Major Projects), since Second Pass Approval, and associated sustainment activities (where applicable), managed by Defence.

I have undertaken a limited assurance engagement of the PDSSs, reporting on the status of the projects selected by the Joint Committee of Public Accounts and Audit, and the *Statement by the Secretary of Defence*, for the year-ended 30 June 2016. The following forecast information was excluded from the scope of this engagement:

(a) Section 1.2 Current Status—Materiel Capability Delivery Performance and Section 4.1 Measures of Materiel Capability Delivery Performance;

(b) Section 1.3 Project Context—Major Risks and Issues and Section 5 – Major Risks and Issues; and

(c) forecast dates where included in each PDSS.

The forecast information has not been included in the scope of the engagement, due to the lack of Defence systems from which to provide complete and accurate evidence, in a sufficiently timely manner to facilitate the review. Accordingly, my conclusion does not provide any assurance in relation to this forecast information. However, material inconsistencies identified in relation to the forecast information, are required to be considered in forming my conclusion.

Bases for Qualified Conclusion

The Guidelines define a project as the acquisition or upgrade of Specialist Military Equipment. The Guidelines provide that the scope of Defence reporting includes the performance of selected major equipment acquisitions and associated sustainment activities, where applicable.

The ARH Tiger Helicopters PDSS has not been prepared on the basis of the Guidelines in the following respects:

(a) The Project Financial Assurance Statement in Section 1.2 of the PDSS reports that sufficient funding is available to complete the acquisition project. The statement does not address the significant caveats, capability deficiencies and obsolescence issues identified in the declaration of Final Operational Capability, in April 2016.[118] Additional funding for these elements would need to be provided separately to the acquisition project, the amount of which is unable to be quantified; and

(b) The project maturity score in Section 6.1 of the PDSS reports a total of 67 out of a maximum of 70 (95.7 per cent) at the end of the acquisition project. Noting the significant caveats, capability deficiencies and obsolescence issues at Final Operational Capability, this score does not accurately or completely represent the project's maturity as at 30 June 2016.

In addition, the following material inconsistencies have been identified in the forecast information:

(a) Section 4.1 in the ARH Tiger Helicopters PDSS reports that materiel capability delivery performance is at 99.8 per cent, indicating that there is a high degree of confidence that materiel capability performance will be met. Expert analysis commissioned by Defence indicates that the program will remain incapable of fully meeting expectations relating to reliability, availability, maintainability and rate of effort; and

(b) Section 4.1 in the LHD Landing Craft PDSS reports that materiel capability delivery performance is at 99 per cent, indicating that there is a high degree of confidence that materiel capability performance will be met. Evidence to support the estimated 99 per cent was not available during the review.

Secretary's Responsibility for the Project Data Summary Sheets

The Secretary of Defence is responsible for the preparation and presentation of the PDSSs for the 26 selected projects, and the *Statement by the Secretary of Defence,* in accordance with the Guidelines. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of PDSSs that are free from material misstatement, whether due to fraud or error. The Guidelines provide that the PDSSs and supporting evidence, provided to the ANAO for review, are complete and accurate.

Auditor's Responsibility

My responsibility is to express an independent limited assurance conclusion on the PDSSs and *Statement by the Secretary of Defence,* based on the procedures I have performed and the evidence I have obtained. I conducted the engagement in accordance with Standard on Assurance Engagements ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information,* issued by the Auditing and Assurance Standards Board. ASAE 3000 requires that I comply with relevant ethical requirements and that I plan and perform my

118 The caveats, capability deficiencies and obsolescence issues were discussed in ANAO Report No.11 2016–17, *Tiger—Army's Armed Reconnaissance Helicopter*, September 2016, pp. 25–33 and pp. 50–53.

procedures to obtain limited assurance about whether the PDSSs and the *Statement by the Secretary of Defence* are prepared in all material respects in accordance with the Guidelines.

In a limited assurance engagement, the assurance practitioner performs procedures, primarily consisting of: making enquiries of managers and others within the entity, as appropriate; the examination of documentation; and the evaluation of the evidence obtained. The procedures selected depend on my judgement, including identifying areas where the risks of material misstatement are likely to arise.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than those performed for, a reasonable assurance engagement. Consequently the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly I do not express a reasonable assurance conclusion on whether the PDSSs and the *Statement by the Secretary of Defence* are prepared in all material respects in accordance with the Guidelines.

I believe that the evidence I have obtained is sufficient and appropriate to provide a basis for my qualified conclusion.

In accordance with Auditing Standard ASQC 1 *Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, Other Assurance Engagements and Related Services Engagements* the Australian National Audit Office maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Independence

I have complied with the relevant ethical requirements relating to assurance engagements, which include independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Australian National Audit Office

Grant Hehir
Auditor-General
Canberra
16 February 2017

Statement by the Secretary of Defence

On 1 July 2015, the Defence Materiel Organisation transitioned to the newly established Capability Acquisition and Sustainment Group (CASG) within the Department of Defence as recommended by the Defence First Principles Review. CASG exists to manage the acquisition and sustainment of Defence materiel equipment to meet Government and Defence requirements.

The attached PDSSs for the 26 major projects included in this report have been prepared in accordance with the Guidelines developed by CASG in consultation with the Australian National Audit Office (ANAO) and endorsed by the Joint Committee of Public Accounts and Audit (JCPAA).

In making this statement, I acknowledge the difference of view between Defence and the ANAO in relation to the AIR 87 Phase 2 - Armed Reconnaissance Helicopter (Tiger) and the JP2048 Phase 3 LHD Landing Craft (LLC).

Specifically, the ANAO has highlighted the following issues in relation to these PDSSs:

- The ANAO is of the view that the AIR87 Phase 2 Tiger Project Financial Assurance Statement in Section 1.2 of the PDSS does not address caveats to the declaration of Final Operational Capability (FOC) in April 2016. The Defence PDSS reports that sufficient funding is available to complete to acquisition project. All materiel-related matters are being addressed at no additional cost. Obsolescence issues will be funded either under the extant sustainment budget, or through the Tiger Capability Assurance Program.
- The ANAO is of the view that the AIR87 Phase 2 Tiger project maturity score in Section 6.1 of the PDSS does not accurately represent the project's maturity as at 30 June 2016. The Defence PDSS reports a total score of 67 out of a maximum of 70 at the end of the acquisition project. The MPR Guidelines detail that maturity scores should be developed in accordance with a referenced *Defence Materiel Standard Procedure*, and should correspond with the maturity score recorded in the June 2016 Monthly Reporting System Majors Master Data Report. The PDSS reflects this outcome. In relation to materiel delivery, the Guidelines detail that achievement of these milestones and completion criteria will be measured against the Project's Materiel Acquisition Agreement (MAA) and/or Joint Project Directive. For the AIR87 Phase 2 Tiger, 99.8 per cent of materiel detailed in the MAA was delivered by the project. The remainder represents the budget allocated for a Deployable Aircraft Maintenance Rig that was not delivered by the project.
- Notwithstanding that Section 4.1 is outside the scope of the formal ANAO review, the ANAO is of the view that the JP2048 Phase 3 LLC PDSS Section 4.1 - Measures of Materiel Capability Performance pie graph is misstated. The Guidelines require that this graph represent a percentage breakdown of the Materiel Release Milestones and Completion Criteria, focusing on materiel capability delivery. Interface trials conducted during the contractor's acceptance test activities successfully demonstrated the specification requirements for carriage of loads up to 65 tonnes, and the designer's

operational envelope has been certified by Lloyds Register. This represents completion of the materiel elements required under the MAA, and Final Materiel Release was achieved in December 2016. A nominal amber component has been included in the Measures of Materiel Capability Performance pie graph to acknowledge that the Navy LLC naval operational testing of the landing craft has not yet been completed. The trials relating to the carriage of Abrams Main Battle Tank are ongoing and are expected to be completed in 2017, leading to the declaration of FOC.

I also note that the preparation of the 2015-16 AIR87 Phase 2 and JP2048 Phase 3 PDSSs is consistent with the approach undertaken for all previous Major Projects Reports.

I am confident that the PDSS for these projects are an accurate reflection of the acquisition of this capability as at 30 June 2016, and are compliant with the 2015-16 Major Projects Report Guidelines.

Project Status as at 30 June 2016

In my opinion, the Project Data Summary Sheets comply in all material respects with the Guidelines and reflect the status of the projects as at 30 June 2016. In stating this opinion, and in agreement with the ANAO, I acknowledge that the following sections of each PDSS are not covered in the scope of the Auditor-General's assessment:

- Section 1.2 Materiel Capability Delivery Performance, Section 1.3 Project Context–Major Risks and Issues, Section 4.1 Measures of Materiel Capability Delivery Performance, Section 5 Major Risks and Issues; and
- Future dates that are 'forecasts' and capability assessments regarding a project's expected achievement of delivery schedules and capability where included in Sections 1 and 3 of each PDSS Project Data Summary Sheets.

Significant Events Occurring Post 30 June 2016

In stating this opinion, I acknowledge the following material events have occurred post 30 June 2016:

SEA 4000 Phase 3 Air Warfare Destroyer

The second of three destroyers (NUSHIP *Brisbane)* was formally named and launched in Australian waters for the first time in December 2016. A review of the Initial Operational Capability (IOC) date for NUSHIP *Hobart*, based on a better understanding of the certification process for the Aegis Combat System, has seen IOC move to Quarter 4 2018 vice June 2018.

AIR 7000 Phase 2 Poseidon P8-A

The project delivered the first aircraft and received the Certificate of Airworthiness in October 2016. The project is on schedule to meet the planned Final Materiel Release and Final Operational Capability dates for the original scope. With the approval of four additional aircraft to be delivered under this project, the schedule has been approved to extend Final Materiel Release and Final Operational Capability to early 2022 to accommodate the increased scope.

JP 2048 Phase 4AB Amphibious Ships (LHD)

The project has advised that Final Acceptance and Final Materiel Release have been delayed, and are now expected to be achieved in the second half of 2017 due to defect/deficiency close-out activities and milestones not yet completed by the contractor.

AIR 87 Phase 2 ARH Tiger Helicopters

The PDSS noted that as at 30 June 2016, the Electronic Warfare Self Protection System exhibits some deficiencies which will be rectified by industry by the end of 2016. As at end-December 2016, all operational aircraft have completed upgrades to the electronic warfare systems to rectify these deficiencies.

AIR 8000 Phase 2 Battlefield Airlift- Caribou Replacement

The project achieved a C-27J Initial Operational Capability with caveats in December 2016. These caveats relate to some mission limitations to the Air Logistic Support and Airborne Operation capabilities and notes some Operational Test and Evaluation is yet to be completed for the Search and Rescue capability. Caveats intend to be lifted as a soon as possible; contingent upon further evidence from test and evaluation activities being available.

AIR 7403 Additional KC-30A Multi-role Tanker Transportation

On 3 August 16, Defence signed a contract with Airbus Defence and Space that will deliver a Government Transport and Communications capability.

LAND 116 Phase 3 Bushmaster Protected Mobility Vehicle

The project declared Final Materiel Release in October 2016 and achieved Final Operational Capability in January 2017.

LAND 121 Phase 3A Overlander Light Field Vehicles and Trailers

The project achieved Final Operational Capability with caveats in October 2016 as scheduled. These caveats will be fully resolved, and relate to final approval of external lift by CH-47 helicopters, and completion of training for G-Wagon Command Post Modules and G-Wagon Winches. The Air Transportation task is in progress with testing already complete, and a formal plan is being released to ensure completion of training requirements.

JP 2072 Phase 2A- Battlespace Communications System

In consultation with the Capability Manager, the project has advised that Final Materiel Release and Final Operational Capability will be delayed to March 2017 and June 2017 respectively.

SEA 1439 Phase 4A Collins Replacement Combat System

The project was awarded Operational Release for the Combat System 05 (CS05) baseline in July 2016.

SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability

The release of *Beyond Benchmark* in October 2016, the follow-up review to the 2012 Coles Review, found a remarkable improvement in the capability to successfully manage the sustainment of the Collins Class submarines.

SEA 1442 Phase 4 Maritime Communications

Current re-planning of Anzac Mid-life Capability Assurance Program (AMCAP) will impact ship availability and will delay the SEA1442 Phase 4 scheduled Initial Operational Capability by six to twelve months as it is dependent on the completion of the first ship under the AMCAP process.

LAND 75 Phase 4 Battle Management System

The project has advised that Materiel Release Milestones two and three have been delayed, and are now expected to be achieved in January 2017 due to the availability of serviceable vehicles to undergo installation at the contractor's premises. Final Materiel Release is forecast to be achieved as scheduled in June 2017.

JP 2048 Phase 3 Amphibious Watercraft Replacement

Head Navy Capability accepted the declaration of Final Materiel Release in December 2016. Final Operational Capability for the LHD Landing Craft capability is expected to be achieved in mid-2017. These platforms are part of the Amphibious Capability for which Navy is managing key test and evaluation activities to achieve Final Operational Capability.

Dennis Richardson
Secretary
Department of Defence

15 February 2017

Project Data Summary Sheets

Project Data Summary Sheet[119]

Project Number	**AIR 6000 Phase 2A/2B**
Project Name	**NEW AIR COMBAT CAPABILITY**
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Acquisition Type	Developmental
Service	Royal Australian Air Force
Government 1st Pass Approval	Nov 06
Government 2nd Pass Approval	Nov 09 (Stage1) Apr 14 (Stage 2)
Total Approved Budget (Current)	**$16,738.4m**
2015-16 Budget	**$246.0m**
Project Stage	Enter Contract
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The AIR 6000 New Air Combat Capability (NACC) Project aims to introduce the F-35A Joint Strike Fighter (JSF) capability that will meet Australia's air combat needs out to 2030 and beyond. AIR 6000 Phase 2A/2B of the project is approved to acquire 72 Conventional Take Off and Landing (CTOL) F-35A JSF aircraft to establish three operational squadrons, a training squadron and necessary supporting/enabling elements to replace the F/A-18A/B Hornet capability.

Lockheed Martin is contracted to the United States (US) Government for the development and production of the F-35A JSF. The aircraft and associated support systems are being procured through a government to government co-operative agreement with the US and JSF partner nations, comprising the United Kingdom, Canada, Italy, Denmark, Norway, Netherlands and Turkey. Japan, Israel and the Republic of Korea are also procuring the F-35A JSF through US Foreign Military Sales (FMS) agreements.

1.2 Current Status

Cost Performance

In-year

In-year expenditure **was** approximately **one** per cent **over** budget (an **overspend** of **$2.9m**). The major **contributor** to the variance **was due to** the unpredictability of expenditure forecasts for F-35 Joint Program Office (JPO) **contracted activity**.

Project Financial Assurance Statement

As at **30 June 2016**, Project AIR 6000 Phase 2A/2B has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

119 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Australia's first two aircraft were delivered in 2014, as part of Materiel Release 1 (MR1) commencement of Pilot training in the US.

Facilities construction is on or ahead of schedule, but remains on the critical path for the project. Facilities works **continue on schedule at RAAF Base Williamtown. Construction is scheduled to commence at RAAF Base Tindal in third Quarter 2016.**

Mission Systems Block 2B **software** Fleet Release **was** achieved in July 2015 (**for** US Marine Corps Initial Operational Capability (IOC) Declaration).

Mission Systems Block 3i software development and test was completed in May 2016, with the JPO declaring the final increment of the Block 3i software suitable for USAF IOC requirements, after some stability issues experienced in the test phase had been resolved. The first two Australian aircraft delivered in November 2014 received the initial increment of the Block 3i software (released in September 2014) which was suitable for early pilot training. The two Australian aircraft will receive the latest (final) Block 3i software in the second half of 2016.

Mission System**s** Block 3F software**, the final software release under the System Development and Demonstration (SDD) phase of the program, will deliver the next increment of warfighting capability and is the requirement for Australian IOC, which is planned by December 2020. Block 3F initial development is complete and will undergo flight test through to mid-2017. Defence acknowledges schedule risk remains with the Block 3F software due to the complexity of integration and fusion. Notwithstanding the risk, the JPO is forecasting Fleet Release of the Block 3F software in late 2017 to coincide with the scheduled completion of SDD. The schedule risk is considered manageable in the context of Australian IOC capability requirements and timeline, and for Australian Operational Test and Evaluation (OT&E) in early 2019 when it is first needed.**

The Australian F-35 sustainment solution is **still maturing.** The **2014 US** Government **assignment of regional Depot Airframe and Engine Maintenance, Repair, Overhaul and Upgrade responsibilities to** Australia has assisted in **the** planning of Australian Sustainment. **Sovereign sustainment requirements have been defined and JSF Division is working closely with the JPO and industry on the planning and execution of these requirements.**

The F-35 Partner Reprogramming Lab contract signature was awarded on 9 April 2015, with risk to Mission Data File delivery in time for IOC being monitored.

The first **two** Australian F-35A pilots **have** completed training and **the training of additional Australian pilots is ongoing**.

Aircraft **3**-72 are scheduled to be delivered by end of 2023, as part of FOC.

Materiel Capability Delivery Performance

The capability of the F-35A JSF Air System is now reaching a level of maturity where the project is confident it will be able to meet the agreed threshold level of capability required for IOC in 2020. However, there remain risks to achieving IOC and FOC of the JSF capability associated with establishment of enabling systems and capabilities, and risk to achieving FOC software capability on schedule. The enabling systems and capabilities include: sustainment establishment, facilities, information systems, reprogramming, weapons integration and training systems.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Project AIR 6000 was established in 1999 to replace the air combat capabilities provided by the F/A-18A/B and F-111 fleets. In 2002 Government identified the Lockheed Martin F-35A JSF as the preferred option and joined the SDD phase of the JSF Program as the eighth (and last) Partner. At this time the project discontinued the competitive evaluation under AIR 6000. The subsequent decision by Government to acquire the F-35A JSF has been taken progressively including:

- Providing First Pass Approval in November 2006, which included agreement to join the next phase of the JSF Program and funded project AIR 6000 Phase 1B detailed definition and analysis activities to support Government Second Pass Approval for AIR 6000 Phase 2A/2B.
- Signing the multilateral Production, Sustainment and Follow-on Development (PSFD) Memorandum of Understanding (MoU) in December 2006 to allow entry into the next stage of the JSF Program.
- AIR 6000 Phase 2A/2B Stage 1 Approval in November 2009 to acquire 14 CTOL F-35A JSF aircraft and associated support and enabling elements necessary to establish the initial training capability in the US, commencing in 2014, and to allow commencement of Operational Test in the US and Australia.
- AIR 6000 Phase 2A/2B Stage 2 was approved by Government in April 2014 to acquire an additional 58 CTOL F-35A JSF aircraft and enabling elements. The combined acquisition of 72 aircraft will provide a FOC in 2023 comprising three operational squadrons of fifth generation F-35 JSF to replace the F/A-18A/B Hornet aircraft.

Uniqueness

The JSF Program was established by the US Government as the first international collaborative development program for a US military aircraft. The program includes initial design, production, follow-on development and through life support of the JSF global fleet.

The JSF Program is expected to deliver over 3,000 aircraft to the nine MoU Partners (with the US to acquire approximately 75 per cent of the total) with the potential for significant additional aircraft procurements by FMS customers.

The JSF is characterised by a low observable (stealth) design, internal weapons and fuel carriage, advanced electro-optical and infrared sensors, long range, the ability to employ a wide range of air-to-surface and air-to-air weapons, advanced communications suite to enable network centric operations, state of the art prognostics and health management, a single interchangeable engine and reduced support requirements.

Due to strict US export restrictions imposed on the JSF Air System, direct commercial sale is not permitted. JSF aircraft and associated supporting systems will be acquired by Australia under the PSFD MoU arrangements. Key factors are:

- The US Government has contracted with Lockheed Martin and Pratt & Whitney on Australia's behalf in accordance with US contracting laws, regulations and procedures.
- The F-35 JPO's acquisition strategy is to commence with eleven annual Low Rate Initial Production (LRIP) contracts, transitioning from a Fixed Price Incentive Fee to a Firm-Fixed Price at the appropriate time.
- Each contract will require a separate Partner Procurement Request (PPR) from each partner nation defining their requirements for that buy. PPRs are submitted two years ahead of contract and four years ahead of delivery.
- F-35A JSF Aircraft to be delivered under Phase 2A/2B will initially be acquired under separate annual contracts until 2019 deliveries (LRIP 11). Subsequent procurements are planned to transition from single lot buys to a multi-year procurement**, although the timing for this transition is still under consideration by the nine MoU Partners.**
- The Australian F-35A JSF capability is to be supported under a global support arrangement (referred to as 'Autonomic Logistics Global Sustainment') through performance-based contracts.

As well as providing capability and programmatic benefits, a key aim of Australia's participation in the JSF Program is to embed Australian industry in the JSF global supply and support chain for the life of the JSF Program. The Commonwealth continues to work with the Prime Contractor Lockheed Martin, its JSF industry partners and their sub contractors to achieve long term industry outcomes for Australia.

Major Risks and Issues

The JSF is a large and complex program and many challenges remain. While as a MoU Partner Australia does have a role, overcoming technical challenges is primarily a US responsibility.

The major risks facing the NACC Project are:

- Possibility of US and JSF Partner Governments altering commitments to the broader JSF Program that impacts Australian acquisition and life-cycle costs.
- Integration of the JSF into the Australian Defence Force (ADF) systems.
- Establishing the required facilities and Information, Communications and Technology (ICT) infrastructure to support stand up of the JSF capability.
- Lack of timely data and releasability of JSF program information that impacts the timely, efficient and effective integration of the F-35 aircraft system into the ADF.
- The maturity of the JSF System and ability to meet IOC and FOC.
- Transition of the JSF into service at the same time RAAF ramps up Australian Super Hornet and Growler capabilities.
- Establishing and ramping up the JSF sustainment system.
- Establishing the Reprogramming element of the program.
- Ensuring required industry outcomes during JSF production and transition into service.
- Significant workforce challenges in effectively manning the Defence acquisition and sustainment organisations impacts program management activities to establish the JSF capability.
- **Establishing the training system.**

The project has one major issue that it is managing, whereby it is currently unable to deliver the Maritime Strike capability originally scoped at project approval by FOC. This issue has emerged due to changes in the approved Block 4.1 and Block 4.2 scope as agreed by the JSF Executive Steering Board. The last report identified two major issues facing the project, however they are no longer considered issues. The establishment of the training system is now considered a major risk instead of a major issue, based on remedial actions taken over the last year. The previous issue of noise associated with the introduction of the JSF at RAAF Base Williamtown is no longer assessed as a major issue or major risk, as the Minister for the Environment has approved the operation of the F-35A, and Defence intends to comply with the conditions for operation that the Minister for the Environment included with the approval on 17 July 2015.

Other Current Sub-Projects

AIR JSF SDD – Participation in the JSF System Development and Demonstration (SDD) Program: The contribution to the SDD Program is in two parts, a cash component of SDD funding of US$144m, and a non-financial component of US$6m with the Defence Science and Technology Group (DSTG) conducting a Pacific Rim Command, Control, Communication, Computing, Intelligence, Surveillance, and Reconnaissance study. All AIR JSF SDD financial milestones have been completed. The US SDD Phase is due to be closed in 2017 following the completion of Development and Test of the Block 3 software.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Nov 09	Original Approved		2,751.6	
May 12	Real Cost Decrease	(204.4)		1
Sep 12	Real Cost Increase	201.5		1
Jun 14	**Government Second Pass Approval – Stage 2**	**10,515.4**		2
			10,512.5	
Jul 10	Price Indexation		351.0	3
Jun 16	Exchange Variation		**3,123.2**	
Jun 16	**Total Budget**		**16,738.4**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – US Government – LRIP 6 Production	**(245.5)**		**4**
	Contract Expenditure – US Government PSFD MoU (FY 09/10 – 13/14)	(181.0)		4
	Contract Expenditure – US Government – PSFD MoU (FY14/15 – 22/23)	**(70.9)**		**4**
	Contract Expenditure – US Government – LRIP 6 Propulsion	**(47.4)**		4
	Contract Expenditure – US Government – LRIP 10 Production	**(18.0)**		**4**
	Other Contract Payments / Internal Expenses	**(121.5)**		5
			(684.3)	
FY to Jun 16				
	Contract Expenditure – US Government – PSFD MoU (FY14/15 – 22/23)	**(59.1)**		**4**
	Contract Expenditure – US Government – LRIP 10 Production	**(51.3)**		**4**
	Contract Expenditure – US Government – Reprogramming Laboratory Phase 1	**(37.0)**		**4**
	Contract Expenditure – US Government – (FMS Cases) Various Weapons	**(19.3)**		**4**
	Contract Expenditure – US Government – LRIP 8 – Production and Non-Annualised Sustainment	**(12.9)**		4
	Contract Expenditure – US Government – LRIP 6 Production	**(7.3)**		4
	Contract Expenditure – US Government – LRIP 9 – Non-Annualised Sustainment	**(5.9)**		4
	Contract Expenditure – US Government – LRIP 11 – Production	**(4.0)**		4
	Contract Expenditure – US Government – LRIP 6 Propulsion	**(2.0)**		4

	Other Contract Payments / Internal Expenses	(50.1)		6
			(248.9)	
Jun 16	**Total Expenditure**		(933.2)	
Jun 16	**Remaining Budget**		15,805.2	

Notes	
1	A May 2012 budget adjustment ($204.4m) was applied to AIR 6000 Phase 2A/2B based on an incorrect interpretation of the Government's decision to vary the NACC Program. In September 2012, a budget adjustment correction was applied $201.5m, using an updated exchange rate. As a result, the project's total approved budget has remained the same as intended by Government.
2	Government approved AIR 6000 Phase 2A/2B Stage 2 in April 2014 for an additional 58 CTOL F-35A JSF aircraft.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $70.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $280.8m having been applied to the remaining life of the project.
4	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
5	Other expenditure for **the period prior to July 2015** is primarily associated with activity to integrate NACC specific information systems into the Defence Information Environment (DIE) **($47.0m), construction services for the F-35 Partner Reprogramming Lab facility ($10.5m),** the NACC Industry Support Program (Grants) **($7.4m)**, Diminishing Manufacturing Supplies **($7.2m), LRIP 8 Production and Non-Annualised Sustainment Contract ($4.9m),** Enterprise Architecture Modelling activity **($4.1m),** F-35A base planning and facility design and Environmental Impact Statement development **($3.9m)**, **Initial OT&E MoU ($2.6m),** LRIP 7 **($2.6m)**, **Reprogramming Support ($2.5m),** Co-operative Program Personnel (US based) expenses **($2.0m)**, Reprogramming Laboratory **($1.4m), FMS Cases associated with weapons ($1.4m)** and Safety Case ($0.1m). The remainder **($23.9m)** is comprised of expenditure associated with **internal Defence activity support,** project travel, minor office expenses and contractors.
6	Other expenditure for **the** period **July 2015 to June 2016** is primarily associated with: Contractor Support **($12.8m),** activity to integrate NACC specific information systems into the Defence Information Environment (DIE) **($11.2m), NACC Industry Support Program (Grants) ($3.1m),** Diminishing Manufacturing Supplies **($2.4m), Reprogramming Laboratory Fit-out ($1.5m),** Enterprise Architecture Modelling activity **($1.5m),** Initial OT&E MoU ($1.4m), Co-operative Program Personnel (US based **Department of Foreign Affairs and Trade),** expenses **($1.3m), LRIP 10 Propulsion ($1.1m),** LRIP 7 **($0.6m),** and **ACURL Reprogramming Support ($0.5m)**. The remainder is comprised of expenditure associated with internal Defence activity support, project travel and minor office expenses.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
463.0	**384.6**	**246.0**	**PBS – PAES: The variance was primarily attributed to delays in finalising contracts and the variable receipt of invoices through the US Government contracting processes. PAES – Final Plan: The variance was attributed to assessments of expected billing against US Government contracts and exchange rate adjustments during the financial year.**
Variance $m	**(78.4)**	**(138.6)**	Total Variance ($m): **(217.0)**
Variance %	**(16.9)**	**(36.0)**	Total Variance (%): **(46.9)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**The $2.9m overspend was due to unpredictability of expenditure forecasts for F-35 JPO contracted activity.**
			Foreign Industry	
			Early Processes	
			Defence Processes	
		2.9	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
246.0	248.9	2.9	**Total Variance**	
		1.2	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
US Government PSFD MoU (FY 09/10 – 13/14)	Dec 06	167.1	181.0	Various	MoU	1, 9, 10 **14, 15**
US Government PSFD MoU (FY 14/15 – 22/23)	Dec 06	253.1	**551.0**	Various	MoU	2, **14, 15**
US Government (LRIP 6 Production)	May 11	22.0	**274.3**	Fixed Price Incentive	USG Contract	3, **14, 15**
US Government (LRIP 6 Propulsion)	Aug 11	5.8	**50.9**	Fixed Price Incentive	USG Contract	4, **14, 15**
US Government (LRIP 10 Production)	Dec 14	79.2	**93.8**	Fixed Price Incentive	USG Contract	5, **14, 15**
US Government (AT-P-AZT)	Feb 15	51.0	**63.3**	Reimbursement	FMS	**14, 15**
US Government (AT-D-YLC)	Feb 15	22.5	**28.8**	Reimbursement	FMS	**14, 15**
US Government (LRIP 10 Propulsion)	Mar 15	13.4	**150.2**	Fixed Price Incentive	USG Contract	6, **14, 15**
US Government (Reprogramming Laboratory Phase 1)	Mar 15	119.0	**131.6**	Fixed Price Incentive	USG Contract	7,**14,15**
US Government (LRIP 8 Production and Non-Annualised Sustainment)	Jun 15	99.9	**116.6**	Fixed Priced Incentive	USG Contract	8, **14, 15**
US Government (LRIP 9 Non-Annualised Sustainment)	**Jul 15**	**51.4**	**59.6**	**Fixed Price Incentive**	**USG Contract**	**9, 14, 15**

US Government (LRIP 11 Production)	**Dec 15**	**88.2**	**90.3**	**Fixed Price Incentive**	**USG Contract**	**10, 14, 15**
US Government (AT-D-AAH)	**Feb 16**	**17.5**	**17.3**	**Reimbursement**	**FMS**	**14, 15**
US Government (AT-P-AMG)	**Feb 16**	**28.9**	**29.6**	**Reimbursement**	**FMS**	**14, 15**
Diminishing Manufacturing Supplies (DMS) case 8070 & 6585RFC	**Apr 16**	**38.9**	**38.6**	**Fixed Price Incentive**	**USG Contract**	**11, 12, 14, 15**
US Government (AT-D-YAF)	**Jun 16**	**111.9**	**111.0**	**Reimbursement**	**FMS**	**14, 15**
US Government (LRIP 10 Non-Annualised Sustainment)	**Jun 16**	**30.1**	**30.1**	**Fixed Price Incentive**	**USG Contract**	**13, 14, 15**

Notes	
1	Contribution to PSFD MoU shared costs based on proportionality principle: i.e. number of aircraft purchased as a percentage of entire partner fleet. Commitment via MoU signature in December 2006 with price re-baselined from 2002 to 2012 per US Government update. Covers period from 2009–10 to 2013–14 as approved by Government in November 2009 and is now complete. The PSFD MoU 'contract' is a 'variable' priced 'contract' in that it is updated annually to reflect both estimated shared costs and escalation.
2	Contribution to PSFD MoU shared costs based on proportionality principle: i.e. number of aircraft purchased as a percentage of entire partner fleet. Commitment via MoU signature in December 2006 with price re-baselined from 2002 to 2012 per US Government update. Covers period from 2014–15 to 2022–23 as approved by Government in April 2014. The PSFD MoU 'contract' is a 'variable' priced 'contract' in that it is updated annually to reflect both estimated shared costs and escalation. Contract Price increase since signature due to increased tooling replacement cost not previously included; inclusion of scope previously considered country unique; and updated estimates for shared sustainment, Follow-on Development and F-35 Joint Program Office administration.
3	**LRIP 6** Production contract for Australia's first two F-35A aircraft including initial Long Lead items, support equipment and other hardware and services. This contract is progressively modified with approved work scope and forms the basis of the Air System contract for the complete system – per Section 1.3 'Uniqueness'.
4	**LRIP 6 Propulsion** contract for two engines for installation on Australia's first two F-35A aircraft. Also includes one spare engine and initial Long Lead items. This contract is progressively modified with approved work scope and forms the basis of the propulsion contract for the complete system – per Section 1.3 'Uniqueness'.
5	**LRIP 10** Production contract for Australia's next tranche of eight F-35A aircraft for initial Long Lead items. This contract is progressively modified with approved work scope and forms the basis of the Air System contract for the complete system – per Section 1.3 'Uniqueness'.
6	**LRIP 10 Propulsion** contract for eight engines for installation on Australia's next tranche of eight F-35A aircraft. This contract is progressively modified with approved work scope and forms the basis of the propulsion contract for the complete system – per Section 1.3 'Uniqueness'. **The increase in this contract value is due to full funding contract now being in place.**
7	Contract for Phase 1 Reprogramming Laboratory hardware and software tools.
8	LRIP 8 Production and Non Annualised Sustainment contract for the provision of training devices, support equipment, non-aircraft spares.
9	**LRIP 9 Non Annualised Sustainment contract including the provision of support equipment and training systems**.

10	**LRIP 11 Production contract for Australia's next tranche of eight F-35A aircraft for initial Long Lead items. This contract is progressively modified with approved work scope and forms the basis of the Air System contract for the complete system – per Section 1.3 'Uniqueness'.**
11	**DMS Case 8070 is a bridge buy of Board Management Processors (BMP) for use in the F-35 radar and Integrated Core Processor (ICP).**
12	**DMS Case 6585RFC is the bridge buy of integrated circuits for the radar Qorvo.**
13	**LRIP 10 Non Annualised Sustainment contract including the provision of support equipment, training systems, Global Spares and Australian specific ALIS equipment.**
14	Contract value as at **30 June 2016** is based on actual expenditure to **30 June 2016** and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
15	The scope of **these contracts** is explained further below.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
US Government (PSFD MoU)	N/A	N/A	Australia's contribution to shared costs from 2010 to 2023 based on the purchase of 100 aircraft. Includes contribution to production tooling, US overhead cost of running program, follow on development and shared sustainment activities.	1
US Government (LRIP 6 Production)	2	2	Procurement of the first two Australian F-35A aircraft including Advanced Acquisition items and services and progressive associated work scope.	
US Government (LRIP 6 Propulsion)	3	3	Provision of engines for installation on Australia's first two F-35A aircraft plus one spare engine.	
US Government (LRIP 10 Production)	8	8	Procurement of Advanced Acquisition items associated with the next eight F-35A aircraft procurement.	
US Government (AT-P-AZT)	N/A	N/A	Procurement of the AIM-9X Weapon System.	
US Government (AT-D-YLC)	N/A	N/A	Procurement of AIM-120 AMRAAM Weapon System.	
US Government (LRIP 10 Propulsion)	8	8	Procurement of Advanced Acquisition items associated with propulsion systems for the next eight F-35A aircraft procurement.	
US Government (Reprogramming Laboratory Phase 1)	N/A	N/A	Reprogramming Laboratory Hardware and Software tools.	
US Government (LRIP 8 Production and Non-Annualised Sustainment)	N/A	N/A	Training devices, support equipment and non-aircraft spares.	
US Government (LRIP 9 Non-Annualised Sustainment)	**N/A**	**N/A**	**Support equipment and training systems**.	

US Government (LRIP 11 Production)	N/A	N/A	Procurement of Advanced Acquisition items associated with the next eight F-35A aircraft procurement.	
US Government (AT-D-AAH)	N/A	N/A	Procurement of bomb bodies to support test and evaluation.	
US Government (AT-P-AMG)	N/A	N/A	Procurement of Flares/Decoys.	
DMS Cases 8070 & 6585RFC	N/A	N/A	Parts bridge buy of radar BMP, ICP and integrated circuits for the Qorvo radar.	
US Government (AT-D-YAF)	N/A	N/A	Procurement of small diameter bombs (SDB 1) and associated racks.	
US Government (LRIP 10 Non-Annualised Sustainment)	N/A	N/A	Procurement of support equipment, training systems, Global Spares and Australian specific Autonomic Logistics Information System (ALIS) equipment.	

Major equipment received and quantities to 30 June 16	
Two F-35A aircraft delivered November 2014 to support commencement of training in the USA.	
Notes	
1	No equipment delivered as part of this contract.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	JSF Air System (CTOL Variant)	Mar 03	N/A	Jul 03	4	1
Critical Design	JSF Air System (CTOL Variant)	Apr 04	Feb 06	Feb 06	22	2

Notes	
1	Aircraft weight was the major issue that delayed the closure of the Preliminary Design Review (PDR) by four months.
2	Design refinements following PDR failed to achieve the weight savings initially expected and considerable additional design effort was required. The original planned CTOL Critical Design Review (CDR), planned for April 2004, was re-scheduled to February 2006 after the redesign effort was completed, which included the 'roll up' of many lower-tiered reviews.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Block 2B Fleet Release (against IMS7 Baseline)	Jun 15	Jun 15	Jul 15	1	1
	Block 3i Initial Release to support LRIP 6 (against IMS7 Baseline)	Mar 14	Nov 14	Sep 14	6	2
	Block 3F Fleet Release (against IMS7 Baseline) – for F-35A (full envelope with weapons)	Aug 17	Oct 17	Oct 17	2	3

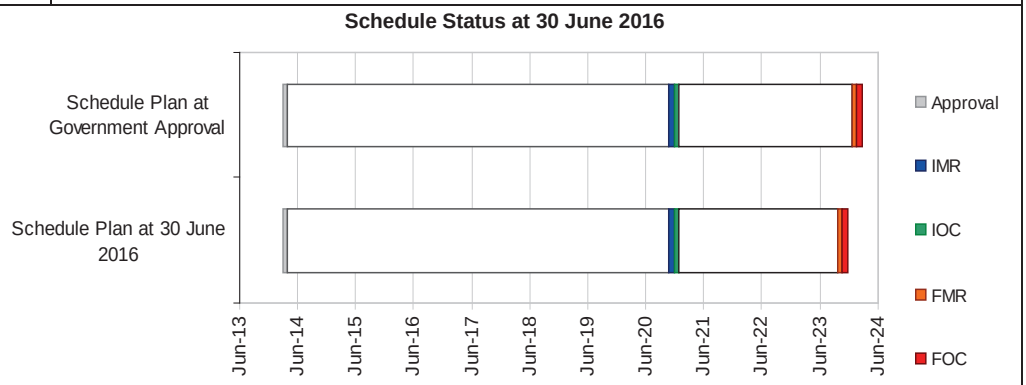
Acceptance	Accept and deliver two (LRIP 6) aircraft to US Pilot Training Centre	Mar 14	Nov 14	Nov 14	8	4
	Accept and deliver aircraft 3-14	Dec 16	Jun 19	Jun 19	30	5
	Accept and deliver aircraft 15-72	Dec 23	Sep 23	Sep 23	(3)	6

Notes	
1	Block 2B supported the United States Marine Core IOC declaration which occurred on 31 July 2015.
2	Block 3i Initial Release software provides initial pilot training capability for the Low Rate Initial Production (LRIP) 6 aircraft configuration. The six month variance was due to delays in earlier software deliveries and compounded by integration into the updated computer architecture delivered in LRIP 6 aircraft.
3	Block 3F Fleet Release is the final capability software state under the SDD Program. The latest software schedule from Lockheed Martin indicates that 3F Fleet Release has been split into variant specific Fleet Release Loads, and subsequently capability specific loads. The F-35A Full Envelope with AIM9-X version of 3F Mission Systems Software is planned for Fleet Release in the US during October 2017. Production and retrofit to the Australian F-35A will follow, with projected lead times satisfying the Australian F-35A IOC objective schedule.
4	The March 2014 original delivery date was based on Australian IOC in 2018. The November 2014 delivery date reflects a deferral in production to align with the US re-baselining of JSF production, and verification of a new software load for LRIP 6 aircraft to assure an appropriate training capability.
5	The remaining 12 Stage 1 Aircraft were originally scheduled for delivery by December 2016 leading to Australian IOC in 2018. In March 2010, the JSF Program experienced a Nunn-McCurdy breach of the critical cost growth statutory threshold. Based on subsequent delays to SDD completion and the US aircraft buy profile, the Australian Government initiated a two year deferral in production and IOC, with Aircraft (14) planned to be accepted in June 2019 to achieve a revised Australian IOC by December 2020.
6	Variance is due to the expected completion of Aircraft 72 production in July 2023, resulting in Aircraft 72 early acceptance and ferry to Australia in September 2023.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Oct - Dec 20	Dec 20	0	1
Initial Operational Capability (IOC)	Dec 20	Dec 20	0	1
Final Materiel Release (FMR)	Oct - Dec 23	Oct 23	(2)	
Final Operational Capability (FOC)	Dec 23	Oct 23	(2)	2

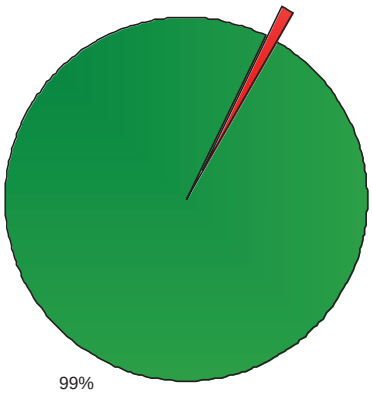
Notes	
1	The Integrated Master Schedule is the subject of on-going critical analysis following recent improvement in Primary and Secondary Materiel Release milestone definitions. A more robust and stable Integrated Master Schedule is expected in the first half of the 2016/17 financial year.
2	FOC date currently forecast as 2 months early. The driving activity for this date is the arrival of the last tranche of Australian aircraft from the US.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Delivery Capability Performance	
	**Green:** The Project **expects to meet the majority of capability requirements as expressed in the Materiel Acquisition Agreement and supporting suite of Capability Definition Documentation, with delivery in accordance with requirements of the relevant Technical Regulatory Authorities.** **Amber:** **N/A** **Red:** **The Project is unable to deliver the Maritime Strike Capability originally scoped at project approval, by FOC. The issues has emerged due to changes in the approved Block 4.1 and Block 4.2 scope, as agreed by the JSF Executive Steering Board. The Project has identified an alternate Maritime Strike Capability, that is planned to be available by FOC and is assessed to deliver the required capability. A Ministerial Submission seeking approval to procure this alternate capability is currently being staffed through defence for Government Approval.**
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Delivery of 15 aircraft throughout 2020 to support OT&E and the transition of No.3 Squadron (SQN) and No.2 Operational Conversion Unit, when combined with the 12 aircraft returning to Australia on completion of US based training. 3SQN facilities fully fitted, accredited, staffed and ready to support flying operations. Materiel delivery, OT&E, training, support and transition activities required for IOC completed.	Not yet achieved
Final Materiel Release (FMR)	Delivery of final nine aircraft throughout 2023 resulting in all 72 F-35A aircraft in Australia. Block 4 software and hardware delivered to provide FOC capability. Delivery and acceptance, commissioning or contracting in Australia of the aircraft, spares, support systems, and personnel, training, weapons, equipment, contracts and facilities necessary for ongoing operations of three Operational Squadrons and one training Squadron at FOC. Materiel delivery, OT&E, training, support and transition activities required for FOC completion.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Possibility of US and JSF Partner Governments altering commitments to the broader JSF Program that impacts Australian JSF acquisition and life-cycle costs.	Australian membership of the JSF Executive Steering Board provides the opportunity to understand and influence Partner imperatives.
Integration of the JSF into the ADF systems.	Ongoing analysis of interfaces with other ADF platforms to ensure optimal interoperability. Participation in the US test activities will enable Australia to obtain greater understanding of the systems integration risks and issues and thereby develop appropriate treatment strategies. This may include the incorporation of Australian platforms and systems into the test program.
Establishing the required ICT infrastructure to support stand up of the JSF capability. Core to this is on-schedule delivery of the Autonomic Logistics Information System (ALIS) with the required functionality and security provisions to protect sovereign data, and the subsequent integration of ALIS into the Defence Information Environment in time for first aircraft arrival in Australian in 2018.	Ongoing engagement with the JPO and key stakeholders to ensure ICT systems development and integration are synchronised with the broader JSF facilities program.
Lack of timely data and releasability of JSF program information that impacts the timely, efficient and effective integration of the F-35 aircraft system into the (ADF).	Ongoing engagement with the JPO and JSF stakeholders to coordinate and obtain the necessary data and information to enable the JSF system integration into the ADF.

Maturing of the JSF System to meet IOC and FOC. **While most development under the SDD phase has been completed, testing is ongoing. Thus new problems could be found during test and cause late delivery or deferment of capability to Follow-on Modernisation (FoM) phase, with the consequence that the SDD delivered capability is less than required for IOC. Further, Block 4.1 and 4.2 under the FoM phase is required for IOC. This is still under development, hence could be delivered late and/or without the required FOC functionality.**	Pro-active coordination between all organisations with responsibilities for acquiring, integrating and supporting the JSF in-service.
Transition of the JSF into service at the same time as ramping up Australian Super Hornet and Growler capabilities..	Ongoing engagement with Air Combat stakeholders to optimise the delivery of capabilities that perform the air power roles of Control of the Air and Strike.
Establishing and ramping up the JSF sustainment system. The NACC Project has identified cost and schedule pressures due to an evolving sustainment solution, which if not adequately defined will lead to capability impacts for IOC and FOC.	The US has released strategies for Australia's involvement in **aircraft and engine depots, and these are being executed. Continued close engagement is required with the JPO to understand the developing Global Support Solution (GSS). Australia has defined an Australian F-35 sustainment solution and focus is now on implementing this and adjusting as GSS evolves.**
The NACC Project has identified schedule and cost pressures for the Reprogramming element of the program. **While development of the initial capability is underway, it may be late-to-need and may not deliver the full capability expected. Further, as the F-35 capability develops under FoM, the Reprogramming Laboratory capability must stay aligned with the Aircraft capabilities.**	Australian participation in **initial development of the joint Reprogramming Laboratory solution with the UK has improved our understanding of technical and programmatic issues. Australia is co-chair of a steering group to manage reprogramming development and mitigation plans are being developed with steering group oversight.**
Australian Industry, as a Fundamental Input to Capability, may not grow adequately to support the sovereign JSF and associated ADF capabilities.	**Coordinated activity with Defence Industry Division including close working relationship with Defence Industry Innovation Centre, Australian Government engagement, and participation in JPO governance boards to influence assignment of work in this region. A Commercial Strategy has also been developed and is being implemented.**
Expected economic benefits (return on investment, market share/regional footprint) of Australian Industry participation in the global JSF Program are not realised.	**Coordinated activity with Defence Industry Division including close working relationship with Defence Industry Innovation Centre, utilisation of the NACC grant program that provides financial support for industry capacity and capability growth, and JSF Division advocacy on behalf of Australian Industry (with JPO, US Prime Contractors and Original Equipment Manufacturers).**
Significant workforce challenges in effectively manning the Defence acquisition and sustainment organisations impacts program management activities to establish the JSF capability.	Provision of supplemental resources to develop and fully support JSF program management activities.

The Australian Training System may not be established in time or with the required capability to support RAAF training of personnel with the consequence of affecting RAAF capability declarations.	The Australian Training System requirements and schedule have been established through the Baseline Control Board. The JSF Training System is still being developed. Work continues with stakeholders to understand the Training System to ensure expectations are clearly understood. Training System sustainment cost impacts to be determined. Additional people resources have been engaged to deliver the Australian Training System and associated support contracts. This risk was previously an issue identified in Section 5.2 but due to the work conducted over the last 12 months it has been reinstated as a risk.
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

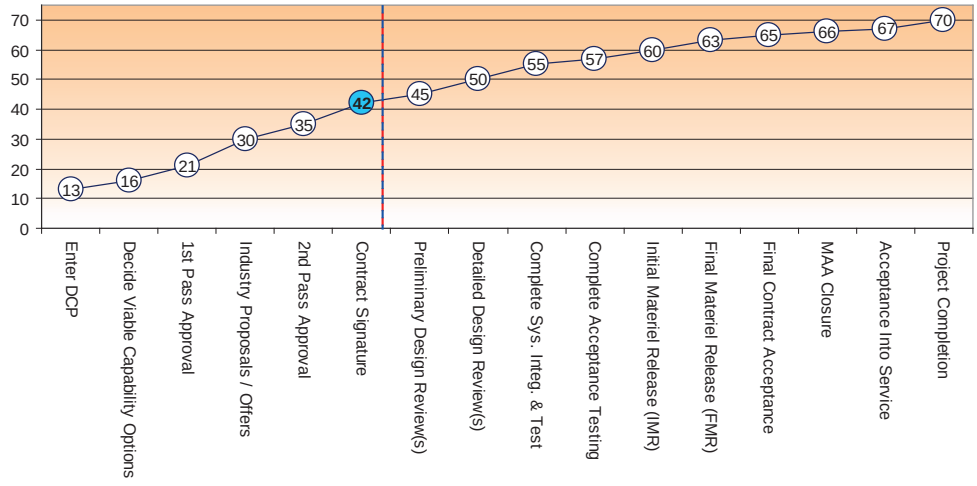
Description	Remedial Action
Noise associated with introducing the JSF at RAAF Base Williamtown is an ongoing sensitive issue and Defence is continuing to investigate options to reduce the noise impacts.	This is no longer assessed as a major issue or major risk and will be removed from this Section in the next report. An environmental impact statement was developed on the proposed flying operations of the F-35A aircraft. This was required to be assessed under the requirements of Commonwealth legislation, specifically the *Commonwealth Environment Protection and Biodiversity Conservation Act* 1999. As part of the environmental assessment the potential impact of noise on the Williamtown area was assessed. The final Environmental Impact Statement (EIS) consisting of the Draft EIS and Supplementary report were presented to the Minister for the Environment in March 2015. The Minister for the Environment finalised his approval decision for the operation of F-35A on 17 July 2015. The approval contained the conditions with which Defence must comply with while operating JSF. Deputy Chief of Air Force noted the Approval and conditions in September 2015. Provided the conditions are met by Defence, this is no longer a major issue for the project.
The project is unable to deliver the Maritime Strike Capability originally scoped at project approval, by FOC. This issue has emerged due to changes in the approved Block 4.1 and Block 4.2 scope, as agreed by the JSF Executive Steering Board.	The project has identified an alternate Maritime Strike Capability that is planned to be available by FOC and is assessed to deliver the required capability. A Ministerial Submission seeking approval to procure this alternate capability is currently being staffed through defence for Government approval.

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	6	6	6	6	6	6	6	42
Enter Contract	Project Status	7	6	6	6	7	6	5	43
	Explanation	• **Schedule:** Recent Project Management Baseline initiatives culminated in April 2016 with improved Milestone Definitions (primary and secondary milestones) and a more robust Integrated Master Schedule, where critical paths can be better analysed and managed. • **Technical Difficulty:** The JSF Air System is an extremely complex weapon system, that will drive significant change in how Australia supports and conducts air combat operations. Technical challenges remain, however progress is being achieved with risks and issues incrementally mitigated or retired. The risks and issues experienced to date are not unexpected in a development program of this complexity. • **Operations and Support:** The global support solution is still being developed, with significant oversight from the JSF Executive Steering Board. Australia is progressively developing its own sovereign plans for operating and supporting the F-35A capability. This includes ongoing cost modelling to better understand operating and support costs as the capability matures.							



2014-15 MPR Status - - - - | 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
JSF is a complex program that requires a robust Program Management framework to be established early in the life of the program lifecycle.	Governance
JSF is a collaborative program that requires active engagement to ensure national requirements are met.	Requirements Management
JSF Production, Sustainment and Follow-on Development Memorandum of Understanding is run by the Joint Program Office and it is difficult to predict cost, schedule and associated budgeting impact on ADF processes and procurement.	Governance
Integration of JSF into ADF systems of systems has been underestimated.	Requirements Management
The collaborative environment of the JSF program introduces additional stakeholder complexity due to the engagement of the nine partner nations.	Governance

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	AVM Chris Deeble **(to Mar 16)** **AVM Leigh Gordon (Mar 16–current)**
Branch Head	AIRCDRE Terry Saunder
Project Director	GPCAPT David Scheul
Project Director	Mr Todd Russell **(to Mar 16)** **WGCDR Vince Palmeri (Acting Mar 16–current).**
Project Director	GPCAPT Michael Brown **(to Dec 15)** **GPCAPT Neil Pearson (Dec 15–current)**
Project Manager	Mr Bill Greenwood **(to Jan 16)** **GPCAPT Ian Nesbitt (Jan 16–current)**

Project Data Summary Sheet[120]

Project Number	**SEA 4000 Phase 3**
Project Name	**AIR WARFARE DESTROYER**
First Year Reported in the MPR	2008-09
Capability Type	New
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	May 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	**$9,120.8m**
2015-16 Budget	**$696.1m**
Project Stage	Detailed Design Review
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

This project will acquire three *Hobart* Class Air Warfare Destroyers (AWD) and their support system for the Australian Defence Force (ADF). The capability provided by the AWDs will form a critical element of the ADF's joint air warfare defence capability and will contribute to a number of other joint warfare outcomes.

1.2 Current Status

On 4 June 2014 the Minister for Defence announced this project as a Project of Concern.

Cost Performance

In-year

The AWD Program Financial Year 2015-16 Budget was underspent by $12.8m. The variance was mainly driven by an underspend against the Alliance Based Target Incentive Agreement (ABTIA), which was mostly due to inaccurate budget assumptions along with unplanned labour reductions in the shipyard as a result of AWD Reform.

Project Financial Assurance Statement

Notwithstanding the issues disclosed at Section 5.2, as at 30 June 2016, SEA 4000 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the program. Having reviewed the current financial and contractual obligations of the program, current known risks and estimated future expenditure, Defence considers, as at the reporting date, and following the **completion of the AWD Reform strategy in December 2015, which included a Real Cost Increase of $1.2 billion to the AWD budget, being approved in July 2015 and provided in September 2015, there is sufficient budget remaining for the Project to complete against the agreed scope.**

Contingency Statement

120 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

The project has applied contingency in the financial year primarily for the offset of indexation shortfall. Due to the revised Reform Budget the future estimated indexation shortfall has been fully funded and therefore will no longer be drawn from Contingency.

Schedule Performance

On 6 September 2012, following a stakeholder review of resource considerations and support for a schedule extension, the then Minister for Defence announced that the AWD schedule **had been** re-baselined. **The** revised AWD delivery dates **were:**

- HMAS *Hobart* (Ship 1) – March 2016;
- HMAS *Brisbane* (Ship 2) – September 2017; and
- HMAS *Sydney* (Ship 3) – March 2019.

These delivery dates represented delays of 15, 18 and 21 months respectively against the dates contracted in October 2007.

Following further concerns with AWD delivery, **the delivery schedule has been further re-baselined as part of the AWD Reform. The post-Reform contracted delivery dates are:**

- **HMAS *Hobart* (Ship 1) – June 2017;**
- **HMAS *Brisbane* (Ship 2) – July 2018; and**
- **HMAS *Sydney* (Ship 3) – December 2019.**

These new delivery dates represent delays of 30, 28 and 30 months respectively against the dates contracted in October 2007.

Since July **2015** the following major events have occurred:

- **November 2015 – Ship 2 Stern release;**
- **November 2015 – Ship 3 Keel laid;**
- **November 2015 – Start of Combat System Light Off for Ship 1;**
- **December 2015 – Ship 2 Mast stepping ceremony occurred; mast lifted onto ship;**
- **December 2015 – Diesel Generator Light Off commenced for Ship 1; and**
- **December 2015 – Ship 2 Hull integration complete.**

Materiel Capability Delivery Performance

All significant government specified capability is currently planned to be achieved and in some warfare areas, the capability will be exceeded. Procurement of the Electronic Warfare Radar – Electronic Attack (R-EA) sub-system has been deferred as its performance, based on currently available technology, does not represent a cost-capability benefit given that more capable second generation technology is expected to be available in the 2017-18 time frame. The R-EA budget has been preserved to support the more capable system being installed in the AWD. Decisions made by the program in conjunction with the Capability Manager will ensure that AWD is delivered with the expected capability.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

In May 2005 the Government granted first pass approval to the Program, allowing commencement of Phase 2, the Design phase.

Phase 2 oversaw the development of two platform designs:

- The 'Existing' design based upon a modified version of the Navantia designed and built F-100 warship as the Australianised military off-the-shelf option; and
- The 'Evolved' design produced by Gibbs & Cox developed from an in-house design utilising design features of the US Navy class of Aegis Guided Missile Destroyers.

In May 2005, the Government selected ASC AWD Shipbuilder Pty Ltd as the shipbuilder for the AWD Program and determined that the ships should be built in Adelaide. Raytheon Australia Pty Ltd was chosen as the Combat System Systems Engineer.

In October 2005, Defence sought and received Government approval to acquire three Aegis Weapon Systems to provide the core air warfare capability of the AWD. The Commonwealth subsequently entered into a United States (US) Foreign Military Sales (FMS) agreement for the acquisition of the Aegis weapons system and associated engineering services and integrated logistic support.

In June 2007, at Second Pass, the Government granted approval to commence construction of the *Hobart* Class AWD utilising the existing design. This decision initiated the current phase of Project SEA 4000 Phase 3, the construction phase.

Phase 3 includes detailed design, procurement, ship construction, and set to work of the Aegis Combat System and the F-100 based Platform Systems. This culminates in the delivery of three *Hobart* Class AWDs together with the ships support systems including initial spares and ammunition outfits, and initial crew training.

Phase 3 concludes with the delivery to the Royal Australian Navy (RAN) of the third AWD, HMAS *Sydney.*

At Second Pass, the Government approved Defence's proposal to close SEA 4000 Program Phase 2, Design, and Phase 3.1, Aegis acquisition activities, and combine the remaining Phase 2 and Phase 3.1 scope and funding with SEA 4000 Program Phase 3.

The Government announced the implementation of an AWD Reform Strategy on 4 June 2014 following an Independent Review of the AWD Program and heightened concern regarding program schedule and forecast cost increases. These concerns resulted in the Program being designated a Project of Concern in June 2014.

As part of the Reform strategy, the Commonwealth entered into agreements with both BAE Systems and Navantia to participate in the Reform Interim Phase from December 2014 until 31 July 2015.

On 22 May 2015, the Minister for Finance and the then Minister for Defence jointly released a media statement. The statement suggested that the project will require an additional $1.2 billion to be completed and that this would be funded at the expense of other Defence acquisitions.

A limited tender process was initiated on 29 May 2015 seeking proposals to either insert a managing contractor into ASC AWD Shipbuilder Pty Ltd for the remainder of the AWD build, or to further enhance ASC capability through a partnering agreement.

After completion of the Reform Interim Phase the Departments of Finance and Defence conducted a Limited Tender for Shipbuilding Management Services (SMS) and jointly agreed that Navantia was the preferred company to provide an experienced shipbuilding management team for insertion into ASC AWD Shipbuilder Pty Ltd.

The Departments of Finance and Defence have worked together to implement Long-Term Arrangements (LTAs) (in the form of Shipbuilding Management Services) aimed at ensuring the successful completion of the AWD Program with greater efficiency and effectiveness and consistent with international productivity levels.

The SMS contract was signed on 5 December 2015 and is a subcontract under ASC AWD Shipbuilder Pty Ltd.

Concurrently with the AWD build program the AWD Transition Support Period (TSP) arrangements strategy is underway with contract signature anticipated for January 2017.

Uniqueness

The SEA 4000 Air Warfare Destroyer Program is currently one of Australia's largest and most technically complex Defence projects.

The AWDs have been designated by the RAN as *Hobart* Class **Guided Missile Destroyers (**DDGs**)** and will be the RAN's first Aegis capable ships.

The AWDs are being delivered through an Alliance based contract arrangement involving ASC AWD Shipbuilder, Raytheon Australia, and the Commonwealth, represented by **Defence.**

Contractual Framework

The Alliance based contract arrangement was signed in October 2007. Key features of the AWD Alliance and the operations of the Alliance based contract arrangement include:

- The Alliance Industry Participants (Raytheon Australia and ASC AWD Shipbuilder) are jointly and severally responsible for the delivery of the three ships and their support systems. Each party remains individually responsible for compliance with all statutory requirements.
- The Alliance is neither a legal body, nor a joint venture.
- The legal and commercial basis for the Alliance is established through the Alliance Based Target Incentive Agreement (ABTIA) contract signed by all three participants. This establishes a virtual organisation under the governance of the AWD Alliance Board.

The Commonwealth entered into a Platform System Design contract with Navantia, the ship designer, in October 2007. This contract is managed by the AWD Alliance under the Alliance based contract arrangement.

The Aegis combat system is being procured by the Commonwealth under the FMS agreement with the US Navy. This agreement is also managed within the AWD Alliance project team.

While Navantia and the US Navy (and its equipment supplier, Lockheed Martin) are not part of the Alliance, they work closely with the Alliance and are treated in an alliance like manner.

Major Risks and Issues

The major challenges the project faces are:

- Integration of the *Hobart* Class Combat System;
- Capability Acceptance;
- Achieving maximum productivity levels through efficient shipyard operation and change management;
- Managing the level and timing of changes to the production baseline to minimise production rework;
- Meeting the consolidation, test and activation schedules within the constraints of a new build in a new Australian shipyard;
- Managing the timely delivery of equipment and fittings from a large number of subcontractors located in Australia and overseas through the AWD Alliance;
- Delivering an effective, efficient and sustainable through-life support system for the *Hobart* Class DDGs; **and**
- Impacts to Test and Activation and Sea Trials due to equipment failure.

Other Current Sub-Projects

SEA 4000 Phase 3.2 – Standard Missile SM-2 Missile conversion and upgrade. The conversion of the missiles will allow them to be used in the AWDs and provide an enhanced anti-aircraft and anti-ship missile defence capability. This project is managed by **Joint Systems Division within Defence.**

Notes

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Jun 07	Original Approved		7,207.4	
Jan 14	Real Variation - Transfer	(109.9)		1
Sep 15	**Real Variation - Real Cost Increase**	**1,199.5**		**2**
			1,089.6	
Jul 10	Price Indexation		1,173.2	3
Jun 16	Exchange Variation		**(349.4)**	
Jun 16	**Total Budget**		**9,120.8**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – AWD Alliance	**(4,266.4)**		
	Contract Expenditure – US Government	**(995.6)**		
	Contract Expenditure – Navantia	**(413.4)**		
	Contract Expenditure – NATO Consortium	(72.4)		
	Other Contract Payments / Internal Expenses	**(210.6)**		**4**
			(5,958.4)	
FY to Jun 16	Contract Expenditure – AWD Alliance	**(552.9)**		
	Contract Expenditure – US Government	**(82.1)**		
	Contract Expenditure – Navantia	**(11.0)**		
	Other Contract Payments / Internal Expenses	**(37.4)**		**4**
			(683.3)	
Jun 16	**Total Expenditure**		**(6,641.7)**	
Jun 16	**Remaining Budget**		**2,479.1**	

Notes	
1	In January 2014, a real cost decrease was approved to transfer project funds to Defence **Estate and Infrastructure** Group which has responsibility for AWD facilities related deliverables.
2	**In September 2015, following advice and approval from Government in July 2015, a revised Budget Approval Notice was provided authorising the Real Cost Increase to the AWD Budget. Included in the RCI was an estimated $167.0m to cover indexation costs.**
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $854.8m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $318.4m having been applied to the remaining life of the project.
4	Other expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
745.5	715.6	696.1	PBS-PAES: The variation is mainly attributable to the reprogramming of FMS, and Program Management Office (PMO) deliverables as part of the AWD Reform. PAES-Final Plan: The variation is mainly attributable to reprogramming of Alliance, FMS and PMO deliverables.
Variance $m	(29.9)	(19.5)	Total Variance ($m): (49.4)
Variance %	(4.0)	(2.7)	Total Variance (%): (6.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(19.8)	Australian Industry	The 2015-16 variance was mainly driven by an underspend against ABTIA which was mostly due to inaccurate budget assumptions along with unplanned labour reductions in the shipyard due to the AWD Reform. Platform System Design (PSD) costs were higher than originally budgeted and an increased FMS payment in June reduced the year end variance.
		3.1	Foreign Industry	
			Early Processes	
		(7.1)	Defence Processes	
		11.0	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
696.1	683.3	(12.8)	**Total Variance**	
		(1.8)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
US Government	Oct 05	842.7	1,066.7	FMS	FMS	1, 2
AWD Alliance	Oct 07	4,323.1	6,532.0	Variable with Pain/Gain Share	Alliance	3
Navantia	Oct 07	373.6	551.4	Fixed with indices escalation	Alliance based	3
NATO Consortium	Dec 09	78.5	72.4	FMS (NATO)	FMS (NATO)	2

Notes

1 The FMS Case established pre-Second Pass involved three contractual steps (initial version and two amendments); October 2005 for initial engineering services, April 2006 for long lead items and July 2006 for three ship sets of core Aegis Combat System Equipment. The resulting scope was in accordance with Government approval of SEA 4000 Phase 3.1. Post-Second Pass, there have been five further amendments to the FMS Case for additional equipment and services for both the AWD Program and the AWD Alliance. These amendments are in accordance with Government approval at Second Pass for the full scope of SEA 4000 Phase 3. There will be further amendments to the FMS Case to cover additional equipment and services for the project. The Price at Signature excludes $171m spent in previous phases of the project.

The Price at 30 June 2016 excludes a current Alliance cost of $208.2m for the purchase of FMS equipment to be supplied under the ABTIA contract.

2	Contract value as at 30 June **2016** is based on actual expenditure to 30 June **2016** and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
3	**As a result of the AWD Reform Strategy, the AWD Alliance (ABTIA) and Navantia (Platform System Design) contracts were renegotiated and new contracts signed in December 2015. The price at 30 June 2016 is the value as per the new contract in out turned dollars (as at June 2016) using the Commonwealth cumulative escalation indices and includes ABTIA Direct Project Costs, Target Fee, Procurement Fee and the Shipbuilding Management Services costs.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
US Government	3	3	Aegis Combat System	
AWD Alliance	3	3	Air Warfare Destroyer	
Navantia	N/A	N/A	Platform System Design and Services	
NATO Consortium	Classified	Classified	**Evolved Sea Sparrow Missiles** (ESSM)	1

Major equipment received and quantities to 30 Jun 16
See Section 1.2 Schedule Performance.

Notes	
1	Quantity being acquired is classified.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	AWD Program	Mar 08	N/A	Apr 08	1	
Preliminary Design	AWD Program	Dec 08	N/A	Feb 09	0	1
Critical Design	AWD Program	Dec 09	N/A	Feb 10	0	2
Support System Detailed Design Review	AWD Program	Jun 10	N/A	Aug 10	0	3

Notes	
1	The Preliminary Design Review (PDR) was conducted as scheduled in December 2008 and resulting actions completed as scheduled by February 2009.
2	The Critical Design Review (CDR) was conducted as scheduled in December 2009 and resulting actions completed as scheduled by February 2010.
3	The Support System Detailed Design Review (SSDDR) was conducted as scheduled in June 2010 and resulting actions completed August 2010.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Ship 1 – Complete Hull Integration	Dec 12	Mar 14	Mar 14	15	1, 3
	Ship 1 – Start Combat System Light Off	Dec 13	Nov 15	Nov 15	23	2, 3, 4
	Ship 2 – Complete Hull Integration	Mar 14	Dec 15	Dec 15	21	3, 4
	Ship 2 – Start Combat System Light Off	Mar 15	Apr 17	Apr 17	25	3, 4
	Ship 3 – Complete Hull Integration	Jun 15	Aug 17	Aug 17	26	3, 4

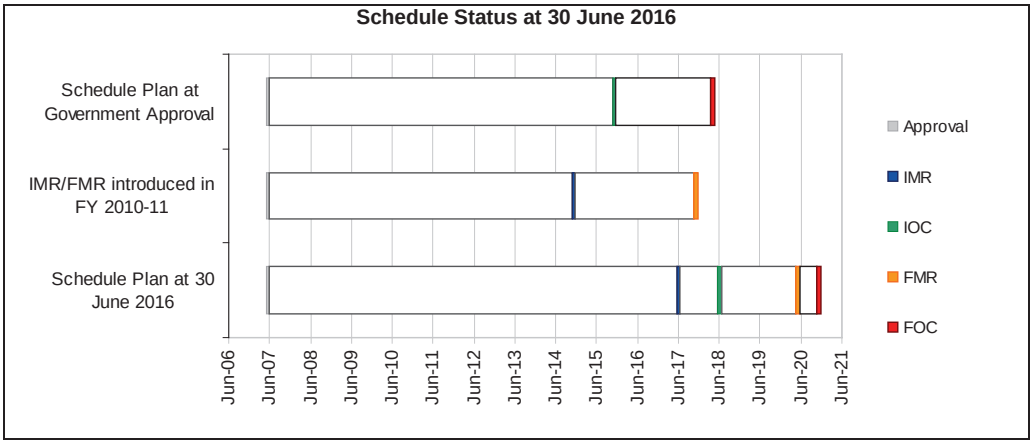
	Ship 3 – Start Combat System Light Off	Jun 16	Sep 18	Sep 18	27	3, 4
Acceptance	Ship 1 – Commencement of Category 5 Trials	Aug 14	Sep 16	Sep 16	25	3, 4
	Ship 1 – Provisional Acceptance (Initial Materiel Release)	Dec 14	Jun 17	Jun 17	30	3, 4
	Ship 2 – Commencement of Category 5 Trials	Nov 15	Dec 17	Dec 17	25	3, 4
	Ship 2 – Provisional Acceptance (Materiel Release 2)	Mar 16	**Jul 18**	**Jul 18**	**28**	3, 4
	Ship 3 – Commencement of Category 5 Trials	Feb 17	Jun 19	Jun 19	28	3, 4
	Ship 3 – Provisional Acceptance (Materiel Release 3)	Jun 17	**Dec 19**	**Dec 19**	**30**	3, 4

Notes	
1	Complete Hull Integration was achieved when the last erection joint was completed and has been structurally inspected and accepted.
2	Start Combat System Light Off verified the readiness of the first set of installed combat system equipment for CAT 4 testing.
3	In 2010 difficulties were encountered in relation to the engineering and construction of some of the first AWD hull blocks. This resulted in the reallocation of block work between BAE, Forgacs and Navantia and **a revision to the delivery schedule. On 6 September 2012,** the then Minister for Defence announced, that the AWD schedule would be re-baselined and that the revised AWD delivery dates would be March 2016, September 2017, and March 2019.
4	**In May 2015, following a Comprehensive Cost Review conducted by the AWD Alliance held in February, the then Minister for Defence announced that the delivery schedule had been changed to June 2017, September 2018 and March 2020 respectively. With the introduction by Navantia of an expert shipbuilding management team into the shipyard as part of the AWD Reform Long Term Arrangements for the AWD Reform, the delivery schedule for Ships 2 and 3 was brought forward by up to three months from prior schedule extension.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 14	Jun 17	30	1, and see also Note 3 and 4 above
Initial Operational Capability (IOC)	Dec 15	Jun 18	30	1, and see also Note 3 and 4 above
Final Materiel Release (FMR)	Dec 17	**Jun** 20	**30**	2
Final Operational Capability (FOC)	May 18	**Dec 20**	**31**	3

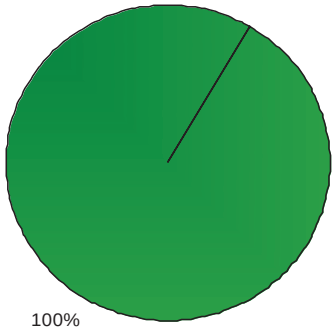
Notes	
1	**The IMR and IOC dates are currently under review and are expected to be clarified in late 2016 with the approval of a revised Materiel Acquisition Agreement.**
2	FMR is scheduled 6 months after Materiel Release 3 (MR3).
3	FOC is scheduled 12 months after MR3.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Program currently expects to meet materiel capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	One *Hobart* Class Ship System with up to Category 5 (sea acceptance) trials, testing and certification completed. Initial sustainment arrangements in place to support IOC. Training of the *Hobart* Class Systems for the commissioning crew to support IOC.	Not achieved.
Final Materiel Release (FMR)	All three *Hobart* Class Ship Systems with up to Category 5 (sea acceptance) trials, testing and certification completed. All sustainment arrangements in place to provide materiel support to the *Hobart* Class.	Not achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
1. Integration of the *Hobart* Class Combat System. Key Risks: • The current version of the Aegis Weapons System has not been previously integrated in the platform. • Integration of Electronic Warfare and Communications Systems. • Equipment selections may impact on the topside design. • Sonar – the software development and integration.	The risks associated with the integration of the Aegis Weapons System are being actively managed through regular reviews between the Alliance, Platform System Designer, US Navy and Lockheed Martin (the Aegis equipment supplier to the US Navy). Action is taken to ensure emerging issues are identified and addressed in a timely manner. Electronic Warfare and Communications and Information Systems procurement strategies have been developed with a wide range of stakeholder engagement. These strategies are aimed at ensuring that the customer will be satisfied with the contracted solution and that the solution will have minimal impact on the platform design. **The Integrated Test Team (ITT) comprised of Aegis specialists commenced on site to conduct Combat System set-to-work activities.** Sonar – See Remedial Action at Risk 3.
2. Capability Acceptance: Certification requirements are unclear for some equipment, and US Navy and some Original Equipment Manufacturers are not disclosing requested objective quality evidence.	The Project Certification Plan has been agreed with the RAN. The Program is working closely with the US Navy and Original Equipment Manufacturers to obtain the required objective quality evidence. Working with RAN to establish processes, procedures and principles to achieve certification. All Safety certification required under FMS has been delivered to Alliance, no outstanding data.
3. Subcontractor Performance: Subcontractor performance may result in poor quality product, delays or changed requirements.	The performance of some subcontractors has required active management and intervention. Embedding Alliance staff in block subcontractors premises provides management oversight and the ability to address and resolve issues quickly. A capability partnering agreement between ASC and Forgacs has been executed and 6 additional ASC personnel, making a total of 22, joined the Forgacs team on 6 March 2014. **The final off-site block delivery arrived in Adelaide in May 2016.** Sonar – The Alliance is actively working with the

	Sonar Original Equipment Manufacturer (OEM) at all levels, including the embedding of Alliance staff on-site to manage risk associated with software development and integration. Sonar schedule is on track. Hardware deliveries will be made in time to support Ship build program. Software delivery is in phases (Build 1 delivered July 2014), **with Final Operating Sonar System software forecast to be delivered in August 2016 for the conduct of Combat System** Sea Trials **in early 2017**.
4. Support System: current data available to the Alliance and/or the Commonwealth may not be mature enough to achieve an optimised support system (maturity of Life Cycle Cost data, loss of project data that supports Through Life Support).	Mitigation strategies are in place to minimise the risk and work is in hand with the Alliance to develop strategies to progressively seek the data required to support the development of an optimised support system. Logistics Information Management System Management plan completed, implementation has begun including prototype data loading. Working with the Alliance to migrate and validate data between systems.
5. Design products may not be available in a timely manner or satisfactory form.	Active monitoring of the Alliance's Platform System Designer's (PSD) contract management strategy to ensure its effectiveness, and engaging the Alliance and PSD as required to resolve current and potential issues as required. **This risk has been retired. PSD contract and design risk mitigated through Navantia's insertion under the Shipbuilding Management Services contract as part of AWD reform in December 2015.**
6. The PSD contract may not provide the level of support that is required to complete ship construction in a timely and cost effective manner.	Establishment of ongoing design support services including construction design support and local design authority availability in support of Ship construction through to delivery of Ship 3. Extension of PSD services will be required due to a schedule rebaseline and is currently being investigated. **This risk has been retired. PSD contract and design risk mitigated through Navantia's insertion under the Shipbuilding Management Services contract as part of AWD reform in December 2015.**
7. Inadequate Configuration Management impact on Ship Acceptance.	Early engagement and agreement on the process and expected deliverables is required to support ship Delivery and Acceptance. The Shipbuilder Certification Plan is in draft with the Alliance and addresses how conformance will be established. The Ship Acceptance Plan is also in development with the Alliance and includes the Functional Configuration Audit and Physical Configuration Audit approach as well as the Compartment Completion Inspection process. **Ship Acceptance Plan is still in draft. Alliance PMO have established a Ship Acceptance Manager reporting directly to the Alliance General Manager. Weekly meetings for Ship Acceptance are taking place, and we anticipate the Ship Acceptance Plan will be submitted mid-late 2016**.

8. Impacts to Test and Activation and Sea Trials due to equipment failure.	Early progressive testing through Verification & Validation phase will mitigate risk if failure experienced. Working with Navantia identifying potential causes early and implementing appropriate contingency plans, OEM support and training, including trials crew training to reduce likelihood of operator errors.
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
1. The delivery of FMS elements of the AWD supplies may not be possible, or may be delayed or compromised in integrity, due to the budget for FMS Engineering and Technical Assistance (ETA) not being sufficient.	Working with the US to identify options to reduce cost and provide waterfront support for Ships 2 and 3. A schedule extension as a result of rebaselining may have a cost impact for the provision of FMS ETA, Indigenous support capability and skills transfer from Ship 1 ITT will enable a reduction in Ship 2 and 3 ITT teams.
2. Indexation: Applying an average, fixed Specialised Military Equipment index to the Program budget may not be sufficient to fund the actual cost increases and liabilities defined in the ABTIA and PSD contracts.	Close monitoring through annual estimates to ensure that the balance of the total project budget remains sufficient to cover any shortfalls. The program is funding actual cost increases with project contingency funds. The true indexation cost **was** included in the Real Cost Increase of the AWD Program Budget. **This issue has been retired. The indexation delta was funded under the Real Cost Increase approved as part of AWD reform.**
3. Shipbuilding Delay: The AWD Alliance will not meet contracted delivery dates for the three ships. The quality and rework issues in block construction are higher than originally envisaged. As a result of the increasing workloads the schedule is being reviewed and managed by the Alliance. On 26 May 2011 the then Minister for Defence announced the reallocation of construction work for the AWD Project including work at Navantia. In March 2012 the decision was made to maintain the same block construction arrangements for Ship 3 as Ship 2. In December 2013 some block construction work was re-allocated within Australian shipyards in an effort to minimise further delay.	**This issue has been partly addressed through Navantia's insertion under the Shipbuilding Management Services contract as part of AWD Reform in December 2015. The remainder is captured under Issue 5. Shipyard Productivity.**
4. Change Management: Change introduced to the existing platform design as a result of: • Legislative or regulatory requirements, • Safety requirements, • Equipment obsolescence, • Errors in the original design, and • Interrelated projects (e.g. AIR9000) Will impact cost and possibly schedule. Severity of the cost and schedule impacts to the Commonwealth will be dependent on the scope and timing of the change implementation relative to Ship completion.	A Design Chill was implemented in 2011 to reduce the level of change rolling into the production baseline. Effective engagement with key stakeholders has been critical to ensure the implications of change requests, approval and subsequent implementation are fully understood. Robust mechanisms to control the authorisation of change have been established within the Alliance and Program Office. The change management approval and implementation process has undergone a number of evolutions to expedite change as efficiently as possible. Delays in

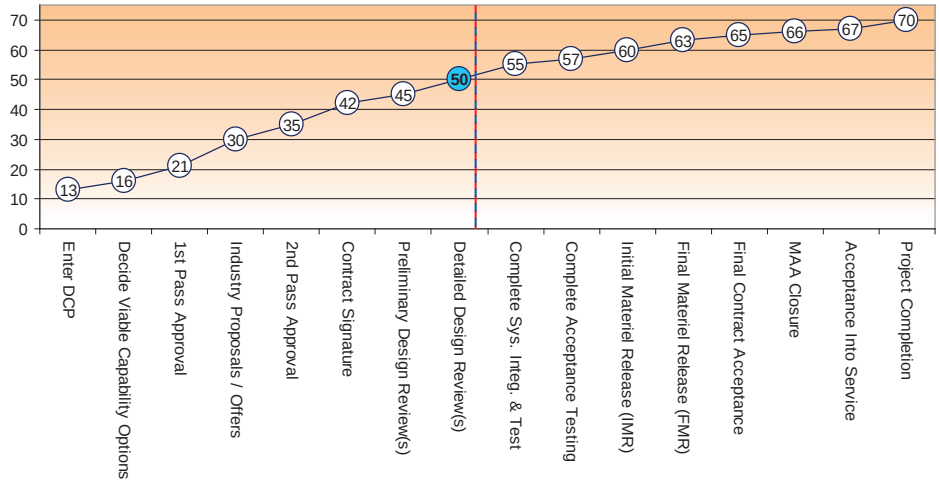
	approval can result in significant cost and schedule impacts. **AWD Reform long term arrangements embed the designer on-site in order to reduce the change management overhead.**
5. **Shipyard Productivity**. AWD shipbuilding productivity has been independently reviewed and benchmarked since 2011. The current low level of shipbuilding productivity is considered a major issue in terms of the overall AWD program and to date the issue has only been partially addressed by ASC, the AWD Shipbuilder. Unless there is a near term improvement in shipbuilding productivity then the current shipbuilding performance, which is in excess of plan and budget, will negatively affect other components of the AWD program.	Annual independent reviews have been undertaken by First Marine International (FMI), a company internationally recognised for its expertise in shipbuilding productivity benchmarking. The most recent review was conducted December 2014. While there has been improvement by ASC in some of the areas underpinning the measurement of productivity, there are many areas that have been identified by FMI in current and previous reports that have either not been addressed, only partially addressed, or addressed only recently. These areas were revisited during the FMI review in 2014 and included recommendations for renewed focus. ASC has implemented strategies aimed at productivity improvement, implemented new management structures, and adopted a keen focus on process changes but these strategies have yet to produce any significant positive productivity change. Insertion of additional Shipbuilding expertise from BAE, Navantia and Raytheon commenced in December 2014 for the duration of the interim Reform period. The long term arrangements of Reform are focused on improving management capability and shipyard productivity to positively improve cost and schedule performance. **Reform long term arrangements commenced December 2015 placing Shipbuilding Management responsibility with Navantia. Fast turnaround of shipyard productivity is dependent on Navantia establishing a good working relationship with ASC to efficiently implement strategy.**
6. Intellectual Property rights are not clear resulting in risk exposure during Through-Life Support.	**Issue previously raised as part of Risk 4, now realised as an Issue to promote visibility and management. Delivery of accurate and complete IP data is an Alliance responsibility and requires close Commonwealth monitoring. The Alliance is currently undergoing an IP data remediation process.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	7	7	8	8	8	6	7	51
	Explanation	• **Requirement:** Reflects the successful completion of the Support System Detailed Design Review in August 2010. • **Technical Difficulty:** Reflects the completion of Communication Information System subsystem CDR. (84 per cent across five specifications of Combat Systems Cat 0 – 4 Test Events have been successfully completed). • **Commercial:** Reflects the lower than expected contractor performance in terms of shipbuilding productivity.							



2014-15 MPR Status - - - - | 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Formation of the Alliance, a new organisational structure takes time and effort to develop the culture necessary to achieve improved outcomes. An external facilitator was engaged to assist in the initial and ongoing development of the Alliance and this has proved invaluable.	Governance
The Program Office, originally located in both Canberra and Adelaide was relocated to Adelaide to improve operations and interactions with the Alliance. The relocation involved considerable effort and a resultant loss in knowledge of staff who did not relocate. Earlier consolidation of the Program Office would have been beneficial.	Resourcing
The interpretation of the requirements of fitness for purpose of drawings is different between contracting parties. A review of all product types prior to contract and interrogation of the delivery schedule to confirm sufficient time for reviews and incorporation of comments is necessary.	Contract Management
The shipbuilding capacity of shipyards involved in a project like AWD needs to be assessed in detail in terms of precise capacity to undertake production engineering as well as the workload constraints of facilities, production supervision and overall workforce numbers taking into consideration the total contracts conducted at the shipyard in parallel.	Resourcing First of Type Equipment
The schedule that plans the transition from design to production needs detailed evaluation by the designer(s) and the production shipyard(s) to ensure the balance between commencing production and completing very detailed design is appropriately balanced and agreed.	Schedule Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
General Manager Ships	**Mr Alan Nicholl (Nov 15–current)**
Program Manager	Mr Peter Croser (Acting) **(to Dec 15)** **CDRE Craig Bourke, RAN (Dec 15–current)**
Deputy Program Manager	Mr Greg McPherson (Acting)
General Manager Engineering	Commodore Craig Bourke, RAN (Dec 14–**Dec 15**)

Project Data Summary Sheet[121]

Project Number	**AIR 7000 Phase 2B**
Project Name	**MARITIME PATROL AND RESPONSE AIRCRAFT SYSTEM**
First Year Reported in the MPR	2014-15
Capability Type	Replacement
Acquisition Type	MOTS
Service	Royal Australian Air Force
Government 1st Pass Approval	Jul 07
Government 2nd Pass Approval	Feb 14
Total Approved Budget (Current)	**$5,519.9m**
2015–16 Budget	**$931.5m**
Project Stage	**Detailed Design Review**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

AIR 7000 Phase 2B seeks to acquire the materiel elements of the Maritime Patrol and Response Aircraft (MPRA) weapon system, including a Through Life Support (TLS) system, as partial replacement of the AP-3C Orion aircraft.

Twelve P-8A Poseidon aircraft will be purchased for the Royal Australian Air Force (RAAF) through a Cooperative Program (CP) with the United States Navy (USN). The scope of the CP includes the Production, Sustainment and Follow-on Development (PSFD) of the United States Navy and RAAF P-8A Poseidon fleet.

1.2 Current Status

Cost Performance

In-year

The project **has** spent **$925.8m 30 June 2016** against a planned budget of **$931.5m**, a variance of **($5.7m)** or **0.6** per cent. This variance is primarily due to **PSFD MoU contribution payments of $21.5m, and Government Furnished Equipment payments of $17.9m being brought forward, as well as earlier than planned payments for Spares $16.5m. This is offset against Aircraft payment requirements moved to FY 16-17 ($11.4m), slippage in Training Systems ($37.0m) and a combination of other slippages amounting to ($13.2m).**

Project Financial Assurance Statement

As at **30 June 2016,** the AIR 7000 Phase 2B Project Office has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the

121 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

reporting date, that there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

In August 2014, an Advanced Acquisition Contract (AAC) was signed by the USN, on behalf of Australia, for the first four RAAF P-8A aircraft. The AAC for the second set of four P-8A aircraft was signed in June 2015. **The AAC for the third set of four P-8A aircraft was signed in May 2016.** The AAC allows the Prime Contractor, Boeing, to acquire long lead items in order to ensure that all required components are available on time for assembly of the P-8A aircraft. The USN **placed** the full aircraft production contract for the first four Australian P-8A aircraft with Boeing in **August 2015**. **The contract for the second set of four aircraft, Lot 7, was placed in January 2016.**

In February 2016 Government approved the acquisition of an additional four RAAF P-8A aircraft with a budget of $1,295.4m. The additional aircraft and budget has increased the AIR 7000 Phase 2B project scope. As a result of the increased scope, an update to the Materiel Acquisition Agreement (MAA) and Schedule will occur.

The first aircraft, initially scheduled for delivery in January 2017, is now expected to be available in November 2016, which supports the MAA required in-service date range of November 2016 to January 2017. The USN have advised that all aircraft, **that are currently on contract,** are expected to be ready for delivery on time or earlier than required.

All other supplies and project events are expected to be delivered/completed in accordance with the agreed MAA schedule. **Following the recent approval of the additional four aircraft, the MAA is being reviewed and updated.**

Materiel Capability Delivery Performance

The P-8A Poseidon is being developed under a spiral development program by the USN. The spiral development consists of an evolution of increments, each of which has a number of Engineering Change Proposals (ECP) that define the maturing configurations of the increment. The variant of the **first** P-8A to be acquired under the scope of Phase 2B is defined as Increment 2, ECP 2.

AIR 7000 Phase 2C proposes to **be the first major** upgrade **of** the aircraft purchased under AIR 7000 Phase 2B (**predominantly a Mission System upgrade delivered in the later ECPs of Increment 3**)subject to future government approval.

The USN declared Initial Operational Capability (IOC) for the Increment 2, ECP 1 aircraft in October 2014, and expects to declare IOC for the Increment 2, ECP 2 aircraft five months prior to the first P-8A delivery to Australia. Through the CP, Australia has had significant insight into, and influence on Search and Rescue Kit and Harpoon 1G integration, the work being undertaken on the Increment 2, ECP 2 configuration, and has high confidence that the aircraft (and supporting systems) will provide the capability required by the MAA.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Project AIR 7000 Phase 2B is an ACAT II project, seeking to acquire the P-8A Poseidon MPRA capability, as partial replacement for the AP-3C Orion capability, under a CP with the USN. IOC is planned for 2018, allowing the withdrawal of the AP-3C Orion to occur around 2019.

In December 2011, Government approval was provided to participate in the CP for development of P-8A aircraft and, in March 2012, the Project entered into an initial 10-year Memorandum of Understanding (MoU) with the USN for P-8A PSFD. The MoU defines Australia's contribution towards the joint costs for PSFD, and the separate funding of Australian-unique deliverables and effort.

The Increment 3 Project Arrangement was signed in September 2012 to enable Australia to participate in the incremental upgrade to Phase 2B. This upgrade will be incorporated under AIR 7000 Phase 2C.

In February 2014, Government Second Pass Approval was for the Project to acquire eight P-8A Poseidon aircraft, along with associated support and training systems. **The Government approved the acquisition of**

an additional four (4) aircraft in February 2016.

The Project Office issues Procurement Requests (PRs) to advise the CP of Australia's intent to acquire materiel through the CP. After an appropriate scope, schedule and cost have been advised by the CP, the Project Office issues a Letter of Authority (LOA) which provides Australia's financial commitment for the acquisition. The Project formally submitted its first PR through the CP in June 2014, which covered aircraft, aircrew training devices, aircraft spares, aircraft support and test equipment, transition training and other support elements.

On 4 September 2014, Defence signed a LOA authorising the USN to procure Australian P-8A initial aircraft spares.

In May 2015, the USN signed the contract for Australia's P-8A Aircrew Training Devices **to be delivered in 2017-18.**

Sustainment and in-service support will provide opportunities for Australian Industry involvement. Further opportunities exist for Australian Industry in facilities and infrastructure development.

In accordance with the approved acquisition strategy, opportunities for Australian Industry participation in the broader USN P-8A Global program will exist on a competitive contracting basis throughout the life-cycle of the P-8A. Opportunities include component manufacture, component repair, and research and design services.

AIR 7000 Phase 2B also seeks to generate Australian industry participation in the acquisition, sustainment and follow-on development phases of the program through the Australian Industry Capability and Boeing Global Supply Chain.

Uniqueness

The RAAF P-8A aircraft will be identical to the USN P-8A aircraft, except for minor configuration differences due to national requirements (such as different aircraft marking schemes). Other support elements, such as training devices and spares, will also be kept as common as technically possible.

AIR 7000 Phase 2B is acquiring, and will sustain, the P-8A capability through a Government to Government CP with the USN. This arrangement is distinctly different from the traditional Foreign Military Sales (FMS) or Direct Commercial Sales (DCS) arrangements.

The benefits of a CP include significantly enhanced insight and influence over the development of the weapon system, better awareness and control of project costs drivers and risks, better access to technical and sustainment data, and access to the USN wholesale spares warehouse. A down-side of the CP is some ambiguity in administrative aspects of the project, as described further below.

Major Risks and Issues

The Project is currently mitigating the risks associated with Air Vehicle and Tactical Operation Centre (TOC) integration into the Single Information Environment (SIE) and TOC software configuration. There is also a potential schedule risk associated with the installation of the Aircrew Training System.

A number of risks for the effective and efficient sustainment of the P-8A are also currently being treated through efforts to more closely align the US and Australian sustainment processes.

The project has also identified issues with CP process development and aircraft fatigue testing results and are working with the USN to quantify the impact of these issues. **The project is also seeking to mitigate the impact of forecast delays in delivery of some elements of Support and Test Equipment (S&TE).**

Other Current Sub-Projects

N/A

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Nov 07	Original Approved		144.1	1
Jul 10	Real Variation – Real Cost Decrease	(21.7)		2
Dec 11	Real Variation – Transfer	(38.0)		3
Apr 12	Government Intermediate Consideration	83.5		4
Feb 14	**Government Second Pass Approval**	**3,409.8**		5
Mar 16	Real Variation - Scope	1,295.4		6
			4,729.1	
Jul 10	Price Indexation		20.5	7
Jun 16	Exchange Variation		626.1	
Jun 16	**Total Budget**		5,519.9	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Aircraft Acquisition Payments – Lot 6	(121.5)		
	Contract Expenditure – Aircraft Retail Spares	(119.5)		
	Contract Expenditure – Aircraft Government Furnished Equipment	(102.5)		
	Contract Expenditure – PSFD MoU Contributions	(68.5)		
	Contract Expenditure – Increment 1 Contribution	(66.0)		
	Contract Expenditure – Aircrew Training System	(63.9)		
	Contract Expenditure – Aircraft Acquisition Payments – Lot 7	(3.1)		
	Other Contract Payments/Internal Expenses	(109.4)		8
			(654.4)	
FY to Jun 16	Contract Expenditure – Aircraft Acquisition Payments – Lot 6 & Lot 8	(431.0)		9
	Contract Expenditure – Aircraft Acquisition Payments – Lot 7	(172.2)		
	Contract Expenditure – Aircrew Training System	(92.5)		
	Contract Expenditure – PSFD MoU Contributions	(21.5)		
	Contract Expenditure – Aircraft Government Furnished Equipment	(17.9)		
	Other Contract Payments/Internal Expenses	(190.8)		10
			(925.8)	
Jun 16	**Total Expenditure**		(1,580.3)	
Jun 16	**Remaining Budget**		3,939.6	

Notes	
1	Government First Pass Approval to initiate the Project and progress the project to Intermediate Consideration. At First Pass, AIR 7000 entered the Spiral 1 MoU with the USN for development of the P-8A weapon system.
2	Hand back of contingency funding due to retirement of specific Increment 1 MoU risks.
3	Reallocation of funding to Defence Support and Reform Group to develop AIR 7000 Phase 2B facilities requirements.

4	Government Intermediate Consideration Funding Approval required to progress the project to 2nd Pass Government approval. Includes costs of project planning documentation development and contractor project support services.
5	Government Second Pass Approval to fund the acquisition of eight P-8A aircraft, and associated support systems and sustainment arrangements.
6	**Government Second Pass Approval to fund the acquisition of an additional four P-8A aircraft and associated support systems. Whilst funding approval was provided under AIR7000 Phase 2D, funds have been merged with AIR7000 Phase 2B for administration and reporting purposes as it relates to the delivery of one capability.**
7	Until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $17.4m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $3.1m having been applied to the remaining life of the project.
8	Other expenditure to 30 June **2015** was comprised of **Increment 3 contributions of $22.9m, Mission Support System (MSS) scoping and acquisition costs of $21.2m, MK 54 acquisition costs of $17.0m, Support and Test Equipment acquisition costs of $14.4m, Commonwealth Project Personnel (CPP) expenses of $8.3m, Contractor expenses of $2.3m and other operating expenditure not attributable to the listed major contracts of $23.3m.**
9	**Lot 8 long lead AAC payment has been included as part of the Lot 6 AAC contract payment. Lot 8 will be split out and will be shown separately in the next report.**
10	Other expenditure to **30 June 2016** was comprised of **Wholesale Spares $39.2m, Maintenance Training Devices $36.4m, Increment 3 Development $17.1m, Tactical Operational Centre/Mobile Tactical Operational Centre (MTOC) $14.9m, Aircrew & Maintenance Training $14.4m, CIO Group Single Integration Environment $7.2m, Sonobuoys $7.4m and other operating expenditure not attributable to the listed major contracts of $54.1m.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
717.3	**766.3**	**931.5**	**PBS - PAES: The variation is due to acceleration of payments for aircraft and the Flight Crew and Mission Crew Training Systems.** **PAES – Final Plan: The variation is due to FOREX supplementation of $17.6m, Reprogramming $147.1m and additional supplementation received for AIR7000 Phase 2D $0.5m.**
Variance $m	**48.9**	**165.2**	Total Variance ($m): **214.2**
Variance %	**6.8**	**21.6**	Total Variance (%):**29.9**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**The FY 15-16 variance is primarily due to PSFD MoU contribution payments of $21.5m, and Government Furnished Equipment payments of $17.9m being brought forward, as well as earlier than planned payments for Spares $16.5m. This is offset against Aircraft payment requirements moved to FY 16-17 ($11.4m), slippage in Training Systems ($37.0m) and a combination of other slippages amounting to ($13.2m).**
			Foreign Industry	
			Early Processes	
			Defence Processes	
		(5.7)	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
931.5	**925.8**	**(5.7)**	**Total Variance**	
		(0.6)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
PSFD MoU - Contributions (US Government)	Mar 12	130.4	**171.9**	Cost Ceiling (Capped)	MoU	1, 8
Aircraft Government Furnished Equipment (GFE) (US Government)	Apr 14	142.9	**160.8**	Variable	MoU	2,7,8
AAC Lot 6 & **Lot 8** (US Government)	Aug 14 **& May 16**	159.0	**939.5**	Variable	MoU	3,7,8
Retail Aircraft Spares (US Government)	Sep 14	122.1	**119.5**	Variable	MoU	4,7,8
Aircrew Training Systems (US Government)	Dec 14	275.4	**332.0**	Variable	MoU	5,7,8
AAC Lot 7 (US Government)	Jun 15	182.5	**805.4**	Variable	MoU	6,7,8

Notes

1	PSFD MoU shared contributions are limited to a cost ceiling, which can only be changed upon mutual written consent of the Participants. Australia is responsible for paying a proportion of the total costs based on the relative number of Australian aircraft in the overall fleet.
2	Aircraft GFE to be procured via contract arrangements between the USN and various suppliers for both Lot 6 and Lot 7 aircraft. Price represents the total value of contracts expected to be awarded and for which Section 23 Commitment Approval has been obtained. The USN are procuring the GFE on behalf of Australia as part of a consolidated US Government purchase.
3	Lot 6 **and lot 8** AAC – signature allowed the prime contractor, Boeing, to procure long-lead aircraft components prior to entering into fully defined contract arrangement**. Lot 6 production contract for acquisition of the first four aircraft was signed on 21 August 2015.**
4	Retail aircraft spares requirements to be procured via US Naval Supply Systems Command (NAVSUP) contracts, from USN inventory or via other US Government agency arrangements. The majority of retail spares are to be procured via NAVSUP.
5	Aircrew Training Devices - signature allowed the prime contractor, Boeing, to acquire the required long-lead parts, commence engineering and program management activities in support of Australian P-8A training device production. A fully defined contract was signed May 2015.
6	Lot 7 Aircraft AAC – signature allowed the prime contractor, Boeing, to procure long-lead aircraft components prior to entering into fully defined contract arrangement. **Lot 7 production contract for acquisition of the second four aircraft was signed in January 2016.**
7	'Contract signature' dates in this table are based on the date each LoA was issued by AIR 7000 Phase 2 project office. LoAs are issued by the project formally authorising the commitment and/or obligation of funds for contract execution or efforts to satisfy Australian-unique requirements.
8	Contract value as at **30 June 16** is based on actual expenditure to **30 June 2016** and remaining commitment at current **budget** exchange rates.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
PSFD MoU - Contributions (US Government)	N/A	N/A	Australia's contribution to shared costs from 2012-13 to 2021-22 based on the **original** purchase of eight aircraft. Includes contribution to production, sustainment and follow-on development for common efforts, and project overhead and administration costs.	1
Aircraft Government Furnished Equipment (GFE) (US Government	Various	Various	Items to be procured in support of production of Lot 6 (aircraft 1-4) and Lot 7 (aircraft 5-8) P-8A Aircraft.	2

AAC Lot 6 & Lot 8 (US Government)	Various	Various	**Four** Lot 6 **aircraft and Lot 8** long-lead P-8A aircraft components.	3
Retail Aircraft Spares (US Government)	Various	Various	Initial spares buy for all eight aircraft.	4
Aircrew Training Systems (US Government)	Various	Various	Training Systems Support Centre, Weapons Tactics Trainers, Part Task Trainer, Operational Flight Trainers, Mission Systems Desktop Trainers and Training Support.	
AAC Lot 7 (US Government)	Various	Various	**Four** Lot 7 **aircraft and** long-lead P-8A aircraft components.	5

Major equipment received and quantities to 30 Jun 16
No major equipment received to date.

Notes	
1	No equipment delivered as part of this contract.
2	GFE delivery will be to prime contractor for aircraft production.
3	No equipment has been delivered as part of this contract. **The contract for acquisition of four aircraft was signed in August 2015. The long lead aircraft components contract for Lot 8 aircraft was entered in 2015-16 as part of the Lot 6 aircraft production contract. This will be separated and reported separately when the contract is further modified to contract aircraft delivery in 2016-17.**
4	Australia has requested Retail Aircraft Spares delivery to commence August 2015 and conclude by May 2016.
5	No equipment **has been** delivered as part of this contract. **The contract for acquisition of the second four aircraft was signed in January 2016.**

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Component Advance Development	Multi-Mission Maritime Aircraft (subsequently called the P-8A Poseidon)	N/A	N/A	2002	**N/A**	1
System Design Development (SDD) - Milestone B	P-8A SDD	May 04	May 04	May 04	0	2
Design Readiness Review	P-8A SDD	Jul 07	Aug 07	Aug 07	1	
Milestone C	P-8A SDD	May 10	Aug 10	Aug 10	3	3
FRP Decision	P-8A Increment 2	Apr 13	Dec 13	Jan 14	8	4,5

Notes	
1	Component Advance Development was a competitive award to multiple contractors to define alternative Multi Mission Aircraft concept system architectures and evaluate associated risks and proposed mitigations.
2	SDD phase was used to design, develop and test the P-8A system.
3	Milestone C represents Low Rate Initial Production (LRIP) Approval and entry into the Production and Deployment Phase.
4	US Defense Acquisition Board approved the deferral of the Full Rate Production (FRP) decision from the original planned to allow for completion of the testing and subsequent reporting as well as adding an additional LRIP (Lot IV).
5	AIR 7000 Phase 2B will be relying on the Design Review processes of the USN.

3.2 Contractor Test and Evaluation Progress

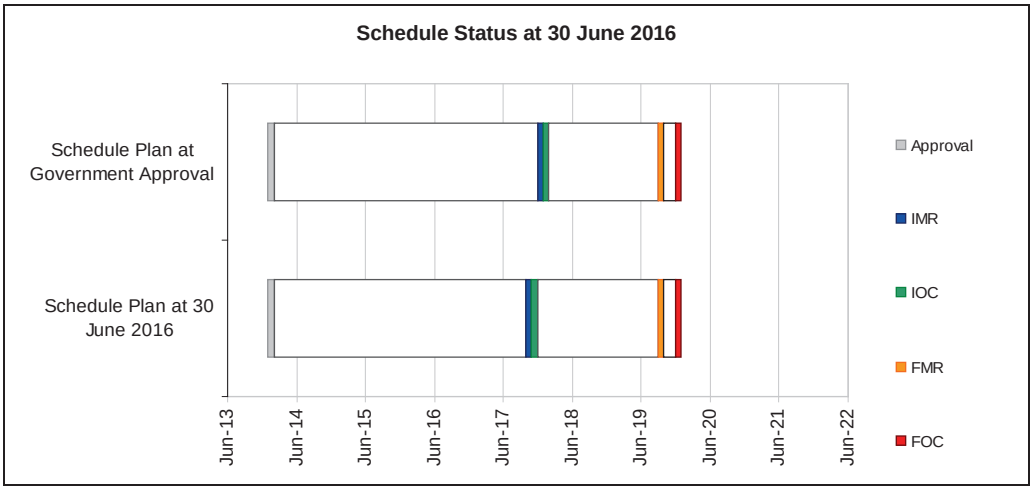
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Integration	Fleet Release 30 (Increment 2 ECP 1)	Apr 14	Dec 14	Dec 14	8	1
	Fleet Release 40 (Increment 2 ECP 2)	Aug 15	**Aug** 16	**Aug** 16	**12**	1
	Fleet Release 50 (Increment 2 ECP 3)	Apr 17	**Oct** 17	**Oct** 17	**6**	1
Acceptance	Accept and deliver Lot 6 Aircraft (1-4)	Nov 16 – Sep 17	Nov 16 – **Aug** 17	**Oct** 16 –**Aug** 17	**(1)**	2,3
	Accept and deliver Lot 7 Aircraft (5-8)	Dec 17 – Sep 18	Dec 17 – **Aug** 18	Dec 17 – **Aug** 18	**(1)**	2,3
	Accept and deliver Lot 8 Aircraft (9-12)	**Aug 19 – Feb 20**	**Aug 19 – Feb 20**	**Aug 19 – Feb 20**	**0**	**2**
	MSS and two Deployable MSS	Sep 16 – Aug 18	Sep 16 – Aug 18	**Dec** 16 – **Dec**18	**4**	4
	Training System	Jan 18 – Mar 18	Jan 18 – Mar 18	**Apr** 18 – Jun 18	3	5

Notes	
1	Fleet Releases are the final configurations for the incremental builds of the P-8A Weapon System. Increment 2 is being delivered through a number of smaller Engineering Change Proposals. **Variance from original planned dates are due to changes in the Boeing / USN schedule.**
2	Australian Lot 6 aircraft are scheduled for delivery in October 2016, March 2017, June 2017, and **August** 2017. Australian Lot 7 aircraft are scheduled for delivery in December 2017, **February** 2018, June 2018, and **August** 2018. **Australian Lot 8 aircraft are scheduled for delivery in August 2019, September 2019, October 2019, and February 2020.**
3	Australia will adopt a model of Recognition of Prior Acceptance for Aircraft.
4	Variance from original planned date is due to incorrect capture of milestone in MAA v3.0. This will be corrected in MAA **v4.0**. **Variance is due to the aligning of delivery with facilities construction completion.**
5	Variance from original planned date is due to the inability of the OEM to deliver the Aircrew Training Devices in a timeframe consistent with the MAA. All training devices are contracted to be delivered prior to the commencement of the first conversion training courses.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Materiel Release 1 (MR1)	Jan 17	**Dec** 16	**(1)**	**1**
In Service Date (ISD)	Nov 16	**Dec** 16	**1**	**1**
Initial Materiel Release (IMR)	Jan 18	Nov 17	(2)	
Initial Operational Capability (IOC)	Feb 18	Dec 17	(2)	
Materiel Release 2 (MR2)	Dec 18	**Dec** 18	**0**	**2**
Operational Capability 2 (OC2)	Jan 19	**Jan 19**	**0**	**2**
Final Materiel Release (FMR)	Oct 19	Oct 19	0	**3**
Final Operational Capability (FOC)	Jan 20	Jan 20	0	**3**

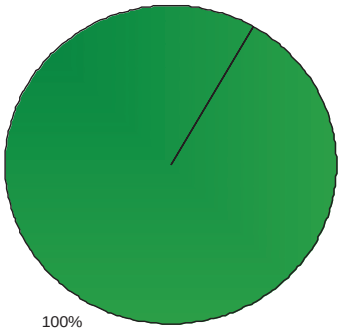
Notes	
1	**Variance due to the acceptance of the first MTOC now scheduled for 19 December 2016**
2	**Variance is due to rolling wave planning and further development of the schedule past MR1.**
3	**The FMR and FOC dates are currently under review following government approval to purchase an additional four aircraft in early 2016 and are expected to be clarified with the approval of a revised MAA.**



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The project expects to meet capability requirements as expressed in the MAA and supporting suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** N/A **Red:** N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	By IMR the following will be delivered: • 4 x P-8A Increment 2 ECP 2 Aircraft delivered to RAAF Edinburgh (EDN). • Four trained crews to support operations, maintenance and MSS at Main Operating Base (MOB) and Forward Operating Base (FOB). • Two Deployable MSS able to support operations at MOB and FOB. • Spares, Consumables, Ground Support Equipment (GSE) and Support and Test Equipment (S&TE) to support MOB and FOB operations. • Appropriate support and sustainment arrangements to support IOC.	Not yet achieved
Final Materiel Release (FMR)	By FMR the following will be delivered: • An additional 4 x P-8A Increment 2 ECP 2 aircraft delivered to EDN. • All spares, Ground Support Equipment GSE and S&TE to support the allocated Rate of Effort (ROE) (5,500 hours) at both MOB and FOB. • The full integration into the Single Information Environment of previously delivered two Deployable MSS and one MSS. • 100% Explosive Ordnance to meet agreed war stock requirements. Appropriate support and sustainment arrangements to support FOC	Not yet achieved
Note		
The constitution of IMR and FMR are currently under review following government approval to purchase an additional four aircraft in early 2016 and are expected to be clarified with the approval of a revised MAA.		

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
The Project has identified capability risks associated with respective integration of the Air Vehicle and the Tactical Operations Centres **(TOC)** into the Defence Single Information Environment (SIE).	• **Alternate operational procedures for the TOC have been identified but result in reduced operational efficiency.** • **USN agencies working with Boeing to release Air Vehicle network configuration information.** • **Develop test asset representing Air Vehicle network to develop SIE interface for Air Vehicle prior to delivery.**
The Project has identified schedule risks associated with development and timely installation of the Aircrew Training Devices, aircrew training and potential delays importing spares due to export control restrictions.	• Expedited construction of Operational Conversion Facility. • Continued, regular, engagement with USN and Boeing regarding Aircrew Training Device development.

	• Continued work with US Navy International Programs Office and US Department of State to ensure clear understanding of US export controls for Australian P-8A spares and data.
The Project has identified supportability risks associated with • development of **processes and establishing arrangements in support of** the P-8A Sustainment System and • the acquisition of a suitable range and depth of retail spares to support P-8A operations.	• Continued engagement with relevant USN agencies regarding the integration of USN-provided sustainment services. • Engagement of additional contractor resources to assist development of detailed plans/processes for the Sustainment System. • Analysis of more mature spares modelling data, which will be delivered by December 2015, and a remodelling/adjustment of future spares purchases. • Agreement of access to USN wholesale spares pool.

5.2 Major Project Issues

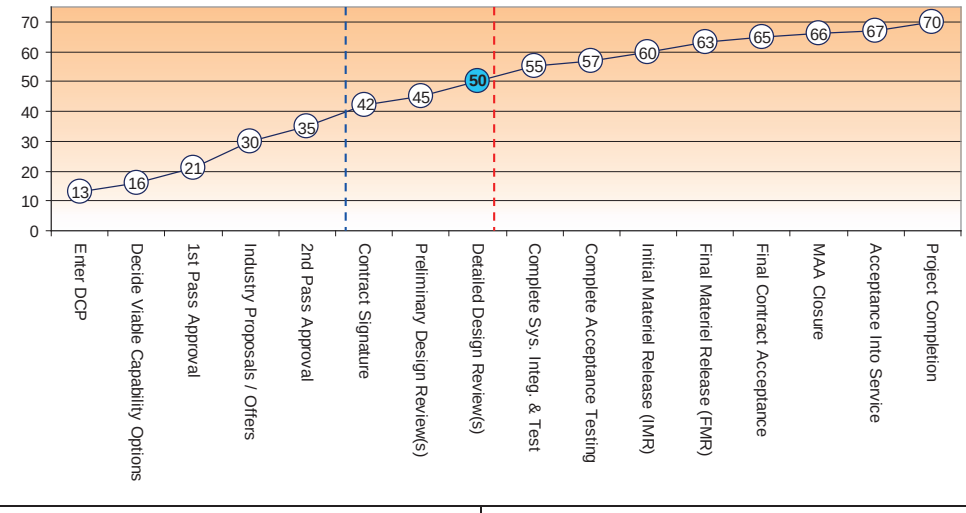
Description	Remedial Action
Cooperative Program process development. The Cooperative Program approach is less regulated than the more conventional FMS or DCS acquisition strategies. As a result, some additional effort is required to develop acquisition and sustainment processes in order to optimise the full benefits of the partnership.	• Work closely with the USN to adapt existing FMS/DCS arrangements, where beneficial for the project. • Identify those areas where existing arrangements are not adaptable or beneficial to the project, and prepare/approve new arrangements as early as possible.
Unexpected fatigue testing results. During a contracted Wing-Fuselage Full Scale Fatigue Test, Boeing discovered unexpected signs of structural fatigue. USN expect this to be a localized issue affecting a finite number of components that will likely require some additional maintenance or replacement during scheduled depot overhauls, but that would not be expected to have widespread consequences for P-8A fleet operations or fleet longevity.	• Ongoing engagement between Australian and USN subject matter experts to understand the causes of the unexpected signs of fatigue and the required remediation actions. • Consideration of incorporating an Operational Loads Monitoring System on at least one P-8A aircraft.
S&TE Support Solution for P-8A deficient.	• **Borrowing common S&TE equipment from other ADF platforms.** • **Borrowing critical items from USN.** • **Rely on USN contracts to provide initial Repair & Maintenance for RAAF S&TE.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	8	8	7	6	8	8	6	51
	Explanation	**1. Schedule: All major IMR/FMR deliverables are now on contract. Given the existing production lines for most deliverables, the Project Office has confidence of acceptable schedule performance.** **2. Cost: All major, initial, deliverables are now on contract. Contracted prices are within Project Budget. The Project Office have confidence that the remaining budget is sufficient.** **3. Technical Understanding: Sustainment arrangements have been agreed in concept, but further work is required to document executable procedures.** The CP with the USN provides insight and access to the P-8A capability. 4. **Technical Difficulty**: AIR 7000 Phase 2B will be relying on Design Review processes of the USN. The Full Rate Production decision for Increment 2 aircraft was made in January 2014. **5. Commercial: Boeing, as the Prime Contractor, continues to deliver P-8A aircraft earlier than contracted to the USN. Australia's first aircraft continues to be forecast for delivery in October, which is earlier than the November contracted date. Additionally, the Project Office's Strategic Support Partnership Contract has now commenced, which provides access to additional resources to complete time-critical project milestones.** 6. **Operations and Support: Australia continues to develop the mechanisms required to execute the proposed Cooperative Sustainment arrangements with the USN. Not all required USN support is under procurement action.**							



2014-15 MPR Status - - - -	2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
The signed PSFD MoU does not provide explicit detail on those activities which will be undertaken in the interests of both nations by the CP (paid for by shared funding) and those which are Australian unique (paid for in addition to the shared financial contribution). Clearer definition of this division in the MoU or the subordinate documents would have avoided the subsequent negotiation required to resolve this ambiguity.	Contract Management
The CP model has allowed Australia to work closely with the USN in the future requirements definition and planning for the P-8A. This has been to the significant mutual benefit of both the USN and Australia.	Requirements Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	AVM Leigh Gordon **(to Mar 16)** **AVM Catherine Roberts (Mar 16–current)**
Branch Head	AIRCDRE Adam Brown
Program Director	GPCAPT Debbie Richardson
Project Manager	WGCDR Peter Hay

Project Data Summary Sheet[122]

Project Number	**AIR 9000 Phase 2, 4 and 6**
Project Name	**MULTI-ROLE HELICOPTER**
First Year Reported in the MPR	2008-09
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy and Australian Army
Government 1st Pass Approval	Apr 06 (Phases 4 and 6)
Government 2nd Pass Approval	Aug 04 (Phase 2), Apr 06 (Phases 4 and 6)
Total Approved Budget (Current)	**$3,773.9m**
2015-16 Budget	**$169.9m**
Project Stage	Initial Materiel Release
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The Multi-Role Helicopter (MRH) Program is a key component of the Australian Defence Force (ADF) Helicopter Strategic Master Plan that seeks to rationalise the number of helicopter types in ADF service. The MRH Program consists of three phases of AIR 9000. Phase 2 (12 helicopters) is the acquisition of an additional Squadron of troop lift aircraft for the Australian Army, Phase 4 (28 helicopters) will replace Army's Black Hawk helicopters in the Air Mobile and Special Operations roles, and Phase 6 (6 helicopters) will replace Royal Australian Navy (RAN) Sea King helicopters in the Maritime Support Helicopter role. All three phases are grouped under the AIR 9000 MRH Program.

1.2 Current Status

On 28 November 2011, the Minister for Defence announced this project as a Project of Concern.

Cost Performance

In-year

The project has spent **$193.9m** against a budget of **$169.9m** to **June 2016**. The **$24.1m overspend** is **primarily** due to **net adjustments to payment phasings across the Prime Acquisition and Full Flight Mission Simulator Contracts offset against** foreign currency gains.

Project Financial Assurance Statement

As at 30 June 2016, project AIR 9000 Phase 2, 4 & 6 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

122 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Contingency Statement

The project has applied contingency in the financial year primarily **for the treatment of various supportability and performance risks such as a replacement Mission Management System and provision of a Crash Rescue Helicopter service.**

Schedule Performance

As a result of the Deed 2 negotiations with the contractor, the final delivery of aircraft has been rescheduled to July 2017; this, and ongoing technical deficiencies, have resulted in delays to the Final Materiel Release (FMR) and Final Operational Capability (FOC) milestones. However, **a number of capability milestones have been declared, including Army Initial Operational Capability (IOC) in December 2014, Navy IOC in February 2015, first Operational Capability Land (OCL1) in September 2015, second and third Operational Capability Amphibious (OCA2/3) in December 2015, and the second Operational Capability Land (OCL2) in March 2016. The FMR and FOC dates are currently under review and are expected to be clarified in late 2016 with the approval of a revised Materiel Acquisition Agreement.**

Thirty-six aircraft have been accepted into service. The first thirteen aircraft **required** an in-service retrofit to bring them up to the full Phase 2/4/6 capability baseline. **All thirteen aircraft have now been retrofitted and accepted back into service.**

Remediation to rectify concerns regarding configuration management issues of production aircraft has slowed the acceptance of production aircraft**,** this in turn **has slowed** the rate of capability growth. The Chief of Army has agreed to delay introduction of MRH90 into 6th Aviation Regiment by 3 years, **because of reliability and design shortfalls,** extending the Black Hawk fleet to 2022 to mitigate the risk to capability. The delayed introduction to 6th Aviation Regiment will mean the growth in total MRH90 flying hours will temporarily stabilise below the planned mature rate. **The aircraft intended for this role will continue to be accepted and will be rotated through the fleet.**

Both Full Flight Mission Simulators have been accepted (the first in August 2013 and the second in October 2014).

Materiel Capability Delivery Performance

Following achievement of In-Service Date (ISD) with agreed partial achievement of the contracted MRH capabilities, there has been significant work by both Industry and the Commonwealth to define and implement a series of capability block enhancements to bring the MRH90 to contracted standards. This **included** a retrofit program to progressively bring all aircraft up to the contracted standard.

The MRH is currently largely achieving the required Rate of Effort. However, this is due to the proportionately larger stock of spares which is designed for the full fleet. Further improvements to aircraft serviceability will be required to maintain this result as more aircraft are delivered.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The Additional Troop Lift project was first foreshadowed in the Defence White Paper 2000.

The MRH Program consists of Phases 2, 4 & 6. Phase 2 was approved initially, providing 12 additional Troop Lift helicopters for Army. Phases 4 & 6 were approved subsequently with Phase 4 which provided 28 helicopters as the replacement of the Australian Army's fleet of 34 S-70A-9 Black Hawk helicopters, again for troop lift capability, and Phase 6 provided 6 helicopters as the replacement of the RAN's fleet of six Sea King helicopters, providing maritime support capability for Navy. The delivery of a 47th MRH90 was negotiated as part of Deed 2. This enables the use of one airframe as a Ground Training Device without impacting the operational fleet.

In total, the AIR 9000 MRH Program will acquire 47 MRH90 aircraft and support systems. Support capabilities, such as Electronic Warfare Self Protection Support System, MRH Software Support Centre, MRH Instrumentation System and a Ground Mission Management System, will be acquired along with training systems and in-service support.

The Phase 2 Acquisition Contract was signed with **Airbus Group Australia Pacific (Airbus Group AP)** in June 2005 with the subsequent Sustainment and Program Agreement contracts signed in July 2005.

In November 2005 the Defence Capability and Investment Committee agreed that the way forward was to seek

a combined first and second pass approval for both Phases 4 and 6 as part of a single approval process.

Cabinet endorsement was gained in April 2006 in a combined first and second pass process for Phase 4 and Phase 6. The agreed method of procurement, a two stage Contract Change Proposal (CCP), resulted in the execution of options contained in the Program Agreement for the procurement of additional aircraft approved under Phases 4 and 6. Initial CCPs for the Acquisition, Sustainment and Program Agreement Contracts were signed in June 2006.

The three AIR 9000 Phase 2/4/6 contracts (Program Agreement Contract, Acquisition Contract and Sustainment Contract) incorporate the above CCPs. On acceptance of two MRH90, appropriate training, maintenance and supply support, an In-Service Date of December 2007 was achieved with aircraft operating under a Special Flight Permit granted by the Chief of Air Force. This triggered the Sustainment Contract to come into effect and all three contracts are now currently active.

The Commonwealth suspended acceptance of aircraft from **Airbus Group AP** in November 2010; deliveries recommenced in November 2011 after negotiations of a remediation plan (Deed of Agreement and CCPs) to address a number of engineering and reliability issues. Concurrent with the recommencement of aircraft acceptance in November 2011, the Minister for Defence announced that the project would be listed as a Project of Concern citing schedule, aircraft technical deficiencies and **Airbus Group AP's** performance.

The Commonwealth has conducted negotiations with the prime contractor to review and settle commercial, technical and schedule issues resulting in a variation to the original contract signed on 9 May 2013, which has been termed 'Deed 2'. Deed 2, which came into effect on 1 July 2013 re-baselined the delivery schedule and addressed commercial and technical issues.

Uniqueness

The MRH90 aircraft is based upon the German Army variant of the NH90 Troop Transport Helicopter. The MRH90 design uses well established aerospace technologies, but will introduce new technologies into Army and Navy, primarily in the areas of composite structure, helmet mounted sight and display and fly-by-wire flight control systems.

The MRH Program is providing an MRH90 capability to two main users - Army and Navy. The capability delivery complexity this introduces has been mitigated through an agreement between Chief of Army and Chief of Navy. This provides the project with a single interface for introduction into service issues.

The MRH Program Office Design Acceptance Strategy is dependent upon the French Military Airworthiness Authority's (Direction Générale de l'Armament (DGA)) prior acceptance of the NH90 variants and certification recommendation for the MRH90. The DGA and other National Qualification Organisations' prior acceptance of European NH90s provide confidence for the ADF to leverage off common certification evidence for the MRH90.

Major Risks and Issues

Aircraft system lack of maturity has affected the certification schedule of the MRH90 and subsequently the declaration of capability milestones. Cabin integration issues, including the Fast Roping and Rappelling Device, the self defence gun mount and the cabin seating have impacted the achievement of these capability milestones.

The **volume** of engineering change proposals has impacted aircraft delivery. In addition, the project is managing issues affecting **Final Materiel Release including the Mission Management System, a replacement Fast Roping, Rappelling and Extraction System,** the Electronic Warfare **Self Protection** System**, the Full Flight Mission Simulator, the Search and Landing Light** and the **Identification,** Friend or Foe Mode 4.

The remediation of these deficiencies and issues through replacement or re-design will draw upon significant engineering, logistic and commercial resources and will therefore form the critical path toward achieving the Final Materiel Release.

In addition, there is a chance that the project may not be able to retain sufficient levels of experienced and skilled manpower to achieve the required rate of Acquisition deliverables.

Other Current Sub-Projects

AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS): HATS will be an important link in the training continuum for inductees to the MRH 90 training system.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Apr 04	Original Approved		3.3	1
Aug 04	**Government Second Pass Approval**	953.9		
Jun 06	Real Variation – Scope	2,565.6		2
Oct 06	Real Variation – Transfer	(219.0)		3
Oct 08	Real Variation – Transfer	(20.0)		4
Oct 08	Real Variation – Scope	31.5		5
			3,312.0	
Jul 10	Price Indexation		679.8	6
Jun 16	Exchange Variation		(221.2)	
Jun 16	**Total Budget**		3,773.9	
	Project Expenditure			
Prior to Jul 15	Contract expenditure – Airbus Group AP	(2,375.1)		
	Contract expenditure – CAE Australia	(165.1)		
	Other Contract Payments / Internal Expenses	(190.1)		7
			(2,730.3)	
FY to Jun 16	Contract expenditure – Airbus Group AP	(161.1)		
	Contract expenditure – CAE Australia	(4.6)		
	Other Contract Payments / Internal Expenses	(28.1)		8
			(193.9)	
Jun 16	**Total Expenditure**		(2,924.2)	
Jun 16	**Remaining Budget**		849.7	

Notes	
1	This project's original budget amount is that prior to achieving Second Pass Government Approval.
2	Incorporation of AIR 9000 Phase 4 (Black Hawk Upgrade/Replacement) and AIR 9000 Phase 6 (Maritime Support Helicopter).
3	The funding related to facilities elements of the project was managed by Defence Estate and Infrastructure Group (DE&IG).
4	Transfer to DE&IG for Facilities Infrastructure.
5	Real Cost Increase funding for Full Flight Mission Simulator.
6	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $556.1m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $123.7m having been applied to the remaining life of the project.
7	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.
8	Other expenditure: $15.1m for Spares and Support and Test Equipment, $0.5m for Full Flight Mission Simulator Upgrade, and $12.6m for operating expenditure, contractors, consultants, contingency and other capital expenditure not attributable to the aforementioned contracts.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
211.8	170.8	169.9	The variance between PBS and PAES estimates is due to foreign exchange funding increase offset by the reprogramming of prime contract milestone deliverables. The variance between PAES and Final Plan estimates primarily reflects minor reprogramming of funding against purchase orders.
Variance $m	(40.9)	(1.0)	Total Variance ($m): (41.9)
Variance %	(19.3)	(0.6)	Total Variance (%): (19.8)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		26.1	Australian Industry	The $24.1m overspend reflects; net adjustments to payment phasings across the Prime Acquisition and Full Flight Mission Simulator Contracts of $26.1m; offset by a foreign exchange gain against foreign currency payments of ($1.7m); and a minor reduction to operating spend of ($0.3m).
			Foreign Industry	
			Early Processes	
		(1.7)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
		(0.3)	Effort in Support of Operations	
			Additional Government Approvals	
169.9	193.9	24.1	**Total Variance**	
		14.2	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Airbus Group AP	Jun 05	846.3	2,831.7	VARIABLE	ASDEFCON (Strategic)	1, 2, 3, 4
CAE Australia	Dec 07	180.5	177.0	VARIABLE	ASDEFCON (Complex)	4, 5

Notes	
1	This contract also includes an Electronic Warfare Self Protection Support System, MRH Software Support System, MRH Instrumented System and 23 Ground Mission Management System (GMMS) (4 Fixed GMMS, 7 Deployable GMMS, 1 Reduced, 9 Light and 2 interim GMMS). Contract Base date is January 2004.
2	The MRH Instrumented System includes an airborne instrumentation pallet, some ground based instrumentation and three aircraft (from the total fleet of 47) that have provisions to have the instrumentation pallet installed.
3	The increase from the original contract value is predominantly due to the increase in aircraft ordered and associated systems following government approved scope changes as described in Section 1.3. Since 1 July 2014, there have been three key CCPs processed for a new cargo hook, for the Aircraft Systems Trainer and for Helmet Mounted Sight Display Modification from Configuration 1 to Configuration 3.
4	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
5	**The Commonwealth has conducted negotiations with the Contractor, to review and settle commercial and technical issues, in December 2015.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		

Airbus Group AP	12	47	MRH90 Aircraft	1
CAE Australia	2	2	Full Flight and Mission Simulator	
Major equipment received and quantities to 30 Jun 16				
36 MRH aircraft have been accepted to date. Both Full Flight Mission Simulators have been accepted by the Commonwealth.				
Notes				
1	The delivery of a 47th MRH90 was negotiated as part of Deed 2. This enables the use of one airframe as a Ground Training Device without impacting the operational fleet.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	MRH aircraft - Phase 2	Aug 05	Oct 05	Sep 05	1	1
	MRH aircraft - Phase 4/6	Apr 07	Apr 07	May 07	1	1
	MRH Software Support Centre	N/A	Mar 07	Apr 07	1	
	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 05	N/A	
	Ground based Mission planning and Management System	Oct 05	Oct 05	Feb 07	16	2
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	May 08	Nov 08	Mar 09	9	3
System Design	Full Flight and Mission Simulators	Oct 08	Mar 09	Jun 09	8	3
Preliminary Design	MRH aircraft - Phase 2	Jan 06	Jan 06	Apr 06	3	
	MRH aircraft - Phase 4/6	N/A	N/A	Jun 08	N/A	
	MRH Software Support Centre	N/A	Jun 07	Jun 07	0	
	Electronic Warfare Self Protection Support System	Mar 06	Mar 06	May 06	2	
	Ground based Mission planning and Management System	Jul 06	Apr 07	Jun 07	11	2
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	Feb 09	Sep 09	Oct 09	8	3
Critical Design	MRH aircraft - Phase 2	May 06	May 06	Jun 06	1	
	MRH aircraft - Phase 4/6	Aug 08	N/A	Oct 08	2	
	MRH Software Support Centre	N/A	Oct 07	Sep 07	(1)	
	Electronic Warfare Self Protection Support System	Sep 06	Sep 06	Oct 06	1	
	Ground based Mission planning and Management System	Nov 06	Nov 07	Jul 08	20	2
	MRH Instrumented System	N/A	Jun 08	Jun 08	0	
	Full Flight and Mission Simulators	Aug 09	Feb 10	Apr 10	6	3

Notes	
1	Delays in the Systems Engineering process have resulted from the more developmental nature of the aircraft system, with the MRH90 variant being unique in some ways.
2	Ground Mission Management System software delays are directly attributable to aircraft schedule delivery slip.

3	Full Flight Mission Simulators design review delays stem primarily from slow Contractor derivation of requirements into a suitable System and Subsystem Specification. This was compounded by delays in the prime contractor establishing a vital subcontract with the aircraft manufacturer.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRH aircraft - Phase 2	Jul 06	Nov 06	Dec 06	5	
	MRH aircraft - Phase 4/6	N/A	N/A	N/A	N/A	1
	MRH Software Support Centre	N/A	Oct 08	Nov 08	1	
	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 07	N/A	
	Ground based Mission planning and Management System	N/A	N/A	N/A	N/A	2
	MRH Instrumented System	Nov 08	May 09	Dec 09	13	3
	Full Flight and Mission Simulators	Jun 11	Sept 11	Sep 11	4	4
Acceptance	Type Acceptance Review Special Flight Permit 1	Oct 07	N/A	Dec 07	2	5
	Australian Military Type Certificate	Dec 08	Dec 10	Apr 13	52	6
	Full Flight and Mission Simulator #1	Jul 12	Aug 13	Aug 13	13	7
	Full Flight and Mission Simulator #2	Jan 13	Oct 14	Oct 14	21	7
	Ground based Mission planning and Management System Lot 1	Feb 09	Sep 09	Dec 09	10	8
	Ground Mission planning and Management System Lot 2	Feb 09	Dec 09	Apr 10	14	8
	Ground Mission planning and Management System Lot 3	Sep10	Sep10	Mar 13	30	8
	MRH Software Support Centre	Feb 09	Feb 09	Dec 08	(2)	
	Electronic Warfare Self Protection Support System	Dec 07	Dec 07	Dec 07	0	
	MRH Instrumented System	Mar 10	Jun 10	Sep 11	18	9
Aircraft Acceptance	MRH aircraft #01 (First aircraft)	Dec 07	N/A	Dec 07	0	
	MRH aircraft #05 (First Australian built aircraft)	Dec 08	N/A	Dec 08	0	
	MRH aircraft #36 (Most Recent)	May 13	Dec 15	Dec 15	31	10
	MRH aircraft #37 (Next aircraft)	Jul 13	Dec 15	Jul 16	36	10
	MRH aircraft #47 (Final Aircraft)	Jul 17	Jul 17	Jul 17	0	

Notes	
1	Phases 4/6 were rolled into the MRH Program from aircraft 13 onwards, which increased the number of aircraft from 12 to 46.
2	The acceptance and test-readiness of the Ground Mission Management System (GMMS) was broken into six lots post contract signature. The lots compose of GMMS deliverables that have been aligned to aircraft delivery – location and baseline. The acceptance of GMMS lots are listed in the acceptance area of this table.
3	The 13 month delay to closure of Test Readiness Review was due to electronic compatibility test design issues not resolved until November 2009. This delay was mitigated by the development of an interim MRH Instrumentation System capability used for a test activity in October 2009.

4	Achieved through completion of Test Readiness Review for Contractor In-Plant Test and Evaluation in September 2011.
5	The first Airworthiness Board (for a Special Flight Permit (SFP)) was conducted in November 2007 and a SFP was granted in December 2007. There have been a number of SFP extensions to allow flight trials of the aircraft as it further develops. The most recent SFP was granted in December 2012 and expired in April 2013.
6	Achievement of the Australian Military Type Certificate proved problematic due to technical and reliability issues, leading to insufficient levels of the Rate of Effort. Rate of Effort was required to validate that in-service support arrangements for the fleet are sufficient to cope with current numbers of aircraft and are growing in maturity to meet fleet requirements. Australian Military Type Certificate and Service Release was achieved 17 April 2013.
7	Refers to acceptance of Full Flight Mission Simulators in Oakey and Townsville. Delays have been incurred due to the late delivery of facilities and an underestimation of the time required to implement the design.
8	Lot 1, 2 and 3 have been altered to accommodate the variation in aircraft delivery date and configuration.
9	The MRH instrumented system incurred delays due to technical and supportability issues that resulted in contractual non-conformances. These non-conformances were rectified by September 2011.
10	The MRH90 program stopped accepting aircraft in November 2010 due to a number of technical and reliability issues. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and contractual issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on **Airbus Group AP's** agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with the most recent aircraft (#**36**) being accepted in December **2015**.

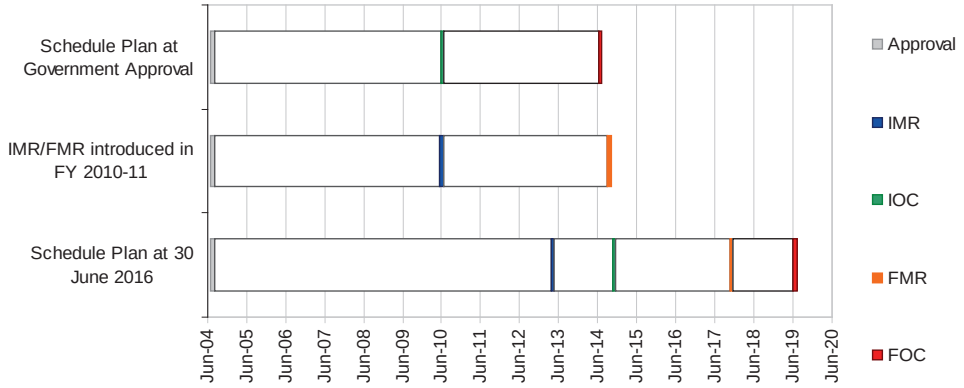
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item		Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Army/Navy	Jun 10	May 13	35	1
Initial Operational Capability (IOC)	Navy	Jul 10	Feb 15	55	2
	Army	Apr 11	Dec 14	44	3
Final Materiel Release (FMR)	Army/Navy	Oct 14	Dec 17	38	4
Final Operational Capability (FOC)	Navy	Dec 12	-	-	5
	Army	Jul 14	Jul 19	60	4

Notes	
1	The MRH90 program stopped accepting aircraft in November 2010 due to a number of technical and reliability issues. This has impacted the achievement of capability milestones. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on **Airbus Group AP's** agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with the most recent aircraft (#**36**) being accepted in December **2015**. IMR was declared on 13 May 2013, based on 6 Product Baseline 003 aircraft.
2	Affected by delays to IMR. (Refer to Note 1 above)
3	Affected by delays to IMR. (Refer to Note 1 above)

4	Dates directly impacted by delay to IMR. (Refer to Note 1 above). **The remediation of technical deficiencies and issues through replacement or re-design will draw upon significant engineering, logistic and commercial resources and will therefore form the critical path toward achieving FMR. The FMR and FOC dates are currently under review and are expected to be clarified in late 2016 with the approval of a revised Materiel Acquisition Agreement.**
5	FOC is now only forecast as a single date. The last capability subset is to be realised by Army.

Schedule Status at 30 June 2016

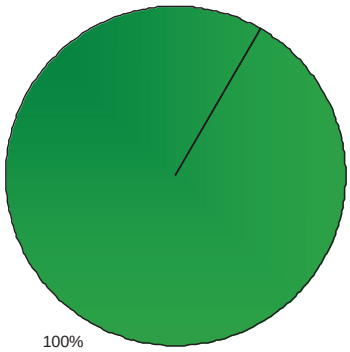


Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Green:

A number of key capabilities have been delivered and service released. Other key capabilities such as cargo hook and the replacement mission troop seats are being progressed in accordance with agreed operational milestones.

Amber:

N/A

Red:

N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	1. Six Product Baseline 003 aircraft with associated role equipment to support Initial Operational Capability milestones; 2. Issue of Australian Military Type Certificate and Service Release; 3. Completion of all MRH90 facilities at Townsville, Oakey and Nowra; 4. Establishment of mature planned contractor support to maintenance and logistics; and 5. Provision and certification of Mission Management systems necessary for Initial Operational Capability milestones. 6. Initial Material Release was achieved in May 2013.	Achieved
Final Materiel Release (FMR)	1. 47 aircraft configured to the contractual baseline including configuration amendments specified in Deeds 1 and 2 (one aircraft to be used as a Maintenance Training Device); 2. Role equipment delivered to support aircraft; 3. A mature sustainment organisation capable of discharging all in-service responsibilities; including logistic and training requirements; 4. Mature training system with all training devices accepted, supported by an effective, functioning training organisation; and 5. All facilities and support equipment, required to support the capabilities accepted. The project is focused on the timely delivery of capability to meet future operational milestones. This includes the delivery of crucial products such as the replacement Cargo Hook, the Fast Roping and Rappelling Device and a Common Ground Mission Management System.	Not **yet** achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the achievement of the Final Materiel Release (FMR) will be affected by delays in the delivery of supplies according to the contracted schedule leading to an impact on cost, schedule and performance.	6. Formation of Cabin Integration Working Group. 7. Industry Prototyping. 8. Accept incremental improvements. 9. Use of Liquidated Damages as offset. 10. Leverage NATO Helicopters 90 (NH90) community solutions. **This risk has been amended to reflect the focus of delivering materiel leading up to FMR.**

Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
There is a chance that the MRH Program may not be able to retain sufficient levels of experienced and skilled manpower to achieve the required rate of Acquisition deliverables leading to an impact on schedule and capability.	**1. Early identification of staff transition and turnover** **2. Detailed succession planning** **3. Early engagement with Army and Royal Australian Air Force posting Directorates and CASG, to identify solutions** **4. Identify areas where contracted workforce can supplement where applicable**

5.2 Major Project Issues

Description	Remedial Action
Upgrading both Full Flight Mission Simulator**s** to Sustainment Software Build 1.1 will be delayed due to an inability to negotiate a sustainable upgrade cost.	11. Work with industry to identify and optimise cost drivers. 12. Investigate alternate contracting strategies. **This issue has been retired as a result of signing a contract with Industry for the upgrade of both Full Flight Mission Simulators to Sustainment Software Build 1.1.**
The Full Flight Mission Simulator configuration alignment with the MRH90 aircraft has been affected by the length of time required to upgrade to Sustainment Software Build 1.1.	**1. Evaluate options for consolidating Full Flight Mission Simulator technologies to a single manufacturer.** **2. Establish an efficient process of obtaining aircraft documentation and associated software packages.** **3. Integrate engineering change proposals between MRH90 aircraft and the Full Flight Mission Simulator.**
The MRH90 Search / Landing Light (SLL) was assessed as not fit for purpose due to beam width and lack of covertness. This reduced the range of illuminations under which the aircraft could conduct night flying and limited operational use.	13. Identify a replacement bulb for SLL capability. 14. Implement solution to meet capability milestones. **A satisfactory replacement SLL solution has been identified, hence this Issue will be retired following delivery of the solution (Q4/16).**
The Electronic Warfare **Self Protection** system fitted to the MRH90 is not performing to specification during specific aircraft manoeuvres.	1. Industry to conduct a technical assessment of the issues identified and provide recommendations for remediation. 2. **Commonwealth** to assess the validity of the recommendations with system specialists **Defence Science and Technology Group.** 3. Verification and validation of the remediation activities by Industry. 4. Implement solution to meet capability requirements.
The Identification**,** Friend or Foe Mode 4 fitted to the MRH90 is not performing during specific scenarios.	1. Assessment by Industry to identify the technical issues. 2. **Commonwealth** and Industry to assess the validity of the remediation options. 3. Industry to implement solution across the MRH90 fleet.

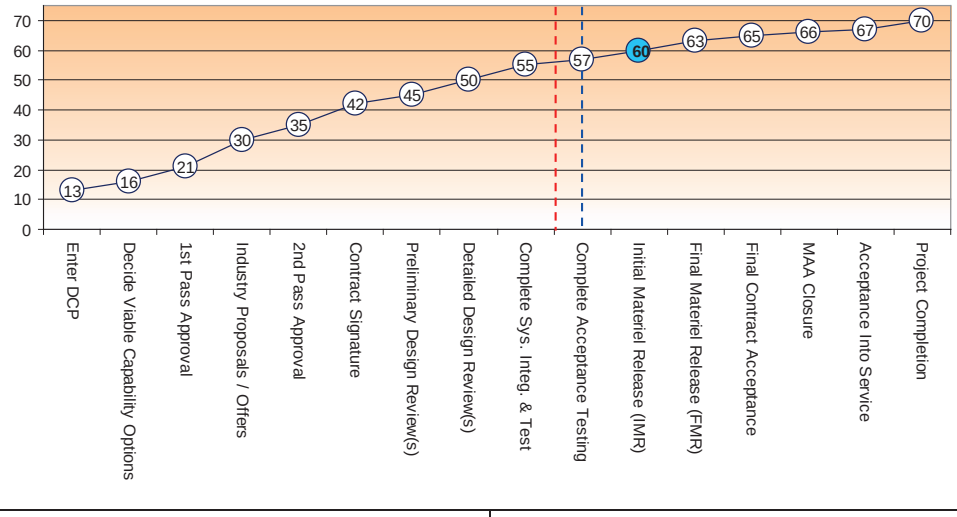
The **volume** of engineering change proposals has impacted the timing and effective delivery of aircraft.	1. Update MRH Configuration Control Board process to achieve Service Release of design changes prior to Commonwealth acceptance of aircraft. 2. Closer alignment of acquisition and sustainment engineering processes. 3. Final aircraft configuration implementation plan to be prioritised.
The Service Release and Operational capability will be affected by the Fast Roping and Rappelling Device being deemed not suitable leading to an impact on schedule and performance.	1. Interim Fast Roping and Rappelling Device solution has been design accepted and service release has been achieved. 2. Identify design options for enduring solution.

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	**7**	7	9	9	8	7	9	**56**
	Explanation	• **Schedule:** **The Final Materiel Release and Final Operational Capability dates are currently under review and are expected to be clarified in late 2016 with the approval of a revised Materiel Acquisition Agreement.** • **Cost:** Not all risks have been retired; however the estimate at completion to mitigate remains within contingency guidance. • **Requirement:** The MRH System design and acceptance testing phases are essentially complete, with activities on-going for outstanding elements such as cargo hook and mission troop seat. Additionally, the project office, with Navy and Army, is conducting validation trials to demonstrate that the system meets in-service requirements. • **Technical Understanding:** The knowledge necessary to operate and support the platform is being transferred to the in-service providers. • **Technical Difficulty:** Capability is still being tested fully due to the immaturity of elements of the capability. • **Commercial:** Deed 2 settled a number of long outstanding commercial issues and has implemented sound management arrangements to provide confidence that industry effort will be focused on capability realisation.							



2014-15 MPR Status - - - -	2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Early establishment of the Sustainment organisations. Both Commonwealth and Industry teams need to be set up well in advance of the first of the deliveries. The provision of accepted aircraft to an Operational Squadron has led to a range of lessons in regard to command and control of assets and people, stakeholder management and the relationship with Industry.	Resourcing
The impact of attaining limited Intellectual Property rights has been critical to the ongoing development of the capability and achievement of value for money in further contract negotiations. It has also limited the provision of data for integration with other platforms (such as the Landing Helicopter Dock ships).	Contract Management
The MRH **Program** was incorrectly viewed as a Military off-the-Shelf (MOTS) acquisition. Lessons associated with intended MOTS procurements include: that it is essential that the maturity of any offered product be clearly assessed and understood; and that elements of a chosen off-the-shelf solution may not meet the user requirement.	Off-the-shelf Equipment
Better arrangements should be put in place to ensure appropriate considerations of contractor performance occur before the Commonwealth enters into similar contracts with the same contractor.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	RADM Tony Dalton **(to Oct 15)** **MAJGEN Andrew Mathewson (Oct 15–current)**
Branch Head	BRIG Andrew Mathewson **(to Oct 15)** **BRIG Anthony McWatters (Oct 15–current)**
Project Director	COL James Allen
Project Manager	Mr Hilton Hunter

Project Data Summary Sheet[123]

Project Number	**AIR 5349 Phase 3**
Project Name	**EA-18G GROWLER AIRBORNE ELECTRONIC ATTACK CAPABILITY**
First Year Reported in the MPR	2013-14
Capability Type	New
Acquisition Type	Australianised MOTS
Service	Royal Australian Air Force
Government 1st Pass Approval	Aug 12
Government 2nd Pass Approval	Apr 13
Total Approved Budget (Current)	**$3,556.5m**
2015–16 Budget	**$555.0m**
Project Stage	**Detailed Design Review**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The EA-18G Growler Airborne Electronic Attack Capability provides for the acquisition of 12 Boeing EA-18G Growler aircraft, ALQ-99 Tactical Jamming Systems (TJS), associated weapons, support and training systems to establish an Airborne Electronic Attack (AEA) capability for the Australian Defence Force (ADF). In December 2014 the scope of the project was expanded to include Electronic Warfare (EW) training ranges west of Amberley in Queensland and in Delamere in the Northern Territory (Mobile Threat Training Emitter System (MTTES)), plus air-to-air and anti-radiation weapons for raise-train-sustain (RTS) activities.

1.2 Current Status

Cost Performance

In-year

At 30 Jun 2016, the project has spent $320.0m against an estimate final plan budget of $555.0m. The underspend of $235.0m was caused by lower March and no June 2016 Foreign Military Sales (FMS) case payments for aircraft and AEA kits, predominantly driven by cost reductions and decreased billing forecasts from US Navy.

Project Financial Assurance Statement

As at 30 June 2016, project AIR 5349 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

123 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

The project has not applied contingency in the financial year.

Schedule Performance

Despite the significant change of scope approved in April 2013 to acquire new aircraft in lieu of modification of existing Lot 33 F/A-18F Super Hornets, the project is on schedule to achieve the initial In-Service Date milestone in January 2017, as well as the subsequent Materiel (and Capability) Release milestones. **The production of all 12 EA-18G Australian aircraft is complete. They remain with the US Navy whilst development and test of aircraft software is undertaken. The Project is** on schedule for completion to meet Australian airworthiness board timelines for Australian flight operations to commence from in-service date (ISD).

The first Australian aircrew completed conversion onto the EA-18G in early 2015 and are now embedded in US Navy operational Growler Squadrons gaining experience for the stand-up of a Growler-equipped No. 6 Squadron from January 2017.

The existing Integrated Visual Environment Maintenance Trainers (IVEMTs) have been successfully upgraded to support F/A-18F and EA-18G and Design Acceptance is on schedule. The Tactical Operational Flight Trainer (TOFT) upgrade has been delayed until March 2017 and the schedule for Design Acceptance is being re-worked accordingly.

Materiel Capability Delivery Performance

The project remains on track to deliver a US Navy common Airborne Electronic Attack Capability based on the EA-18G aircraft and ALQ-99 TJS.

The EA-18G Growler contains the ALQ-218 Radio Frequency Receiver System as well as the ALQ-227 Communications Countermeasures Set to receive broad spectrum radio frequency signals and subsequently disrupt or jam those signals with the ALQ-99 TJS. As the EA-18G Growler airframe is based on the F/A-18F Super Hornet Block II configuration, it retains an Air-to-Air capability with the APG-79 Radar and AIM-120 Advanced Medium Range Air to Air Missiles (AMRAAM) weapons. Additional AMRAAM tactical missiles and Captive Air Training Missiles (CATMs) are being procured for the expanded air combat fleet. The AIM-9X Sidewinder Air-to-Air missile as integrated on the F/A-18F Super Hornet is also being integrated onto the EA-18G with additional CATMs and tactical missiles for RTS approved for acquisition in December 2014.

The Australian EA-18G Growler will retain the capability for aircrew to train for the employment of AGM-88B High Speed Anti-Radiation Missiles (HARM) and AGM-88E Advanced Anti-Radiation Air to Ground Missiles (AARGM), with four HARM CATMs and eight AARGM CATMs being procured. Further, HARM and AARGM tactical missiles were approved for acquisition in December 2014 for RTS activities.

The AN/ASQ-228 Advanced Targeting Forward Looking Infra-Red (ATFLIR) pod will also be integrated onto the EA-18G and 15 ATFLIR pods will be procured. Air Combat Manoeuvring Instrumentation pods will also be procured for the Growler fleet to maximise training effectiveness.

In addition to modifying aircrew and maintenance training devices that were procured by AIR 5349 Phase 1 for the F/A-18F Super Hornet to enable training on either the F/A-18F or EA-18G, the project will also acquire an additional two Tactical Operational Flight Trainers (TOFTs) (flight simulators) to address the increased training requirements of the additional EA-18G Growler aircrew.

The project plans to follow a similar approach taken to recent FMS acquisitions (including the F/A-18F Super Hornet) within the aviation domain to ensure compliance with Australian Defence Force airworthiness and workplace health and safety standards.

The December 2014 approval of MTTES will provide the ability for in-country EA-18G aircrew training through establishment of EW training range capabilities in the Amberley Western Training Area and at Delamere in the Northern Territory. Establishment of these ranges will ensure EA-18G aircrew can train effectively without needing frequent deployments to use United States electronic combat ranges for skills development. The Delamere range in particular will provide opportunities for other ADF units and visiting forces for high-end EW training.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Defence first considered an Airborne Electronic Attack Capability based on the EA-18G Growler as part of the Force Structure Review 2008 (FSR08). While it was noted that an Electronic Attack capability would have broad application in a range of contingencies, the decision at the time was to consider the capability further as part of FSR13. Notwithstanding, in 2008, the Government approved a production modification for the last 12 F/A-18F Super Hornet aircraft procured under AIR 5349 Phase 1, to enable future upgrade to EA-18G Growler configuration, should strategic circumstances dictate.

In early 2011, the US Department of Defence advised the ADF that the US Navy (the sole operator of the EA-18G Growler) would place its final order for these aircraft in the second half of 2012 and the production line would close in 2015. Accordingly, the US Navy advised that if Australia wished to economically acquire an Airborne Electronic Attack capability, the only feasible option would be to add any Australian requirements to the final US Navy production contract.

In August 2012, the Government approved acquisition of an Airborne Electronic Attack Capability based on the EA-18G Growler. The approved scope from this combined pass approval consisted of modification of 12 existing RAAF Lot 33 F/A-18F Super Hornets.

Defence continued to assess the risk associated with the ADF's air combat transition from the F/A-18A/B Hornet and the F/A-18F Super Hornet, to the F-35A Joint Strike Fighter and developed options for Government consideration – the Air Combat Capability Transition Review. In April 2013, the Government approved the preferred option, which included the acquisition of 12 new build EA-18G Growler aircraft in lieu of modification of existing F/A-18F Super Hornets.

The project classification is Australianised Military-Off-The-Shelf as there are a small number of Australian unique changes, such as ATFLIR and AIM-9X Stores Clearances.

The Acquisition Strategy for AIR 5349 Phase 3 is to procure the principal materiel elements of the capability through the US Government FMS program. Accordingly, a number of FMS cases have been established with Navy International Programs Office and Naval Air Systems Command for acquisition of the materiel components of the capability as well as aircrew and maintainer training. Another FMS case will be utilised to acquire AIM-120 AMRAAM missiles from the US Air Force Security Assistance Command and the AMRAAM Joint Program Office. The procurement approach for the sustainment of the capability will mirror, and optimally leverage that already in place for the F/A-18F Super Hornet and will comprise a combination of Australian Industry based commercial support contracts, augmented where necessary with FMS case procured, US Government sourced products and services.

The Materiel System for the capability will comprise 12 Boeing EA-18G Growler aircraft, ALQ-99 TJSs, AIM-120 AMRAAM missiles, AGM-88B/E HARM/AARGM training missiles, alternate mission equipment, mission planning systems, training devices, spares and support and test equipment, as well as training for aircrew and maintenance personnel. The Airborne Electronic Attack architecture will be enabled by a US Navy common EW database.

Initially, both aircrew and maintenance personnel will be trained in the US utilising the US Navy's training system for the EA-18G Growler. Following the initial training of maintenance personnel, an EA-18G Growler maintenance training framework will be established at RAAF Base Amberley for ongoing training. For aircrew, training will remain in the US throughout the capability life cycle, supported by Defence managed FMS cases.

In December 2014 the scope of AIR 5349 Phase 3 was expanded to include EW training ranges west of Amberley in Queensland and Delamere MTTES in the Northern Territory, plus air-to-air and anti-radiation weapons for RTS activities. Additionally, ongoing EA-18G and F/A-18F aircrew training in the US was approved.

AIR 5349 Phase 3 will establish a Support System for the capability, which leverages the significant configuration commonality between the F/A-18F Super Hornet and the EA-18G Growler. Existing support contracts are planned to be modified to include sustainment products and services for the EA-18G Growler, in a similar way to that already in place for the F/A-18F Super Hornet. In addition, US Government FMS cases delivering sustainment products and services will either be amended or replaced with arrangements including both F/A-18F and EA-18G systems. Notably, consistent with the Air Combat Capability Transition Review outcomes agreed by Government, all F/A-18F and EA-18G aircrew training will be transitioned to the US once No.6 Squadron commences transition from being the F/A-18F training squadron to the EA-18G operational squadron.

Uniqueness

Noting that AIR5349 Phase 3 shares many common aspects with AIR5349 Phase 1 and the acquisition of the F/A-18F Super Hornet, the primary area of uniqueness resides in the introduction of an offensive radio frequency Electronic Attack capability, and the underpinning materiel enablers for this new warfare domain for the ADF.

Major Risks and Issues

Establishment of Growler support contracts; in particular, the aircraft sustainment contract is a focus area of the Project Office. Although in the early stages of acquisition, several risks have also been identified with supply of MTTES hardware to meet schedule, as well as the timely establishment of MTTES operation and maintenance support contracts. **The risk of RAAF EA-18G structural life of type being inadequate to meet planned withdrawal date is a longer term consideration that will continue to be monitored over the life of the capability. Participation in the USN F/A-18 E/F Service Life Assessment and Extension program (SLAP/SLEP) will mitigate this risk.**

Other Current Sub-Projects

AIR 5349 Phase 1 – Bridging Air Combat Capability: Provision of 24 F/A-18F Super Hornets and associated supplies and support. Some AIR 5349 Phase 1 delivered supplies will be shared with AIR 5349 Phase 3 once the EA-18G is introduced to service. AIR 5349 Phase 3 will augment AIR 5349 Phase 1 delivered support arrangements.

AIR 5349 Phase 2 – Bridging Air Combat Capability Weapons: Provision of Air-to-Air and Air-to Surface Weapons and expendables for the F/A-18F Super Hornet. AIR 5349 Phase 2, through a Memorandum of Agreement (MOA) with AIR 5349 Phase 3, is managing the acquisition and introduction into service of the EA-18G weapons (AIM-120 AMRAAM, AIM-9X Sidewinder, AGM-88B HARM and AGM-88E AARGM) and expendables.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Aug 12	Original Approved		1,155.3	1
Apr 13	Subsequent Second Pass Approval – New build aircraft	1,486.1		2
Dec 14	Real Variation – Scope	200.6		3
Jan 16	**Real Variation – Financial Reduction**	**(267.9)**		**4**
			1,418.9	
Jun 16	Exchange Variation		**982.4**	
Jun 16	**Total Budget**		**3,556.5**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – US Government (AT-P-SCI)	**(1,091.6)**		**5**
	Contract Expenditure – US Government (AT-P-LEN)	**(520.9)**		**5**
	Contract Expenditure – US Government (AT-P-GTM)	**(8.0)**		**5**
	Contract Expenditure – US Government (AT-P-AZN)	**(4.4)**		**5**
	Contract Expenditure – US Government (AT-P-GUW)	**(1.8)**		**5**
	Contract Expenditure – US Government (AT-D-YLB)	**(0.9)**		**5**
	Other Contract Payments / Internal Expenses	**(21.5)**		**6**

			(1,649.1)	
FY to Jun 16	Contract Expenditure – US Government (AT-P-SCI)	(162.1)		5
	Contract Expenditure – US Government (AT-P-LEN)	(70.3)		5
	Contract Expenditure – US Government (AT-P-AZN)	(36.5)		5
	Contract Expenditure – US Government (AT-P-GUW)	(15.2)		5
	Contract Expenditure – US Government (AT-D-YLB)	(14.3)		5
	Contract Expenditure – US Government (AT-P-GTM)	(4.3)		5
	Other Contract Payments / Internal Expenses	(17.2)		6
			(320.0)	
FY to Jun 16	**Total Expenditure**		(1,969.1)	
Jun 16	**Remaining Budget**		1,587.5	

Notes	
1	Government approval in August 2012 for modification of Super Hornet aircraft to EA-18G Growler configuration and acquisition of associated Electronic Attack equipment.
2	Government approval in April 2013 to change acquisition strategy to acquisition of new-build aircraft rather than modification of existing aircraft.
3	Government approval in December 2014 for inclusion of Growler Enabling capabilities – MTTES and RTS Weapons.
4	**Real Cost reduction – MAA 3.1 amendment processed January 2016 – for transfer of project funds to offset Growler Facilities funding shortfall, and return of surplus funds to the Defence Capability Plan.**
5	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
6	Other expenditure comprises: Operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
889.8	419.5	555.0	**The variation between PBS and PAES is driven by a revised FMS expenditure profile result in first quarter 2015-16 aircraft production and AEA kit costs being paid in June 2015. Variance between PAES and Final plan estimates is due to an increase of $130m in Termination Liability (TL) balance sought from USG in November 2015 against the aircraft production and AEA kit FMS cases. This drove an increase in expenditure forecast in order to maintain sufficient case funds to meet expected disbursement expenses, pending release of a significant amount of held TL funds in late 2016.**
Variance $m	(470.3)	135.4	Total Variance ($m): (334.9)
Variance %	(52.9)	32.3	Total Variance (%): (37.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(9.7)	Australian Industry	**The underspend of $235.0m was caused by lower March and no June 2016 FMS case payments for aircraft and AEA kits, predominantly driven by cost reductions and decreased billing forecasts from US Navy.**
			Foreign Industry	
			Early Processes	
			Defence Processes	
		(225.3)	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
555.0	320.0	(235.0)	**Total Variance**	
		(42.3)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
US Government (AT-P-LEN)	Aug 12	944.2	**893.8**	Reimbursement	FMS	1, 2
US Government (AT-P-AZN)	May 13	36.2	**81.9**	Reimbursement	FMS	1, 2
US Government (AT-P-SCI)	Jul 13	1,313.1	**1,545.6**	Reimbursement	FMS	1, 2
US Government (AT-P-GTM)	Sep 13	19.3	**91.0**	Reimbursement	FMS	1, 2, 3
US Government (AT-P-GUW)	Feb 15	88.6	**110.0**	Reimbursement	FMS	1, 2
US Government (AT-D-YLB)	Feb 15	84.6	**135.9**	Reimbursement	FMS	1, 2, 4

Notes

1	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
2	The scope of this contract is explained further below.
3	The large increase in the value of this contract reflects an increase in the training already being procured.
4	This contract is for the acquisition of AMRAAM missiles and is being managed by Guided Weapons Branch through an FMS case established as part of the AIR 5349 Phase 2 Bridging Air Combat Capability Project.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
US Government (AT-P-LEN)	Various	Various	Advanced Electronic Attack Kits, ALQ99 TJSs, Launchers, Launch computers, Joint Mission Planning System and Software	
US Government (AT-P-AZN)	12	**Various**	HARM and AARGM training missiles, **tactical missiles,** associated support equipment and training	
US Government (AT-P-SCI)	12	12	EA-18G aircraft, associated spares and support equipment	
US Government (AT-P-GTM)	N/A	N/A	Initial Aircrew and Maintenance Training	

US Government (AT-P-GUW)	Various	Various	EW training ranges systems including threat emitter systems, range control and debrief systems, associated IT, spares, support equipment, integration and test services.	
US Government (AT-D-YLB)	Various	Various	Weapons – AIM-120 C7 AMRAAM air-to-air missiles and associated support equipment and infrastructure	
Major equipment received and quantities to 30 Jun 16				
No major equipment has been received to date.				
Notes				
1	N/A			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Requirements	EA-18G Aircraft	N/A – Military Off the Shelf				
	Aircraft Software – SCS H10A	Jan 14	N/A	Jan 14	0	
	Mission Planning System	May 14	N/A	May 14	0	
	ALQ-99 TJS	N/A – Military Off the Shelf				
	Modified TOFTs	Nov 14	N/A	**Jul 15**	**8**	1, 3
	New-build TOFTs	Nov 14	N/A	Apr 15	5	2
	Modified Integrated Visual Environment Maintenance Trainers(IVEMTs)	Nov 14	N/A	Jul 15	8	3
	MTTES – Western Training Area	TBD	N/A	TBD	0	4
	MTTES – Delamere Air Weapons Range	TBD	N/A	TBD	0	4
Preliminary Design	EA-18G Aircraft	N/A – Military Off the Shelf				
	Aircraft Software SCS H10A	Jun 14	N/A	Jun 14	0	5
	Mission Planning System	Aug 14	N/A	Sep 14	1	
	ALQ-99 TJS	N/A – Military Off the Shelf				
	Modified TOFTs	May 15	N/A	**Aug 15**	**3**	1, 3
	New-build TOFTs	May 15	N/A	**Mar 16**	**10**	2
	Modified IVEMTs	May 15	N/A	Oct 15	5	3
	MTTES – Western Training Area	TBD	N/A	TBD	0	4
	MTTES – Delamere Air Weapons Range	TBD	N/A	TBD	0	4
Critical Design	EA-18G Aircraft	N/A – Military Off the Shelf				
	Aircraft Software SCS H10A	Jun 14	N/A	Jun 14	0	5
	Mission Planning System	Sep 14	N/A	Jan 15	4	
	ALQ-99 TJS	N/A – Military Off the Shelf				
	Modified TOFTs	May 15	N/A	**Aug 15**	**3**	1,3
	New-build TOFTs	May 15	N/A	**Mar 16**	**10**	2

	Modified IVEMTs	May 15	N/A	Oct 15	5	3
	MTTES – Western Training Area	TBD	N/A	TBD	0	4
	MTTES – Delamere Air Weapons Range	TBD	N/A	TBD	0	4

Notes	
1	Modified TOFT's contract awarded April 2015.
2	Revised date reflects post contract award schedule.
3	Revised date reflects delay in contract award and updated schedule.
4	MTTES schedule has not been baselined and US Government work remains pre-contract.
5	SCS H10A Preliminary Design Review (PDR) and Critical Design Review (CDR) (held by US Navy) was a combined event, hence dates are the same.

3.2 Contractor Test and Evaluation Progress

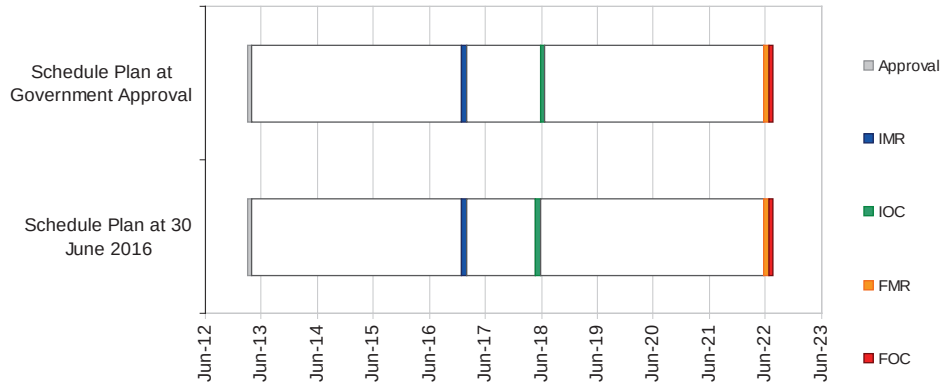
Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	EA-18G Aircraft	Jun 16	N/A	Jul 16	0	1
	Aircraft SCS H10A	Jul 16	N/A	Jul 16	0	1
	Mission Planning System	Jul 16	N/A	Jul 16	0	1
	ALQ-99 TJS	Jul 16	N/A	Jul 16	0	1
	Modified TOFTs	Sep 16	N/A	**Dec 16**	**3**	2
	New-build TOFTs	Sep 17	N/A	Sep 17	0	
	Modified IVEMTs	Oct 16	N/A	Sep 16	**(1)**	
	MTTES – Western Training Area	TBD	N/A	TBD	0	3
	MTTES – Delamere Air Weapons Range	TBD	N/A	TBD	0	3
Acceptance	EA-18G Aircraft	Jul 16	N/A	Jul 16	0	1
	Aircraft Software – SCS H10A	Jul 16	N/A	Jul 16	0	1
	Mission Planning System	Jul 16	N/A	Jul 16	0	1
	ALQ-99 TJS	Jul 16	N/A	Jul 16	0	1
	Modified TOFTs	Jan 17	N/A	**Feb 17**	**1**	2
	New-build TOFTs	Sep 17	N/A	Sep 17	0	
	Modified IVEMTs	Nov 16	N/A	Nov 16	0	
	MTTES – Western Training Area	TBD	N/A	TBD	0	3
	MTTES – Delamere Air Weapons Range	TBD	N/A	TBD	0	3

Notes	
1	US Navy conduct a combined development and acceptance test program encompassing aircraft, SCS H10A, mission planning system, stores integration testing including the ALQ-99 TJS. Accordingly, dates for system integration and acceptance testing reflect the same schedule window.
2	Modified TOFTs contract awarded April 2015. Forecast achievement dates **for integration, test and acceptance are based upon contract deliverable dates and access to existing facilities.**
3	MTTES schedule has not been baselined and US Government work remains pre-contract.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Feb 17	Feb 17	0	
In-Service Date (ISD)	Jan 17	Jan 17	0	
Materiel Release 2 (MR2)	Oct 17	Oct 17	0	
Materiel Release 3 (MR3)	Jul 18	**Jul 18**	0	
Materiel Release 4 (MR4)	Mar 19	Feb 19	**(1)**	
Materiel Release 5 (MR5)	Jul 19	**Jul 19**	0	
Materiel Release 6 (MR6)	Mar 20	Feb 20	**(1)**	
Initial Operational Capability (IOC)	Jul 18	Jun 18	**(1)**	
Final Materiel Release (FMR)	Jul 22	Jul 22	0	
Final Operational Capability (FOC)	Jul 22	Jul 22	0	

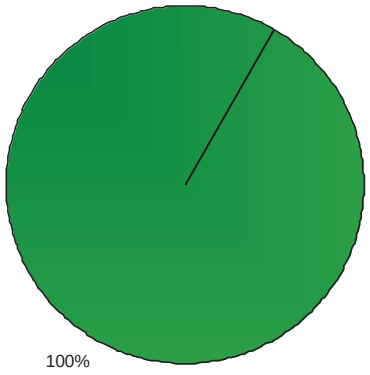
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The project remains on track to deliver a US Navy common Airborne Electronic Attack capability based on the EA-18G Growler aircraft. **Amber:** N/A **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	• At least six new-build EA-18G aircraft in USA and associated equipment delivered to support Initial Operational Test and Evaluation (IOT&E) programs. • Sufficient aircrew and maintenance personnel to support Growler operations from ISD. • Initial in-country aircrew training. IMR is a future dated milestone projected for February 2017.	Not yet achieved
Final Materiel Release (FMR)	• All 12 EA-18G aircraft delivered. • All assets, equipment and spares delivered. • All acquisition tasks completed and transitioned to sustainment organisation completed. FMR is a future dated milestone projected for July 2022.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a possibility that the Growler support contract will not be in place to support post ISD activities.	Growler Statement of Work (SOW) requirements included in SOW and negotiated with contractor for Super Hornet and Growler sustainment. Early engagement with selected contractor to ensure contact negotiated and in place to meet Growler ISD requirement.
There is a **possibility** that the level of Australian unique development required to meet the MTTES requirements will need design and manufacture effort that cannot be completed within the MAA milestone dates (MR2, MR4 & MR6).	MTTES is currently in initial design phases. During the scoping phase of the project, the team will aim to identify areas of greatest technical risk and treat as appropriate.
There is a possibility that the support **contracts** for MTTES will not be established in time to meet **Operative Dates.**	A Contract Change Proposal (CCP) to an in-place contract is being **developed** to cover initial MTTES support in the Western Training Area.
There is a possibility that the Structural Life Of Type of the RAAF EA-18G aircraft may be inadequate to support the planned withdrawal date.	**Participation in the USN F/A-18E/F Service Life Assessment & Extension Program**
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
There is a possibility that International Traffic in Arms Regulations (Technical Assistance Agreements / Third Party Retransfer Agreements) will Impact on Support Systems and Contracts.	**A Technology Control Plan detailing industry support requirements has been completed and used to facilitate engagement with and obtain support of the US Navy International Programs Office (NIPO) and US Department of State. Third Party Retransfer agreements are being developed and staffed for approval.**

5.2 Major Project Issues

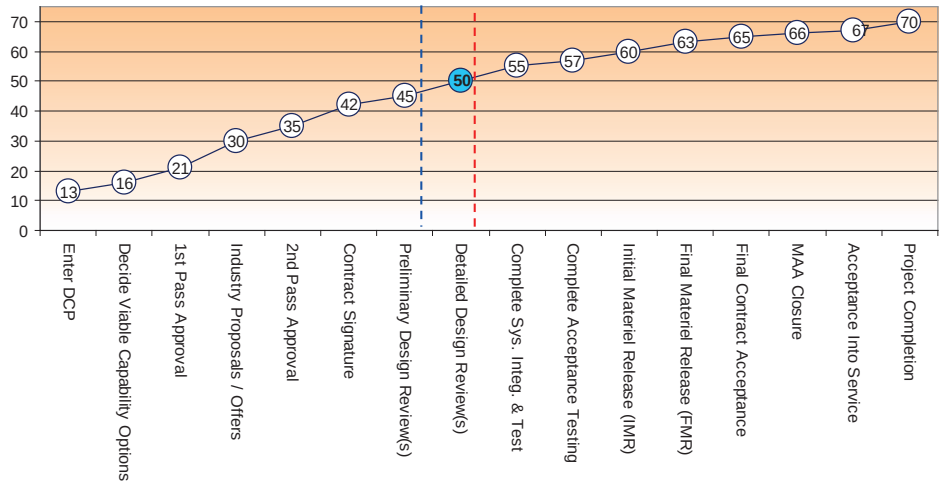
Description	Remedial Action
N/A	N/A

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	7	8	7	8	7	7	7	51
	Explanation	• **Cost:** The project is tracking to plan, aided by increasing US Navy program maturity driving more fidelity in forecasting.							



2014–15 MPR Status - - - - 2015–16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
For appropriate management according to Defence best practice benchmarks, allocation of project management resources is required immediately on project approval, particularly for projects with primarily FMS acquisition strategies. These projects inherently experience significant lag between Second Pass approval and schedule and financial management maturity, due to the lag between FMS case establishment and initial prime acquisition contracts when compared to commercially based acquisitions. The delay in achieving maturity benchmarks are only exacerbated when resourcing is not applied early in the acquisition life cycle.	Resourcing

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	AVM Leigh Gordon **(to Mar 16)** **AVM Catherine Roberts (Mar 16–current)**
Branch Head	AIRCDRE Catherine Roberts (Dec 14–**Mar 16**) **MS Carolyn Buzza (Acting Mar 16–Jun 16)** **AIRCDRE Gregory Hoffmann (Jun 2016–current)**
Project Director	Mr Gavin Healy
Project Manager	WGCDR Darren Spee

Project Data Summary Sheet[124]

Project Number	**AIR 9000 Phase 8**
Project Name	**FUTURE NAVAL AVIATION COMBAT SYSTEM**
First Year Reported in the MPR	2011-12
Capability Type	Replacement
Acquisition Type	MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	Feb 10
Government 2nd Pass Approval	Jun 11
Total Approved Budget (Current)	**$3,520.4m**
2015–16 Budget	**$293.5m**
Project Stage	Initial Materiel Release
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

AIR 9000 Phase 8 is acquiring 24 MH-60R Seahawk naval combat helicopters, associated weapons and support systems to replace the current 16 S-70B-2 Seahawk helicopters and the cancelled SH-2G(A) Seasprite helicopters. The aircraft is equipped with a highly sophisticated avionics suite designed to employ Hellfire air-to-surface missiles and Mark (Mk) 54 anti-submarine torpedoes. The aircraft will provide Navy with a contemporary helicopter with anti-submarine warfare (ASW) and anti-surface warfare capability.

The acquisition of 24 helicopters will enable the Navy to deploy at least eight Seahawks embarked at sea across the ANZAC class frigates and the new *Hobart* class Air Warfare Destroyers (AWD).

1.2 Current Status

Cost Performance

In-year

In-year variance of **$11.3m was mainly due to a year to date foreign exchange gain of $10.8m as well as delays in ship integration procurements, facilities related expenditure and non-Foreign Military Sales (FMS) procurements. The underspend has been slightly offset by higher than predicted payments against the MK54 Torpedo FMS case, Hellfire Missile FMS case and the MH-60R Helicopter FMS case.**

Project Financial Assurance Statement

As at 30 June 2016, project AIR 9000 Phase 8 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

124 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

The next major milestone will be **Materiel Release Two (MR2)**, defined as **thirteen** aircraft in United States Navy (USN) configuration accepted, with sufficient **logistics support and** Explosive Ordnance (EO) to support **four flights at sea; four modified *ANZAC* ships for interoperability with MH-60R aircraft; two Tactical Operational Flight Trainers (TOFTs); one Rear Crew Trainer; one Composite Maintenance Trainer; one Avionics Maintenance Trainer incorporating Weapons Loading Part Task Trainer; and sufficient Internal (crew served) Machine Guns to support four flights at sea**.

Project AIR 9000 Phase 8 declared **Initial Operational Release (IOR) and Initial Operational Capability (IOC) on 25 September 2015. This declaration enables Chief of Navy to deploy MH-60R flights to sea on modified ANZAC class ships for training and operational requirements**. **Twenty-three** aircraft have now been accepted**. Aircraft six was initially retained** in the USA with industry as the prototype aircraft for ADF Unique Mission System Options – Phase 1 verification activities. **These verification activities have been completed with aircraft six being returned via a RAAF C17 flight to HMAS Albatross in April 2016**.

Materiel Capability Delivery Performance

The MH-60R Seahawk helicopter being procured is a Military Off the Shelf (MOTS) procurement of a USN specification MH-60R Seahawk. The MH-60R Seahawk has been in service with the USN since 2005 and was first deployed operationally by the USN in early 2010. The USN has accepted **220** MH-60Rs and flown in excess of **376,000** flight hours as at **30 April 2016**. The Australian Defence Force (ADF) has accepted delivery of **23** MH-60R aircraft, as of **30 June 2016** and there are currently no known impediments to the Project achieving the materiel capability performance requirements. The aircraft delivery schedule will result in ADF MH-60Rs being delivered earlier than forecast at Second Pass.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The Defence White Paper 2009 stated that 'As a matter of urgency, the Government will acquire a fleet of at least 24 new naval combat helicopters to provide eight or more aircraft concurrently embarked on ships at sea. These new aircraft will possess advanced ASW capabilities, including sonar systems able to be lowered into the sea and air-launched torpedoes, as well as an ability to fire air-to-surface missiles.'

First Pass Approval for the acquisition of the Future Naval Aviation Combat System to satisfy this requirement was provided by Government on 24 February 2010.

The selection of the MH-60R followed a competitive solicitation process between a US Government FMS case offering the Sikorsky / Lockheed Martin MH-60R Seahawk and a direct commercial sale from Australian Aerospace offering the NATO Helicopter Industries NH90 NATO Frigate Helicopter. Second Pass Approval for acquisition of the MH-60R was provided by Government on 15 June 2011.

Uniqueness

The Australian MH-60R helicopter is being acquired as a MOTS product, in the same baseline configuration as the USN aircraft. A limited number of Australia unique design modifications will be incorporated after all aircraft have been delivered. The USN will develop the modifications for incorporation in Australian and USN MH-60R aircraft.

The MH-60R is being acquired as a maritime combat capability. It will have limitations in utility roles such as passenger or cargo transfer.

Major Risks and Issues

The Project Office (PO) is currently managing **five** open risks with the highest level of pre-mitigation risk being medium, whilst also managing **two** open issues. However, there are currently no major risks or issues in achieving the MH-60R operational capability milestones on schedule.

Other Current Sub-Projects
Project AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS). HATS will be an important link in the training continuum for inductees to the MH-60R training system.
Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Aug 09	Original Approved		0.3	1
Jun 10	Real Variation – Budgetary Adjustment	9.6		2
Jun 11	**Government Second Pass Approval**	3,019.7		
Jun 14	Real Variation – Budgetary Adjustment	(39.2)		3
			2,990.1	
Jul 10	Price Indexation		0.1	4
Jun 16	Exchange Variation		529.9	
Jun 16	**Total Budget**		3,520.4	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – US Government (AT-P-SCF)	(1,443.0)		5
	Contract Expenditure – US Government (AT-P-AHV)	(66.5)		5
	Contract Expenditure – US Government (AT-B-ZBZ)	(19.6)		5
	Contract Expenditure – Navy – Empire Test Pilots' School	(7.4)		6
	Contract Expenditure – US Government (AT-P-GTC)	(3.5)		5
	Other Contract Payments / Internal Expenses	(67.0)		6
			(1,606.9)	
FY to Jun 16	Contract Expenditure – US Government (AT-P-SCF)	(240.9)		5
	Contract Expenditure – US Government (AT-P-AHV)	(21.9)		5
	Contract Expenditure – US Government (AT-B-ZBZ)	(0.7)		5
	Other Contract Payments / Internal Expenses	(18.8)		6
			(282.2)	
Jun 16	**Total Expenditure**		(1,889.1)	
Jun 16	**Remaining Budget**		1,631.3	

Notes	
1	This amount represents the project Budget prior to achieving Second Pass Approval by Government.
2	Project Development Funds
3	Facilities Budget Transfer to Defence Support and Reform Group
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $0.1m, applied only to the portion of the budget approved at First Pass. From July 2010 all project budgets were approved by Government in out-turned dollars including AIR 9000 Phase 8.
5	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
6	Other includes travel, contractor support, legal support, Non-FMS Procurements, ANZAC and AWD Ship Modifications, and general support activities.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
546.2	343.5	293.5	**PBS to PAES: primarily due to the reduction in the FMS case termination liability reduction for the MH-60R Seahawk Helicopters as well as the acceleration of FMS case payments into the 2014-15 Financial Year.** **PAES to Final Plan: primarily due to reprogramming of FMS case payments based on improved budget and schedule information from the US Government and foreign exchange updates.**
Variance $m	(202.7)	(50.0)	Total Variance ($m): (252.7)
Variance %	(37.1)	(14.6)	Total Variance (%): (46.3)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(12.1)	Australian Industry	**Year end variance primarily caused by FOREX gain and delays in Weapons LOA signing. There are also delays/slow billing against:** *** AWD/ANZAC ship integration procurements** *** Facilities expenditure** *** Non-FMS procurements** *** Contractor support** *** ICT, Travel and other procurements.** **This has been offset by higher than expected payments against the Torpedo FMS case, MH-60R Helicopter FMS case and the missile FMS case.**
		11.5	Foreign Industry	
			Early Processes	
		(10.8)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
293.5	282.2	(11. 3)	**Total Variance**	
		(3.8)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
US Government (AT-P-SCF)	Jun 11	2,090.3	2473.7	Variable	FMS	1, 3
US Government (AT-P-AHV)	Aug 11	168.1	218.3	Variable	FMS	1, 3
US Government (AT-B-ZBZ)	Jan 12	12.3	21.8	Variable	FMS	1, 2, 3
US Government (AT-P-GTC)	Feb 13	10.9	15.1	Variable	FMS	1, 3

Notes

1	The scope of this contract is explained further below.
2	Increased quantity of Tactical and Training Missiles in FMS Case.
3	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
US Government (AT-P-SCF)	24	24	MH-60R, synthetic training devices, and associated mission and support systems	
US Government (AT-P-AHV)	Classified	Classified	Mk 54 Torpedoes	

US Government (AT-P-ZBZ)	Classified	Classified	AGM-114N Hellfire Air to Surface Missiles	
US Government (AT-P-GTC)	N/A	N/A	RAN MH-60R Detachment – Naval Air Station Jacksonville, Florida support	

Major equipment received and quantities to 30 Jun 16

Spares and Support Equipment deliveries
Aircraft 1 and 2 delivered in December 2013
Aircraft 3 and 4 delivered in February 2014A quantity of Mk 54 Torpedos delivered in August 2014
A quantity of Hellfire Missiles delivered in August 2014
Aircraft 5 delivered in October 2014
'BRomeo' Seahawk Training Device delivered in October 2014
Aircraft 7 and 8 delivered in January 2015
Tactical Operational Flight Trainer 1 delivered in February 2015
Aircraft 9 and 10 were accepted in January 2015
Aircraft 11 and 12 were accepted in April 2015
Aircraft 13 and 14 were accepted in July 2015
Aircraft 15 and 16 were accepted in November 2015
Aircraft 17 and 18 were accepted in January and February 2016
Aircraft 6 and 19 were accepted in March 2016
Aircraft 20 was accepted in April 2016
Aircraft 21 was accepted in May 2016
Aircraft 22 was accepted in June 2016
Aircraft 23 was accepted in June 2016

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Mission System Options – Phase 1	Jan 14	Jan 14	Apr 14	3	2
	ADF Mission System Options – Phase 2	**Nov 14**	**Nov 14**	Nov 14	0	2
	Air Warfare Destroyer	Dec 14	Dec 14	Jan 15	1	3
Preliminary Design	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Mission System Options – Phase 1	Mar 14	Mar 14	Jun 14	3	2
	ADF Mission System Options – Phase 2	Mar 15	Mar 15	Apr 15	1	2
	Air Warfare Destroyer	Dec 15	Dec **16**	**Feb 17**	**14**	3
Critical Design	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Mission System Options – Phase 1	**Jun 14**	**Jun 14**	Jun 14	0	2
	ADF Mission System Options – Phase 2	May 15	May 15	May 15	0	2
	Air Warfare Destroyer	Dec 16	**Jun 17**	**Aug 17**	**8**	3

Notes	
1	MH-60R helicopter system requirements and design reviews not required as it is a MOTS helicopter procured through FMS.
2	The ADF Mission System Options have been split into two phases. Phase 1 Statements of Work (SOWs) for ADF Unique Mission System Options have been agreed by the PO, USN, Sikorsky and Lockheed Martin. Director General Technical Airworthiness has endorsed SOWs in accordance with Technical Airworthiness Regulations. Dates are reflective of Phase 1 design reviews. SOW for Phase 2 was released as part of USN request for tender 26 February 2014, and contract signature with Lockheed Martin being achieved in October 2014.
3	The AWD requires modification to enable the MH-60R aircraft to operate at full capability as the AWD certification baseline is based on a classic Seahawk aircraft. The modification works required to integrate the MH-60R aircraft will be conducted following the delivery of each AWD. **With the reorganisation of the AWD Alliance the aviation upgrade effort has been delayed.**

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	ADF Mission System Options – Phase 1	Aug 15	Aug 15	Aug 15	0	1
	ADF Mission System Options – Phase 2	**Sep 18**	**Sep 18**	**Sep 18**	TBA	1
	Air Warfare Destroyer	TBA	TBA	TBA	TBA	
Acceptance	ADF Mission System Options – Phase 1	Aug 16	Aug 16	Aug 16	0	1
	ADF Mission System Options – Phase 2	**Sep 18**	**Sep 18**	**Sep 18**	TBA	1
	Acceptance of first MH-60R	Jun 14	Dec 13	Dec 13	(6)	
	Acceptance of final MH-60R	Sep 18	Aug 16	Aug 16	(25)	
	Air Warfare Destroyer	TBA	TBA	TBA	TBA	

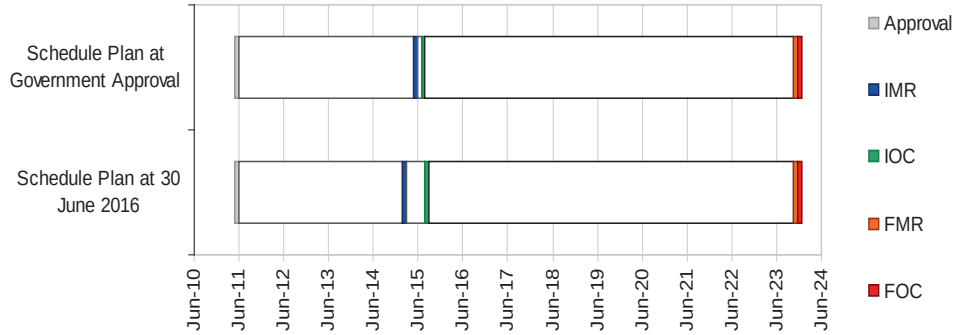
Notes	
1	The ADF Mission System Options have been split into two phases. Phase 1 SOW for ADF Unique Mission System Options have been agreed by the PO, USN, Sikorsky and Lockheed Martin. SOW for Phase 2 was released as part of USN request for tender 26 February 2014, and contract signature with Lockheed Martin being achieved in October 2014.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
In-Service Date (ISD)	Jun 14	Jan 14	(5)	1
Initial Materiel Release (IMR)	Jun 15	Mar 15	(3)	2
Initial Operational Capability (IOC)	Aug 15	**Sep** 15	**1**	**3**
Materiel Release 2 (MR2)	Dec 16	Dec 16	0	
Materiel Release 3 (MR3)	Jun 19	Jun 19	0	
Materiel Release 4 (MR4)	Dec 20	Dec 20	0	
Final Materiel Release (FMR)	Dec 23	Dec 23	0	
Final Operational Capability (FOC)	Dec 23	Dec 23	0	

Notes	
1	Revised aircraft delivery schedule.
2	The project declared IMR in March 2015, three months ahead of schedule and **the** Capability Manager **signed**-off IMR in July 2015.
3	**The Capability Manager declared IOC on 25 September 2015, 25 days later than originally scheduled. Navy linked MH-60R IOC to Anzac Class ship aviation upgrades, which resulted in extra technical assessments that resulted in the minor delay.**

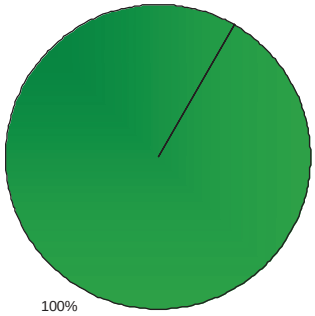
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The project expects to meet capability requirements as expressed in the Materiel Acquisition Agreement and supporting suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** N/A **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	1. Five aircraft in USN configuration, Tactical Operational Flight Trainer and supporting systems, 2. Establishment of key Sustainment organisations, 3. Initial stock of Mk 54 Torpedos and Hellfire Missiles, and 4. Modification of one ANZAC class ship for interoperability with MH-60R Seahawk helicopter.	Achieved
Final Materiel Release (FMR)	1. All 24 aircraft delivered and Australian Mission System Options implemented, 2. Full EO fit-out and all Mk 54 Torpedos and Hellfire Missiles delivered, 3. All ANZAC class ships and Air Warfare Destroyers modified for interoperability with MH-60R Seahawk helicopter, and 4. Final Training Management Package. Achievement is scheduled for December 2023.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

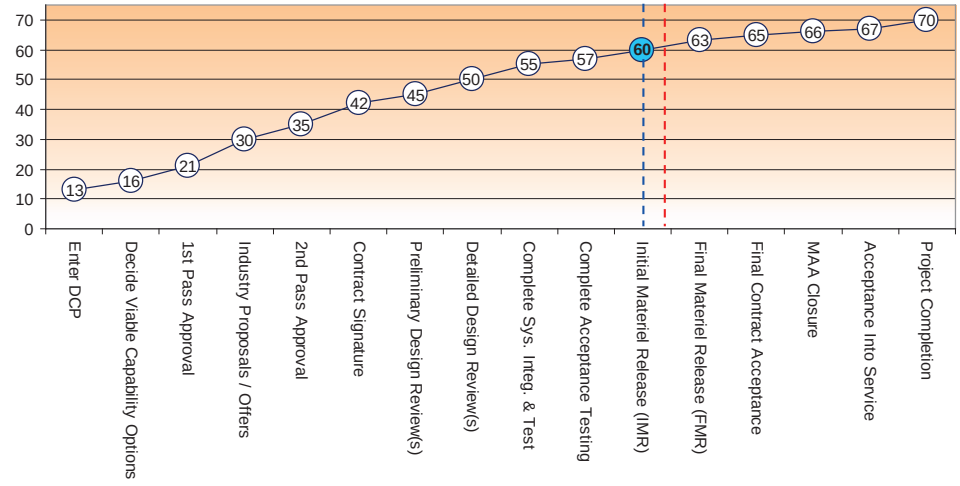
Description	Remedial Action
N/A	N/A

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	9	8	8	9	8	**10**	**61**
	Explanation	• **Schedule:** The MH-60R production line is mature. The Project has negotiated early delivery dates for ADF MH-60R. • **Cost:** The overall Estimate at Completion is projected to be within project guidance. The Project has benefited from economies of scale from the US Government multi-year buys of aircraft and key components. • **Operations and Support:** **The capability achieved IOC and MH-60R Flights are now embarked on RAN Fleet Units.**							



2014-15 MPR Status - - - - | 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Whilst an FMS program affords a number of advantages, the transfer of a significant amount of project management and engineering functions to the US Government implementing agency (NAVAIR PMA-299) and the weak bargaining position of the Commonwealth, increases the project's exposure to risk (technical, schedule and cost). The resultant level of risk and complexity is often understated and poorly understood. The level of Commonwealth contract and financial management involvement and oversight of industry is very low in comparison to that mandated for Direct Commercial Sale contracts, yet both procurement methods confront similar issues. Adequate Commonwealth participation in key project management and technical oversight activities in the US, as provided for in the Government Second Pass submission, is critical to provide the required level of contract management.	Contract Management
The recruitment process lead times for candidates not already within the ADF or APS can create significant extended vacancies within the Project workforce, and this is exacerbated by the relatively short notice that Defence personnel are obliged to provide for internal transfers.	Resourcing
By procuring MOTS equipment, adhering to the project's clearly defined scope as detailed by government at Second Pass, and effectively using the Program Management Steering Group to prevent potential scope creep, the project has been able to meet or exceed its financial and schedule obligations as detailed within the project's Materiel Acquisition Agreement.	Off-The-Shelf Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	RADM Tony Dalton (to Oct 15) **MAJGEN Andrew Mathewson (Oct 15-current)**
Branch Head	CDRE Colin Lawrence (to Dec 15) **CDRE Scott Lockey (Dec 15-current)**
Project Director	CAPT Peter Ashworth
Project Manager	CMDR Michael Rainey

Project Data Summary Sheet[125]

Project Number	**LAND 121 Phase 3B**
Project Name	**OVERLANDER VEHICLES (MEDIUM AND HEAVY VEHICLES, MODULES AND TRAILERS)**
First Year Reported in the MPR	2013-14
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Service	Australian Army
Government 1st Pass Approval	Jun 04 – Phase 3 Dec 11 – Phase 3B
Government 2nd Pass Approval	Aug 07 – Phase 3 Jul 13 – Phase 3B
Total Approved Budget (Current)	**$3,465.6m**
2015–16 Budget	**$174.4m**
Project Stage	**Detailed** Design Review
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

LAND 121 Phase 3 was established to replace the current fleet of Australian Defence Force (ADF) Field Vehicles, Modules And Trailers (FVM&T) and will enhance the ground mobility of the ADF.

In December 2011, Government approved the splitting of LAND 121 Phase 3 into two projects:

- LAND 121 Phase 3A – Lightweight and Light Capability (LLC), incorporating the approved Phase 5A; and
- LAND 121 Phase 3B – Medium and Heavy Capability (MHC), incorporating the yet to be approved Phase 5B.

LAND 121 Phase 3B will upgrade and replace the existing medium and heavy vehicle and trailer fleet. Vehicles (protected and unprotected) consisting of nine variants, will be introduced by the project including cargo, tractor, recovery and tanker functions. Ten trailer variants for general cargo, equipment transport, and tanker capability will also be acquired. Fleet flexibility will be supplemented by flatracks and modules that will permit the rapid deployment of stores (including maintenance and combat engineering), fuel and water tankers and specialist bridging capabilities.

The following vehicles, trailers and modules will be acquired:

- 2,536 MHC vehicles and **3,054** modules supplied by Rheinmetall MAN Military Vehicles Australia (RMMVA);
- 1,704 trailers will be acquired from Haulmark Trailers (Australia);
- 122 Geländewagen (G-Wagon) and maintenance modules supplied by Mercedes-Benz Australia / Pacific Pty Ltd and associated trailers supplied by Haulmark Trailers (Australia) Pty Ltd (HTA), acquired by LAND 121 Phase 3A;
- 49 in-service Bushmaster Protected Mobility Vehicles upgraded to customised General Maintenance Vehicle variants;

125 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

- 18 Line Laying Modules acquired by LAND 121 Phase 3A; and
- A further **664** specialist modules to be acquired which are not yet in contract.

1.2 Current Status

Cost Performance

In-year

As at **30 June** 2016, financial year 2015–16 expenditure was $**176.3m** against the forecast expenditure of $**174.4**m. The variation is primarily due to **additional deliveries of trailers in 2015-16.**

Project Financial Assurance Statement

As at **30 June** 2016, Project LAND 121 Phase 3B has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency funds in the financial year.

Schedule Performance

Haulmark Trailers (Australia) Pty Ltd (trailers) continue to provide deliverables as required under the contract. Both RMMVA and Haulmark Trailers (Australia) Pty Ltd continue to progress through the design phase and verification testing has commenced on selected systems. Due to early delays~~,~~ **caused by RMMVA's late engagement with their key sub-contractors the** schedule performance is closely monitored but the Project is confident it will achieve the Initial Materiel Release (IMR) milestone on the originally planned date of December 2018.

Phase 3B has progressed through the Preliminary Design Phase and entered the Detailed Design Phase. There has however been delays to some mandated systems reviews which to date has resulted in stop payment on related milestones being imposed on RMMVA. Contract performance and achievement of Financial Milestones is now being monitored by the RMMV Executive Board who have provided assurance that Financial Year targets will be achieved.

Materiel Capability Delivery Performance

Affordability will impact the overall capability, with costs being managed by maximising off-the-shelf solutions.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Project LAND 121 is a multi-phased project to provide the ADF with the FVM&T and associated support systems to meet ADF mobility requirements including logistic distribution, command and liaison, casualty evacuation, troop lift, and the provision of mobility for specialist assets such as command shelters and communications terminals.

At the time Government approved LAND 121 Phase 3 the ADF's FVM&T fleet consisted of some 7,300 vehicles and 3,700 trailers acquired progressively from 1959. By 2008, 98 percent of the current assets had exceeded their life of type. The fleet was increasingly costly to maintain, repair and operate. Furthermore, the increased operational tempo from 1999 has compounded the challenges faced by the fleet to provide the mobility needs required by the ADF.

LAND 121 Phase 3 was approved in August 2007 to acquire 1,187 Mercedes-Benz G-Wagons, and 973 matching trailers from HTA. In August 2011, Government approved the acquisition of an additional 959 G-Wagons and 826 trailers under LAND 121 Phase 5A via the contracts negotiated for Phase 3.

Phase 3 was also intended to acquire medium and heavy FVM&T; however, the Commonwealth withdrew from negotiations with the preferred tenderer, and a tender resubmission process was initiated in December 2008. In December 2011, Defence announced negotiations would commence with the preferred tenderers, RMMVA for the MHC vehicle and module requirements and with HTA for the MHC trailer requirements.

Strictly, MOTS items were not considered appropriate as modifications are required to achieve:

- compliance with Australian Design Regulations;

- a requirement for vehicles to interface with in-service and new Australian designed trailers and modules; and
- integrate with in-service communication equipment.

In a related decision at the same time, Government approved the splitting of LAND 121 Phase 3 into two projects: LAND 121 Phase 3A for the LLC approved under Phase 3 and amalgamating this with the additional scope approved under Phase 5A; and LAND 121 Phase 3B to progress the Phase 3 MHC scope elements. This decision effectively closed Phase 3 and amounted to a combined pass approval for the new Phase 3A and an 'interim pass' approval for the new Phase 3B. The December 2011 approval allowed the continuation of contracted activities toward the LLC acquisition and the ongoing negotiations for the MHC contracts for Phase 3B. Phase 3B was required to seek a supplementary second pass approval following contract negotiations.

The Phase 3A LLC Contract Amendments were executed in January 2012 and Phase 3B achieved second pass approval in July 2013 and contracts were executed shortly after.

Uniqueness

LAND 121 Phase 3B is to deliver the FVM&T capability to multiple locations throughout Australia and on operational service overseas. This presents a unique logistic challenge in having a robust Support System that will achieve stated availability requirements for the lowest life cycle cost.

Major Risks and Issues

The following risks and issues may have an impact on schedule, cost, performance, and/or reputation.

Risks associated with the vehicle acquisition process include changes to system specifications, integration issues with new generation communication equipment, and access to public roads. The key issues concerning the project are the performance of key subcontractors, and interface issues between vehicles, trailers and modules.

Other Current Sub-Projects

LAND 121 Phase 3A will deliver 2,146 lightweight (4x4) and light (6x6) Mercedes-Benz G-Wagons and 1,799 matching Haulmark trailers, replacing approximately two thirds of the current Land Rover 4x4 and 6x6 vehicle fleets. The new G-Wagons will be used primarily for tactical training, but will also be available to support humanitarian assistance or disaster relief operations, and to help secure Australia's coastline.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Dec 11	At Original Approval (Phase 3 Project Budget prior to split into 3A and 3B)		3237.7	1
Jun 12	Exchange Variation		(66.5)	
Jun 12	Budget as at 30 June 2012		3,171.2	
Jul 12	Real Variation – Scope (Funds retained by 3A)	(622.0)		2
			(622.0)	
Jul 12	**At Original Approval (Phase 3B Project Budget after split from Phase 3)**		**2,549.2**	
Jul 12	Exchange Variation to opening budget	23.3		3
Jul 13	Real Variation – Scope	7.0		4
Jul 13	Real Variation – Scope	21.0		5
Jul 13	Real Variation – Project Supplementation	684.2		6
			735.5	
Jun 16	Exchange Variation		180.9	
Jun 16	**Total Budget**		3,465.6	

	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Rheinmetall MAN Military Vehicles Australia (Acquisition)	(72.0)		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(22.9)		
	Other Contract Payments / Internal Expenses	(52.5)		7
			(147.4)	
FY to Jun16	Contract Expenditure – Rheinmetall MAN Military Vehicles Australia (Acquisition)	(119.4)		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(37.7)		
	Other Contract Payments / Internal Expenses	(19.1)		8
			(176.3)	
Jun 16	**Total Expenditure**		(323.7)	9
Jun 16	**Remaining Budget**		3,142.0	

Notes	
1	Phase 3 project budget prior to the split into Phase 3A and Phase 3B.
2	Retention of Light Capability scope by LAND 121 Phase 3A.
3	Update of exchange rates from approval to 2012–13 PBS rates.
4	Transfer of funds from LAND 116 Phase 3 for acquisition of trailers.
5	Transfer of funds from JP 2059 Phase 2 Bulk Liquid Distribution for acquisition of some vehicles and associated equipment to facilitate fuel and water transportation.
6	Provision for general program supplementation associated with easing cost pressures identified during scoping for project approval.
7	Expenses comprise of (**$26.2m) for the acquisition of G-Wagons by LAND 121 Phase 3A on behalf of LAND 121 Phase 3B,** ($14.7m) for salaries and ($11.6m) for other project office costs not associated with the prime contracts.
8	Expenses comprise of ($6.8m) for salaries, (**$4.7m) for the acquisition of trailers and** $1.6m for the acquisition of G-Wagons by LAND 121 Phase 3A on behalf of LAND 121 Phase 3B **($1.7m) for the Protected Mobility Variant**~~,~~ and ($4.3m) for other project office costs not associated with the prime contracts.
9	**Delays to some mandated systems reviews resulted in stop payment on related milestones being imposed.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
204.6	**169.5**	**174.4**	**PBS to PAES: Variation is due to reprogramming of systems review milestones, associated escalation and reprogramming of ILS deliverables.** **PAES to Final Plan: Variation is due to Pre-ERC 2015-16 update performed on the 10 Feb 16, PBS 2016-17 update performed on the 19 May 16 and additional deliveries of trailers in 2015-16.**
Variance $m	**(35.1)**	**4.9**	Total Variance ($m): **(30.2)**
Variance %	**(17.2)**	**2.9**	Total Variance (%):**(14.8)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		1.9	Australian Industry	The variation is due to additional deliveries of trailers in 2015-16.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiation/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
174.4	176.3	1.9	**Total Variance**	
		1.1	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Rheinmetall MAN Military Vehicles Australia (Acquisition)	Jul 13	1,585.9	1,918.1	Variable	ASDEFCON	1, 2
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	Jul 13	397.7	480.1	Variable	ASDEFCON	1, 2
Rheinmetall MAN Military Vehicles Australia (Support)	Jul 13	32.3	46.3	Variable	ASDEFCON	1, 2

Notes

1	**Additional commitments of $28.3m and $4.7m are included in the Mercedes Benz Australia Pacific Pty Ltd and Haulmark Trailers contracts in Section 2.3 of the LAND 121 Phase 3A Project Data Summary Sheet. These items are being procured by LAND 121 Phase 3A, on behalf of the LAND 121 Phase 3B project. Commitments in relation to General Maintenance Vehicles will be funded by LAND 121 Phase 3B.**
2	**Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Rheinmetall MAN Military Vehicles Australia (Acquisition)	2,536	2,536	MHC vehicles with associated modules.	1
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	1,582	1,582	MHC Trailers.	1
Rheinmetall MAN Military Vehicles Australia (Support)	N/A	N/A	MHC Support Contract for vehicles and modules.	

Major equipment received and quantities to 30 Jun 16

Two MHC vehicles have been accepted to support design and verification activities. **12 vehicles and 18 flatrack modules have been delivered to support training development activities. 22 Medium weight Cargo, 30 Heavy ILH trailers and 10 Cargo Kits have been delivered.**

Notes

1	The quantity figures being communicated publicly excludes vehicle and trailer prototypes.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Preliminary Design	Vehicles	Dec 14	Aug 15	Dec 15	12	1, 2
	Modules	Aug 14	Feb 15	Mar 15	7	1, 3, 4
	Trailers	Jun 16	N/A	Jan 17	7	1, 5
Detailed Design	Vehicles	May 15	Dec 15	Aug16	15	1, 3, 6
	Modules	Nov 14	Jun 15	Mar 16	16	1, 4, 6
	Trailers	Jan 17	N/A	Jul 17	6	1, 5
Critical Design	Vehicles	Aug15	May 16	Nov 16	15	1, 3, 6
	Modules	Mar 15	Nov 15	Sep 16	18	1, 3, 6

Notes	
1	All dates represent the Approval of the exit for the Reviews of the last vehicle, module and trailer variants.
2	All vehicle variants have exited preliminary design review.
3	Delays by RMMVA to secure its subcontractor has impacted the completion of nominated review.
4	All module variants have exited preliminary and detailed design reviews, and are now progressing to critical design review.
5	Six trailer variants have exited all design reviews. PDR for the remaining four variants has yet to occur.
6	Senior management attention (Defence and the RMMV Board) is expected to improve the schedule performance for completion of preliminary, detailed and critical design reviews for vehicles and modules.

3.2 Contractor Test and Evaluation Progress

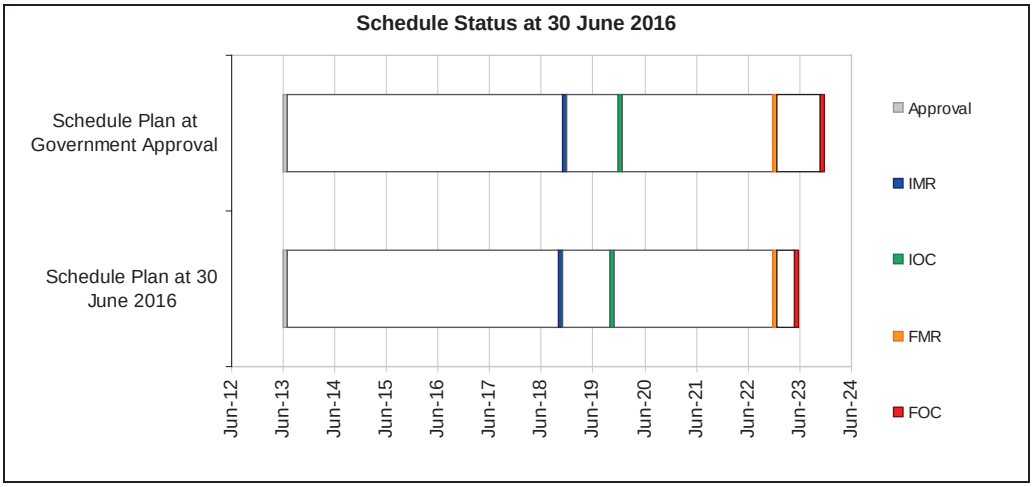
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Integration, Acceptance Test and Evaluation (AT&E)	Vehicles	Jul 16	Apr 17	Jul 18	24	1, 2, 3
	Modules	Nov15	Aug 16	Jul 17	20	1, 2, 3
	Trailers	Sep 17	N/A	May 18	8	1

Notes	
1	All dates represent the Approval of the Acceptance Verification Reports for the tests of the last vehicle, module and trailer variant.
2	Delays by RMMVA to secure its subcontractor has impacted the completion of verification.
3	Senior management attention (Defence and the RMMV Board) is expected to improve the schedule performance for completion of acceptance test and evaluation.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Note
Initial Materiel Release (IMR)	Dec 18	Nov 18	(1)	1
Initial Operational Capability (IOC)	Dec 19	Nov 19	(1)	
Final Materiel Release (FMR)	Dec 22	Dec 22	(0)	
Final Operational Capability (FOC)	Dec 23	Jun 23	(6)	

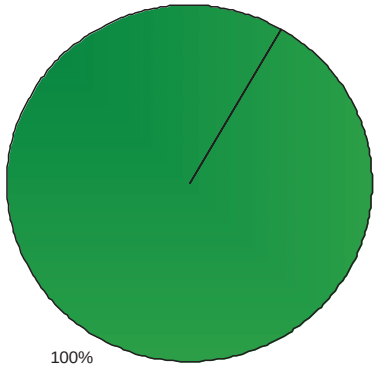
Notes	
1	All variances are forecast to be achieved on or ahead of planned dates and are a reflection of estimated planned work required to achieve MAA milestones.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Project expects to meet materiel capability requirements as expressed in the MAA and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** N/A **Red:** N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	IMR requires the following to be delivered: 101 medium and heavy vehicles, 250 modules, 59 trailers, sufficient training for operators and maintainers to support Army's introduction into service plan and adequate logistic support arrangements. Forecast achievement November 2018.	Not yet achieved
Final Materiel Release (FMR)	FMR requires the following to be delivered: 2,707 medium and heavy vehicles, 3,858 modules, 1,704 trailers, achieve the Directed Training Requirement across the entire medium and heavy capability for operators and maintainers and logistic support arrangements. Forecast achievement Dec 2022.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Changes to system specifications. There is a chance that the project will be affected by changes to system specifications leading to Contract Change Proposals which will impact on cost and schedule.	**Development of a decision log.** Changes will only be considered on formal advice from Army and will include costs and risks. The project team has worked with relevant stakeholders to assess proposed changes resulting from design reviews. While a number of Contract Change Proposals have been generated to reflect agreed outcomes of the design reviews, there has been no impact on schedule, and costs are being managed within the approved budget. **This risk should diminish as the design review process nears completion.**
Integration of new generation communication equipment (C4I) – vehicles. There is a chance that the project will be affected by the complexities of delivering MHC vehicles with an integrated C4I solution impacting on performance, cost and schedule.	**Monitor and Review RMMVA performance.** **This risk continues to be managed through the establishment of a working group involving RMMVA as the Prime System Integrator, and Thales as the Subject Matter Expert.**
Access to Public Roads. There is a chance that the MHC will be affected by the States and Territories (S&Ts) delaying certification and/or not issuing the appropriate permits for operational use which may impact on schedule, cost, performance, supportability, environment, reputation and compliance.	**Develop and agree to a strategy with States and Territories.** **Defence continues to lead negotiations with the States and Territories. Visits by LAND 121 Phase 3B and Strategic Logistics Branch (JLC) to all States and Territories have been completed. JLC will incorporate LAND 121 Phase 3B vehicle and trailer combinations iteratively into the Defence Road Transport Exception Framework (DRTEF) as Defence reviews road access confirmation from individual States and Territories**
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

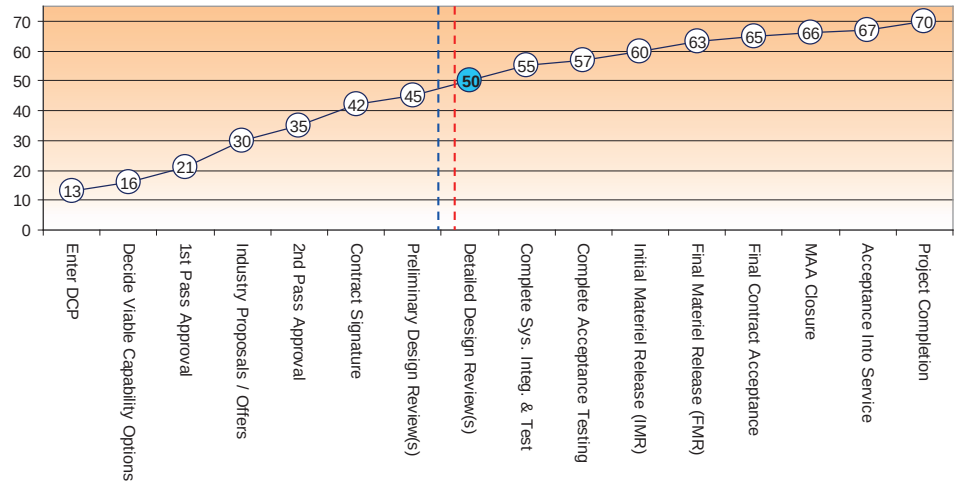
Description	Remedial Action
Subcontractor engagement. The project has been affected by the delay to subcontractor engagement impacting on schedule, cost, performance and reputation.	**CoA to undertake financial, capacity and viability assessment of subcontractors.** All key subcontractors have now been engaged. The delay in engaging the subcontractors has impacted on the conduct of design reviews for some module elements. **Performance issues initially identified with Varley have been resolved. RPC Technologies are now seeking additional costs above the contract price from RMMVA. There is also concern that Holmwood Highgate may pursue a similar approach as they recently advised RMMVA that they are unable to deliver against the contract schedule and are developing a remediation plan. Although there will be some schedule refinements, there are no impacts to the achievement of MAA milestones anticipated.** This issue is being closely managed at Director General level and weekly updates are sought from RMMVA to assess progress and where the option is available further negotiation may occur.
Project interface and integration issues. The MHC has encountered technical engineering and project management integration and interface issues. Integration issues include issues between vehicles, modules and/or trailers.	**Establish an Interface Control Working Group. (ICWG)** **The project is actively managing a range of integration and interface issues between vehicles, modules and trailers that have a potential impact on cost, schedule and performance. The ICWG convene as required (last one held 12 November 15) with the CoA, prime contractors and subcontractors (as appropriate) where integration issues affecting trailers, vehicles and modules are identified and addressed.** Interface Control Documents have also been **developed** for vehicles, modules and trailers, and designs are under constant review. Prototype vehicles **have been** acquired to support trailer verification testing

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	8	7	7	7	7	6	6	48
	Explanation	• **Schedule:** Concurrent activity and schedule float contribute to confidence that schedule will be within the tolerance of the Materiel Acquisition Agreement. • **Technical Understanding:** Technical data and Intellectual Property provisions will allow Defence to operate, support, maintain, modify and dispose the materiel elements of the capability. • **Commercial:** Contractor is improving its situation with engaging subcontractors to ramp-up its resources. • **Operations and Support:** Detailed operational and support requirements have been specified and In-Service Contracts are in place.							



2014-15 MPR Status - - - - | 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Government should refrain from announcing preferred tenderers until negotiations are complete. Public announcements undermine negotiation leverage and may provide detail which is subject to change during negotiations.	Contract Management
Projects must have a robust suite of up-to-date capability documents (Operational Concept Document and Functional Performance Specification) available during tender evaluation and negotiations to provide critical contextual information for the negotiation team. These documents also provide the framework for the acquisition authority and capability manager to conduct an informed acceptance process.	Requirements Management
It is key that requirements are fully agreed before negotiations commence to avoid any uncertainty and potential for delays.	Requirements Management
Where doubt exists in relation to compliance claims and/or significant risk is apportioned to a performance requirement, project teams should seek Objective Quality Evidence (OQE) during tender evaluation, so claims of fitness for purpose are supportable and evidence required during Design Acceptance, and AT&E is minimised.	Requirements Management
For projects of this size and complexity, team members require highly developed project management and contracting skills and experience. In preparing for LAND 121 Phase 3B contract negotiations, the need was identified for external expertise and advice to support the negotiation process. The presence of an experienced negotiator and technical adviser was key to being able to negotiate a successful contract.	Contract Management
The effort involved with the vehicle/module/trailer interface (including all interfaces between elements of the prime equipment) should not be underestimated even for apparently simple equipment. The early formation of interface working groups is critical.	Contract Management
Early involvement of Army Logistic Training Centre **(ALTC)** staff in the development of the Training requirement is mandatory. This includes reviewing the ASDEFCON template DID ILS-910 and relevant clauses pertaining to training and participation in preliminary meetings to the Initial Training Conference. Propose a preliminary brief by ALTC to define expectations and 'fit' to contractual requirements.	Resourcing
Government Furnished Equipment (GFE) lists should be continuously developed and updated while the system specifications and statement of work are still subject to negotiations and potential variation, to ensure all items on the contracted GFE list are available and sourced.	Contract Management
Ensure contractual provisions require the contractor to have executed contracts with Approved Subcontractors within a specific time following contract execution, so as to avoid impact on contract deliverables and slippage to key engineering reviews.	Contract Management
'Mancats' is a vehicle diagnostic tool that can be used with the fleet of RMMVA vehicles being acquired. A lesson learned from LAND 121 Phase 3A (G-Wagons) was to lease, and not buy, the vehicle diagnostic tool. Leasing reduces the risk of hardware and firmware redundancy, and is a better value for money option for the Commonwealth. LAND 121 Phase 3B is negotiating an appropriate lease arrangement with RMMVA for 'Mancats'.	Contract Management

An AT&E program should consider risk and performance requirements to determine whether OQE can be provided by prime contractors and their parent companies to support claims of fitness for purpose in lieu of testing. During negotiations all claims of compliance should be reflected in the qualification method to be used in the AT&E program.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	**MAJGEN Paul McLachlan (Jul 15-Dec 15)** **MAJGEN David Coghlan (Dec 15–current)**
Branch Head	BRIG Haydn Kohl
Project Director	**COL Greg McGlone (Jul 15-Aug 15)** **Ms Sarah Myers (Aug 15–current)**
Project Manager Vehicles and Modules	Ms Jacquie Menzies
Project Manager Trailers	Mr Jonathan McGuigan

Project Data Summary Sheet[126]

Project Number	**JP 2048 Phase 4A/4B**
Project Name	**AMPHIBIOUS SHIPS (LHD)**
First Year Reported in the MPR	2008-09
Capability Type	New
Acquisition Type	Australianised MOTS
Service	Joint Services
Government 1st Pass Approval	Aug 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	**$3,092.9m**
2015–16 Budget	**$65.2m**
Project Stage	**Initial Materiel Release**
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The JP 2048 Phase 4A/4B project is providing the Australian Defence Force (ADF) with an increased amphibious deployment and sustainment capability through the acquisition of two Landing Helicopter Docks (LHDs) and associated supplies and support.

Together, these 27,000 tonne LHDs will be able to land a force of over 2,000 personnel by helicopter and watercraft, along with all their weapons, ammunition, vehicles and stores.

1.2 Current Status

Cost Performance

In-year

Year to date underspend of **$6.1m** is **primarily as a result of delays in supply of Recommended Provisioning Lists (RPL) until 2016-17 and Onboard Training System milestone not being achieved due to unavailable resources.**

Project Financial Assurance Statement

As at 30 June 2016, project JP 2048 Phase 4A/4B has reviewed the approved scope and budget for those elements required to be delivered. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

126 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

The project accepted the second LHD in the fourth quarter of 2015 representing a delay of approximately two months from the original planned date of August 2015.

Major project milestones achieved in 2015-16 include:

- Recommended Provisioning List Contract Change Proposals;
- **LHD 02 Harbour Acceptance Trials 85 per cent complete;**
- **LHD 02 Sea Acceptance Trials 85 per cent complete;**
- **Delivery and Acceptance of LHD 02;**
- **Completion of System Integration and Testing;**
- **Achievement of Initial Operational Capability (IOC) (11 months behind schedule);**
- **Commissioning of LHD 02 as HMAS *Adelaide*; and**
- Settlement of Liquidated Damages for LHD 02 late delivery.

Progress of these milestones demonstrates schedule performance and supports the achievement of project completion, after full transition to in-service sustainment agency, as planned.

Materiel Capability Delivery Performance

The amphibious capability sought through the provision of two LHDs is as follows:

- Carriage, in addition to the crew, of approximately 1,200 personnel in the force ashore with a further 800 personnel providing helicopter operations, logistics, command and intelligence as well as other supporting units;
- Space and deck strength sufficient to carry around 100 armoured vehicles, including tanks, and 200 other vehicles (approximately 2,400 lane metres);
- Hangar space for at least 12 helicopters and an equal number of landing spots to allow a company group to be simultaneously landed;
- 45 days endurance for crew and embarked force including sustainment, medical, rotary wing and operational maintenance and repair support to these forces whilst ashore for 10 days;
- Command and control of the land, sea and air elements of a Joint Task Force; and
- The ability to conduct simultaneous helicopter and watercraft operations in conditions up to Sea State 4.

Production set to work and test activities, although delayed due to a combination of low electrical trade productivity, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, supported the achievement of project capability outcomes with later than planned acceptance dates for both LHD 01 and LHD 02.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The Defence Capability Plan 2004–14 identified a requirement to replace the Heavy Landing Ship HMAS *Tobruk* (JP 2048 Phase 4A) and one Amphibious Landing Ship, either HMAS *Manoora* or *Kanimbla* (JP 2048 Phase 4B). In the Defence Capability Plan 2006–16, Phases 4A and 4B of JP 2048 were amalgamated.

A Request For Information was undertaken to gather vessel capability and industry capacity information from international and Australian ship designers and shipbuilders. A Risk Reduction and Design Study and a preliminary Request for Quotation were also undertaken to provide commercial, technical, financial and schedule information for First Pass.

First Pass approval was obtained in August 2005 with the identification of two existing LHD designs that could meet the capability requirements (Armaris' Mistral and Navantia's LHD 'Juan Carlos') and the identification of potential Australian shipbuilders.

After First Pass, a Design Development Activity was conducted at the designers' respective premises to clarify the necessary Australian environmental and technical requirements, resulting in Australianised designs.

During this process, two shipbuilder/designer teams were formed with Tenix Defence working with Navantia and Thales Australia with Armaris.

A Request for Tender was released in April 2006 to the shipbuilders for the construction of the Australianised designs. Both builders submitted compliant tenders which were evaluated, and Second Pass Approval for the Tenix-Navantia solution was obtained in June 2007.

A contract was signed in October 2007 between the Commonwealth and Tenix Defence (now BAE Systems Australia Defence), for the acquisition of the two Spanish designed *Canberra* Class LHD ships and support systems; the contract came into effect in November 2007.

Navy accepted HMAS *Canberra* (LHD 01) on 25 November 2014 and HMAS *Adelaide* (LHD 02) on 2 December 2015.

Uniqueness

While the LHDs are based on an existing Spanish LHD design, the Australianisation changes, the incorporation of an existing SAAB Combat System, and the development and integration of the internal and external communication systems will result in a unique vessel.

Despite the experience gained in amphibious operations with the current amphibious ships in the Royal Australian Navy (RAN), the LHDs will bring a new and unique capability to the ADF by virtue of their size, aviation, well dock, and communications capabilities.

A unique build strategy has been employed. The LHD hulls were built, including the majority of the fit-out, by Navantia at the Ferrol and Fene Shipyards in Spain. They were transported to Australia as individual lifts on a 'float on/float off' heavy lift ship, the Blue Marlin. Construction of the superstructure and its consolidation with the hull was conducted by BAE Systems Australia Defence (BAE Systems) at their Williamstown (Victoria) Shipyard in Australia. The superstructure contains the high level Combat and Communications Systems equipment that will be maintained and upgraded in Australia. BAE Systems also **undertook** the final out-fit, set-to-work, and trials.

Major Risks and Issues

As the project moves towards closure a reduction in the strategic risk profile is anticipated, with many existing risks retired upon delivery of LHD 02 and the associated integrated logistics support products. Such risks **included** the identification and treatment of technical issues, major ship system or equipment failure, indices escalation, supplies, severe weather conditions during sea trials, non-acceptance of the LHD Safety Case and any non-supply of Government Furnished Equipment or Services**. The remaining certification and acceptance tasks (five per cent of the total tasks and decreasing) continue to be resolved by the project office in conjunction with the prime contractor, Navy and other relevant Defence areas. The risk regarding the availability of suitably qualified project office personnel remains and continues to be addressed.**

Other Current Sub-Projects

JP 2048 Phase 3: Watercraft system acquisition used in conjunction with the JP 2048 Phase 4A/4B Amphibious Ships (LHD) Mission System. This watercraft **is** the ship to shore connector for the LHDs.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Nov 03	Original Approved		3.1	1
Sep 04	Real Variation – Scope	4.8		2
Aug 05	Real Variation – Scope	29.6		3
Jun 07	**Government Second Pass Approval**	2,920.8		
Oct 08	Real Variation – Transfer	9.3		4
			2,964.5	
Jul 10	Price Indexation		428.4	5
Jun 16	Exchange Variation		(303.1)	
Jun 16	**Total Budget**		3,092.9	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – BAE Systems	(2,610.9)		
	Other Contract Payments / Internal Expenses	(108.6)		6
			(2,719.5)	
FY to Jun 16	Contract Expenditure – BAE Systems	(55.8)		
	Other Contract Payments / Internal Expenses	(3.3)		6
			(59.1)	
Jun 16	**Total Expenditure**		(2,778.6)	
Jun 16	**Remaining Budget**		314.3	

Notes	
1	This project's original budget amount is that prior to achieving Second Pass Government approval.
2	To fund a risk reduction activity for the Project to obtain design data and develop designs to meet Australian essential requirements.
3	First Pass Approval.
4	Transfer of funding for technical studies from **the then** Defence Science and Technology Organisation **(now Defence Science and Technology Group)**.
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $350.0m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $78.4m having been applied to the remaining life of the project.
6	Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
145.7	100.2	65.2	**PBS–PAES: The variation is due to savings realised from the test and evaluation program for HMAS Canberra applied to NUSHIP Adelaide. Additionally, the revision of forecasted supply support milestones and the renegotiation of the Final Acceptance framework resulting in reductions.**

			PAES–Final Plan: The variation is primarily due to a combination of cost savings, risk reduction strategies and the movement of activities and milestones associated with LHD 02 acceptance.
Variance $m	**(45.5)**	**(35.0)**	Total Variance ($m): **(80.5)**
Variance %	**(31.2)**	**(35.0)**	Total Variance (%): **(55.3)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(5.7)	Australian Industry	**Year to date underspend** of **$6.1m** is **primarily as a result of delays in supply of RPL until 2016-17 and Onboard Training System milestone not being achieved due to unavailable resources.**
			Foreign Industry	
			Early Processes	
		(0.4)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
65.2	**59.1**	**(6.1)**	**Total Variance**	
		(9.4)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract / Arrangement	Notes
		Signature $m	30 Jun 16 $m			
BAE Systems	Oct 07	2,268.1	**2,686.9**	Variable	ASDEFCON	1, 2

Notes	
1	Contract Price at Revision **116**. Amendments to Contract since signature include execution of contracted options for Training and Spares.
2	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
BAE Systems	2	2	LHD ships and integrated support systems.	

Major equipment received and quantities to 30 Jun 16
LHD 01 **and LHD 02** Delivery and Acceptance achieved.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mission System (Includes Platform / Combat Systems)	Feb 08	Feb 08	Feb 08	0	
	Support System	Apr 08	Apr 08	Apr 08	0	
Preliminary Design	Communication	Oct 08	Oct 08	Dec 08	2	1
	Navigation	Oct 08	Oct 08	Dec 08	2	1
	Platform System	Nov 08	Nov 08	Nov 08	0	
	Combat System	Dec 08	Apr 09	Apr 09	4	1
	Whole of Ship	Jan 09	May 09	May 09	4	1
	Support system	Mar 09	May 09	May 09	2	1
Detailed Design	Communication	May 09	Sep 09	Sep 09	4	1
	Navigation	Jun 09	Jun 09	Jun 09	0	
	Platform system	Jun 09	Jun 09	Jun 09	0	
	Combat system	Jul 09	Oct 09	Oct 09	3	1
	Whole of ship	Jul 09	Dec 09	Dec 09	5	1
	Support system	Aug 09	Dec 09	Dec 09	4	1

Notes	
1	Due to the complexity of the design and integration of the combat, communications and platform systems, more time was allocated to the design review activities. The Heavy Lift Ship Company, Dockwise, delivered the LHD 01 hull to BAE Systems in Australia on 28 October 2012 (66 days later than planned). LHD 02 departed Spain on the Heavy Lift Ship, Blue Marlin, in December 2013 and arrived in Australia in February 2014 on schedule.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	**Oct 15**	**7**	1
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Feb 14	Oct 14	9	2
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	Oct 15	2	3
	LHD Final Acceptance	Sep 15	**Nov 16**	**Nov 16**	**14**	4

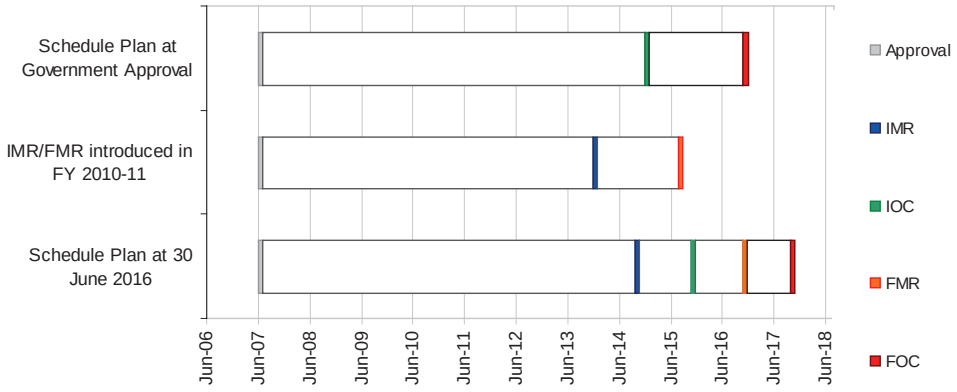
Notes	
1	System Integration relates to the whole capability, commencing with LHD 01 and completion at LHD 02. **LHD 01 production and test activities delays impacted System Integration and set to work activities.**
2	Project Acceptance for LHD 01 occurred later than planned. The delay was a direct result of a combination of low productivity in the set to work of electrical systems, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions.
3	A combination of lower than anticipated production and testing performance, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, delayed the planned Sea Acceptance Trials for LHD 02, with an associated follow-on impact of delayed delivery and acceptance of LHD 02.
4	**The change from Original Planned Date to Current Planned Date for** Final Acceptance is due to the relationship this has with LHD 02 Project Acceptance **and scheduled defect/deficiency close-out activities and milestones**.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR) (LHD 01)	Jan 14	Oct 14	9	1
Initial Operational Capability (IOC) (LHD 01)	Dec 14	**Nov 15**	**11**	2, 3
Materiel Release 2 (MR2) (LHD 02)	Aug 15	Oct 15	2	4
Final Materiel Release (FMR)	Aug 15	**Nov 16**	**15**	4
Final Operational Capability (FOC) (LHD 02)	Nov 16	**Oct 17**	**11**	**5**

Notes	
1	LHD 01 production delays impacted System Integration and set to work activities resulting in the delay to achievement of IMR.
2	The change is a direct result of a combination of low productivity in the set to work of electrical systems, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions. IOC is a Capability Manager responsible milestone which is constituted by an operational capability level delivered through a range of Defence assets. LHD 01 and the associated Integrated Logistic Support products contribute to the achievement of IOC.
3	**This variance** is as a result of late delivery of LHD 01 and the programmed workup of operational capability level during the year by the Defence Forces. This delay is not related directly to LHD 02 delivery or dependent on FMR.
4	**The** variance is related directly to a combination of lower than anticipated production and testing performance, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, and delayed LHD 02 delivery to the project. **The FMR date is under review and expected to be clarified in late 2016 with the approval of a revised Materiel Acquisition Agreement.**
5	**The variance to the Capability Manager defined milestone relates to the availability of both LHD ships to demonstrate operational scenarios. This milestone will confirm the two LHDs combined ability to operate as part of an Amphibious Task Group and support an Amphibious Ready Group in a complex amphibious warfare environment. The FOC date is under review and expected to be clarified in late 2016 with the approval of a revised Materiel Acquisition Agreement.**

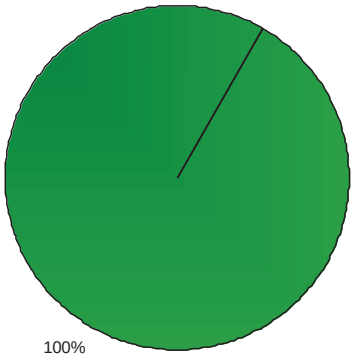
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** Defects and associated operational capability limitations identified against Materiel Capability Delivery Performance requirements were identified during harbour and sea trials and declared to the Capability Manager prior to ship acceptance. All limitations have allocated remediation plans to address and achieve all Materiel Capability Delivery Performance requirements. **Amber:** N/A **Red:** N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	• LHD 01 delivered ready for Operational Test and Evaluation. • **Capability Acquisition and Sustainment Group (CASG)** Elements of Fundamental Input to Capability Support System, including Technical Documentation, Spares Support and Training Support (**CASG** portion).	Achieved
Final Materiel Release (FMR)	• Completed delivery of LHD 02 and all remaining Acquisition Project Support Deliverables. • **FMR is expected to be achieved in November 2016.**	Not **yet** achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Legislative/Regulatory Changes may affect Contract Requirements and impact on the delivery of LHD 02.	• Raise Contract Change Proposals. • Seek Real Cost Increases to Project Funding where affected by Legislative change. • Seek waivers as necessary. **This risk was re-evaluated with completion of LHD 02 delivery and acceptance of LHD 02; risk is retired.**

The delivery of LHD 02 will be affected by scope creep caused by contemporary understanding of requirements.	• Seek schedule and cost relief for changes affected by Stakeholder expectations or changes in related Defence projects. • Program change in the Capability Insertion Program (funding source outside JP 2048 Phase 4A/4B). **This risk was re-evaluated in consideration of the small number of requirements not yet endorsed as met and the reduced associated risk exposure; risk downgraded to medium.**
Contracted indices escalation exceeds the specialist military supplementation provision.	• Contingency allocation. • Reduce contracted scope. **This risk was re-evaluated based on the remaining milestone payments and the significantly reduced exposure to indices escalation; risk downgraded to low.**
The contractor is unable to deliver supplies in accordance with the deliverable schedule for LHD 02.	• Conduct capability schedule trade-off. • Seek schedule relief. **This risk was realised and is now disclosed as an issue in Section 5.2.**
The LHD Project organisation will be impacted through the lack of the correct number of appropriately qualified personnel available to undertake required LHD Project Office commitments.	• Engaging External Service Providers (Contractors). • **Utilise personnel from CASG maritime matrix organisation and available personnel from the SPO.**
The delivery LHD 02 may be affected by an inability to verify system and functionality requirements during Test and Evaluation.	• Workshops involving BAE Systems and stakeholders to improve quality of test procedures in addressing requirements. • Early engagement of stakeholders for the provision of assets required for testing. • Identify costs of assets for budgeting purposes. • Reschedule activity. **This risk is retired due to achievement of LHD 02 Delivery and Acceptance.**
Acceptance Testing during sea trials on LHD 02 will be delayed due to severe weather conditions.	• Reschedule activity. • Ensure BAE planning has sufficient flexibility to accommodate adverse weather conditions. • Reallocate Commonwealth resources as required. **This risk is retired due to completion of Sea Acceptance Trials and achievement of LHD 02 Delivery and Acceptance.**
The acceptance test conduct for LHD 02 will be impacted due to the failure or non supply of Government Furnished Equipment or Services required to support testing, resulting in non completion of testing and/or claim by contractor for excusable delay.	• Maintain regular communications with relevant Government Furnished Equipment or Service stakeholders and suppliers. • Seek alternative third-party suppliers. **This risk is retired due to completion of Sea Acceptance Trials and achievement of LHD 02 Delivery and Acceptance.**

The delivery of LHD 02 may be affected by the Contractor failing to inform the Commonwealth of technical issues in a timely manner.	• Assess the severity of technical issues and determine if they impact acceptance. • Apply additional resources into assessment of technical issues in timely manner to lessen impact to schedule. • Respond on issues that prevent excusable delay. **This risk is retired due to achievement of LHD 02 Delivery and Acceptance.**
The LHD 01 will be affected by a major ship-system or equipment failure during Delivery that will result in the non-availability of systems post delivery.	• Contingency budget allocation for CoA to attend re-testing activities. • CoA monitoring of Contractor due diligence and quality of manufacture. • Contractor issues management provided by on-site construction staff and/or additional sub-contract assistance. **This risk is retired due to achievement of LHD 01 Delivery and Acceptance.**
There is a chance that RAN Regulators may not approve LHD Safety Program process and/or artefacts for LHD 02.	• Project systematically engaging with RAN regulators and relevant safety subject matter experts to progress delivery/acceptance of LHD Safety Program artefacts. • Ship 02 Safety Case built upon Ship 01 basis. **This risk is retired due to endorsement of LHD safety case prior to delivery / acceptance of LHD 02 by Navy and transfer of safety case ownership to Navy Capability Manager.**
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	**N/A**

5.2 Major Project Issues

Description	Remedial Action
Delay of LHD 01 during delivery to Australia.	• Settlement of Liquidated Damages. • Alignment of Contract. This issue is **retired** due to the settlement of Liquidated Damages.
The contractor is unable to deliver supplies in accordance with the deliverable schedule for LHD 01.	• RAN accepted late delivery. • Extension of HMAS Tobruk service. • Settlement of Liquidated Damages. This issue is **retired** due to the settlement of Liquidated Damages.
The contractor is unable to deliver supplies in accordance with the deliverable schedule for LHD 02.	• **Consider capability schedule trade-off.** • **Consider schedule relief.** **This issue is retired due to delivery of supplies and the resolution of applied Liquidated Damages.**

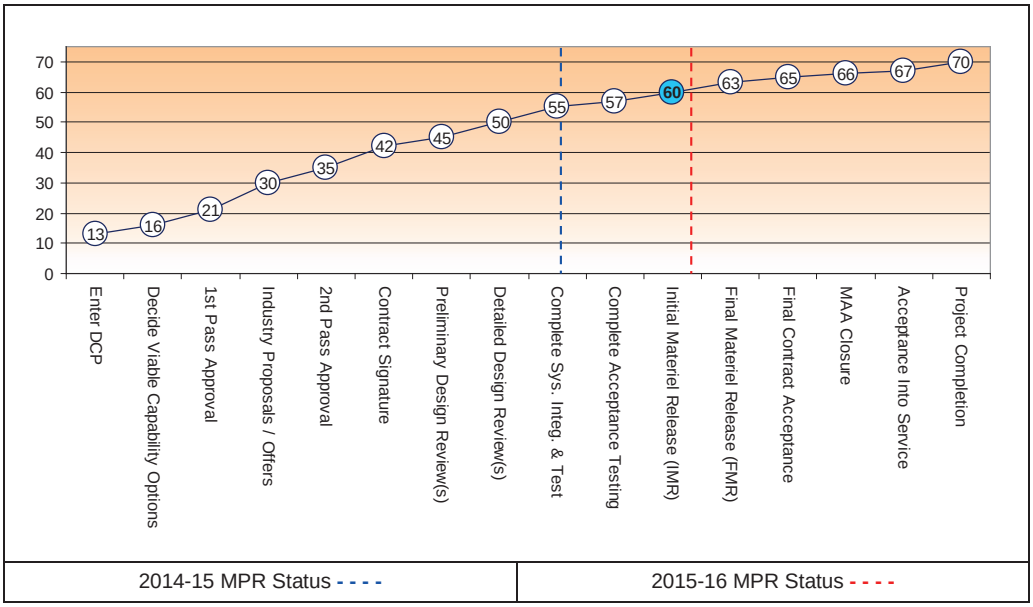
LHD 01 system fails to meet all Certification and Acceptance requirements	• **Early sign off of contract requirements.** • **Monitor burn down rate of remaining contract requirements.** • **Provision of expert review at earlier acceptance testing.** • **Progressive acceptance review of stage category test results.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	**10**	**8**	8	8	**9**	8	**9**	**60**
Initial Materiel Release	Project Status	**8**	**9**	**9**	**9**	**9**	8	9	**61**
	Explanation	• Schedule: BAE Systems delivered LHD 01 **and LHD 02** late. • Cost: The Project is on track to achieve outcomes within the allocated budget. • **Requirement: Integration and testing processes have verified achievement of endorsed requirements.** • **Technical Understanding: Knowledge necessary to operate and support the capability has been transferred to Sustainment.**							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Defect and Deficiency List (DDL) item fidelity: In constructing the LHD 01 DDL prior to ship acceptance the in-service availability period for the conduct of rectification work onboard was not adequately considered, resulting in elements of inaccurate forecasting of defect/deficiency close out. Experience with DDL item closures with LHD 01 and consideration of ship availabilities allowed significant improvements during development of the LHD 02 DDL and follow on work planning aspects.	**First of Type Equipment**

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	RADM Mark Purcell **(to Dec 15)** **Mr Alan Nicholl (Dec 15–current)**
Branch Head	Mr Patrick Fitzpatrick **(to Dec 15)** **Mr Peter Croser (Dec 15–current)**
Project Director	Mr Patrick Fitzpatrick (Dec 14–**Dec 15**) **Mr Peter Croser (Dec 15–current)**
Project Manager	Mr David Kingston (Dec 14–**Jun 16**) **Mr Paul Hegarty (Jun 16–current)**

Project Data Summary Sheet[127]

Project Number	**AIR 87 Phase 2**
Project Name	**ARMED RECONNAISSANCE HELICOPTER**
First Year Reported in the MPR	2007-08
Capability Type	New
Acquisition Type	Australianised MOTS
Service	Australian Army
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Mar 99
Total Approved Budget (Current)	**$2,033.0m**
2015–16 Budget	**$1.1m**
Project Stage	Acceptance Into Service
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project was approved to provide a reconnaissance and fire support capability for the Australian Defence Force (ADF). The project has delivered 22 aircraft including an instrumented aircraft (permanently fitted with in-flight test instrumentation), a Full Flight and Mission Simulator, two Cockpit Procedures Trainers, Groundcrew Training Devices, Electronic Warfare Mission Support System, Ground Mission Equipment, with supporting stores, facilities and ammunition.

1.2 Current Status

Cost Performance

In-year

As at **30 June 2016**, **the** Final Plan estimate of **$1.1m has been** achieved.

Project Financial Assurance Statement

As at 30 June 2016, project AIR 87 Phase 2 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope. **The residual budget of $3.4m allocated in Financial Year 2016/17 for the delivery of the Deployable Aircraft Maintenance Rig capability, that has not been expended at time of project closure, is planned to be transferred to sustainment and the remainder of the project's budget of $163.0m (contingency and unallocated funds) returned as part of the project closure process. There is no requirement for project funds to address the treatment of the Final Operational Capability (FOC) caveats. Funding to address the caveats will be provided through sustainment or other means.**

127 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Tiger is probably the most technically complex rotary wing weapon system in the ADF inventory and, though direct comparison with other aircraft types is difficult, it remains relatively expensive to operate. A range of sustainment improvements implemented in 2015 are driving Tiger cost of ownership down, with an average cost of $29,874 per flying hour in Financial Year 2015-16 compared to $39,825 in Financial Year 2013-14 and a target of approximately $27,000 in Financial Year 2017-18.

Sustainment Budget

The sustainment budget for Armed Reconnaissance Helicopters (ARH) is $145.5m in 2016-17 and $454.7m through the Forward Estimates at 2016-17 PBS Out-turned Prices, as published in the 2016-17 PBS.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

The Final Materiel Release (FMR) Approval Certificate was signed by all stakeholders on 19 March 2014, with Army caveats, (20 months behind schedule).

FOC **was declared in April 2016 (82 months behind schedule) by the Chief of Army with nine caveats (detailed below).**

Materiel Capability Delivery Performance

As at 30 June **2016**, all 22 ARH have been accepted by the Commonwealth in the Initial Operational Test and Evaluation Readiness configuration; **five** are being used for training, one of which is also being used to support test activities; and **17** are being used to raise, train and sustain the operational squadrons in Darwin in order to maintain directed levels of capability. All three simulators have been accepted and are being used for aircrew training in Oakey and Darwin.

The rebaselined schedule included all planned engineering activities required to deliver a fully compliant ARH System. Full compliance, or Service Release, of all Engineering Change Proposals was achieved in May 2013.

Operational readiness of the delivered ARH capability is being progressed by Army. The Operational Capability (OC) 2 milestone, a deployable squadron, was granted by the Chief of Army on 11 July 2013. The OC3 milestone, a deployable squadron plus troop by land into a non-permissive environment, was granted by the Chief of Army on 2 December 2014. The delivery of the remaining items is being managed by the Tiger sustainment organisation and is expected to have minimal impact on the overall ARH capability, noting that the deficiency in the Electronic Warfare System will be corrected in aircraft available to the Capability Manager **after** FOC.

Chief of Army declared FOC of the ARH capability in April 2016 with the following nine caveats, which are being managed by the Tiger sustainment organisation with funding to address the caveats to be provided through sustainment or other means:

1. **Electronic Warfare Self-Protection System – the system exhibits some deficiencies which will be rectified by industry by the end of 2016 at no cost to the Commonwealth.**
2. **Availability and Rate of Effort – Tiger availability is likely to plateau at 50% (four from eight aircraft per two squadrons), compared to the originally envisaged 75% (six from eight aircraft per two squadrons), with Tiger planned to fly 4,800 hours during Financial Year 2016-17 with the mature Rate of Effort unlikely to exceed 5,300 hours (a mature Rate of Effort of 7147 hours per year was initially expected). In Financial Year 2015-16, Tiger achieved an annual Rate of Effort of 3,996 hours. This is an increase of 8.6% on the 3,678 achieved in Financial Year 2014-15 and continues a positive trend up from 3,019 hours achieved in Financial Year 2013-14. Defence and industry are continuing to collaboratively identify ways to improve aircraft availability and achievement of Rate of Effort. This issue is being managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.**
3. **Identification Friend or Foe System – the system was experiencing technical issues which have been rectified. 13 systems have been upgraded with the remainder expected to be complete before the end of 2016.**
4. **Communication and mission planning – limitations exist with the voice and data communications systems and the Ground Mission Equipment mission planning suite. Radio obsolescence replacement and a new Common Mission Management System is being developed to support both the Tiger and Taipan platforms, funded by the AIR 9000 Ph2/4/6 Multi-Role Helicopter (Taipan) Project, with resolution planned to be achieved by 2019.**

5. **Missiles – AGM-114M Hellfire missiles are no longer being manufactured. Sufficient stocks are available in the short term. Defence and industry are undertaking the engineering effort to certify the replacement AGM-114R missile for use on Tiger. This issue is being managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.**
6. **Ammunition – limited stocks are available. Additional stocks have been procured for delivery in July 2016.**
7. **Spare parts and consumables – supply constraints on breakdown spares and consumables. Demand satisfaction rates for breakdown spares and consumables are showing improvement with performance for the quarter ending 30 June 2016 exceeding the contracted target. This issue is being managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.**
8. **Class IX Fly Away Kits – each kit is designed to support a troop-level deployment in a field environment for 14 days. The original spares to support the Fly Away Kits required by Army have been delivered. Additional kits may need to be procured if more than one squadron was to be deployed.**
9. **Support – Defence and industry engineering capacity is constrained with the potential to affect capability. Defence and industry are closely managing Tiger engineering priorities. This issue is being managed by the Tiger sustainment organisation.**

Commitment from Industry

Following agreement in August 2014 to principles relating to Rate of Effort, cost of ownership, rapid targeted action, transparency and partnership, which where confirmed in the Viability Review Deed of December 2014, Airbus Group Australia Pacific, its parent company Airbus Helicopters, and the industry partners supporting the Tiger Armed Reconnaissance Helicopter have remained positively engaged in addressing issues with the ARH capability.

Note

Forecast dates and capability assessments are excluded from the scope of the review.
Defence acknowledges that the average cost per flying hour of $39,825 reported for Financial Year 2013-14 differs from the figure of $43,026 detailed for the same period in the recent ANAO Performance Audit Report on the Tiger ARH. In working with its Prime Contractor to measure and improve sustainment outcomes, Defence excluded some discretionary costs that were outside the scope of the sustainment contract with Australian Aerospace at the time and did not contribute to Rate of Effort generation. The excluded costs are largely attributable to capability upgrades for the ARH Full Flight Mission Simulator and Electronic Warfare Mission Support System technical services.

1.3 Project Context

Background

The project received Government approval in March 1999 to replace the Army's aerial reconnaissance and fire support capability, which was based on the 1960s technology Bell Kiowa and Iroquois helicopters. The project's acquisition strategy specified substantial Australian Industry Involvement and, in December 2001, the Commonwealth entered into separate contracts with Australian Aerospace for the Acquisition and Through Life Support (TLS) programs.

The first four aircraft were manufactured and assembled in France and the remaining 18 aircraft were manufactured in France and assembled in Brisbane. One ARH is fitted with flight test instruments to assist the test and evaluation of ARH capability upgrades.

The training system relies heavily on simulation devices using the Full Flight and Mission Simulator and Cockpit Procedures Trainers which were built in France, then shipped to Australia. The Full Flight and Mission Simulator and one Cockpit Procedures Trainer are installed at Oakey (Queensland); the second Cockpit Procedures Trainer is installed at Darwin (Northern Territory).

The project experienced delays in achieving the Initial Operational Capability (IOC) critical contractual milestone, which was originally contracted for June 2007, resulting in the Commonwealth exercising its contractual right to stop all payments on the Acquisition Contract while maintaining payments on the TLS Contract.

Delays resulted in insufficient numbers of aircraft, training devices and logistics support in service to enable the required training outcomes.

Airbus Group Australia Pacific (formerly Australian Aerospace) served a notice of dispute in October 2007 and the parties entered into a formal Dispute Resolution process over issues affecting both the Acquisition and TLS contracts. The dispute resolution process resulted in both parties signing a Deed of Agreement in April 2008 which established a revised Acquisition Contract Price and Delivery Schedule, a revised TLS Contract pricing structure that transitioned it to a Performance Based Contract, and established networks for work done by third-party support subcontractors. The re-plan included integration of a program necessary to retrofit all ARH to the final configuration where all mission systems are certified for employment by Army crews (known as the retrofit program). Partial payments to Airbus Group Australia Pacific on the ARH Acquisition Contract were recommenced in April 2008, with full payment due on signing of the Contract Change Proposals (CCP).

Changes to the Acquisition Contract arising from the signing of the Deed of Agreement were agreed between the parties in February 2009, with full payment recommencing from this date.

The commensurate major documentation amendment through a CCP was approved in May 2009, and the Contract Amendment was issued in June 2009.

Inadequate contractor supply and maintenance support networks and slow resolution of technical issues continued to affect the growth of the ARH capability. Flying Rate of Effort and aircraft availability remained below expectations, posing a risk to FOC. A Viability Review Deed of Agreement was signed between Airbus Group Australia Pacific and the Commonwealth in December 2014 which introduced a more rigorous performance based contract to reduce the cost per flying hour by almost half by Financial Year 2016-17.

Uniqueness

The Australian Tiger ARH design is based on the Eurocopter French and German Tiger helicopters. The ARH design varies from the French and German designs through changes made to the following systems:

- Secure radio communication systems;
- Digital Map System;
- Integration of the Hellfire Missile weapon system;
- 70mm rocket modifications;
- Storage Bay and Digital Video Recorder;
- Roof Mounted Sight multi-target tracking system; and
- Helmet Mounted Sight and Displays in both cockpits.

The ADF's Airworthiness certification of the ARH Tiger aircraft relies on the French Airworthiness certification process undertaken by the French acquisition agency (Direction Générale de l'Armement). The ADF's Director General Technical Airworthiness recognises the French acquisition agency as a competent certification agency, and subsequently accepts the French acquisition agency certification of common Tiger systems used in the Australian ARH Tiger. In doing so, the French acquisition agency certification of the French aircraft became an integral part of the ADF's ARH certification plan. Consequently, delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This caused schedule slip in the aircraft and system certification, simulator development and aircrew training. The delays in the program resulted in the contractor failing to achieve the original contracted IOC critical milestone.

Major Risks and Issues

All major risks identified in the 2013-14 Major Projects Report have been retired from an Acquisition perspective and AIR 87 Phase 2 project closure activities are in progress.

The nine FOC caveats affecting the ARH capability are being managed by the Tiger sustainment organisation with funding to address the caveats to be provided through sustainment or other means. The resolution of these caveats, and additional operational and sustainment issues pertaining to amphibious operations and LHD integration, workforce and obsolescence, is addressed in detail under Section 5.2 below.

Other Current Sub-Projects

AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS): HATS will be an important link in the training continuum for inductees to the ARH training system.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Mar 99	Original Approved		1,584.0	
Oct 02	Real Variation – Transfer	(18.2)		1
Dec 03	Real Variation – Transfer	(59.1)		2
Aug 04	Real Variation – Budgetary Adjustments	(2.2)		3
Sep 04	Real Variation – Transfer	(3.0)		4
Jun 05	Real Variation – Transfer	(4.0)		5
Aug 05	Real Variation – Budgetary Adjustments	(4.5)		6
			(91.0)	
Jul 10	Price Indexation		418.2	7
Jun 16	Exchange Variation		**121.8**	
Jun 16	**Total Budget**		**2,033.0**	8
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Airbus Group Australia Pacific	(1,710.3)		9
	Other Contract Payments / Internal Expenses	(**155.3**)		10
			(**1,865.6**)	
FY to Jun 16	Other Contract Payments / Internal Expenses	(**1.1**)		11
			(**1.1**)	
Jun 16	**Total Expenditure**		(**1,866.7**)	
Jun 16	**Remaining Budget**		**166.3**	**8**

Notes	
1	Transfer to the then Defence Support Group (DSG) Oakey Redevelopment Project to develop ARH specific infrastructure.
2	Transfer to the then DSG 1 Aviation Relocation Project (Darwin) to develop ARH specific infrastructure.
3	Administrative Savings harvest.
4	Transfer to **the then** Defence Science and Technology Organisation **(now Defence Science and Technology Group)** to fund studies in support of ARH.
5	Transfer to the then DSG to fund AIR 87 facilities constructed as part of the Darwin 1 Aviation Relocation Project.
6	Skilling Australia's Defence Industry harvest.
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $414.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $3.3m having been applied to the remaining life of the project.
8	**This amount includes $3.4m for the delivery of the Deployable Aircraft Maintenance Rig capability to be transferred from AIR 87 Phase 2 to sustainment.**
9	Includes first five years support costs of the TLS Contract (two years Pre-Implementation and the first three Contract Years), Preliminary Engineering Proposals and Indefinite Quantity tasks performed in Acquisition

10	Other expenditure comprises: operating expenditure, External Service Providers, Foreign Military Sales, research and development costs and other capital expenditure not attributable to the aforementioned contract, minor contract expenditure **and discounts on upgrades to Ground Mission Equipment received as liquidated damages**.
11	Other expenditure includes **the costs associated with the delivery of the Deployable Aircraft Maintenance Rig capability.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
2.2	**1.2**	**1.1**	**PBS – PAES: The variance is due to cost savings and slippage in the delivery of the Deployable Aircraft Maintenance Rig.** **PAES – Final Plan: The variance is due to cost savings.**
Variance $m	**(1.0)**	**0.1**	Total Variance ($m): **(1.0)**
Variance %	**(44.2)**	**(4.9)**	Total Variance (%): **(47.0)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**Nil.**
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
1.1	**1.1**	**0.0**	**Total Variance**	
		(0.0)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Airbus Group Australia Pacific	Dec 01	1,139.9	1,710.3	Variable	SMART 2000	1, 2

Notes	
1	Increase in price is due to updates for Price and Exchange over the life of the project as well as the approval of Contract Change Proposals. A Deed of Closure to the Airbus Group Australia Pacific Prime Contract was signed on 28 May 2013.
2	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Airbus Group Australia Pacific	22	22	Tiger Armed Reconnaissance Helicopter	

Major equipment received and quantities to 30 Jun 16
22 aircraft have been accepted by the Commonwealth. Engineering and maintenance arrangements have been established.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	ARH System	Mar 02	N/A	Feb 03	11	1
	Aircrew Training Devices	Jun 02	N/A	Feb 03	8	2
System Design	ARH System	Jun 02	N/A	Feb 03	8	1
	ARH System - Delta System Design Review	Mar 03	N/A	Apr 03	1	1
	Aircrew Training Devices	Apr 03	N/A	Jul 03	3	2
Preliminary Design	ARH Tiger	Oct 02	N/A	May 03	7	3
	Aircrew Training Devices	Mar 03	N/A	Oct 04	19	2
Critical Design	ARH Tiger	Mar 03	N/A	Jul 04	16	4
	Aircrew Training Devices	Sep 03	N/A	Jun 05	21	2

Notes	
1	Reliance on the certification of the French Tiger variant was critical to the Australian design review and acceptance program. The project's ability to leverage from the French program was adversely impacted because the French program had not achieved design approval outcomes in the timeframe expected.
2	The Full Flight and Mission Simulator required customisation to both the visual system and the motion systems following contract signature in order to account for capability deficiencies associated with the proposed simulator design. A major cause of the delay in delivering training devices can be attributed to the efficacy with which the software provided from the aircraft manufacturer's test program was being managed to produce a high fidelity simulator.
3	As the ARH is a variant of the French and German Tiger helicopters, the ADF Technical Airworthiness Authority planned to utilise the existing certification work undertaken by the French acquisition agency (Direction Générale de l'Armement). Delays experienced directly impacted on design and development and the Australian Military Type certification achievement.
4	The maturity of the ARH design has required ongoing engineering changes to the approved ARH product baseline presented to the Airworthiness Board at the In Service Date. As a result, subsequent flight testing was required to confirm contract compliance and operational acceptance of incorporated design changes to enable removal of Australian Military Type Certificate and Service Release limitations.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Full Flight and Mission Simulator Contractor In-plant	Jul 04	N/A	Oct 07	39	1
	Cockpit Procedures Trainer Oakey Contractor In-plant and On-Site	Jul 04	N/A	Jun 08	47	1
	Cockpit Procedures Trainer Darwin Contractor In-plant and Army In-plant	Jul 04	N/A	Dec 08	53	1
Acceptance	ARH					
	Type Acceptance Review Special Flight Permit	Oct 04	N/A	Jun 05	8	1
	Australian Military Type Certificate	Jun 05	N/A	Oct 05	4	1
	Aircrew Training Devices - Final Acceptance Test and Evaluation					
	Full Flight and Mission Simulator (Transition Training capability)	Feb 05	N/A	Nov 07	33	1

	Full Flight and Mission Simulator (Full Training capability)	Feb 05	N/A	Nov 09	57	1
	Cockpit Procedures Trainer Oakey	Feb 05	N/A	Nov 09	57	1
	Cockpit Procedures Trainer Darwin	Feb 05	N/A	Feb 10	60	1
	Acceptance					
	ARH #11	Jul 06	N/A	Apr 08	21	1
	ARH #22	Apr 08	N/A	Nov 11	43	1, 2

Notes	
1	The difference between the Original Planned and Achieved dates is due to contractor delays in delivering conforming supplies.
2	The acceptance of the 22nd production ARH was contracted for July 2011. The milestone was achieved on 25 November 2011. Note: Production aircraft (#22) is the 22nd aircraft accepted by the Commonwealth which is not to be confused with the milestone for the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration under the Acquisition Contract. The 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration was achieved on 14 December 2012 following the delivery of A38-002 from retrofit.

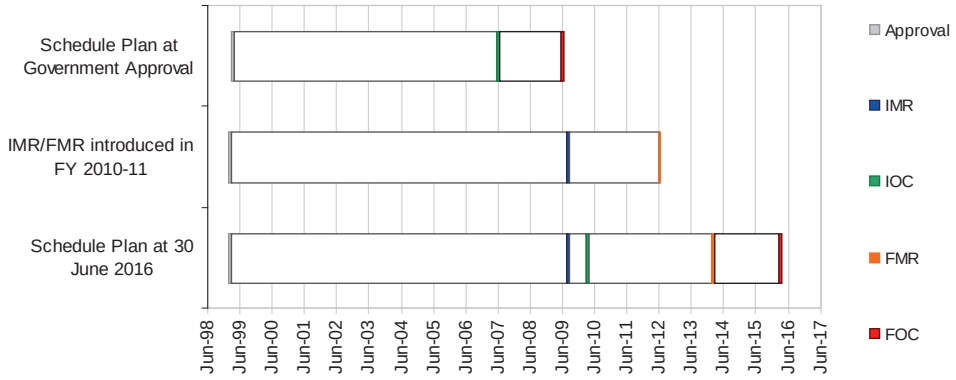
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Sep 09	N/A	
Initial Operational Capability (IOC)	Jun 07	Apr 10	34	1
Final Materiel Release (FMR)	Jul 12	Mar 14	20	2
Final Operational Capability (FOC)	Jun 09	**Apr 16**	**82**	3

Notes	
1	Operational Capability 1 (OC1) (IOC) was granted by Chief of Army on 8 April 2010 with the variance primarily due to contractual delays.
2	No FMR originally identified. Current FMR is the date agreed in Amendment No. 2 to the project AIR 87 Phase 2 Materiel Acquisition Agreement. Delays in the achievement of the Final Acceptance Milestone under the contract with Airbus Group Australia Pacific, delays in the formal transition of capability components to the respective in-service management agencies and the time taken to get all stakeholders to sign off on the FMR Approval Certificate contributed to the delay in achieving FMR. The FMR Approval Certificate was signed by all stakeholders on 19 March 2014, with Army caveats that are being managed by the Tiger sustainment organisation.
3	Previously, as a result of the reduction in flying Rate of Effort experienced by the ARH fleet, as well as a requirement to conduct amphibious operations from LHD ships, Army amended its Acceptance into Operational Service Plan, to reflect the associated training delays. Consequently, Chief of Army advised that the previously anticipated achievement date of December 2012 would not be met, and that a date of January 2016 was planned. Chief of Army has since advised that FOC has not been delayed by a new requirement to conduct amphibious operations but that the delay was solely due to the reduced Rate of Effort of the aircraft. The FOC milestone, full regiment (16 aircraft) by land into a medium threat, non-permissive environment, **was progressed** to plan with Chief of Army granting the OC2 milestone, a deployable squadron (eight aircraft), on 11 July 2013 and the OC3 milestone, a deployable squadron plus troop (11 aircraft) by land into a non-permissive environment, on 2 December 2014. **On 14 April 2016, Chief of Army advised the Minister that he had declared FOC of the ARH capability with the nine caveats detailed at Section 1.2 Materiel Capability Delivery Performance and Section 5.2 Major Project Issues.**

1. **Electronic Warfare Self-Protection System**
2. **Availability and Rate of Effort**
3. **Identification Friend or Foe System (Mode 4)**
4. **Communication and mission planning**
5. **Missiles**
6. **Ammunition**
7. **Spare parts and consumables**
8. **Class IX Fly Away Kits**
9. **Support.**

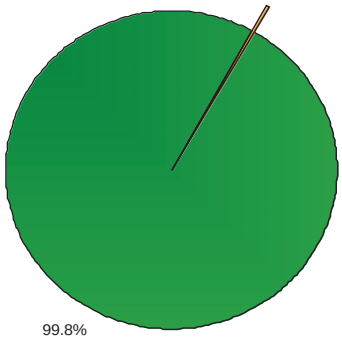
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The project is currently meeting Materiel Capability requirements as expressed in the MAA. The project has delivered all 22 Armed Reconnaissance Helicopters in the final configuration and had the required numbers of aircrew, groundcrew and technicians trained prior to the achievement of FMR. **One item of** Support and Test Equipment **is** yet to be formally accepted. The delivery of the remaining **item** is being managed and has minimal impact on the overall ARH capability. **Amber:** N/A **Red:** N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review. **The Pie Chart reflects delivery of the materiel elements required under the MAA. The delivered Electronic Warfare Self Protection System has been subsequently found to be defective and is being repaired at no cost to the Commonwealth by industry. The 0.2 percent wedge of the Pie Chart that is not yet green represents the outstanding requirement for delivery of a Deployable Aircraft Maintenance Rig capability. This figure is based on the budget allocated for the Deployable Aircraft Maintenance Rig capability as a percentage of the total project budget.**

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	• Three ARH in the Initial Operational Test and Evaluation Readiness configuration; • Aircraft Availability and Reliability parameters met; • Initial Integrated Logistic Support elements in place to support three ARH flying an annual Rate of Effort of 325 airframe hours/ARH; and • Trained aircrew, groundcrew, and technicians.	Achieved

Final Materiel Release (FMR)	• Remaining 19 ARH (22 in total) in the Initial Operational Test and Evaluation Readiness configuration delivered;
	• Aircraft Availability and Reliability parameters met;
	• All Initial Integrated Logistic Support elements in place to support remaining 19 ARH (22 in total) flying an average annual Rate of Effort of 325 airframe hours/ARH.
	• Trained aircrew, groundcrew, and technicians; and
	• Additional requirements as endorsed by Capability Development Group as being in scope of the project delivered.
	• FMR was agreed achieved provided the following Army caveats are addressed:
	  • Rate of Effort Generation;
	  • Groundcrew Training Devices;
	  • Electronic Warfare System; and
	  • Cost of Ownership.
		Achieved with caveats

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	**N/A**
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
The Electronic Warfare System fitted to the ARH is not performing to specification during specific aircraft manoeuvres.	Industry **rectified** the Electronic Warfare System performance issue at no cost to the Commonwealth **however, emergent technical issues in system performance were discovered during ground testing in late 2015. Industry is correcting the software regression as a matter of priority and at no cost to the Commonwealth with all modifications now planned to be completed by the end of 2016.** This issue is being managed by the Tiger sustainment organisation.
Cost of Ownership. In Financial Year 2013-14 the cost of sustaining the ARH Capability in exchange **for** flying hours **represented a** very poor return on investment for Army**, equating to approximately $40,000 per flying hour**. Army **required** adjustment to the sustainment contract to ensure value for money.	**Following signature of the Viability Review Deed in December 2014, a range of sustainment improvements have been, and continue to be, implemented to drive down the cost of ownership for Tiger. The cost per flying hour was reduced to $29,874 in Financial Year 2015/16 with a target of approximately $27,000 in Financial Year 2016/17.** **This figure includes Integrated Logistic Management Services (including Engineering, Maintenance Management, Supply Support and Technical Services), ARH Fleet Deeper Maintenance Services, Aircrew and Maintainer Training, Flight Simulators and Maintenance Training Systems Support Services, Software Support Services, Instrumented ARH Capability Operations and Support Services, and Management and Administration provided by the contractor in support of the ARH Capability.** **Industry remains positively engaged in addressing this issue in accordance with the principles contained within the Viability Review Deed.** **This issue is being managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.**
Availability and Rate of Effort. A minimum of six from eight aircraft available in each of Army's 161 and 162 squadrons was envisaged. Tiger availability is likely to plateau at 50% (four from eight aircraft per two squadrons) **A mature Rate of Effort of 7,147 hours per year was initially expected. Defence is now planning to fly 4,800 hours during Financial Year 2016-17 with the mature Rate of Effort unlikely to exceed 5,300 hours per year.**	**In Financial Year 2015/16, Tiger achieved an annual Rate of Effort of 3,996 hours. This is an increase of 8.6% on the 3,678 achieved in Financial Year 2014/15 and continues a positive trend up from 3019 hours in Financial Year 2013/14.** **Defence and industry continue to collaboratively identify ways to improve aircraft availability and achievement of Rate of Effort.** **This issue is being managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.**

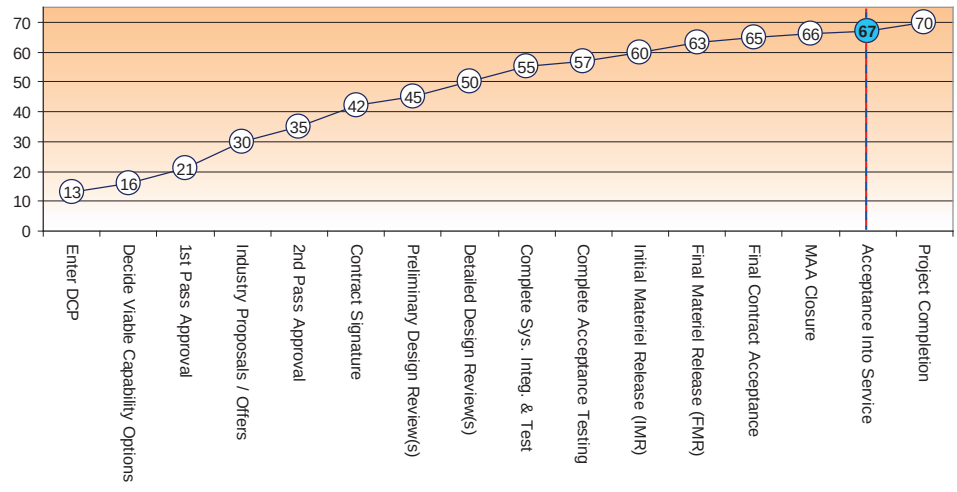
Identification Friend or Foe System. The system was experiencing technical issues.	These issues have now been rectified. 13 systems have been upgraded with the remainder expected to be complete before the end of 2016.
Communication and mission planning. Limitations exist with the voice and data communications systems and the Ground Mission Equipment mission planning suite.	Radio obsolescence replacement and a new Common Mission Management System is being developed to support both the Tiger and Taipan platforms with resolution planned to be achieved by 2019. This issue is being managed by the Tiger sustainment organisation and is being funded by the AIR 9000 Ph2/4/6 Multi-Role Helicopter (Taipan) Project.
Missiles. AGM-114M Hellfire missiles are no longer being manufactured.	Sufficient stocks are available in the short term. Defence and Industry are undertaking the engineering effort to certify the replacement AGM-114R missile for use on Tiger. This issue is being managed by the Tiger sustainment organisation and is funded within the approved sustainment budget..
Ammunition. Limited stocks are available.	Additional stocks have been procured for delivery in July 2016.
Spare parts and consumables. Supply constraints on breakdown spares and consumables.	Demand satisfaction rates for breakdown spares and consumables are showing improvement with performance for the quarter ending 30 June 2016 exceeding the contracted target of 90%. This issue is being managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
Class IX Fly Away Kits. Each kit is designed to support a troop-level deployment in a field environment for 14 days. Defence currently has limited stocks.	The original spares to support the Fly Away Kits required by Army have been delivered. Additional kits may need to be procured if more than one squadron was to be deployed.
Support. Defence and Industry engineering capacity is constrained with the potential to affect capability.	Defence and Industry are closely managing Tiger engineering priorities. This issue is being managed by the Tiger sustainment organisation.
Workforce. Army has experienced issues training and retaining sufficient Ground Crewman Aircraft Support and Ground Crewman Mission Support personnel as well as key aviation technical trades, and achieving the required aircrew training progression as a result of inadequate aircraft availability and Rate of Effort. The Tiger sustainment organisation has also experienced issues with staff turnover and retention.	Army is actively managing these workforce issues as part of the broader ARH capability, with recent consideration by the Tiger Weapon System Review Committee. Additionally, staggered posting cycles are being maintained for key military positions within the Tiger sustainment organisation. The issue of aircraft availability and Rate of Effort, which is impacting aircrew training progression, is addressed previously within this section.
Amphibious operations and LHD integration. While not an acceptance criteria for FOC, Army requires the ARH Tiger to be capable of conducting amphibious operations from Navy's LHD ships. This requirement has not yet been satisfied.	The requirement for a Tiger amphibious operational capability is being actively managed by Army and was considered by the recent Tiger Weapon System Review Committee. first of class flight trials are scheduled for the first half of 2017, with operational evaluation to follow in the second half of the year. The objective end state, with Tiger having achieved the necessary embarked clearances, is planned for the first half of 2018. This issue is being managed by the Directorate of Aviation Capability Management and is funded within Army and Navy's approved operating/sustainment budgets.

Obsolescence. Army has been operating the ARH Tiger since 2004. As with all major systems with a protracted life of type, a number of significant components require replacement in order to address obsolescence and supportability issues. The number and complexity of these issues are beyond the financial scope of treatment available through sustainment.	**Army is working closely with Airbus Group Australia Pacific to identify and rectify Tiger obsolescence issues. In the short term, materiel obsolescence management is incorporated under the current Tiger sustainment contract through to 2019, Longer term, and more significant capability obsolescence issues, will be addressed under the Armed Reconnaissance Helicopter Capability Assurance Program.**
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Acceptance Into Service	Project Status	10	9	10	10	10	9	9	67
	Explanation	N/A							



2014-15 MPR Status - - - -	2015-16 MPR Status - - - -
Note	
The Project Maturity Score has been developed in accordance with Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, Project Maturity Scores at Life Cycle Gates, September 2010, and has been drawn from the Monthly Reporting System Majors Master Data in accordance with the requirements of the 2015-2016 Major Projects Report Guidelines. The score reflects the Project's maturity against a benchmark relevant to its life cycle gate stage and does not necessarily reflect the maturity of the broader ARH Capability.	

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Aircraft still undergoing development by their parent Defence force or Original Equipment Manufacturer should not be classed as off-the-shelf.	Off-The-Shelf Equipment
Delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This has caused schedule slip in the aircraft and system certification, simulator development and aircrew training. The delays in the program have resulted in the contractor failing to achieve the IOC critical milestone **on schedule**.	Off-The-Shelf Equipment
Resolve or escalate minor disputes as they arise to prevent escalation to major contract dispute.	Contract Management
Use integrated teams with strong processes and empowered staff facilitated by appropriate contractual arrangements.	Resourcing Contract Management
The AIR 87 TLS Contract needs constant management by experienced contract management staff with ready access to legal support. The Commonwealth must challenge the contractor on performance and must not enter into contract change discussions with the contractor where the Commonwealth will not receive value for money for the contracted services.	Contract Management
In respect of the out-sourced Systems Program Office core functions, the notion that the Commonwealth can optimise resource availability by outsourcing activities needs to be challenged. This value for money hypothesis is flawed.	Resourcing Contract Management
Better arrangements should be put in place to ensure that appropriate consultations occur before the Commonwealth enters into similar contracts with the same contractor. AIR 9000 did not consult AIR 87 to any significant extent before signing the Multi-Role Helicopter Sustainment Contract and over time this contract has proven to be similarly flawed.	Contract Management
Defence needs to re-evaluate its policy in relation to the use of 'cost-plus' contracts. A cost-plus contract for the initial years of the AIR 87 TLS Contract would have ensured effective performance parameters could be set for a more robust mature-state stage of the contract.	Contract Management
The Commonwealth must seek adequate evidence from the Contractor that its sustainment arrangements with its suppliers/subcontractors are in place and effective and that any provisions contained in the head contract have been adequately flowed down into any subcontracts. Demonstration should be linked to sustainment contract signature or as an entry obligation to the achievement of In-Service Date.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	RADM Tony Dalton **(to Oct 15)** **MAJGEN Andrew Mathewson (Oct 15–current)**
Branch Head	BRIG Andrew Mathewson **(to Oct 15)** **BRIG Anthony McWatters (Oct 15–current)**
Project Director	COL Anthony McWatters **(to Jan 16)** **COL Michael Millar (Jan 16–current)**
Project Manager	Mr Cliff Meyer

Project Data Summary Sheet[128]

Project Number	**AIR 5402**
Project Name	**AIR TO AIR REFUELLING CAPABILITY**
First Year Reported in the MPR	2008-09
Capability Type	New
Acquisition Type	Developmental
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	May 03
Total Approved Budget (Current)	**$1,821.7m**
2015-16 Budget	**$74.5m**
Project Stage	**MAA Closure**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project has provided the Australian Defence Force (ADF) with five new generation Airbus A330 Multi Role Tanker Transport aircraft (MRTT), to be known as the KC-30A in Royal Australian Air Force (RAAF) service. The MRTT will be equipped with both hose and drogue and boom refuelling systems capable of in-flight refuelling of current and future aircraft, including F/A-18 Classic and Super Hornets, Hawk Lead-In Fighter, Wedgetail Airborne Early Warning and Control, C-17 Globemaster III, and Joint Strike Fighter (JSF). The MRTT will also provide significant Air Logistics Services capability for carriage of up to 270 passengers and cargo. The acquisition also establishes the infrastructure necessary to deliver services including engineering, maintenance, spares management, technical data, software and training support for the new fleet.

1.2 Current Status

This project was removed from the Project of Concern list in February 2015.

Cost Performance

In-year

The ($5.9m) variance is due to savings associated with the Future Modification Program ($1.2m), Additional Work Tasking Orders (AWTO) ($0.2m) and savings against various other minor contracts including service providers and legal ($0.5m), a slippage in spares ($0.8m), a reduction in the value of non-cash liquidated damages expense ($0.5m), and an unsettled FOREX gain of ($2.7m).

Project Financial Assurance Statement

As at 30 June 2016, project AIR 5402 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting

128 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has **not** applied contingency in the financial year.

Schedule Performance

All five KC-30A MRTT aircraft and Simulation Devices have been delivered with both Final Accreditation and Acceptance of the KC-30A Simulation Devices and Contract Final Acceptance achieved in November 2015.

FMR **was achieved in** May 2016 **with FOC declared in July 2016;** 39 **and 64** months **respectively** behind the original planned dates.

Materiel Capability Delivery Performance

To meet Defence strategic goals, the project worked closely with Airbus Defence and Space to ensure that the initial configuration at acceptance provides; essential capability for Air Logistics Support (passengers and cargo) and pods (hose and drogue) air to air refuelling. A suitable framework to enable contractual acceptance of aircraft with non-critical non-conformances has been established. This framework also ensures that full compliance will be achieved by Final Materiel Release (FMR) in order to achieve Final Operational Capability (FOC). **The KC-30A capability has been contractually accepted and delivered to Air Force with FMR achieved in May 2016 with FOC declared in July 2016.**

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Government gave the equivalent of second pass approval in May 2003 for a new generation air to air refuelling capability.

An open Request for Tender was released in June 2003 for both the Acquisition and Through Life Support (TLS) Contracts. In April 2004, Government announced that the Military Transport Aircraft Division of the European Aeronautic and Space Company Construcciones Aeronauticas S.A. (EADS CASA), teamed with Qantas Defence Services, had been selected as the preferred tenderer for the supply of five Airbus A330 MRTT aircraft and their associated support.

The Acquisition Contract was signed with Spanish company EADS CASA in December 2004. The TLS Contract was signed with Qantas Airways Limited in February 2007.

In April 2009, the Military Transport Aircraft Division of EADS was amalgamated with the Airbus Military Division, and commenced trading as Airbus Military. In February 2014, Airbus Military was rebranded and commenced trading as Airbus Defence and Space.

The A330 MRTT is based on the Airbus A330-200 medium/long-range twin aisle commercial aircraft. The first (prototype) aircraft was modified and tested by Airbus Defence and Space in Madrid, Spain. The remaining four aircraft were modified by Qantas, under subcontract to Airbus Defence and Space, at the Australian Conversion Centre, located at Brisbane Airport, Australia.

A Contract Change Proposal (CCP) was signed in March 2006 for the procurement of a Full Flight Mission Simulator, Integrated Procedures Trainer and a Simulator Training Facility.

Another CCP was signed in December 2006 for changes to the cockpit layout to accommodate redesign of the refuelling operator console and associated changes to the cockpit access door and forward lavatory. Implementation of these changes on the first aircraft required the conversion and test activities to be divided into two phases:

1. Phase 1 involved the structural modification of the aircraft, including installation of boom and pods for civil certification.
2. Phase 2 involved the installation of the military systems, installation of the refuelling operator console and completion of cabin modifications for full military certification and qualification of the modified aircraft.

Uniqueness

AIR 5402 is the lead customer of the A330 MRTT platform, including the lead customer for the Airbus Defence and Space developed ARBS. Whilst Airbus Defence and Space has previously developed and delivered underwing pod equipped A310 MRTT aircraft to the German and Canadian Air Forces, the A330 MRTT is a significantly more complex developmental effort to design, build and test the first of type, highly integrated military mission and refuelling systems. In parallel, Airbus Defence and Space is required to develop the publications, training devices and training material to support introductory training of aircrew and maintenance staff and for transition to the TLS Contractors for ongoing support of the new tanker capability. Subsequent sales to Saudi Arabia, United Kingdom, United Arab Emirates and Singapore have bolstered the Airbus Defence and Space commitment to the program and helped amortise development costs.

Major Risks and Issues

All of the project's risks and issues have been retired.

Other Current Sub-Projects

Project AIR 7403 Phase 3 for the purchase of two A330 aircraft and conversion to MRTT aircraft, was implemented in June 2015 through a CCP to the current contract.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
May 03	Original Approved		2,076.6	
Jun 04	Real Variation – Budgetary Adjustment	(149.4)		1
Aug 04	Real Variation – Budgetary Adjustment	(1.2)		2
Aug 05	Real Variation – Budgetary Adjustment	(3.0)		3
Nov 05	Real Variation – Transfer	(135.5)		4
			(289.1)	
Jul 10	Price Indexation		484.1	5
Jun 16	Exchange Variation		(449.9)	
Jun 16	**Total Budget**		1,821.7	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Airbus Defence and Space	(1,526.1)		
	Contract Expenditure – Northrop Grumman Integrated Defence Services	(6.8)		
	Other Contract Payments / Internal Expenses	(158.9)		6
			(1,691.8)	
FY to Jun 16	Contract Expenditure – Airbus Defence and Space	(47.0)		
	Contract Expenditure – Northrop Grumman Integrated Defence Services	(16.6)		7
	Other Contract Payments / Internal Expenses	(5.0)		8
			(68.6)	
Jun 16	**Total Expenditure**		(1,760.4)	
Jun 16	**Remaining Budget**		61.3	

Notes	
1	Defence Capability direction regarding currency mix at approval and Government decisions.
2	Administrative Savings harvest.
3	Skilling Australia's Defence Industry harvest.
4	Transfer to **Defence Estate and Infrastructure Group** for delivery of MRTT infrastructure at RAAF Amberley and at other RAAF bases.
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $473.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $10.2m having been applied to the remaining life of the project.
6	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure. The major component of this amount is for Tanker Hire costs ($26.4m) incurred in Financial Year 2009-10**,** associated with the delay to the program.
7	The Northrop Grumman Integrated Defence Services **(NGIDS),** contract covers work under the modification program to upgrade three aircraft to the final configuration via a Through Life Support contract.
8	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure. **This amount includes $0.7m for Discrete Tasking Orders, $1.4m for contractor and legal support, $2.7m for non cash liquidated damages expense and $0.2m for other miscellaneous orders.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
67.3	**74.5**	**74.5**	**The variation between PBS and PAES estimates is due to a slippage of prime contract milestones from FY2014-15 to FY2015-16, delays in the delivery of spares, cost savings associated with contract changes and additional material handling equipment that is no longer being procured.**
Variance $m	**7.1**	**0.1**	Total Variance ($m): **7.2**
Variance %	**10.6**	**0.1**	Total Variance (%): **10.7**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(1.6)	Australian Industry	**The variance of $5.9m is due to savings associated with the Future Modification Program ($1.2m), Additional Work Tasking Orders (AWTO) ($0.2m), savings against various other minor contracts including service providers and legal ($0.5m), a slippage in spares ($0.8m), a reduction in the value of non cash liquidated damages expense ($0.5m) and an unsettled FOREX gain of $2.7m.**
			Foreign Industry	
			Early Processes	
		(4.3)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
74.5	**68.6**	**(5.9)**	**Total Variance**	
		(7.9)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Airbus Defence and Space	Dec 04	1,413.4	**1,573.2**	Variable	ASDEFCON	1,2
Northrop Grumman Integrated Defence Services	Jan 15	15.0	**18.1**	Fixed	ASDEFCON	1,3,**4**

Notes

1	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustment for indexation (where applicable).
2	The increase in contract value is due primarily to a number of major CCPs including CCP-001 Simulator, CCP-074 Support and Test Equipment, CCP-078 Spares, CCP-053 Flight Management System, CCP-060 Training Course Development and CCP-102 Boom Enhancements.
3	The contract price includes a provision for direct materiel purchases and additional labour.
4	**Contract value as at 30 June 2016 includes a 3 month extension due to impacts resulting from prime contract schedule slippage.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Airbus Defence and Space	5	5	Provision of a new generation air to air refuelling capability comprising five A330 MRTT aircraft and associated supplies and support.	1
Northrop Grumman Integrated Defence Services	3	3	Modification to upgrade three aircraft to the final configuration.	

Major equipment received and quantities to 30 Jun 16

Final Acceptance of the KC-30A Simulation Devices and Contract Final Acceptance were both achieved on 27 November 2015.

NGIDS completed the modification program to upgrade three KC-30A aircraft to final fleet configuration on 30 March 2016.

Notes

1	CCP 131 - purchase of two A330 aircraft and CCP 132 - conversion to MRTT aircraft, raised and signed to update the existing acquisition contract with Airbus Defence and Space for the two aircraft and associated conversion at a cost of AUD $408m. This acquisition will be managed under Project Air 7403 Phase 3.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements /Design	MRTT Aircraft	Feb 05	Feb 05	Mar 05	1	
System Requirements	Simulation Devices	May 06	May 06	Oct 06	5	
Preliminary Design	MRTT Aircraft	Jun 05	Jun 05	Jun 05	0	
	Simulation Devices	Sep 06	Sep 06	Jun 07	9	
	Simulation Devices Facility	Sep 06	May 07	Jul 07	10	
Critical Design	MRTT Aircraft	Feb 06	Mar 06	Jun 06	4	1
	Simulation Devices	Mar 07	Jan 08	Jan 09	22	2
	Simulation Devices Facility	Apr 07	Nov 07	Jan 09	21	3

	Aerial Refuelling Boom System	Sep 11	Sep 11	Dec 11	3	4
Final Design	MRTT Aircraft	Sep 06	Sep 06	Jul 07	10	1
	Aerial Refuelling Boom System	Dec 11	Dec 11	Jul 12	7	4

Notes	
1	The MRTT Aircraft Critical Design Review (CDR) was conducted over a series of meetings from February to May 2006. Although design for the majority of the aircraft systems had been satisfactorily completed, the design for key elements of the aircraft mission system was not yet mature. “Practical Completion” of the CDR Milestone was achieved in June 2006; with a follow-on milestone designated as the Final Design Review (FDR). Concurrently, evaluations of the new Remote Aerial Refuelling Operator console identified the need for changes to the cockpit layout. These changes were agreed as part of the CDR close-out and required a change to the conversion and test process, which was split into two phases: Phase 1 for structural conversion and civil certification, and Phase 2 for installation of the military avionics and military certification. Closure of the residual activities to achieve the FDR proved problematic. These were progressively completed over the following 12 months.
2	Delays to completion of the MRTT Aircraft design process had a knock-on impact to completion of the Simulation Devices CDR.
3	Completion of the CDR for the Simulation Devices Facility was delayed due to redesign to accommodate increased security requirements.
4	Additional design review milestones were added for development of improvements to the ARBS. As with previous design reviews, closure of the contract milestone has lagged conduct of the design review activity in order to complete approval of documentation in accordance with the milestone exit criteria.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRTT Aircraft	Aug 08	Dec 08	May 11	33	1
	Simulation Devices	Feb 09	Dec 09	Apr 11	26	2
Acceptance	MRTT Aircraft – Milestone 18 - Acceptance of First Aircraft	Dec 08	Oct 10	Jun 11	29	1
	Simulation Devices and Simulation Devices Facility	May 09	Dec 11	Dec 11	31	2
	Full Mission Simulator Final Accreditation	Feb 10	Feb 14	**Nov 15**	**69**	2
	Aerial Refuelling Boom System	Dec 12	Dec 12	Dec 14	24	3
	Contract Final Acceptance	Feb 11	Jul 15	**Nov 15**	**57**	4

Notes	
1	Originally planned as a single-phase activity, the system integration test program for the first-of-type A330 MRTT was split into two phases to accommodate changes to the Remote Aerial Refuelling Operator console. The first phase, for civil certification of the modified aircraft, was successfully completed in February 2008. The second phase, for military certification and qualification of the modified aircraft, commenced end of December 2008, approximately six months late due to the combination of delays to the first and second conversion phases. Unexpected and continued delays experienced in the development test phase during 2009 delayed commencement of the formal certification ground and flight testing program. A Technical Certificate for certification of the A330 MRTT was issued by the Spanish military certification authority Instituto Nacional de Tecnica Aerospacial (INTA) in October 2010 and reissued in April 2011 to certify changes introduced following a serious in-flight incident and loss of the boom in January 2011 during a training flight with Portuguese F-16 fighters. Qualification testing was completed in December 2010; although two additional flights were necessary, and completed in May 2011, to complete test evidence necessary to demonstrate compliance with the contract specification. Acceptance Test and Evaluation of the first MRTT Aircraft (MRTT#3) was conducted during May 2011 as part of the Customer Acceptance Process following completion of all system integration testing and aircraft preparation for delivery.
2	Delays to completion of the MRTT Aircraft test process **had** a knock-on impact to completion of testing of the Simulation Devices as the data required for its final accreditation **was** dependent on a targeted flight test phase conducted at the end of the formal test program. The Simulation Devices were introduced in phased manner to recover schedule due to delays in the aircraft test program, enabling initial acceptance to be completed in 2011 and training to commence on the devices in 2012. Final accreditation was delayed due to the need for development and testing of further improvements to meet full capability and flow-through of changes to the Simulation Devices.
3	The ARBS program was delayed due to continued development of the ARBS. The Milestone schedule was rebaselined at Deed 4 to allow for further testing.
4	Rectification of all non-conformances at initial acceptance and provision of service bulletins for upgrade of delivered aircraft **was** completed by Contract Final Acceptance

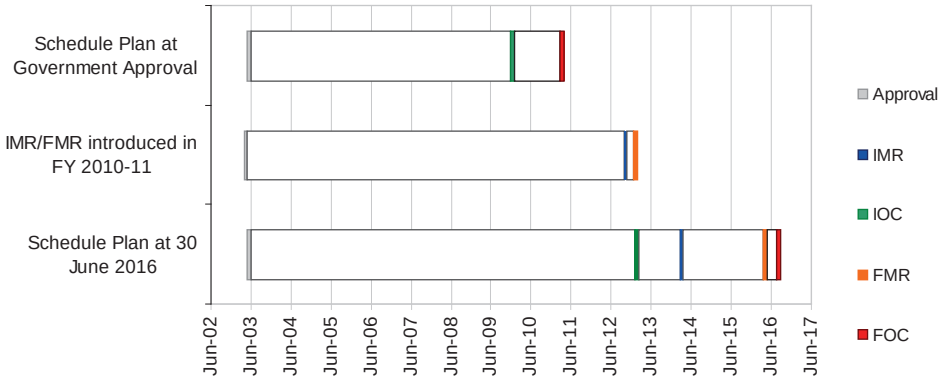
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Oct 12	May 14	19	1, 5
Initial Operational Capability (IOC)	Dec 09	Feb 13	38	2
Final Materiel Release (FMR)	Feb 13	May 16	39	3, 5
Final Operational Capability (FOC)	Mar 11	**Jul 16**	**64**	4

Notes	
1	Defence milestone for delivery and acceptance of two aircraft, and issue of a Special Flight Permit (SFP) for Air Logistics Support and air to air refuelling for pod refuelling only in support of an IOC. Although IOC achievement **was** declared, declaration of IMR was delayed pending approval of the IMR report.
2	IOC required demonstration of an effective capability for Air Logistics Services (passengers and cargo) and pods (hose and drogue) air to air refuelling. Variance from the original planned date was due to delays to the development, certification and qualification of the first-of-type aircraft and refinement of planning and identification of additional training and operational test and evaluation requirements. Delays to Acceptance of the first aircraft required alternative arrangements for provision of aerial refuelling and air logistics services to meet Air Force operational and training commitments.
3	Defence milestone for delivery and acceptance of five aircraft and mature support system, including training devices, training materials, publications, spares and support and test equipment.

4	Completion of the KC-30A fleet modification program **was** delayed due to a combination of impacts from supporting operations and contractor performance. Scheduling of the Airworthiness Board for Service Release of the Boom Capability in March 2016 **impacted** achievement of FOC, albeit operations **were** conducted under the boom SFP and the impacts are therefore minor.
5	In 2004, Government approved the IOC and FOC Original Planned dates. In 2010 Defence introduced the IMR and FMR milestones. The Original Planned dates for IMR and FMR were aligned with the then Forecast dates for IOC and FOC.

Schedule Status at 30 June 2016

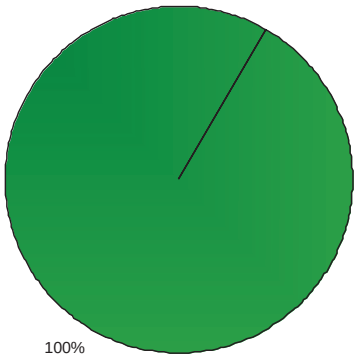


Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Green:

The capability requirements expressed in the MAA have been met. FMR was achieved in May 2016.

Amber:

N/A

Red:

N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	The acceptance of two MRTT aircraft and SFP for Air Logistics Services and AAR (pods only). IMR was declared in May 2014.	Achieved
Final Materiel Release (FMR)	The acceptance of five MRTT aircraft with KC-30A type capable of achieving all Measures of Effectiveness requirements, acceptance of Simulation Devices, and Australian Military Type Certificate (AMTC) and Service Release (SR) achievement. FMR was achieved on 31 May 2016.	Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

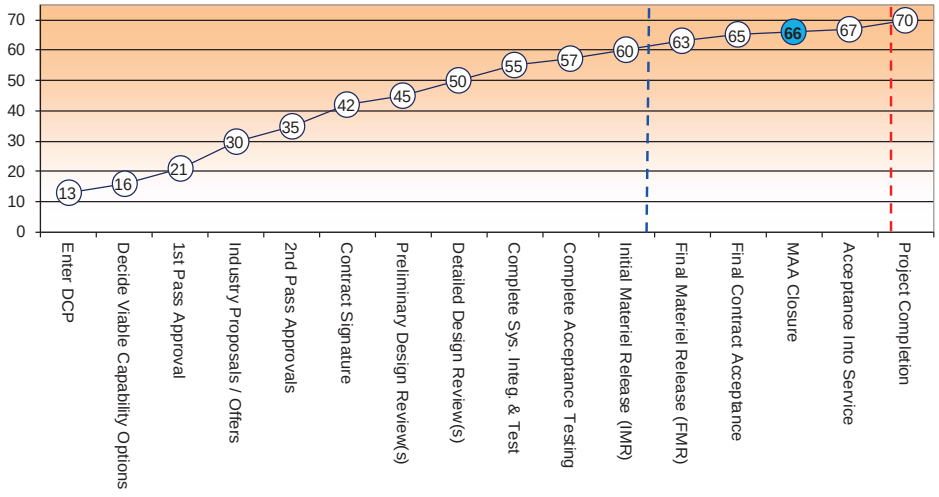
Description	Remedial Action
N/A	N/A

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	10	9	9	9	66
MAA Closure	Project Status	10	9	10	10	10	10	10	69
	Explanation	The project has completed acceptance and hand over to Air Force of five aircraft in a configuration able to support achievement of Final Operational Capability. • **Technical Difficulty:** The design and validation of the KC-30A has been proven and accepted using the ASDEFCON Verification and Validation testing process and certified by the various Technical Regularity Authorities. • **Commercial:** Apart from some residual long lead spares, all contract requirements in accordance with the MAA have been met which means the KC-30A system has full capability and has been transitioned to the sustainment organisation with NIL caveats. • **Operations and Support:** The KC-30A has transitioned into operational service.							



2014-15 MPR Status - - - - 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
The development and introduction into service of a first-of-type military (aircraft) mission and support system is always harder than it first appears. At contract signature the project appeared a reasonably low risk venture. However, over the course of the project, it became apparent to both Defence and the contractor that the integration of the fuel delivery systems and military systems on a commercial aircraft introduced many challenges including: software integration issues, underestimation of developmental and certification testing schedule. As a result, a higher effort for a greater period of time was required by Defence to support the program.	First of Type Equipment.
Technical (design) maturity assessment: a tender definition activity was undertaken following selection of the preferred supplier and prior to contract negotiations. However, due to time constraints and the breadth of review activities, it was not possible to conduct a comprehensive technical review and maturity assessment. As a consequence, an aggressive system design schedule was agreed that subsequently proved difficult to achieve due to lower design maturity - and hence higher development effort - on some systems. The additional development effort was accommodated under the change to a two-phased conversion and test process. In hindsight, once it became apparent that Australia was the lead customer for the A330 MRTT, a more robust design maturity assessment should have been undertaken under a funded design development process prior to contract award.	First of Type Equipment Schedule Management
Whilst this project preceded improvements in the capability definition documents (Operational Concept Document, Function and Performance Specification and Test Concept Description), the intent of these documents was included in tender documentation and refined during contract negotiation for inclusion in the Acquisition Contract. The Contractor's internal requirements management process did not adequately support a robust process for customer clarification of the operational intent leading to protracted development and rework. There is a need to ensure that a robust process exists to achieve a common understanding of derived requirements and operational intent, and that it is agreed in the early stages of the project life-cycle.	Requirements Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	AVM Leigh Gordon **(to Mar 16)** **AVM Catherine Roberts (Mar 16–current)**
Branch Head	AIRCDRE Philip Tammen
Project Director	Mr Luke Brown
Project Manager	Mr Grant Cameron

Project Data Summary Sheet[129]

Project Number	**AIR 8000 Phase 2**
Project Name	**BATTLEFIELD AIRLIFT – CARIBOU REPLACEMENT**
First Year Reported in the MPR	2013-14
Capability Type	Replacement
Acquisition Type	MOTS
Service	Royal Australian Air Force
Government 1st Pass Approval	Apr 12
Government 2nd Pass Approval	Apr 12
Total Approved Budget (Current)	**$1,434.5m**
2015–16 Budget	**$141.5m**
Project Stage	Integration and Test
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project was approved to replace the retired Caribou capability and provide the Australian Defence Force (ADF) with an enhanced intra-theatre and regional airlift capability through acquisition of a fleet of ten new Light Tactical Fixed Wing aircraft. The Government approved solution is acquisition through United States Air Force (USAF) Foreign Military Sales (FMS) of the **Leonardo-Finmeccanica (previously known as** Alenia Aermacchi) built C-27J aircraft modified by L-3 Product Integration Division (PID) to the United States (US) Department of Defense Joint Cargo Aircraft (JCA) C-27J configuration, known as Spartan. The JCA C-27J is a Military Off The Shelf (MOTS) acquisition offering enhanced self protection and interoperability that meets Australian requirements. The aircraft will be operated by 35 Squadron with its Interim Main Operating Base (MOB) at Royal Australian Air Force (RAAF) Base Richmond**. Government agreed in May 2016 to both delay FOC and the relocation of the C-27J to RAAF Amberley until December 2019.** Project acquisition includes the ten aircraft, training system, support system materiel elements and three years of initial FMS training and support services from aircraft In-Service Date (ISD), through Initial Operational Capability (IOC) to Final Operational Capability (FOC)**.**

1.2 Current Status

Cost Performance

In-year

The year end variance of ($32.8m) is driven by underspend against forecast FMS disbursements reflecting delays in achieving performance based payments for Aircraft milestones, and further slippage against Spares, Contractor Logistics Support and Training delivery elements of the FMS case. Other major drivers in the variance relate to delays in delivery of commercially procured spares and support equipment, spectrum and navigation database development and licensing costs slippage.

129 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Project Financial Assurance Statement

As at 30 June 2016, project AIR 8000 Phase 2 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, whilst there is sufficient budget remaining for the project to complete against the agreed scope, yet to execute contracts carry cost risk.

Contingency Statement

The project has **not** applied contingency **in** the financial year.

Schedule Performance

The original schedule of IOC in December 2016 remains achievable. FOC at end of 2017, as originally planned, is unachievable as a result of: Leonardo-Finmeccanica aircraft production delays; reduced training throughput due to aircraft availability; the delayed start to US based training in 2014; and delays associated with establishing facilities at the Main Operating Base at RAAF Base Amberley. The revised schedule indicates FOC is expected to be achieved by Dec 2019 (24 months behind schedule); noting, the capability will continue to mature beyond FOC. The most significant milestones achieved in financial year 2015-16 include delivery of Aircraft A34-003 and A34-004. In May 2016 Government agreed to delay FOC to December 2019 and redefine FOC to exclude the flight simulator. These changes are being progressed through project management documentation.

Materiel Capability Delivery Performance

The C-27J **aircraft** is a relatively mature and well tested MOTS product. Notwithstanding, the project office is working through a number of capability baseline considerations identified post-establishment of the FMS Case. These baseline issues are associated with the configuration and certification status of the USAF JCA C-27J program, which were not finalised by the USAF at the time of divestiture. **Four** aircraft have been accepted to date and a total of **five** are expected to be delivered by **October 2016**.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

A requirement to replace Defence's battlefield airlift capability was first identified in the 1980s. Defence ensured the battlefield airlift capability was maintained via a sustainment commitment to the Caribou until their retirement in 2009 and lease of additional B300 King Air aircraft until suitable replacement platforms and appropriate Defence Capability Plan funding could be allocated.

Government authorised Defence to issue a Letter of Request seeking price and availability information from the USAF for the C-27J on 30 September 2011. Defence **approached Airbus Military for price and availability data for the Airbus Military C295 aircraft. Raytheon data for C-27J was solicited via Direct Commercial Inquiry**. On 10 May 2012 Government announced it had approved the purchase of ten C-27J battlefield airlift aircraft via FMS from the US Government to replace the Caribou aircraft, at a total program cost of up to A$1.4 billion.

Leonardo-Finmeccanica manufactures the C-27J Military Industrial Baseline Aircraft configuration which is then flown to the US for modification. L-3 PID, acting as the prime contractor to the US Government, is responsible for post-production integration of US improved mission systems. The design and integration work by L-3 PID enhances the effectiveness of the baseline aircraft, ensuring that the US JCA variant, as offered through the FMS agreement, meets the battlefield airlift capability needed by Defence.

The USAF's potential to divest the C-27J was a known consideration that was factored into the business case presented to and approved by government at project combined First and Second Pass in April 2012. In early 2013 the USAF confirmed its intention to divest their C-27J fleet and accelerated its schedule for withdrawal. Subsequently, in mid 2013 USAF advised that it would not complete Military Type Certification (MTC) and that L-3 PID was, contrary to earlier advice, required by the Air National Guard to vacate the facilities occupied by the C-27J training school located at Robins Air Force Base, Georgia USA. This resulted in a late notice requirement for relocation of the L-3 training school to L-3 facilities in Arlington and Waco Texas, which resulted in a three month delay to ISD (achieved June 2015).

Australian Military Type Certification (AMTC) will leverage heavily on the Federal Aviation Authority civilian certification and USAF work completed at the time of its decision to cease its MTC. **The** USAF decision not to complete MTC has materially increased the effort and schedule risk associated with achieving AMTC **which will have a cost impact.** The Commonwealth has secured significant Intellectual Property licensing

rights to technical data from **Leonardo-Finmeccanica** and L-3 PID to aid in AMTC and through-life support of the C-27J.

Uniqueness

The C-27J is a MOTS aircraft acquisition with the following changes to meet Australian requirements: paint scheme; upgraded Radar Warning Receiver; updates to address obsolescence; and upgrade to Mode 5 Identify Friend or Foe system.

The novelty of the project lies in the degree of Australian specific contracting effort being conducted by the USAF C-27J FMS Program Office to establish initial FMS training and support services as a result of USAF C-27J divestiture (generally, FMS leverages off a contemporary US military procurement). USAF contracting of US based initial training from L-3 PID utilising the ADF Airworthiness Management System is also atypical. Historically, the USAF airworthiness management system has been utilised for such training arrangements; however, due to USAF C-27J divestiture, this option is no longer possible and both the USAF and L-3 are unfamiliar with Australian requirements.

Major Risks and Issues

The Government endorsed acquisition strategy accepted a number of risks stemming from, or exacerbated by, the likelihood of USAF C-27J divestiture. Notwithstanding these risks, the benefits of acquiring the USAF JCA configured C-27J via FMS were assessed to outweigh these risks, and their likelihood of occurring was taken into account when developing initial project strategies and plans. However, the accelerated pace of USAF C-27J divestiture resulted in greater impact to the program than originally anticipated.

Current major project residual risks and issues are as follows:

C27-J Capability Baseline. The project has reviewed the C-27J capability baseline and identified a number of known incomplete capability requirements, some of which will be matured beyond FOC. Following confirmation of divestment, USAF subsequently ceased MTC and rectification of those incomplete capability requirements. The project is undertaking a detailed analysis to quantify and characterise the structural life-of-type of the airframe and the proposed capability upgrades including Electronic Self Protection systems impacting project budget and schedule. They are not anticipated to be an impediment to achieving ISD or IOC; however, the overall capability is expected to mature beyond FOC.

Training. Delays in establishment of contracts between the US Government and L-3 impacted training schedule and student throughput. The courseware standard delivered required active involvement by the Commonwealth to implement ongoing improvements and meet perceived gaps in US based training. The project is undertaking detailed planning to ensure the continuity of training is maintained when training activities are expected to transition from the US to Australia. The lack of suitable training devices has led to a risk that a mature training system will not be available at RAAF Amberley in time for FOC, leading to increased training on-aircraft. The delay in establishment of contracts between USG and L-3 for mature training devices also carries an element of cost risk.

Sustainment. The availably of spares and support and test equipment has not met the requirements of the Commonwealth. The US Government and L-3 are working to deliver all spares on order under the FMS Case expeditiously. The project is undertaking a detailed analysis of the future requirements for spare parts and support and test equipment, including a review of the supply pipeline, delivery timeframes, stock levels to improve the operational availability.

Facilities. Delay in approval for construction of the new 35 Squadron facilities at RAAF Amberley currently represents a risk to FOC. A delay in establishing mature training facilities at Amberley will result in a requirement for increased training on-aircraft or an extension to US based training.

USAF Divestiture of C-27J. The C-27J capability delivery has been affected by US Government divestiture of their C-27J program leading to an impact on project schedule and cost. The USAF decision to divest of C-27J effectively decreases the global fleet by approximately 150 aircraft to an estimated 80 aircraft, reducing opportunities for sustainment and training cost sharing. The requirement to move the training facility from Robins AFB to L-3 facilities at Waco and Arlington has had an impact on acquisition cost and schedule. The impact to cost will be understood once contracts are finalised between the US Government and L-3, until final cost impact is known there remains additional risk to the overall project budget.

Contracting. The contracting processes to establish initial training and support arrangements took longer than planned, **which has had an impact on project schedule and affordability.**

Aircraft Production Delays. The risk of aircraft production delays was not anticipated to represent a significant risk to project IOC or FOC given the significant schedule contingency contained in the original production schedule. However, **Leonardo-Finmeccanica's** decision in May 2015, based on commercial considerations, to close its **Naples** C-27J fuselage production facility and consolidate all C-27J production at

its Turin facility will delay delivery of Aircraft 5 through 10 by up to 20 months. **The magnitude of production restructure has made the December 2017 FOC date unachieveable. Leonardo-Finmeccanica have applied additional resources in an effort to recover the schedule where possible.**
Other Current Sub-Projects N/A.

Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Apr 12	Original Approved		1,156.5	
Jun 16	Exchange Variation		**278.0**	
Jun 16	**Total Budget**		**1,434.5**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – US Government	**(547.3)**		1
	Contract Expenditure – **Leonardo-Finmeccanica**	(**23.7**)		**2**
	Other Contract Payments/Internal Expenses	(**11.9**)		**3**
			(**582.9**)	
FY to Jun 16	Contract Expenditure – US Government	**(85.7)**		1
	Contract Expenditure – **Leonardo-Finmeccanica**	**(10.8)**		2
	Other Contract Payments/Internal Expenses	(**12.1**)		**4**
			(108.7)	
Jun 16	**Total Expenditure**		(**691.6**)	
Jun 16	**Remaining Budget**		**742.9**	

Notes	
1	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
2	**Alenia Aermacchi is now shown as Leonardo-Finmeccanica due to a partial corporate de-merger.**
3	Other expenditure comprises: operating expenditure, minor contract expenditure and other capital expenditure not attributed to the listed contracts.
4	**Other expenditure comprises: operating expenditure, related to initial sustainment costs ($1.3m), support and test equipment, spares and global freight costs ($7.6m) and contractor support costs for certification purposes ($2.4m). Other minor project administrative costs also contribute to other expenditure.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
230.4	**174.4**	**141.5**	**PBS - PAES: The variation is primarily due to delayed aircraft production, spares ordering, and contracting of training devices under the FMS contract.** **PAES - Final Plan: The variation is mainly due to delayed aircraft production and spares ordering under the FMS contract and the unanticipated release of FMS case Termination Liability (deposit). Foreign exchange supplementation under the normal 'no win, no loss' arrangements for foreign exchange funding also contributes to the variance.**
Variance	**(56.0)**	**(32.9)**	Total Variance ($m): **(88.9)**

$m			
Variance %	(24.3)	(18.9)	Total Variance (%):(38.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	The year end variance is driven by under spend against forecast FMS disbursements reflecting further slippage against Aircraft milestones, Spares, Contractor Logistics Support and Training delivery elements of the FMS case. Other major drivers in the variance relate to delays in delivery of commercially procured spares and support equipment, spectrum and navigation database development and licensing costs slippage.
		(6.1)	Foreign Industry	
			Early Processes	
		(7.0)	Defence Processes	
		(19.7)	Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
141.5	108.7	(32.8)	**Total Variance**	
		(23.2)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
US Government	May 12	882.4	995.1	Reimbursement	FMS	1,2
Leonardo-Finmeccanica	May 12	62.0	73.1	Firm Price	Modified ASDEFCON (Complex)	1,3

Notes	
1	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
2	The scope of this contract is explained further below.
3	**Alenia Aermacchi is now known as Leonardo-Finmeccanica due to a partial corporate de-merger.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
US Government	10	10	**10 C-27J Aircraft and associated training, training equipment, spears, ground support equipment and initial support**	
Leonardo-Finmeccanica	N/A	N/A	C-27J Intellectual Property and Technical Data	3

Major equipment received and quantities to 30 Jun 16
Four aircraft accepted plus a substantial amount of the IP rights and Technical data received.

Notes	
1	N/A

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,**2**
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Preliminary Design	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Critical Design	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1

Notes	
1	Contracts for the acquisition of the training devices have yet to be established.
2	**The Project expects to approach the market to procure a suitable flight simulator in 2018 following the completion of aircraft baseline configuration works.**

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Operational Flight Trainer	TBA	TBA	TBA	TBA	1,2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1
Acceptance	C-27J Aircraft 1 (A34-001)	Jul 14	**N/A**	Nov 14	4	3
	C-27J Aircraft 2 (A34-002)	Sep 14	**N/A**	Dec 14	3	3
	C-27J Aircraft 3 (A34-003)	Nov 14	**N/A**	Aug 15	9	3,4
	C-27J Aircraft 4 (A34-004)	Feb 15	N/A	Mar 16	13	**5**
	C-27J Aircraft 5 (A34-005)	Aug 15	N/A	Oct 16	14	5,6
	C-27J Aircraft 6 (A34-006)	Oct 15	N/A	Mar 17	17	5, 6
	C-27J Aircraft 7 (A34-007)	Dec 15	N/A	May 17	17	5, 6
	C-27J Aircraft 8 (A34-008)	Feb 16	N/A	Oct 17	20	5, 6
	C-27J Aircraft 9 (A34-009)	Apr 16	N/A	Nov 17	19	5, 6
	C-27J Aircraft 10 (A34-010)	May 16	N/A	Jan 18	20	5, 6
	Operational Flight Trainer	TBA	TBA	TBA	TBA	1, 2
	Fuselage Trainer	TBA	TBA	TBA	TBA	1

Notes	
1	Contracts for the acquisition of the training devices have yet to be established.
2	**The Project expects to approach the market to procure a suitable flight simulator in 2018 following the completion of aircraft baseline configuration works.**
3	Aircraft **1, 2, 3 and 4** have been Accepted by the Commonwealth of Australia and have been placed on the Australian State Register.
4	**Delivery of Aircraft 3 was delayed due to the requirement for repair of the life raft door following damage sustained during the acceptance test flight, and the requirement for delivery of minor waiver data to support aircraft acceptance (later rectified through a contract change proposal)..**
5	**Delivery of Aircraft 4 was delayed due to availability of required spares from Leonardo-Finmeccanica to rectify a number of discrepancies and the prioritisation of an aircraft component for use on another aircraft.**
6	**Leonardo-Finmeccanica's** decision to close its Naples fuselage production facility and consolidate all C-27J production at its Turin facility **may** result in **a** delay to delivery of Aircraft 5 through 10. **However, Leonardo's production consolidation has been beneficial to the overall production of aircraft.**

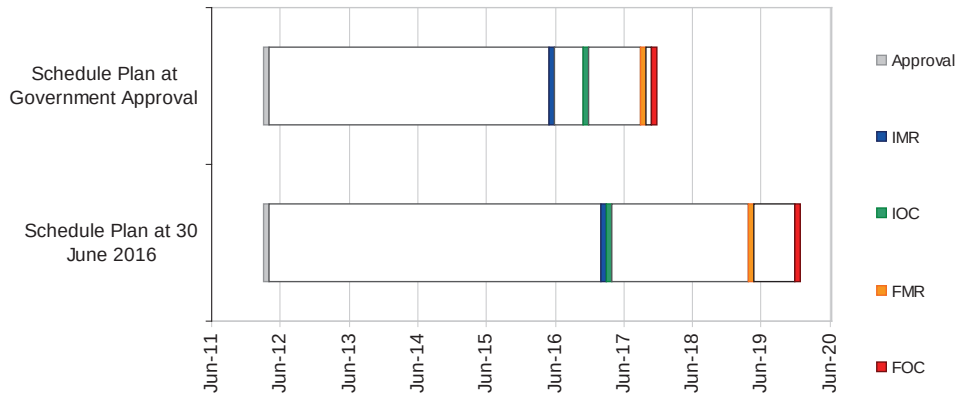
	From Aircraft 5, there have been considerable improvements in aircraft build quality and the project has been able to recover some lost production schedule. Continued improvements are expected as a result of Leonardo's consolidation decision and management of its supply chain to reduce delivery risks such as working with Dowdy to deliver propellers after a production line fire (potentially effecting Aircraft 8,9 and 10).

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
In-Service Date (ISD)	Mar 15	Jun 15	3	1
Initial Materiel Release (IMR)	Jun 16	**Mar 17**	**9**	2
Initial Operational Capability (IOC)	Dec 16	**Mar 17**	**3**	**3**
Final Materiel Release (FMR)	Oct 17	**Apr 19**	**18**	**4**
Final Operational Capability (FOC)	Dec 17	**Dec 19**	**24**	**4**

Notes	
1	Variance due to delays in establishing FMS support and training arrangements in the US.
2	Variance due to delay in delivery of Aircraft.
3	**IOC is forecast for Mar 17 but remains achievable in December 2016 with planning well underway to deliver the third aircraft (and potentially the fourth) to Australia before December.**
4	Variance due to delays in aircraft production, acquisition of Mature Training System devices and construction of facilities at RAAF Amberley. A substantial delay to FMR/FOC is anticipated as a result of the decision by **Leonardo-Finmeccanica** to consolidate aircraft production at its Turin facility. Noting this delay, and in conjunction with other USAF C-27J divestiture considerations, the project office has **undertaken** a detailed planning review to enable an appropriate rebaseline of the project schedule. **In May 2016 Government agreed to delay FOC to December 2019 and redefine FOC to exclude the flight simulator. These changes are being progressed through project management documentation.**

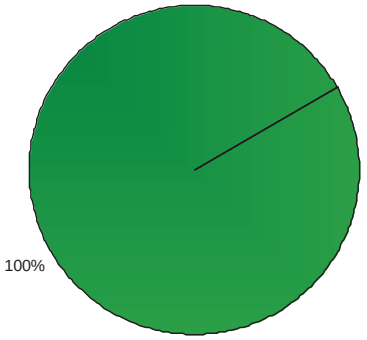
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Project expects to meet capability materiel requirements as per the Joint Project Directive, Materiel Acquisition Agreement and relevant Technical Regulatory Authority. **Amber:** **N/A** **Red:** **N/A**
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release –

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Delivery of four aircraft, Air Logistics Support and Airborne Operations roles enabled, aircrew and maintainer training system established, and logistics support established. IMR is forecast for **March 2017.**	Not yet Achieved
Final Materiel Release (FMR)	All 10 aircraft delivered Aeromedical Evacuation and Search and Rescue roles enabled, and logistics support available at the final MOB. FMR is forecast for **April 2019.**	Not yet Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks –

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
C-27J Capability Baseline. The project has reviewed the C-27J capability baseline and identified a number of known **incomplete capability requirements, some of which will be matured beyond FOC.** Following confirmation of divestment, USAF subsequently ceased MTC and rectification of a number of known **incomplete capability requirements. The project is undertaking a detailed analysis to quantify and characterise the structural life-of-type of the airframe and proposed capability upgrades including Electronic Self Protection systems impacting project budget and schedule. Prior** to divestiture, the USAF was operating the JCA C-27J under a Military Flight Release with broad capability scope and mitigators for the known	A capability baseline confirmation process has been established to address the known deficiencies. The baseline confirmation process will culminate in a plan for addressing deficiencies. Each deficiency will be assessed based on its acceptability 'as is' or importance to capability in order to determine a priority for rectification. Once priorities and costs are determined, available project budget will be allocated on a priority basis.

incomplete capability requirements. They are not anticipated to be an impediment to achieving ISD or IOC; however, the overall capability is expected to mature beyond FOC.	
Training Delays in establishment of contracts between the US Government and L-3 has impacted the training schedule and student throughput. The courseware standard delivered required active involvement by the Commonwealth to implement ongoing improvements and meet perceived gaps in US based training. The project is undertaking detailed planning to ensure the continuity of training is maintained when training activities are expected to transition from the US to Australia. The lack of suitable training devices has led to a risk that a mature training system will not be available at RAAF Amberley in time for FOC. Leading to increased training on-aircraft or an extension to US based training in the interim until a mature training system is established.	The project is continuing to work closely with the USAF FMS Program Office to minimise delays to the delivery of training and implement improvements to courseware. . The project continues to investigate options to deliver a Mature Training System at RAAF Amberley and have informed Government that alternative approaches to FMS are required.
Sustainment The availably of spares and support and test equipment has not met the requirements of the Commonwealth. The US Government and L-3 are working to deliver all spares on order under the FMS Case expeditiously. The project is undertaking a detailed analysis of future requirements for spare parts and support and test equipment, including a review of the supply pipeline, delivery timeframes, stock levels to improve the operational availability.	**The project is continuing to work closely with the USAF FMS Program Office and L-3 to minimise delays to the delivery of spares and support and test equipment. The project office is directly engaging with industry suppliers to acquire items not on order under the FMS case.** **The project is also working closely with the Air Force to improve the breadth and depth of spares available and enhance supply chain responsiveness to improve operational availability.**
Facilities. There is a chance that the construction of facilities at RAAF Amberley will not meet the schedule for FOC, leading to a delay in establishing mature training facilities in Australia resulting in a requirement for increased training on-aircraft or an extension to US based training.	Air Force is working closely with Defence Estate and Infrastructure Group to establish the facilities Parliamentary Works Committee has approved facilities enabling more detailed planning for establishment of mature training in Australia. The risk has been downgraded to medium.
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues –

Description	Remedial Action
USAF Divestiture of C-27J. The risk that USAF C-27J divestiture would have a greater than anticipated impact on project budget and schedule has been realised. Accelerated USAF divestiture resulted in incomplete military type certification by the USAF and the unanticipated requirement for interim training to be relocated from Robins Air Force Base to L-3 facilities in Texas, with conduct of flying training to be contracted by the USAF utilising the ADF Airworthiness Management System (AMS) rather than the USAF AMS as originally planned.	In the absence of USAF Military Type Certification, completion of AMTC has required additional Project resourcing to be applied. AMTC will be achieved with nil impact to IOC/FOC schedule. Implementation of ADF AMS requirements in USAF contracts with L-3 took longer than anticipated. All stakeholders (CoA, USG and L-3) underestimated the time required to relocate and re-establish the training school at its Texas facilities resulting in approximately a six month delay to the planned start of training. The delayed start to training translated to a three month delay to achievement of the planned ISD at 35 Squadron.

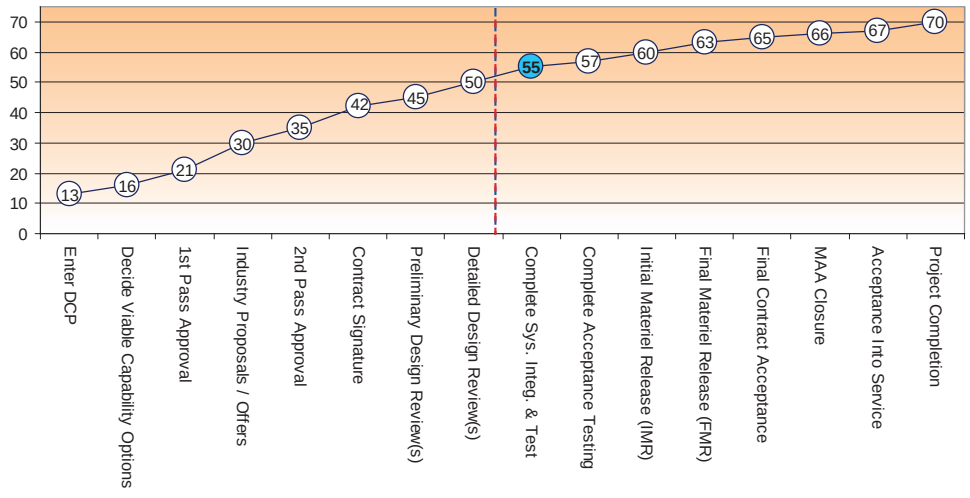
	Remediation **and throughput management** of the training system is ongoing between **the** Commonwealth of Australia, USAF and L-3. The final impact to cost will be understood once **the mature training system** contracts have been finalised, until final cost impact is known this remains an issue.
Contracting. The contracting processes to establish initial training and support arrangements took longer than planned, which has had an impact on project schedule and affordability.	The project continues to work closely with the USAF FMS Program Office to contain the cost and schedule impact.
Aircraft Production. The unlikely risk that significant aircraft production delays would occur **and** impact the project IOC/FOC schedule has been realised as a result of **Leonardo-Finmeccanica's** commercial decision to close its Naples fuselage production facility and consolidate all C-27J production at its Turin facility and subsequent delays to aircraft modification in the USA. **The** decision by **Leonardo-Finmeccanica** in May 2015 will affect delivery of Aircraft 5 through 10 by up to 20 months. **The magnitude of production restructure has made the December 2017 FOC date unachieveable. Leonardo-Finmeccanica have applied additional resources in an effort to recover the schedule.**	The Project is working with USAF and L-3 to implement a mitigation strategy that maximises available aircraft utilisation in support of training and 35 Squadron to support IOC and minimise impact on FOC. **The Project has engaged USAF, L-3 and Leonardo-Finmeccanica to convey the Commonwealth of Australia's requirement to improve the aircraft production schedule.** Noting the **anticipated** substantial delay to FOC, the project office has **undertaken** a detailed planning review to enable an appropriate rebaseline of the project schedule.

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	7	8	8	8	8	8	55
Integration and Test	Project Status	6	6	9	8	9	6	7	51
	Explanation	• **Schedule:** Critical Path activities understood, however, delays to critical milestones are anticipated.. Delay to IMR anticipated however IOC remains **achievable**. • **Cost:** Progress of USAF contracting action has enabled FMS cost to be better understood. The costs are currently expected to be contained within the available contingency budget. • **Requirement:** Operational Test and Evaluation of the Aircraft in Australia has commenced. • **Technical Difficulty:** Necessary logistics data and arrangements for its employment in support of the capability are in place. • **Commercial:** Contractor is in the early stages of delivery and starting to demonstrate some degree of risk management necessary. • **Operations and Support:** Support system elements have been defined with procurement underway and transition of some elements to the sustainment system commenced.							



2014-15 MPR Status - - - - | 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned –

Project Lesson	Categories of Systemic Lessons
The level of risk and complexity contained in an FMS Letter of Offer and Acceptance is often understated and poorly understood. Whilst an FMS program for MOTS equipment and associated support affords a number of advantages, the transfer of a significant amount of project and technical management to the US Government implementing agency, and the weak bargaining position of the Commonwealth, increases the project's exposure to technical, schedule and cost risk. For an FMS program the level of Commonwealth contract and financial management involvement and oversight of industry is very low in comparison to that mandated for Direct Commercial Sale contracts, yet both procurement methods confront similar issues. This accords the FMS customer a 'Best Endeavours' approach to business. Adequate Commonwealth participation in key project management and technical oversight activities in the US, as provided for in the Government Combined First and Second Pass submission, is critical to providing the necessary level of project and contract management. In the case of C-27J, divestiture has further accentuated project risk and complexity, increasing the need for ongoing engagement of the USAF FMS program office and L-3 PID to ensure Commonwealth requirements and risks are adequately understood and managed.	Contract Management
The practice of approving projects with staffing to be found from within existing Divisional resourcing can result in 'late to need' or understaffing at critical project planning and execution phases that is counter productive to achieving project outcomes. Further, the recruitment process lead times for candidates not already within the ADF or Australian Public Service can create significant extended vacancies within the Project workforce, with this being exacerbated by the relatively short notice that personnel are obliged to provide for internal transfers. This is exacerbated when the Department imposes a recruiting freeze on the workforce. Whilst outsourced services may be suitable in some instances to mitigate this risk, in such circumstances they are not always available, the most efficient, or affordable, and come with an additional administrative overhead. In particular, rapidly approved projects, such as AIR 8000 Phase 2, which gained combined Government Pass approval, should be priority staffed as outlined in the approved project workforce plan, on which the Materiel Acquisition Agreement schedule was developed.	Resourcing
Accelerated project approval, through a combined government 1st and 2nd Pass, carries additional project execution risk given the likelihood that data fidelity and planning maturity will be otherwise inherently lower. As such, all effort should be made to understand the associated risk premium versus the benefit an accelerated project approval offers. In the case of AIR 8000 Phase 2 the potential impact of USAF divestiture was not fully appreciated across the full breadth and depth of the project. Any assumption that because procurement is via FMS it is low risk must be fully tested.	Off-The- Shelf Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	AVM Leigh Gordon (**Jul 15–Mar 16**) **AVM Catherine Roberts (Mar 16-current)**
Branch Head	AIRCDRE Phil Tammen
Project Director	GPCAPT Warren Bishop **(Jul–Dec 15)** GPCAPT **Gerry van Leeuwen (Dec 15-current)**
Project Manager	WGCDR Martin Harris (**Jul–Dec 15**) WGCDR **Jamie Scott (Jan 16-current)**

Project Data Summary Sheet[130]

Project Number	**LAND 116 Phase 3**
Project Name	**BUSHMASTER PROTECTED MOBILITY VEHICLE**
First Year Reported in the MPR	2007-08
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Service	Australian Army and Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 98
Total Approved Budget (Current)	**$1,250.7m**
2015-16 Budget	**$46.5m**
Project Stage	**Final Materiel Release**
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is delivering 1,015 vehicles in seven variants; troop, command, mortar, assault pioneer, direct fire weapon, air defence and ambulance. These vehicles will provide protected land mobility to Army units and Royal Australian Air Force Airfield Defence Guards. In addition to the acquisition of the vehicles through the Approved Major Capability Investment Program, a number of enhancements are being made to the vehicles through the Rapid Acquisition process. These enhancements do not form part of the Project LAND 116 Phase 3, but do impact upon the project. Vehicle production information is represented below:

Production Period (PP)	Quantity	Description
PP1	300	300 vehicles were acquired in six variants.
PP2	144	144 vehicles were acquired in five variants.
PP3	293	293 additional vehicles were acquired in seven variants to meet the medium Protected Vehicles component of LAND 121 Phase 3 Project Overlander.
PP4	70	70 troop variant vehicles were acquired to meet future operation attrition. An additional 31 troop variant vehicles were acquired to replace battle damaged Protected Mobility Vehicles (PMVs), which were managed as a funded sustainment activity.
PP5	208	208 vehicles in four variants are being acquired to maintain critical skills at Thales Bendigo site for the production of Hawkei. In addition, six troop variant vehicles were acquired and funded by LAND 17 Phase 1A.
Total	**1,015**	

130 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

1.2 Current Status

Cost Performance

In-year

The **full year end** spend was **$45.4m** against **a final** budget of **$46.5m**. The **underspend** of **$1.2m is due to: cost savings from the reduced price of materials and engineering change orders of ($0.8m) and delays to engineering change proposals ($1.0m) partially offset by the early delivery of four vehicles $0.5m.**

Project Financial Assurance Statement

As at 30 **June** 2016, project LAND 116 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

All Production Period 1 (PP1), PP2, PP3 and PP4 vehicle deliveries are now complete. Delivery of the Project's 208 PP5 vehicles commenced in July 2013 and is scheduled to conclude in **September** 2016.

Materiel Capability Delivery Performance

All variants are meeting their required specifications.

The External Composite Armour (ECA) Detailed Design solution was completed in November 2012. The project entered a contract with Thales Australia for the production of 101 sets of Opaque Armour and 20 sets of Transparent Armour on 21 December 2012. Delivery occurred in May 2014.

The PMV Trailer tender response from Thales on 22 May 2009 was evaluated and deemed non-compliant and not value for money. On 8 July 2013 the Government approved the removal of the trailer capability from the project scope.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The Bushranger Project is being conducted in three phases:

Phase 1 involved the motorisation of the infantry battalions of 6 Brigade, with 268 interim infantry mobility vehicles, based on the in-service Land Rover PERENTIE 4x4 and 6x6 vehicles and the procurement of an additional 25 support vehicles.

Phase 2 consisted of Phase 2A the development of the infantry mobility vehicle specification and the release of an Invitation to Register Interest and Phase 2B the release of a Request for Tender and the trialling and evaluation of successful contender vehicles.

Phase 3 is the full rate production of the protected vehicles. The Production Contract Option was executed on 1 June 1999 with Australian Defence Industries for the supply of 370 Bushmaster vehicles by December 2002. A range of problems emerged with design enhancements, cost, and schedule slip in the contract, shortly after the Production Option was exercised, leading to renegotiation of the Contract in July 2002 for 299 vehicles. This phase has been divided into five separate production periods that reflects the increase over time in the quantity of vehicles being acquired. The Production Periods are as follows:

Production Period One (PP1): During this Production Period 300 vehicles in six variants were acquired; troop, command, mortar, assault pioneer, direct fire weapon and ambulance. Defence had contracted for 299 vehicles; however, it then sold 25 vehicles back to Thales for sale to the Netherlands and received 26 vehicles from Thales as consideration.

Production Period Two (PP2): During this Production Period 144 vehicles were acquired in five variants consisting of**:** troop, command, mortar, direct fire weapon and ambulance. Defence had contracted for 143 vehicles; however, it then allowed Thales to divert 24 vehicles from the production line for sale to the

United Kingdom, thereby delaying delivery to Defence. Defence received one additional vehicle from Thales as consideration.

Production Period Three (PP3): During this Production Period an additional 293 vehicles were acquired to meet the Medium Protected Mobility vehicle component of LAND 121 Phase 3 Project Overlander. This included all six variants and an air defence variant. In addition purpose designed ECA was also acquired.

Production Period Four (PP4): In May 2011 the Government announced the acquisition of an additional 101 PMVs to replace 31 battle damaged PMVs and to accommodate future attrition. As part of this requirement LAND 116 Phase 3 also procured 70 MEAO upgrade kits (current standard blast kits as opposed to the improved blast protection). Delivery of the additional 101 PMVs was completed in May 2013.

Production Period Five (PP5): In June 2012 the Government approved the acquisition of a further 214 PMVs to maintain critical skills at Thales Bendigo, which would be required for the possible production of Hawkei. The approval identified that LAND 116 Phase 3 would acquire 50 command variants and up to 158 troop variants and that LAND 17 Phase 1A would acquire six troop variants. In July 2014 the Government approved a change to the variant mix of PP5 reducing the number of troop variants from 158 to 118 and including 20 mortar variants and 20 ambulance variants. **In November 2015 Defence allowed Thales to divert 12 vehicles from the production line for sale to the Netherlands, thereby delaying delivery to defence.**

As a result of operational experience a number of enhancements were made to the Bushmaster vehicle to enhance crew survivability. These include Protected Weapon Stations, Automatic Fire Suppression Systems and purpose-designed Spall Curtains which were progressively fitted to vehicles under a Rapid Acquisition Framework. These were funded outside of LAND 116 Phase 3.

In December 2007 the Chief of Army redesignated the Bushmaster Infantry Mobility Vehicle as the Bushmaster PMV.

Uniqueness

The Bushmaster PMV has been developed and built in Australia by Thales to meet a niche requirement of Australian forces.

Major Risks and Issues

Managing the integration and configuration of the baseline vehicle while incorporating upgrades to meet current operational threats will continue to be an issue – see section 5 Major Project Issues for more information.

Other Current Sub-Projects

N/A

Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Nov 98	Original Approved		295.0	
Jul 07	Real Variation – Scope	154.8		1
Aug 07	Real Variation – Scope	360.6		2
Oct 11	Real Variation – Scope	103.9		3
Mar 13	Real Variation – Scope	221.2		4
Aug 13	Real Variation – Scope	(7.0)		5
Jun 14	Real Variation – Scope	(1.3)		6
			832.2	
Jul 10	Price Indexation		124.6	7
Jun 16	Exchange Variation		**(1.1)**	
Jun 16	**Total Budget**		**(1,250.7)**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Thales Australia (Prime)	**(797.4)**		
	Contract Expenditure – Thales Australia (SOTASip)	(30.2)		
	Other Contract Payments/Internal Expenses	**(158.2)**		8
			(985.8)	
FY to Jun 16	Contract Expenditure – Thales Australia (Prime)	**(42.4)**		
	Other Contract Payments/Internal Expenses	**(3.0)**		9
			(45.4)	
Jun 16	**Total Expenditure**		**(1,031.1)**	
Jun 16	**Remaining Budget**		**219.6**	

Notes	
1	Additional PMV for Enhanced Land Force requirements.
2	Additional PMV for Overlander requirements.
3	Additional PMV to replace Battle Casualty Vehicles.
4	Additional Protected Mobility Vehicles to maintain critical skills.
5	Removal of trailer requirement and transfer of funds to LAND 121 phase 3B trailers.
6	Transfer of funds to Health SPO to support Integrated Logistics Support (ILS) requirements of the PMV Ambulance variant
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $118.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $5.7m having been applied to the remaining life of the project.
8	Other expenditure comprises: ILS deliverables **($60.3m)**, ancillary equipment ($27.0m), ECA **($17.7m)**, project management and operating expenses **($16.0m)**, Automatic Fire Suppression Kits (AFSS) **($9.5m)**, SOTAS headsets ($7.2m), facilities ($7.1m), test and evaluation ($6.1m), system engineering ($5.6m), Professional Service Providers ($0.9m), travel ($0.7m) and support test equipment ($0.1m).
9	Other expenditure comprises: project management and operating expenses **($1.7m)**, **ECA ($1.1m) and AFSS ($0.2m).**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
49.0	46.6	46.5	PBS to PAES: Delay in vehicle milestone payments. PAES to Final Plan: No significant change from PAES.
Variance $m	(2.3)	(0.1)	Total Variance ($m): (2.4)
Variance %	(4.7)	(0.2)	Total Variance (%) (4.9)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(0.5)	Australian Industry	Year to date variation is due to cost savings from the reduced price of materials and engineering change orders of ($0.8m) and delays to engineering change proposals ($1.0m) partially offset by the early delivery of four vehicles $0.5m.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
		(0.7)	Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
46.5	45.4	(1.2)	**Total Variance**	
		2.5	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 16 $m	Type (Price Basis)	Form of Contract	Notes
Thales Australia	June 99	170.0	841.2	Variable	DEF PUR 101	1
Thales Australia (SOTASip)	Feb 09	35.8	30.2	Fixed	ASDEFCON Vol 2	

Notes	
1	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 16	Scope	Notes
Thales Australia	370	1,015	Bushmaster Protected Mobility Vehicles	
Thales Australia (SOTASip)	737	737	Communication System	

Major equipment received and quantities to 30 Jun 16

All PP1, PP2, PP3 and PP4 vehicle deliveries are now complete. At 30 June 2016, 12 ambulance, 20 mortar, and 24 troop vehicles had been delivered during 2015-16 financial year to bring the total of PP5 vehicles to 12 ambulance, 20 mortar, 50 command, and **124** troop vehicles delivered. This includes the six procured for LAND 17 Phase 1A.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Requirements	Troop Vehicle	N/A	N/A	Aug 03	N/A	1
	Assault Pioneer Vehicle	N/A	N/A	Oct 06	N/A	
	Command Vehicle	N/A	N/A	Jan 06	N/A	
	Mortar Vehicle	N/A	N/A	Feb 09	N/A	
	Direct Fire Weapon Vehicle	N/A	N/A	Feb 09	N/A	
	Ambulance Vehicle	N/A	N/A	Feb 09	N/A	
	Air Defence Variant	N/A	N/A	Oct 10	N/A	
Preliminary Design	Troop Vehicle	Oct 99	N/A	Oct 99	0	
	Assault Pioneer Vehicle	Nov 99	N/A	Feb 00	3	
	Command Vehicle	Oct 99	N/A	Oct 99	0	
	Mortar Vehicle	May 03	N/A	Mar 03	(2)	
	Direct Fire Weapon Vehicle	May 03	N/A	Mar 03	(2)	
	Ambulance Vehicle	Jul 03	N/A	May 03	(2)	
	Air Defence Variant	April 10	N/A	Dec 09	(4)	
Critical Design	Troop Vehicle System Verification Review	Oct 02	N/A	Sep 02	(1)	
	Assault Pioneer Vehicle Initial Production Vehicle Review	Oct 04	N/A	Dec 06	26	
	Command Vehicle Initial Production Vehicle Review	Oct 04	N/A	Mar 06	17	
	Mortar Vehicle Initial Production Vehicle Review	Apr 06	N/A	May 07	13	
	Direct Fire Weapon Vehicle Initial Production Vehicle Review	Apr 06	N/A	Apr 07	12	
	Ambulance Vehicle System Verification Review	Oct 05	N/A	Feb 07	16	
	Air Defence Variant Initial Production Vehicle Review	Sep 11	N/A	Aug 11	(1)	

Notes	
1	Initial testing of the first variant revealed a number of deficiencies against the specification that required rectification and design changes prior to acceptance and production. This had a consequential effect on the system and design review progress for the subsequent variants. As a result additional testing was required which impacted on completing critical design review and contractor test and evaluation.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Troop Vehicle	Jun 04	N/A	Dec 04	6	1
	Command Vehicle	Sep 04	N/A	Mar 06	18	
	Assault Pioneer Vehicle	Oct 04	N/A	Dec 06	26	
	Mortar Vehicle	Apr 06	N/A	May 07	13	
	Direct Fire Weapon Vehicle	Apr 06	N/A	Apr 07	12	
	Ambulance Vehicle	Aug 07	N/A	Feb 08	6	
	Air Defence Vehicle	Sep 11	N/A	Jul 11	(2)	
Acceptance	All PP1 vehicles except Ambulance	Jun 06	N/A	Jul 07	13	
	PP1 – Ambulance	Jul 07	N/A	May 08	10	
	Troop Vehicle	May 06	N/A	Jun 09	37	
	Command Vehicle	Jul 06	N/A	Jun 09	35	
	Assault Pioneer Vehicle	Jan 07	N/A	Jun 09	29	
	Mortar Vehicle	May 07	N/A	Jun 09	25	
	Direct Fire Weapon Vehicle	Mar 07	N/A	Jun 09	27	
	Ambulance Vehicle	Jul 07	N/A	Jun 09	23	
	Air Defence Vehicle	Apr 12	N/A	Apr 12	0	

Notes

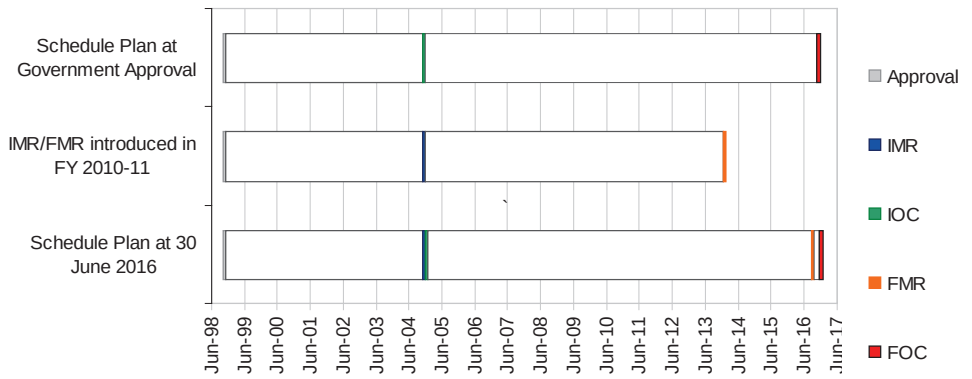
1	Additional reviews and testing requirements impacted the ability of Thales to conduct Production Acceptance Testing and Evaluation in the original timeframe. The situation was also impacted by the priority to support vehicles deployed on operations. Technical issues that resulted in design changes impacted on the ability to finalise Production and Acceptance Testing and Evaluation.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Dec 04	N/A	1
Initial Operational Capability (IOC) - PP1	N/A	Dec 04	N/A	2
Final Operational Capability (FOC) - PP1	Oct 07	Nov 10	37	3
Initial Operational Capability (IOC) - PP2	Jul 08	Nov 08	4	4
Final Operational Capability (FOC) - PP2	Apr 09	Nov 10	19	5
Initial Operational Capability (IOC) - PP3	Oct 11	Oct 11	0	6
Final Operational Capability (FOC) - PP3	Apr 12	Mar 13	11	7
Initial Operational Capability (IOC) - PP4	Jul 12	Jul 12	0	8
Initial Operational Capability (IOC) – PP5	Dec 13	Nov 13	(1)	9
Final Operational Capability (FOC) - PP4	Apr 14	Nov 13	(5)	10
Final Materiel Release (FMR)	Sep 16	Sep 16	0	11
Final Operational Capability (FOC) – PP5	Dec 16	Dec 16	0	12

Notes	
1	IMR was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
2	IOC was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
3	Delays in the acquisition and installation of communications harness equipment (SOTASip) resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles were being retrofitted before issue to Army.
4	This was due to the restructure of Army under Enhanced Land Force not fully completed and the unavailability of the communications harness. Army have accepted the initial vehicles without the communications capability.
5	Delays in the acquisition and installation of communications harness equipment (SOTASip) resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles were being retrofitted before issue to Army.
6	DMO no longer tracks multiple IOCs due to a change in policy.
7	This variance was due to clarification of the requirements in reaching FOC. FOC was achieved when the final subset of PP3 vehicles was operationally employed by Army.
8	IOC was achieved when the first subset of LAND 116 PP4 vehicles was operationally employed by Army.
9	IOC was achieved when the first subset of LAND 116 PP5 vehicles was employed by Army.
10	FOC was achieved when the final subset of PP4 vehicles was operationally employed by Army.
11	Completion of delivery of supplies listed in the Projects MAA at section 4 – Supplies, to the Customer. Change to original planned date is due to creation of additional production period.
12	FOC will be achieved when the final subset of PP5 vehicles will be operationally employed by Army.

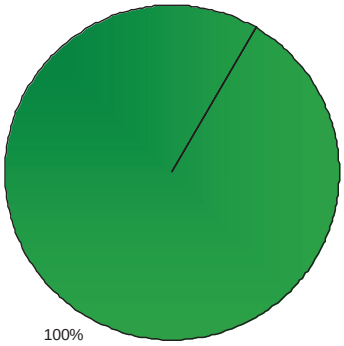
Schedule Status as at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Project is currently meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** N/A **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Commencement of delivery of full rate of production for PP1.	Achieved.
Final Materiel Release (FMR)	Completion of vehicle deliveries for all five production periods as detailed in Section 1.1. **FMR is scheduled for September 2016.**	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that fitment of the ECA buttons to the PMV will be affected by vehicle availability impacting on the Project's scheduled completion date.	Liaise with Contractor and Army to establish fitment priorities and schedule. **This risk has been retired as the scope of work and funding will be transferred to sustainment to align with the vehicle's midlife upgrade to achieve cost efficiencies by combining the activities and to reduce the impact on vehicle availability.**
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

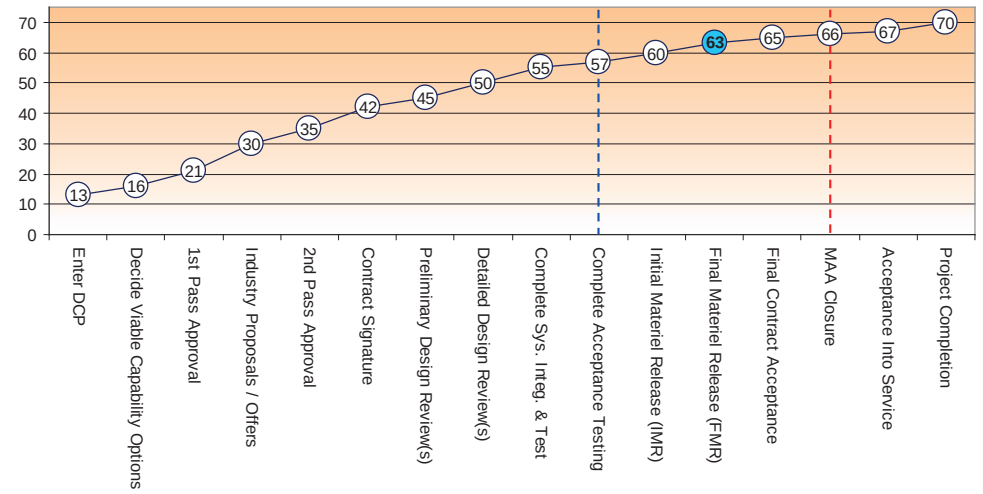
Description	Remedial Action
There is a backlog of engineering changes due to the Commonwealth and Thales reprioritising engineering effort to higher priority operationally focused tasks. This backlog needs to be addressed in order to baseline the PMVs configuration.	The application of a more managed approach and the commitment of additional resources by the Commonwealth and Thales in an effort to reduce the backlog.

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	9	9	9	9	8	9	63
Final Materiel Release	Project Status	9	9	10	10	10	8	10	66
	Explanation	• **Schedule: Initial vehicles have been delivered with the final vehicles to be delivered by September 2016.** • **Requirements: The vehicle has met all of the project scope requirements.** • **Technical Understanding: The vehicle has fully transitioned to the PMV Fleet and all technical issues are managed by the fleet.** • **Technical Difficulty: The vehicle design has been proven.** • **Operations and Support: The vehicle has fully transitioned to the PMV Fleet.**							



2014-15 MPR Status - - - - | 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
In the early planning phases of the project, the operational concept and functional performance requirements were not clearly defined, making it difficult to understand and undertake appropriate cost-capability trade-offs.	Requirements Management
Cost Estimating – there was a lack of industry capability to provide adequate cost estimates and inability by Defence to evaluate the validity of the cost data.	Contract Management
Testing program – significant contingency planning should be conducted for compliance testing of a new capability.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	MAJGEN Paul McLachlan **(to Dec 15)** **MAJGEN David Coghlan (Dec 15–current)**
Branch Head	BRIG Cameron Purdey **(to Jul 15)** **BRIG Simon Stuart (Jul 15–current)**
Program Director	Mr Luke Crampton
Project Manager	Mr Steven Brown

Project Data Summary Sheet[131]

Project Number	**LAND 121 Phase 3A**
Project Name	**OVERLANDER VEHICLES**
First Year Reported in the MPR	2009-10 (as Phase 3) 2012-13
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Service	Australian Army
Government 1st Pass Approval	Jun 04 – Phase 3 Aug 11 – Phase 5A Dec 11 – Phase 3A
Government 2nd Pass Approval	Aug 07 – Phase 3 Aug 11 – Phase 5A Dec 11 – Phase 3A
Total Approved Budget (Current)	**$1,017.7m**
2015–16 Budget	**$128.0m**
Project Stage	Initial Materiel Release
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

In December 2011, Government approved the splitting of LAND 121 Phase 3 into two projects: LAND 121 Phase 3A – Lightweight and Light Capability (LLC) (incorporating the approved Phase 5A); and LAND 121 Phase 3B – Medium and Heavy Capability (MHC).

LAND 121 Phase 3A will deliver 2,146 lightweight (4x4) and light (6x6) Mercedes-Benz Geländewagen (G-Wagons), associated modules and 1,799 matching Haulmark trailers. LAND 121 Phase 3A variants include:

- 4x4 lightweight: Station Wagon, Carryall Hardtop and Carryall Soft Top;
- 6x6 light single cab: Ambulance and Cargo;
- 6x6 light dual cab: Canine, Command Post **Module** (CPM), **Dual Cab Cargo** and Line Laying Modules; and
- 6x6 Surveillance and Reconnaissance.

In addition, the project office is facilitating the purchase of 122 G-Wagon based General Maintenance Vehicles (GMV) and 122 related trailers that form part of the scope of LAND 121 Phase 3B.

LAND 121 Phase 3A will replace approximately two-thirds of the current Land Rover 4x4 and 6x6 vehicle fleets that have been in service since the mid-1980s (the remainder to be replaced under LAND 121 Phase 4). The new G-Wagons, together with the modules and trailers, will be used by the Army and Air Force for training and to support domestic security and emergency response efforts. The vehicles will also be employed on humanitarian assistance/disaster relief and low-threat operations.

131 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

1.2 Current Status

Cost Performance

In-year

As at **30 June 2016**, Financial Year **2015-16** expenditure was **$123.0m** against the forecast year expenditure plan of **$128.0m**. The **$5.0m underspend** is **primarily** due **to delay in delivery of CPM Module Installation Kits resulting in 9 Kits/Modules being delayed until 2016-17 along with associated installation and support (-$3.5m); delay to the proposed procurement of 67 Dual Cab Cargo Modules (-$2.3m) now planned to commence in 2016-17; together with earlier than scheduled delivery of G-Wagon Load Restraints (+$0.8m).**

Project Financial Assurance Statement

As at **30 June 2016**, Project LAND 121 Phase 3A has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has applied contingency in the financial year, **primarily for the treatment of the CPM Module Installation Kit.**

Schedule Performance

Between July 2012 and October 2016, the 2,146 G-Wagons and 1,799 Haulmark trailers that are within the approved LAND 121 Phase 3A scope are scheduled to be issued to units throughout Australia.

Introduction into Service began on 2 July 2012 with the delivery of 20 G-Wagons and 18 trailers to the 7th Brigade in Brisbane. As of **30 June 2016**, **1,897** G-Wagons and **1,627** trailers had been delivered to ADF units. The Initial Materiel Release (IMR) milestone was achieved, with caveats, in May 2014, 29 months behind schedule due to delays in implementing the vehicle support system and processing the IMR report. **Declaration of Initial Operating Capability (IOC) with caveats was approved on 17 December 2015.** The Final Materiel Release (FMR) and Final Operating Capability (FOC) milestones are scheduled to be achieved in October 2016, three months behind schedule due to delays in design, and test and evaluation activities for the CPM module.

Materiel Capability Delivery Performance

The Project is currently meeting capability requirements as expressed in the Materiel Acquisition Agreement (MAA) and in accordance with the requirements of the relevant Technical Regulatory Authorities. As of **30 June 2016** the Contractors have delivered 2,268 production vehicles and **1,921** production trailers to the project. This includes deliveries against 122 vehicles and trailers being acquired on behalf of LAND 121 Phase 3B.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Project LAND 121 is a multi-phased Project to provide the ADF with the Field Vehicles, Modules and Trailers (FVM&T) and associated support systems to meet ADF mobility requirements including logistic distribution, command and liaison, casualty evacuation, troop lift, and the provision of mobility to specialist assets such as command shelters and communications terminals.

LAND 121 Phase 3 was approved in August 2007 to acquire 1,187 Mercedes-Benz G-Wagons, and 973 matching trailers from Haulmark Trailers (Australia). In August 2011, Government approved the acquisition of an additional 959 G-Wagons and 826 trailers under LAND 121 Phase 5A via the contracts negotiated for Phase 3.

Phase 3 was also intended to acquire medium and heavy FVM&T; however, the Commonwealth withdrew from negotiations with the preferred tenderer and a tender resubmission process was initiated in December 2008. In December 2011, Defence announced negotiations would commence with the preferred tenderers, Rheinmetall MAN Military Vehicles Australia for the vehicle and module requirements and with Haulmark Trailers (Australia) for the MHC trailer requirements.

At the same time, Government approved the splitting of LAND 121 Phase 3 into two projects: LAND 121 Phase 3A for the LLC approved under Phase 3 and Phase 5A; and LAND 121 Phase 3B to progress the Phase 3 MHC scope elements.

This decision effectively closed Phase 3 and amounted to a combined pass approval for the new Phase 3A and an 'interim pass' approval for the new Phase 3B. The December 2011 approval allowed the continuation of contracted activities toward the LLC acquisition and the ongoing negotiations for the MHC contracts for Phase 3B. Phase 3B subsequently achieved second pass approval in July 2013 following contract negotiations.

Uniqueness

LAND 121 Phase 3A is to roll-out the FVM&T capability to multiple locations throughout Australia. This presents a unique logistic challenge requiring a robust Support System to achieve stated availability requirements at the lowest life cycle cost.

Major Risks and Issues

Integration of Command, Control, Communication, Computer and Intelligence (C4I) systems

There **was** a residual chance that the LLC CPM will be affected by the complexity of testing, procurement, manufacture and/or installation. **This risk has been retired by the Project Office, as at 30 June 2016, as this module has achieved Materiel Release and commenced introduction into service.**

Concurrency of critical activities

There is a chance that the project will be affected by the concurrency of critical activities including developing the design and support system, and introducing into service the Ambulance and CPM modules. The project will **continue to** manage the workload within the current workforce allocation **through FOC leading to project closure** and continue to monitor the risk.

IMR/IOC Caveats

Achievement of the IMR Milestone was declared with three caveats in May 2014 relating to the following issues:

- **Carryall Hardtop and Station Wagon load restraint;**
- **G-Wagon air transportability; and**
- **Vehicle warning systems operating during blackout and reduced lighting operation.**

Further details are provided in Section 5.2.

Other Current Sub-Projects

LAND 121 Phase 3B will provide the ADF with 2,707 protected and unprotected medium and heavy vehicles which, along with 1,704 matched trailers. This will provide payloads of between four and seventy tonnes for a range of logistics functions including vehicle recovery, freight, bulk liquid distribution and personnel carriage. **LAND 121 Phase 3B is formally scoped for the delivery of 122 General Maintenance Vehicles and associated trailers. This aspect of the Phase 3B capability is being delivered through Phase 3A Project Office.**

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Dec 11	At Original Approval (Phase 3 Project Budget prior to split into 3A and 3B)		3,237.7	1
Jun 12	Exchange Variation		(66.5)	
Jun 12	Budget as at 30 June 2012		3,171.2	
Jul 12	Real Variation – Scope	362.7		2
Jul 12	Real Variation – Scope (Transfer of funds to 3B)	(2,549.2)		3
			(2,186.5)	
Jun 16	Exchange Variation		33.0	
Jun 16	**Total Budget**		1,017.7	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	(536.4)		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(78.2)		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Support)	(3.3)		
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Support)	(3.1)		
	Contract Expenditure – Cablex Pty Ltd	(0.9)		
	Other Contract Payments / Internal Expenses	(114.2)		4
			(736.1)	
FY to Jun 16	**Contract Expenditure – Cablex Pty Ltd**	(51.2)		
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	(32.7)		
	Contract Expenditure – Haulmark Trailers (Aust) Pty Ltd (Acquisition)	(0.4)		
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Support)	0.3		5
	Other Contract Payments / Internal Expenses	(39.1)		6
			(123.0)	
Jun 16	**Total Expenditure**		(859.1)	
Jun 16	**Remaining Budget**		158.9	

Notes	
1	Phase 3 project budget prior to the split into Phase 3A and Phase 3B.
2	Additional scope from LAND 121 Phase 5A.
3	Removal of Medium/Heavy Capability scope to LAND 121 Phase 3B.
4	Other expenditure comprises Phase 3A Outsourced Services, Contractors and Consultants ($22.6m), Salaries ($18.9m), and ($55.5m) for other Project Office costs not associated with the prime contracts. Also includes $17.2m for expenditure on Medium and Heavy Capability activities for Phase 3B that could not be recorded as being against Phase 3B due to financial system and reporting constraints.

5	**Reflects refunds from the Contractor for payments made in error.**
6	Other expenditure comprises: **C4I Government Furnished Materiels and Integration ($24.0m), Ambulance Module Intercom ($6.2m),** Outsourced Services (**$0.7m**), and other project office costs not associated with the prime contracts (**$8.2m**).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
119.6	**131.4**	**128.0**	**PBS to PAES: The variation is due to work on the ambulance module intercom and installation of communications equipment within the CPM being brought forward.** **PAES to Final Plan: Variation is due to a reduction in CPM Module Installation Kits and repurposing of Dual Cab Chassis trucks with Dual Cab Cargo modules. This was due to Army HQ revised Basis of Issue for the CPM mission system.**
Variance $m	**11.8**	**(3.3)**	Total Variance ($m): **8.4**
Variance %	**9.9**	**(2.5)**	Total Variance (%): **7.1**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		0.8	Australian Industry	**Variation is primarily due to delay in delivery of CPM Module Installation Kits resulting in 9 Kits/Modules being delayed until 2016-17 along with associated installation and support (-$3.5m); delay to the proposed procurement of Dual Cab Cargo Modules (-$2.3m) now planned to commence in 2016-17; together with earlier than scheduled delivery of G Wagon Load Restraints (+$0.8m).**
			Foreign Industry	
			Early Processes	
		(5.8)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
128.0	**123.0**	**(5.0)**	**Total Variance**	
		(3.9)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Mercedes Benz Australia Pacific Pty Ltd (Acquisition)	Oct 08	321.8	**604.5**	Variable	ASDEFCON	1, 2
Mercedes Benz Australia Pacific Pty Ltd (Support)	Oct 08	45.1	**45.5**	Variable	ASDEFCON	2
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	Apr 10	42.0	**80.5**	Variable	ASDEFCON	1, 2
Haulmark Trailers (Australia) Pty Ltd (Support)	Apr 10	22.2	**23.8**	Variable	ASDEFCON	2
Cablex Pty Ltd	**Mar 15**	**1.5**	**68.6**	**Firm**	**ASDEFCON**	**2, 3**
Notes						

1	**Note that the Mercedes Benz Australia Pacific Pty Ltd and Haulmark Trailers (Australia) Pty Ltd Contract Prices 30 June 2016 above includes $28.3m and $4.7m respectively for GMV commitment. This item is being procured by LAND 121 Phase 3A, on behalf of the LAND 121 Phase 3B project which is funding the GMV, in accordance with the LAND 121 Phase 3B Second Pass Government Approval in July 2013.**
2	**Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).**
3	**The increase in value of this contract reflects the contracting approach of procuring prototype Module Installations Kits followed by production Module Installation Kits.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Mercedes Benz Australia Pacific Pty Ltd (Acquisition)	1,187	2,268	Vehicles with associated modules	1
Mercedes Benz Australia Pacific Pty Ltd (Support)	N/A	N/A	Support Contract for vehicles and modules	
Haulmark Trailers (Australia) Pty Ltd (Acquisition)	979	1,921	Production Trailers	1
Haulmark Trailers (Australia) Pty Ltd (Support)	N/A	N/A	Support Contract for Trailers	
Cablex Pty Ltd	**2**	**172**	**C4I Installation Kits for the CPM Module**	

Major equipment received and quantities to 30 Jun 16

- All design reviews completed under Phase 3.
- All eight mission system variants have completed Production Readiness Review.
- 13 prototypes delivered.
- 2,268 production vehicles delivered to the project by the Contractor including those acquired on behalf of LAND 121 Phase 3B.
- 1,921 production trailers delivered to the project by the Contractor including those acquired on behalf of LAND 121 Phase 3B

Notes

1	The quantity figures being communicated publicly exclude modules and prototypes. An additional 122 vehicles and trailers **have been** acquired **for the** GMV **variant** on behalf of LAND 121 Phase 3B. The GMV capability is being finalised by **LAND 121 Phase 3A, on behalf of the LAND 121 Phase 3B project**.

Section 3 – Schedule Performance

3.1 Design Review Progress

Design reviews were completed under LAND 121 Phase 3.

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	Vehicles	Apr 09	N/A	Jun 09	2	1
	Modules	Mar 09	N/A	Mar 09	0	
	Trailers	Oct 10	N/A	Oct 10	0	
Critical Design	Vehicles	Jun 10	N/A	Jun 10	0	
	Modules	Jul 10	N/A	Oct 11	15	2, 3
	Trays and Trailers	Mar 11	N/A	Aug 11	5	2
Critical Design (Redesign)	Module (Light Ambulance, Cab Chassis)	Feb 15	N/A	Apr 15	2	4
	Module (Light CPM)	Sep 15	N/A	**Mar 16**	**6**	5

Notes	
1	Vehicle Preliminary Design occurred as planned from 22 April 2009 to 6 May 2009, however, exit was unable to be granted until 12 June 2009 when the Commonwealth was satisfied with the way ahead for issues identified during the review.
2	Critical Design Review variance was due to a change in specification by the Commonwealth.
3	All work on the Personnel/Cargo Restraint System (PCRS) Module ceased post Critical Design following advice from Capability Development Group (CDG) that removed the requirement for a PCRS Module. CDG recommended the acquisition of 15 additional Modules (Light Cargo) in lieu of the PCRS module. Army Headquarters and Air Force Headquarters concurred with this change.
4	Two extra months taken for retesting of electromagnetic compatibility performance and in preparation of conduct of Critical Design Review and Functional Configuration Audit.
5	**Two** month variance was due to delay in **initial** completion of the prototype**s**. **A further four month variance due to the need to repeat a number of tests, availability of testing resources/facilities and other competing priorities.**

3.2 Contractor Test and Evaluation Progress

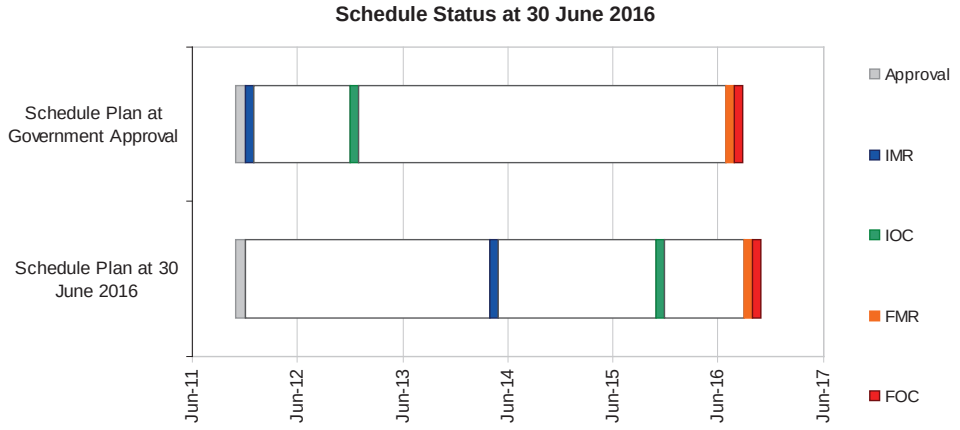
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	Module (Light Ambulance, Cab Chassis)	Oct 10	Jan 12	Feb 12	16	1
	All other vehicle, module (except Ambulance) and trailer variants had passed under Phase 3	Jul 11	Dec 11	Dec 11	5	2
	Module (Light Ambulance, Cab Chassis) (Redesign)	Nov 14	N/A	Nov 14	0	
	Module (Light CPM) (Redesign)	Feb 15	N/A	**Aug 15**	6	3
Functional Configuration Audit	Module (Light Ambulance, Cab Chassis)	Apr 11	Aug 12	Apr 15	48	2
	Tray (Light Surveillance and Reconnaissance)	Feb 11	Sep 12	Nov 12	21	2
	All other vehicles and modules completed under Phase 3	Feb 11	Oct 11	Oct 11	8	2
	Module (Light CPM) (Redesign)	May 15	N/A	**Aug 16**	**15**	3
Acceptance Verification and Validation	Light and Lightweight Trailers completed under Phase 3	Jul-Oct 11	N/A	Jul-Nov 11	1	4
	Module (Light Ambulance, Cab Chassis) (Redesign)	Nov 14-Feb 15	N/A	Nov 14-Apr 15	2	5
	Module (Light CPM) (Redesign)	Feb-May 15	N/A	**Aug 16**	**15**	3

Notes	
1	Delayed from originally planned first week of January 2012 to February 2012 due to collective availability and conduct of Surveillance and Reconnaissance User Trial in mid to late January 2012.
2	Variances are due to specification changes by the Commonwealth.
3	This Test and Evaluation phase relates only to Commonwealth re-design and integration **with digital C2 systems**. Delay due to design activities taking longer than anticipated and delay in the completion of the prototypes.
4	One extra month taken for retesting.
5	Two extra months taken for retesting of electromagnetic compatibility performance and in preparation of conduct of Critical Design Review and Functional Configuration Audit.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 11	May 14	29	1
Initial Operational Capability (IOC)	Dec 12	Dec 15	36	2
Final Materiel Release (FMR)	May-Jul 16	Oct 16	3	3
Final Operational Capability (FOC)	Mid 16	Oct 16	3	3

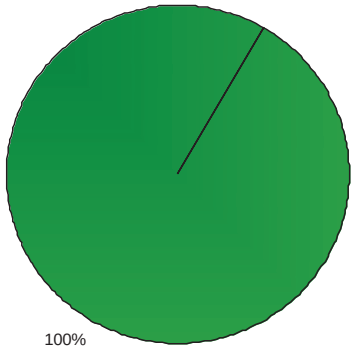
Notes	
1	December 2011 to June 2012: Delay to the implementation of the vehicle support system. July 2012 to May 2014: Delay due to processing of the IMR Report. With Army Headquarters' concurrence the main roll-out of vehicles, modules and trailers commenced in July 2012. **IMR was declared with caveats on 28 May 2014 with these formally agreed as satisfied by AHQ on 29 February 2016, with implementation of solutions in progress. Further details are provided at Section 5.2.**
2	Delays due to the development required for module components. **IOC was declared with caveats on 17 December 2015, with these formally agreed as satisfied by AHQ on 29 February 2016, with implementation of solutions in progress. Further details are provided at section 5.2.**
3	Variance due to delay imposed by complexity of finalising design and manufacture of the CPM **module**.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Project is currently meeting capability requirements as expressed in the MAA and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** N/A **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Full issue to a Brigade of the initial vehicle variants Carryall (quantity 15), Panel Van (quantity three), Station Wagon (quantity 15), Cargo (quantity nine) and Canine (quantity one). IMR was achieved provided the following caveats are resolved prior to IOC: 1. Carryall Hardtop and Station Wagon load restraint; 2. G-Wagon air transportability; and 3. Vehicle warning systems operating during blackout and reduced lighting operation. **Refer to Section 5.2 for more detail.**	Achieved with caveats.
Final Materiel Release (FMR)	Completion and release of Acquisition Project Supplies required, including: • The final tranche of light and lightweight vehicles, modules, and trailers and associated supplies transferred to sustainment; • Verification and validation, testing and certification of all supplies; • Maintenance support and training provided for operators and maintainers; and • Support spares and repair parts provided for a period of three years.	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Integration of C4I systems has the potential to impact on the cost, schedule and capability requirements of **the LLC CPM**.	**This risk has been retired by the Project Office, as at 30 June 2016, as this module has achieved Materiel Release and commenced introduction into service.**
The concurrency of critical activities including developing the design and support system, and introducing into service the Ambulance and CPM modules, has the potential to impact on cost, schedule, supportability and reputation.	The project will **continue to** manage the workload within the current workforce allocation **through FOC leading to project closure** and continue to monitor the risk.
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
Carryall Hardtop and Station Wagon Load Restraint Anchorages (caveat). The respective DEF(AUST) Specifications for the Carryall Hardtop (CAHT) and the Carryall Station Wagon (CASW) require the rear load space to be "*integrated within the Vehicle Cab"* and that "*all items stowed inside the Cab with a mass of greater than 250grams to remain stowed when subjected to specified crash loadings*". However, both the CAHT and the CASW were designed/manufactured in accordance with normal commercial practise that does not meet the Australian Defence specific requirement.	**The Project Office, in conjunction with MBAuP, developed modification packages for both the CAHT and the CASW that will enable the requirements of the respective DEF(AUST)s to be satisfied. The modifications were demonstrated to, and found suitable by, AHQ representatives in December 2015. AHQ formally agreed this caveat was satisfied on 29 February 2016. Modification Kits to be subsequently issued and installation to be undertaken.**
Air Transportability (caveat). At the time of its submission, the Materiel Release MR1 (IMR) and MR2 (Trailer) Achievement Report identified that G-Wagons were yet to be formally certified for transportation by air.	**Air-land certification for all IMR variants as a standard load in both the C-130J and C-17A aircraft has been provided and the applicable Australian Air Publication (AAP) has been updated as per:** • **AAP 7211.031-9-2 Loading and Lashing Instructions Hercules C-130J-30** • **AAP 7211.038-9-2 Loading and Lashing Instructions Boeing C-17A Aircraft** **External Air Lift certification activities for all IMR variants was completed and the associated AAP was amended as per:** • **AAP 7210.021-9-4 Helicopter External Load Rigging Procedures** **AHQ formally agreed this caveat was satisfied on 29 February 2016.**

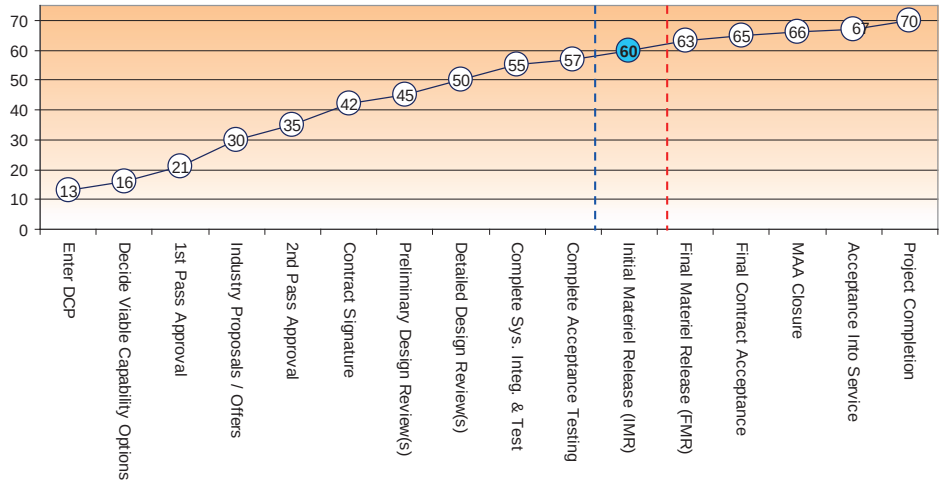
Vehicle warning systems operating during blackout and reduced lighting operation (caveat). The DEF(AUST) Specifications for the G-Wagon fleet required "*the vehicle crew to be able to dim (shield) and switch off the instrument lights*" and "*to be able to dim (but not switch off) Driver Console warning lights*" during Blackout / Reduced Lighting modes. The MR1 (IMR) and MR2 (Trailer) Achievement Report however identified that the G-Wagon fleet, being essentially a Military Off-The Shelf purchase, was compliant to international requirement – Blackout Lighting Systems for Tactical Land Vehicles which states: "*Blackout conditions implies total blackout in which all vehicle lighting (both normal and blackout lighting) is extinguished*".	**The Project Office, in conjunction with MBAuP, developed a modification to the G-Wagon fleet that enabled the requirements of the respective DEF(AUST)s to be satisfied. The modification was demonstrated to, and found suitable by, AHQ representatives with AHQ Approval for the Modification / Engineering Change to proceed being granted in October 2015. AHQ Formally agreed this caveat was satisfied on 29 February 2016. The "modification pack" was subsequently ordered by MBAuP with installation to be undertaken by the Commonwealth.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	**8**	**9**	9	**9**	8	**10**	**62**
	Explanation	1. **Schedule:** Due to revised forecast for FMR. IMR has been achieved. 2. **Requirement: The Lightweight/Light Capability deliverables are designed, and the majority of deliverables are fully tested and delivered. Testing is almost fully complete for the final items.** 3. **Technical Understanding:** Knowledge necessary to operate and support the solution has been transferred. 4. **Operations and Support: The routine fleet management has transitioned to Sustainment.**							



2014-15 MPR Status - - - - 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
To avoid costly and time consuming Contract Change Proposals, due to requirement variations, it is critical that Defence stakeholders provide clarity in terms of the Operational Concept Document and Functional Performance Specification and that the	Requirements Management

project office captures the origin and maintains the traceability into the System Specification.	
The time required to negotiate contracts for the LAND 121 project is a significant driver of the schedule.	Contract Management Requirements Management
When the organisation is under pressure to compress schedule so as to hasten the delivery of capability to the war-fighter, key decisions must be taken in light of potential impact on the ability of the project to achieve this aim.	Schedule Management Resourcing
It is important to ensure the early involvement of Army Logistics Training Centre (ALTC) staff in the development of the Training requirement. This includes reviewing the relevant contract template and clauses pertaining to training and participation in preliminary meetings to the Initial Training Conference. Suggest preliminary brief by ALTC for them to define their expectations, and 'fit' to contractual requirements.	Resourcing
The effort involved with the vehicle/trailer interface (and any other interface with the prime equipment – e.g. wheels, required payload, etc) should not be underestimated even for apparently simple equipments. The early formation of interface working groups is important.	Requirements Management
Significant time and effort may be saved if critical items of Support and Test Equipment identified during source evaluation are secured concurrently with the prime system acquisition, when Commonwealth negotiation power is greatest.	Contract Management
Strategic Relationship Boards, or similar forums for senior management of the Commonwealth and the Prime Contractor to meet on a regular basis, are useful mechanisms that should be seriously considered across other major projects. Pitched at Director General and Managing Director level, these board meetings have real potential to resolve issues in a more timely and effective way than contract level discussions, particularly in the in-contract management phase.	Contract Management
The complexity of integrating communication and battle-management equipment into vehicles during the design and development phase of both materiel systems, with different project offices, prime contractors and development cycles, should not be underestimated. More work should be done by Defence in the Needs/Requirements stage to de-conflict or better integrate interdependent projects.	Requirements Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	MAJGEN Paul McLachlan **(to Dec 15)** **MAJGEN David Coghlan (Dec 15–current)**
Branch Head	BRIG Haydn Kohl
Project Director	Mr Ken Butler
Project Manager	Mr Geoff Fallon (Acting) **(Vehicles and Modules)** **Mr Brian Whiffen (Trailers)** **Mr Ron Thompson (CPM Module)**

Project Data Summary Sheet[132]

Project Number	**AIR 7403 Phase 3**
Project Name	**Additional KC-30A Multi-role Tanker Transport**
First Year Reported in the MPR	2015-16
Capability Type	New
Acquisition Type	Australianised MOTS
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jun 15
Total Approved Budget (Current)	$911.4m
2015–16 Budget	$271.6m
Project Stage	Integration and Test
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

AIR 7403 Phase 3 will acquire two A330-200 aircraft and convert them to KC-30A Multi-role Tanker Transport (MRTT) aircraft and deliver them together with their associated spares and support equipment. This project follows on from AIR 5402 which delivered five MRTT aircraft equipped with both hose and drogue and boom refuelling systems capable of in-flight refuelling of current and future aircraft.

1.2 Current Status

Cost Performance

In-year

In-year cost performance has resulted in an overspend of $1.6m, which is largely due to acceleration of Capability Development activities.

Project Financial Assurance Statement

As at 30 June 2016, project AIR 7403 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

Aircraft conversion schedule supports achievement of the Final Materiel Release (FMR) / Final Operational Capability (FOC) planned dates.

132 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Major project milestones achieved in 2015-16 include:

- Acceptance of the first A330-200 Aircraft in July 2015;
- Acceptance of the second A330-200 Aircraft in November 2015;
- Completion of the Production Readiness Review in March 2016;
- First A330-200 inducted into conversion in February 2016; and
- Second A330-200 inducted into conversion in May 2016.

Materiel Capability Delivery Performance

The project remains on schedule to deliver the two additional KC-30A MRTT aircraft to Air Force.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Government provided a combined first and second pass approval in June 2015 for the purchase of two additional Airbus A330-200 aircraft for conversion to KC-30A MRTT aircraft.

In February 2016, the project received interim Government approval for a scope increase to further modify the second MRTT aircraft to provide an enhanced communications capability in support of long-range international government transport.

In accordance with Government approval, AIR 7403 Phase 3 is scoped to provide two additional KC-30A MRTT aircraft that meet the same configuration to the maximum extent possible to the Air Force fleet of five KC-30A MRTT aircraft. To meet these requirements there is a need to Australianise the MRTT aircraft as provided by Airbus Defence and Space.

Uniqueness

The two aircraft were previously operated under lease by Qantas and originally assembled between the first two Royal Australian Air Force (RAAF) MRTT aircraft that are the basis of the KC-30A design. Being the same overall civil build status provides an opportunity to maintain close commonality with the configuration of the existing RAAF KC-30A fleet.

The enhanced communications capability in support of long-range international government transport installed on a KC-30A MRTT aircraft will be the first of type for Air Force.

Major Risks and Issues

Early identification of baseline configuration differences between the Airbus A330-200 aircraft and Air Force KC-30A fleet may lead to integration issues during conversion to MRTT as well as introduce increased supportability costs. Defence is also re-assessing previously accrued civil flight hours on both A330-200 aircraft to determine the impact of the significantly increased in-service utilisation on the Planned withdrawal Date of the KC-30A**.**

Other Current Sub-Projects

AIR 7403 Phase 3 is an extension of the original AIR 5402 acquisition contract that provided the Australian Defence Force with five KC-30A MRTT aircraft. The KC-30A MRTT aircraft design was previously accepted under AIR 5402.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Jun 15	Original Approved		681.9	
Mar 16	Real Variation – Scope	187.7		1
Mar 16	Real Variation – Budgetary Adjustment	(4.8)		2
			182.9	
Jun 16	Exchange Variation		46.5	
Jun 16	**Total Budget**		**911.4**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Airbus Defence and Space	(46.2)		3
			(46.2)	
FY to Jun 16	Contract Expenditure – Airbus Defence and Space	(253.4)		3
	Other Contract Payments / Internal Expenses	(19.7)		4
			(273.1)	
Jun 16	**Total Expenditure**		**(319.3)**	
Jun 16	**Remaining Budget**		**592.1**	

Notes	
1	The approved scope increase associated with interim pass approval has been incorporated into the budget, increasing the project approval by $187.7m, for the Government Transport and Communications modification.
2	Budgetary adjustment was to correct an error in the price basis immediately following guidance transfer.
3	The scope of this contract is explained in Section 2.3 – Details of Project Major Contracts.
4	Other expenditure comprises contractor, legal support, salaries, other capital expenditure including Discrete Tasking Orders and travel.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Defence's Explanation of Material Movements
0.0	261.7	271.6	PBS to PAES: Project was not approved at the time of Estimates PBS exercise. PAES to Final Plan: Variance is due to the incorporation of Government Transport and Communications funding.
Variance $m	261.7	9.9	Total Variance ($m): 271.6
Variance %	100.0	3.8	Total Variance (%): 100.0

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Year End variance is mainly due to acceleration of Capability Development activities, which have been offset against foreign exchange movements.
			Foreign Industry	
			Early Processes	
		1.5	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
271.6	273.1	1.6	**Total Variance**	

		0.6	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Airbus Defence and Space	Jun 15	408.8	434.2	Variable	ASDEFCON	1,2
US Government	Mar 16	11.1	11.1	Fixed	FMS	1,3

Notes

1	Contract Value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
2	Price at 30 June 2016 includes the addition of Contract Change Proposal (CCP) 133.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Airbus Defence and Space	2	2	Purchase of two additional A330-200 aircraft and conversion to KC-30A MRTT.	1, 2
US Government	2	2	This FMS case value is to fund LAIRCM kits.	3

Major equipment received and quantities to 30 Jun 16

Two additional Airbus A330-200 aircraft were accepted in July and November 2015 respectively. Both aircraft were immediately transferred to Airbus Defence and Space, Madrid Spain for conversion to MRTT aircraft.

Notes

1	CCP131 – purchase of two A330 aircraft and CCP132 – conversion to MRTT aircraft, raised and signed to update the existing acquisition contact with Airbus Defence and Space for the two aircraft and associated conversion.
2	CCP133 – Configuration options in order to reduce the differences in configuration between the baseline of the additional two A330 aircraft and the original five aircraft.
3	US Government - purchase of two LAIRCM Group B ship sets.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	MRTT Aircraft	N/A	N/A	N/A	0	1
Preliminary Design	MRTT Aircraft	N/A	N/A	N/A	0	1
Critical Design	MRTT Aircraft	N/A	N/A	N/A	0	1
Production Readiness Review	MRTT Aircraft	Dec 15	N/A	Mar 16	3	2

Notes

1	MRTT aircraft system requirements and design reviews not required as the design was previously approved under the original acquisition contract, project AIR 5402 Air to Air Refuelling Capability.
2	The Additional MRTT Aircraft Production Readiness Review (PRR) was completed in December 2015 with PRR milestone achieved in March 2016.

3.2 Contractor Test and Evaluation Progress

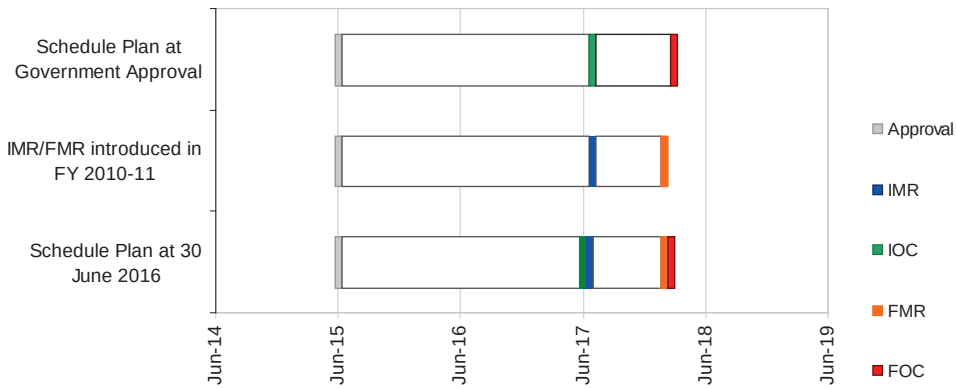
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Acceptance	Purchase of first additional A330-200 aircraft	Jul 15	N/A	Jul 15	0	
	Purchase of second additional A330-200 aircraft	Nov 15	N/A	Nov 15	0	
	Acceptance of MRTT# 6	May 17	N/A	Jul 17	2	1
	Acceptance of MRTT# 7	Aug 17	N/A	Oct 17	2	1
	Contract Final Acceptance	Oct 17	N/A	Oct 17	0	

Notes

1	The Commonwealth has factored in additional time to accommodate rework activities that may be required to close out these milestones. This remains within the project's planned delivery window.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jul 17	Jul 17	0	
Initial Operational Capability (IOC)	Jul 17	Jul 17	0	
Final Materiel Release (FMR)	Mar 18	Mar 18	0	
Final Operational Capability (FOC)	Mar 18	Mar 18	0	

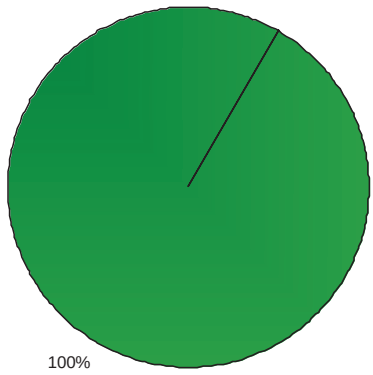


Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Green:
The project expects to meet Materiel Capability Requirements as expressed in the Materiel Acquisition Agreement.

Amber:
N/A

Red:
N/A

Note

This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	The delivery and acceptance of MRTT#6 including initial spares and initial support equipment.	Not yet achieved
Final Materiel Release (FMR)	The delivery and acceptance of MRTT#7 including the final delivery of remaining spares and support equipment.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Differences between the baseline configuration of the two Airbus A330-200 aircraft and Air Force KC-30A fleet may affect spares and support and lead to integration issues during conversion of the aircraft to MRTT, that may require deviation to specification or replacement of components.	Actively engage with Airbus Defence and Space to undertake configuration analysis of both aircraft, documenting results to ensure the Commonwealth has a full understanding of any differences in configuration to support sustainment modelling and to address any supportability issues.
The Logistics suite of products required to support both integration of the modification and or acceptance into service may not be synchronised with the aircraft delivery schedule.	Early identification of potential shortfalls and engagement with both prime contractor and external agencies to develop plans to secure adequate resources and or procurement of spares and support equipment for introduction into service of the additional two MRTT aircraft.
The two additional A330-200 aircraft may not achieve the KC-30A fleet Planned withdrawal Date (PwD) of 2041 due to previously accrued flight hours and the significantly increased usage planned by Air Force.	Early engagement with Defence Technical Airworthiness Authority to assess previous commercial operations and their impact to KC-30A PwD.
Airbus Defence and Space may not have fully scoped the requirements of equipment options contracted under CCP-133 (additional aircraft configuration options) impacting the ability to achieve closer KC-30A fleet configuration commonality.	Maintain close communications with the Prime contractor to clarify and agree on a finite set of requirements to ensure a common configuration of the KC-30A fleet whilst not affecting safety, operations and airworthiness.
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

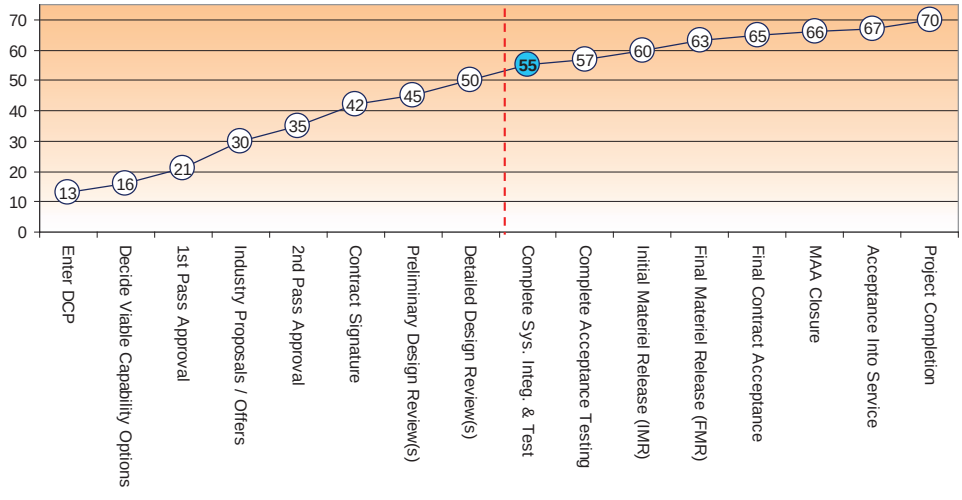
Description	Remedial Action
N/A	N/A

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	7	8	8	8	8	8	55
Integration and Test	Project Status	6	7	8	10	10	6	6	53
	Explanation	• **Schedule:** PRR milestone was delayed by 3 months without impacting the conversion schedule or IMR and IOC. • **Technical Understanding:** The technical solution for the additional KC-30A MRTT aircraft is very well understood as it is based on the existing RAAF KC-30A fleet. • **Technical Difficulty:** This project does not require an extensive design and test program as the two additional KC-30A MRTT aircraft will be built to the same design standard as used to build the current RAAF KC-30A fleet. • **Commercial:** Preserving the conversion schedule while maintaining the desired level of quality for contract deliverables remains commercially challenging. • **Operations and Support:** The Through Life Support contract is operative; however there are challenges in determining the support requirements associated with KC-30A fleet increase from 5 to 7 aircraft.							



2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	AVM Leigh Gordon (to Mar 16) AVM Catherine Roberts (Mar 16–current)
Branch Head	AIRCDRE Phillip Tammen
Project Director	Mr Luke Brown
Project Manager	Mr Wayne Bicket

Project Data Summary Sheet[133]

Project Number	**SEA 1448 Phase 2B**
Project Name	**ANZAC ANTI-SHIP MISSILE DEFENCE**
First Year Reported in the MPR	2009-10
Capability Type	Upgrade
Acquisition Type	Developmental
Service	Royal Australian Navy
Government 1st Pass Approval	Nov 03
Government 2nd Pass Approval	Sep 05
Total Approved Budget (Current)	$678.6m
2015-16 Budget	**$68.2m**
Project Stage	Initial Materiel Release
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA 1448 Phase 2 project will provide the ANZAC Class Frigates with an enhanced level of self-defence against modern anti-ship missiles.

There are two sub-phases of SEA 1448 Phase 2. Phase 2B of the ASMD Project, will introduce an indigenous, leading edge technology, phased array radar (CEAFAR) and missile illuminator (CEAMOUNT) collectively referred to as the Phased Array Radar (PAR) System. The PAR System delivers enhanced target detection and tracking that allows Evolved Sea Sparrow Missiles to engage multiple targets simultaneously. A new dual ship-set I-Band Navigation radar will coincidentally be provided under this Phase to replace the navigation function performed by the Target Indication Radar, at the same time replacing the obsolescent Krupp Atlas 9600.

1.2 Current Status

This Project had been a Project of Concern since June 2008, but was removed in November 2011 as part of the Real Cost Increase (RCI) decision made by Government in November 2011.

Cost Performance

In-year

As at 30 June **the project has an underspend of $16.9m. This underspend is due to the inability to process a planned closing pain/gain share payment to industry participants. A review of the pain/gain share final payment has identified significantly complex errors that have not been resolved within the 2015-16 Financial Year. It is expected that the reconciliation process will be completed by September 2016 and will be transferred into the 2016-17 budget estimates.**

133 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Project Financial Assurance Statement

As at 30 June 2016, project SEA 1448 Phase 2B has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has applied contingency in the financial year **primarily for the treatment of pain/gain share, adjustments, escalation risks and to allow for procurement of a radar test set which had not been adequately budgeted for.**

Schedule Performance

Based on the revised acquisition strategy approved by Government in July 2009, the systems being delivered in Phase 2B are largely on schedule. With the RCI for Phase 2B approved for the follow on ships 2-8 in November 2011, there is now a 55 month variance to the original **approved date for Final Operational Capability (FOC)** for this phase of the project. During 2014-15, due to pressures from the large sustainment program of work, a revised schedule **was** developed for ships four onwards. Recent achievements include the Materiel Release (MR) of the **fourth ship HMAS *Warramunga* in October 2015, and the fifth ship.** HMAS *Ballarat* the fifth ship **in May 2016.** HMAS *Parramatta* the sixth ship **and HMAS *Toowoomba* the seventh ship are both well into the upgrade, with the final ship HMAS *Stuart* due to enter the program in mid 2016**. The project remains on track to deliver Final Operating Capability by October 2017.

Materiel Capability Delivery Performance

Initial Materiel Release (IMR) was claimed for Stage 1 Capability on HMAS *Perth* on 24 June 2011. The Chief of Navy formally provided Initial Operational Release (IOR) for ASMD upgrade capability delivered to HMAS *Perth* and its associated support systems in 16 August 2011. The Project has now completed Operational Test & Evaluation (OT&E) for the final Stage 2 capability. Initial Operational Capability (IOC) **was achieved in** September 2015.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The need for an ASMD capability in the Royal Australian Navy's (RAN) surface fleet was first foreshadowed in the 2000 Defence White Paper.

SEA 1448 Phase 2B is the final Phase of the ANZAC ASMD Program, where the addition to the Class of the phased array radar technology is being undertaken by the Australian Company CEA Technologies and the overall integration into the ANZAC Class is being performed by the ANZAC Alliance (Commonwealth plus BAE Systems (previously Tenix) and Saab Systems).

SEA 1448 Phase 2B was approved by Government in September 2005. SEA 1448 Phases 2A (the initial phase of the ASMD Project which is procuring the combat management system hardware and the infra-red search and track capability) and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. Due to its leading edge and developmental technology, Phase 2B, was considered to be a high risk phase. Originally planned for installation into all eight ANZAC Class ships under a single contract, a further review in 2007 of the technical risks associated with the introduction of the leading edge radar led Government in August 2009 to revise the acquisition strategy to a single ship installation. This strategy allows the project to prove this capability at sea before seeking Government approval to commence installation into subsequent ships. The lead ship, HMAS *Perth,* successfully underwent acceptance testing between October 2010 and June 2011 with the Chief of Navy accepting IOR in August 2011. **IOC was achieved in September 2015.**

Uniqueness

The phased array radar component of the ASMD Project is highly developmental and has not previously been fielded in this form before, although the system components are fourth generation derivatives of fielded CEA systems. The RAN is the first to operate a ship with the Australian designed and manufactured CEA Technologies low power active Phased Array Radar System.

Major Risks and Issues

The major risks and issues for SEA 1448 Phase 2B are:

- That indices used in the prime contract, particularly labour rates, may exceed current predictions;
- An inability to resource the ASMD Project correctly (includes availability, conflicts, personnel, training and quality (Commonwealth, CEA, ANZAC IMS, Industry, Test and Trials); and
- Unplanned work being activated during an ASMD upgrade period such as emergent work arising from planned ASMD installation activities, other maintenance activities and unplanned work scheduled during the ASMD installation work period.

Other Current Sub-Projects

SEA 1448 Phase 2A – This initial phase of the ASMD Project is to upgrade all eight of the ANZAC Class Ship's existing ANZAC Class Combat Management Systems (CMS) and fire control systems, and install an Infra-Red Search and Track (IRST) System which will provide improved detection of low level aircraft and anti-ship missiles when the ship is close to land.

SEA 1448 Phase 4A – This Phase complements the ASMD Upgrade by delivering a contemporary Electronic Support Measures (ESM) system. This Phase is being managed through Electronic Systems Division (ESD).

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Sep 05	Original Approved		248.8	
Mar 06	Real Variation – Transfers	155.4		1
May 06	Real Variation – Transfers	(6.7)		2
Nov 11	Real Variation – Scope	214.7		3
			363.4	
Jul 10	Price Indexation		76.1	4
Jun 16	Exchange Variation		(9.7)	
Jun 16	**Total Budget**		678.6	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – CEA Technologies (PAR Production)	(171.2)		5
	Contract Expenditure – BAE Systems Australia (Follow On Ships)	(117.7)		6
	Contract Expenditure – SAAB Systems Pty Ltd (First of Class)	(76.8)		6
	Contract Expenditure – BAE Systems Australia (First of Class)	(59.8)		6
	Contract Expenditure – CEA Technologies (P3 Contract)	(57.6)		7
	Contract Expenditure – ICWI Membership	(19.6)		6
	Other Contract Payments / Internal Expenses	(46.1)		6, 8
			(548.7)	

FY to Jun 16	Contract Expenditure – BAE Systems Australia (Follow On **Ships**)	**(37.6)**		
	Contract Expenditure – CEA Technologies (PAR Production)	**(12.2)**		5
	Contract Expenditure – SAAB Systems Pty Ltd **(First of Class)**	**(0.2)**		
	Contract Expenditure – BAE Systems Australia (First of Class)	**(0.1)**		
	Other Contract Payments / Internal Expenses	**(1.2)**		8
			(51.3)	
Jun 16	**Total Expenditure**		**(600.0)**	
Jun 16	**Remaining Budget**		**78.6**	

Notes	
1	$155.4m transferred from SEA 1448 Phase 2A after Government agreed that initial Very Short Range Air Defence (VSRAD) was to be replaced with the PAR System from CEA.
2	Transfer to DSTO (Maritime Operations Division) for phased array radar risk mitigation activities in line with original Government approval in September 2005.
3	RCI of $214.7m approved for the follow on ships 2-8 in November 2011.
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $71.0m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $5.1m having been applied to the remaining life of the project.
5	This is the production contract for the delivery of the first PAR System into HMAS *Perth* (lead ship). Following the approval of an RCI in November 2011, options were exercised to increase the scope to the remaining seven ships and spare system. In order to manage acquisition obsolescence of phased array radar components and retention of the strategic workforce related to the phased array radar, this contract also included forward component buys.
6	**The amounts for each contract differ from prior years due to a revalidation of life to date expenditure.**
7	(P3 = Preliminary Phased Array Radar Program); This contract was officially closed in April 2010 and was aimed at development and initial production of the first PAR System.
8	**Other expenditure comprises: operating expenditure, short term contractors, consultants and other capital expenditure not attributable to the aforementioned top five contracts and minor contract expenditure.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
59.0	**55.4**	**68.2**	**PBS – PAES: The ($3.6m) variance is due to the application of the outcomes of the lessons learned program, in conjunction with the Proactive Management of the ASMD production and refit schedule.** **PAES – Final Plan: The $12.8m variance is predominantly due to the addition of $6.5m projected gain share into the Project budget. Additionally, $5.3m was identified as being incorrectly allocated to Phase 2A The remainder of the variance was due to provision for escalation and revised phasings.**
Variance $m	**(3.6)**	**12.8**	Total Variance ($m): **9.1**
Variance %	**(6.2)**	**23.1**	Total Variance (%): **15.5**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(16.9)	Australian Industry	Variance due mainly to the inability to process planned closing pain/gain and escalation payments to industry participants. The pain/gainshare final payment amounts are under review and significant effort is currently being undertaken to quantify the payment. The corrected payment figure will be transferred into the 16/17 budget estimates. Industry Participants have also indicated efficiencies resulting in an underspend for the project.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
68.2	51.3	(16.9)	**Total Variance**	
		(24.7)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
BAE Systems Australia (First of Class)	Jul 05	2.1	59.9	Variable	Alliance	1, 2
SAAB Systems Pty Ltd (First of Class)	Jul 05	3.1	76.9	Variable	Alliance	1
CEA Technologies (P3 Contract)	Dec 05	8.9	57.6	Variable	ASDEFCON	1
CEA Technologies (PAR Production)	Dec 08	16.0	185.6	Variable	ASDEFCON	1
BAE Systems Australia (Follow on Ships)	Jan 12	164.9	185.4	Variable	Alliance	1

Notes

1	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
2	Initially contracted to Tenix Defence prior to their sale to BAE Systems Australia in 2008.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
BAE Systems Australia **(First of Class)**	0	2	Research and Development and Ship 1 system	
SAAB Systems Pty Ltd **(First of Class)**	0	2	Research and Development and Ship 1 system.	
CEA Technologies **(P3 Contract)**	1	2	Phased array radar developmental systems	1
CEA Technologies **(PAR Production)**	1	9	PAR Systems for Ship 1 - 8 and spare system	2
BAE Systems Australia **(Follow on Ships)**	7	7	Ships 2-8 Installation	

Major equipment received and quantities to 30 Jun 16
Equipment has been delivered into store and is being appropriately maintained until required by Phase 2B for its installation. Installation has been completed for First Of Class ship, HMAS *Perth*, HMAS *Arunta,* HMAS *ANZAC,* **HMAS *Warramunga* and HMAS Ballarat.**

Notes	
1	(P3 = Preliminary Phased Array Radar Program); This contract was officially closed in April 2010 and was aimed at development and initial production of the first PAR System.
2	This is the production contract for the delivery of the first PAR System into HMAS *Perth* (lead ship). Following the approval of an RCI in November 2011, options were exercised to increase the scope to the remaining seven ships and spare system. In order to manage acquisition obsolescence of phased array radar components and retention of the strategic workforce related to the phased array radar, this contract also included forward component buys.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Requirements Review)	Mar 06	N/A	May 06	2	1
	Mk3E Combat Management System – Stage 2 (Requirements Review)	N/A	N/A	Aug 09	N/A	1
	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Functional Review)	Jun 06	N/A	Aug 06	2	1
Preliminary Design	Mk3E Combat Management System/Phased Array Radar Preliminary Design Review	Dec 06	N/A	Aug 07	8	1
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	N/A	Aug 08	N/A	

Critical Design	Mk3E Combat Management System (Phased Array Radar integration) - Stage 1 Critical Design Review – Part 2	Dec 07	N/A	Aug 08	8	1
	Mk3E Combat Management System - Stage 2 Critical Design Review	Nov 10	Sep 11	Sep 11	10	2
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	N/A	Dec 08	N/A	
	Phased Array Radar	Oct 07	N/A	Oct 07	0	

Notes	
1	Variance in design reviews is directly related to the change of acquisition strategy (movement from an eight ship program to a single ship program) or delay in initial contract award for phased array radar system.
2	Variance in Stage 2 Critical Design Review (CDR) date was as a result of delays in finalising Defence's requirements in the Software update. This was completed in April 2011 with CDR appropriately rescheduled. There **was** no impact to final Stage 2 software release date.

3.2 Contractor Test and Evaluation Progress

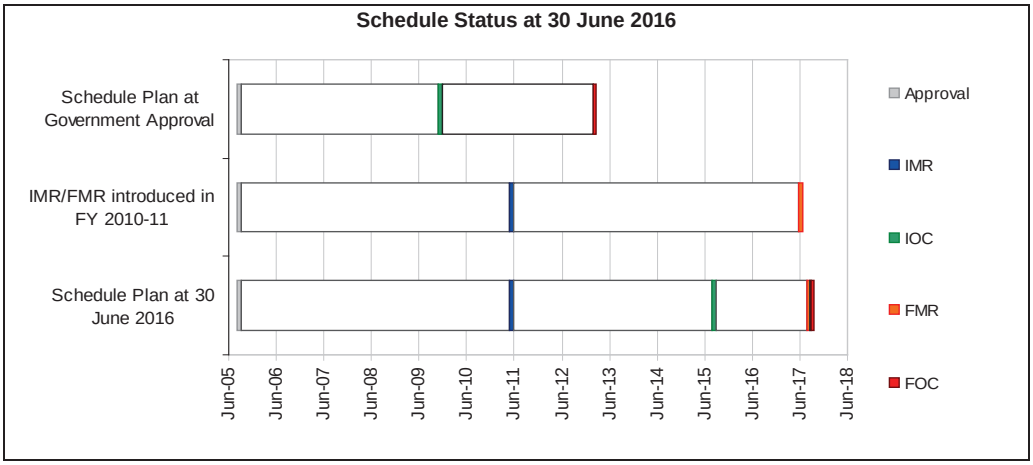
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Phased Array Radar System/Navigation Radar System - Harbour Phase)	Dec 08	Aug 10	Aug 10	20	1
Acceptance (Initial Operational Capability)	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Navigation Radar System)	Dec 09	Nov 13	Sep 15	69	2

Notes	
1	Variance in both the test readiness review and acceptance of the first upgraded ASMD ship is directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program.
2	Initially the variance in the acceptance of the first upgraded ASMD ship was directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program. As part of the RCI process it was agreed by Navy, **the then** Capability Development Group and **the then Defence Materiel Organisation** to move IOC until after PAR had been proven against Supersonic Targets. IOC documentation was submitted to Navy in July 2014 and **Capability Manager endorsement of IOC was achieved in September 2015.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Jun 11	N/A	
Initial Operational Capability (IOC)	Dec 09	Sep 15	69	1
Final Materiel Release (FMR)	Jul 17	**Sep 17**	**2**	2
Final Operational Capability (FOC)	Mar 13	Oct 17	55	3

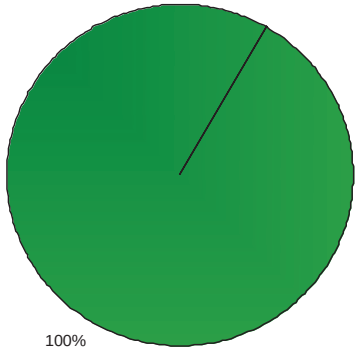
Notes	
1	Variance **was** directly linked to updated Materiel Acquisition Agreement which moved IOC until after Phased Array Radar System had been proven against Supersonic Targets.
2	Variance is due to approval of ships 2-8 by Government.
3	Variance is directly linked to the change of acquisition strategy - movement from a one plus seven ship program to an eight ship program.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Project is meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** N/A **Red:** N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Provisional acceptance of the ASMD upgraded HMAS *Perth.*	Achieved
Final Materiel Release (FMR)	Acceptance of the ASMD upgraded ship 8, HMAS *Stuart,* scheduled for **September** 2017.	Not Yet Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the phased array radar will not meet the required functional performance specifications and its integration complexity into the upgraded ANZAC Combat Management System may be underestimated.	Project has developed a Confidence Level Demonstration Program that has been actively demonstrating the functional performance of the phased array radar since November 2007 utilising a land based test site that has been established at the CEA premises (Fyshwick, ACT). These tests continue to provide evidence that the Phased Array Radar System is meeting the expected functional performance specifications and is able to integrate with the upgraded ANZAC Combat Management System. Successful completion of acceptance testing for HMAS *Perth* has seen the Stage 1 capability of the phased array radar technology achieve IOR; however this risk will not be retired until all capability is realised, following the Stage 2 software upgrade in late 2013. Stage 2 capability OT&E in late 2013 confirmed the functional performance of the radar has been achieved. This risk **has been retired as the achievement of IOC has confirmed the performance of the PAR and CMS system.**
There is a chance that with the significant change in the technology levels being delivered under the ASMD upgrade, stakeholder expectations may not be achieved.	Continuous engagement and education of stakeholders regarding the capability that will be delivered. In addition, a series of practical exercises for RAN operations crews in a specially built land based test site that simulates an upgraded ANZAC Ship operations room and all of the new systems being installed. Stage 2 capability OT&E in late 2013 confirmed that the capability meets all stakeholders expectations. This risk **has been retired as the Chief of Navy has declared the achievement of IOC.**
There is a risk that indices used in the prime contract, particularly labour rates, may exceed current predictions.	This risk is currently considered manageable, but is being monitored closely by the project. Commonwealth to work with industry to manage impacts of increased costs flow-on from increases in labour and overhead costs for all contracts associated with ASMD.
There is a chance of an inability to resource the ASMD Project correctly (includes availability, conflicts, personnel, training and quality (Commonwealth, CEA, ANZAC IMS, Industry, Test and Trials).	Planning of resource profiles against known constraints and schedules using close liaison with Navy through ANZAC Systems Program Office (SPO), and with our key industry participants.
There is a chance of unplanned work being activated during an ASMD upgrade period such as emergent work arising from planned ASMD installation activities, other maintenance activities and unplanned work scheduled during the ASMD installation work period.	The project and ANZAC SPO engineering group are actively managing the introduction of additional work packages into the ASMD upgrade period, with priority on maintaining the approved ASMD schedule.
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

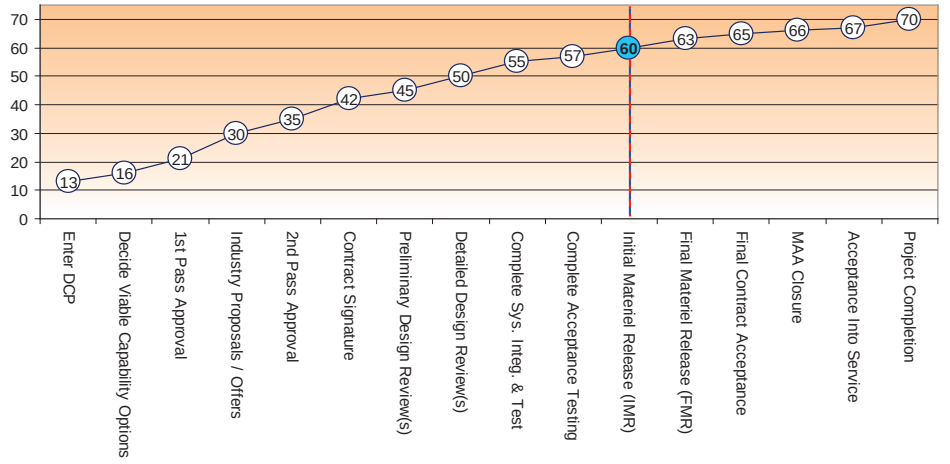
Description	Remedial Action
N/A	N/A

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	8	8	9	9	9	8	9	60
	Explanation	• **Schedule:** Schedule is mature and there remains a further **three** ships to upgrade. • **Requirement:** Based on the completion of OT&E, the requirements of Phase 2B are clearly understood. • **Technical Understanding:** Successful OT&E completed in August 2013.							



2014-15 MPR Status - - - -	2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that technically complex developmental projects that have high levels of risk as part of the new system or integration of the new system into existing systems, demands that a prototype (lead platform) be agreed up-front and used for proving the capability before agreeing to additional platforms.	First of Type Equipment
Adequate communication between, and engagement of, critical stakeholders to ensure that a common understanding of Project status is maintained.	Governance

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	RADM Mark Purcell, RAN **(to Dec 15)** **RADM Adam Grunsell, RAN (Dec 15-current)**
Branch Head	CDRE Steve Tiffen, RAN
Project Director/Manager	Mr Mark Simmonds **(to Mar 16)** **Mr Michael Welsh (Acting Mar 16-current)**

Project Data Summary Sheet[134]

Project Number	**AIR 9000 Phase 5C**
Project Name	**ADDITIONAL MEDIUM LIFT HELICOPTERS**
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Acquisition Type	MOTS
Service	Australian Army
Government 1st Pass Approval	Sep 07
Government 2nd Pass Approval	Feb 10
Total Approved Budget (Current)	**$642.4m**
2015-16 Budget	**$60.6m**
Project Stage	Initial Materiel Release
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is replacing the extant Australian Defence Force (ADF) Medium Lift Helicopter capability of CH-47D Chinook helicopters with seven new modernised CH-47F Chinook helicopters, two Transportable Flight Proficiency Simulators (TFPS) and associated supporting systems.

1.2 Current Status

Cost Performance

In-year

The $17.1m underspend is due to movement of the following activities into 2016-17: spares, crashworthy pilot seats, mini gun, deliverables to support aircraft build up, training device activities and other minor deliverables. Some activities were deemed to be no longer required. These underspends were partially offset by higher than expected payments for the capability alignment program and training.

Project Financial Assurance Statement

As at 30 June 2016, Project AIR 9000 Phase 5C has reviewed the approved scope and budget, for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project **has applied contingency in the financial year primarily to fund the introduction of an Australian-based maintenance technician sustainment training system and a crashworthy seating solution for CH-47F.**

134 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

The project accepted the first TFPS from the US Army in April 2014, with the second TFPS arriving in February 2015. On delivery, both devices were installed in temporary facilities and in January 2016, they were moved to their permanent facilities. Both devices received Synthetic Training Device Installation Operation Permits in April 2016.

All seven aircraft were delivered to Australia between April and August 2015, with the final aircraft placed on the Defence Register on 3 September 2015.

The Australian Military Type Certificate and Service Release (SR) were issued for the aircraft on 17 December 2015, with two limitations. The first limitation was a restriction on use of the rotor brake system pending the receipt of outstanding rotor brake certification documentation. This limitation is expected to be lifted by the Operational Airworthiness Authority on 1 July 2016. The second limitation relates to embarkation of the aircraft aboard amphibious landing platforms. The first of class flight trials that will seek to provide the basis for lifting this remaining limitation commence aboard HMAS *Adelaide* on 5 August 2016. .

IMR was declared by Capability Acquisition and Sustainment Group (CASG) on 1 July 2015 and the IOC declaration was formally acknowledged by Chief of Army on 22 April 2016.

Materiel Capability Delivery Performance

The CH-47F Chinook helicopter being acquired is a Military-Off-The-Shelf (MOTS) procurement of a US specification CH-47F Chinook, with only minimal essential ADF unique modifications. The CH-47F Chinook has been employed operationally by the US Army for over eight years and the capability has achieved outstanding operational results. The ADF has to date taken delivery of all seven aircraft identified in this Project; and there are currently no impediments to the Project achieving the materiel capability performance requirements.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Support to the extant ADF CH-47D Chinook fleet is heavily leveraged off the US Army and supporting US industrial base. The US Army is currently several years into a program to replace its entire CH-47D fleet with the modernised CH-47F Chinook helicopter. Beyond 2017, adequate in service logistics and training support from the US Army for the ADF CH-47D will no longer be available. Procurement of the CH-47F will ensure the ongoing viability of a Medium Lift Helicopter capability to the ADF.

The ADF CH-47D fleet is small and loss or severe damage of a single aircraft would result in a significant capability loss. The growth in fleet size (to seven) will improve the robustness of the ADF Medium Lift Helicopter capability.

A MOTS procurement strategy, via the government-to-government FMS program, was selected for the CH-47F acquisition as it offered the lowest risk capability solution in terms of project cost and schedule.

Following Government Second Pass in February 2010, the Commonwealth signed a FMS case with the US Government in March 2010. The US Army has finalised its contracts with suppliers for the provision of the aircraft and all other supporting systems specified in the FMS case. Boeing is the principal Original Equipment Manufacturer (OEM) for the CH-47F Chinook.

Uniqueness

The CH-47F aircraft acquired by the Project is a MOTS US Army specification CH-47F Chinook helicopter. The only production configuration difference with the ADF aircraft is the inclusion of a rotor brake to allow for embarked amphibious operations. The rotor brake is a mature design that has been previously certified on other US Army and international variants of the Chinook.

A minimal number of ADF unique modifications will be installed on the aircraft following delivery. All of these modifications are mature designs with the majority having previously been integrated and certified on the ADF CH-47D Chinook. Integration of these ADF modifications carries very low technical risk due to the high degree of commonality between the CH-47D and CH-47F aircraft. Nonetheless, delays related to Operational Test and Evaluation efforts in support of the M134D mini-gun installation into the CH-47F have resulted in a significant amount of work in excess of what was originally anticipated. These issues have delayed the declaration of the Materiel Release 2 (MR2) milestone now expected to occur

in July 2016.

The CH-47F is a modern digital aircraft. The Common Avionics Architecture System and Digital Automatic Flight Control System are the two most significant upgrades included on the CH-47F Chinook over its predecessor. These systems have been certified by the US Army and Boeing and are currently in service.

The Project **included** delivery of two TFPSs to provide an organic ADF CH-47F simulator capability. Previous simulator training support for the CH-47D **was** provided by the US Army.

The Cargo Helicopter Management Unit (CHMU) is the organisation responsible for acquiring the CH-47F capability. The CHMU **was** also responsible for the in-service support **of** the CH-47D capability **and is currently** supporting the CH-47F model **in** service. Having the CHMU as the single acquisition and sustainment organisation provides synergies due to the high degree of commonality between the CH-47D and CH-47F aircraft. It also allows staff to be prioritised between sustainment and acquisition where vacancies exist in the Unit.

Major Risks and Issues

The ADF CH-47D Chinook fleet completed operations in Afghanistan on Operation SLIPPER in 2013 reducing some risk involved with the challenges of fielding a replacement CH-47F Chinook fleet in parallel with an operational deployment. There **were** resource challenges **and associated risk** whilst the CH-47D **and CH-47F** fleets **were sustained concurrently, however the CH-47D fleet has now ceased flight operations and disposal action is well advanced, thus this risk has passed.**

Whilst the FMS program affords a significant number of advantages, delegation of many project management and contracting functions to the US Government, coupled with restrictive communications protocols, provides some management challenges to the ADF Project team for this schedule critical Project. **Nonetheless, all seven aircraft and both TFPS were delivered ahead of the original planned schedule with a real cost decrease proposed in 2016 reflecting the maturity of pricing and value for money associated with the aircraft and associated systems**.

The risks of greatest concern are the delivery of Aircraft Survivability Equipment **(ASE)** support systems and crashworthy passenger seating. **The associated** delays **are owned** by external agencies **and outside of CHMU direct control**. **As such, though** CHMU **is unable to** mitigate the **ASE support system** delays, **we are working with the US agencies involved to achieve the best schedule outcome possible. As at 1 July 2016, CHMU has taken over full responsibility for progressing a project** to **develop a** crashworthy passenger seating **solution for CH-47F**. **As a result of emergent issues with the planned overseas maintenance technician training solution,** the **development and** delivery of a **comprehensive domestic** maintenance **technician training** solution is **in progress within the current project scope and on schedule for delivery by early 2018. CHMU is now in contract for delivery of a suite of training devices and associated courseware for the Rotary-wing Aircraft Maintenance School, based at Swartz Barracks, Oakey.**

Estate and Infrastructure Group advises that the facilities in Townsville **are progressing.** The impact of facility delays has been mitigated through robust plans to minimise the effect of construction on the operational unit and project transition activities.

Other Current Sub-Projects

AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS): HATS will be an important link in the training continuum for inductees to the CH-47F training system.

LAND 4502 Phase 1 proposed to expand the CH-47F fleet from seven to ten aircraft in the same configuration as those provided by this project. LAND 4502 Phase 1 was approved by Government on 1 March 2016. All three aircraft under this project were delivered ahead of schedule with the last aircraft arriving in Australia on 23 June 2016.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Sep 07	Original Approved		3.4	1
Feb 10	**Government Second Pass Approval**	634.2		
			634.2	
Jul 10	Price Indexation		46.9	2
Jun 16	Exchange Variation		(42.1)	
Jun 16	**Total Budget**		642.4	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – US Government (AT-B-UDK)	(323.2)		3
	Contract Expenditure – US Government (AT-B-BAH)	(31.5)		3
	Contract Expenditure – US Government (AT-B-UGB)	(9.8)		3
	Other Contract Payments / Internal Expenses	(18.5)		
			(383.0)	
FY to Jun 16	**Contract Expenditure – Boeing Defence Australia Ltd (CH-47F Avionics Training Devices)**	(12.5)		3
	Contract Expenditure – US Government (AT-B-BAH	(4.2)		3
	Contract Expenditure – US Government (AT-B-UGB)	(3.9)		
	Other Contract Payments / Internal Expenses	(22.8)		4
			(43.5)	
Jun 16	**Total Expenditure**		(426.5)	
Jun 16	**Remaining Budget**		215.9	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government Approval.
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $16.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $30.6m having been applied to the remaining life of the project.
3	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.

4	Major items of expenditure include **Delivery and Operational Maintenance Contract $3.3m, Combining Transmission Assembly $1.9m, Technical Advice and Data $1.7m, Pilot/Co-pilot Seats $1.7m, Recurring Charges $1.6m, Ballistic Protection $1.3m, M134D Mini-gun Equipment $1.2m, Engineering Support A15 Platform Transition $1.1m, Travel/Freight $1.1m, Facilities Use Charges $0.8m, Non-Recurring Engineering $0.7m, Contractor – Strategic Partnership $0.7m, Type Certification Services Support $0.5m, Design/Service Engineering $0.5m, Integrated Logistics Support $0.4m, Qualified Flying Instructor $0.3m, Engine Condition Quadrant $0.3m and Supplies/Parts $0.2m.**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
63.0	**44.3**	**60.6**	**PBS – PAES – Variation is mainly due to savings as a result of reduced costs against various FMS case deliverables including aircraft production. PAES – Estimate Final Plan is mainly due to the addition of Training Device implementation activities at the BE 2016-17 Review.**
Variance $m	**(18.7)**	**16.3**	Total Variance ($m): **(2.4)**
Variance %	**(29.7)**	**36.8**	Total Variance (%): **(3.9)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(4.0)	Australian Industry	**The $17.1m underspend is due to movement of the following activities into 2016-17: spares ($7.3m), crashworthy pilot seats ($1.1m), mini gun (3.3m), deliverables to support aircraft build up ($2.3m), training device activities ($2.3m) and other minor deliverables ($1.1m). Some activities were deemed to be no longer required ($1.7m). These underspends were partially offset by higher than expected payments for the capability alignment program and training $2.9m**
		(12.8)	Foreign Industry	
			Early Processes	
		(0.3)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
60.6	**43.5**	**(17.1)**	**Total Variance**	
		(28.2)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
US Government (AT-B-UDK)	Mar 10	513.5	**356.4**	Reimbursement	FMS	1, 2, 5
US Government (AT-B-UGB)	Dec 11	18.0	**22.8**	Reimbursement	FMS	1, 3, 5
US Government (AT-B-BAH)	Jun 13	41.6	**54.2**	Reimbursement	FMS	1, 4, 5
Boeing Defence Australia Ltd	**May 16**	**16.5**	**16.2**	**Firm**	**ASDEFCON**	**1,5**

Notes	
1	The scope of this contract is explained further below.
2	FMS Case AT-B-UDK, Amendment **6, signed on 30 March 2016**, has further reduced the overall case value due to firm pricing data for aircraft procurement post definitization of the US Army – Boeing aircraft production contract
3	FMS Case AT-B-UGB was created to allow greater management of the aircraft production retrofit activities required to ensure all aircraft are delivered at the same configuration as the final aircraft.
4	FMS Case AT-B-BAH was created through the removal of the spares package from FMS Case AT-B-UDK. The creation of this case provides Defence with greater control over the procurement of spares required for the project.
5	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
US Government (AT-B-UDK)	7	7	CH-47F aircraft	1
US Government (AT-B-UGB)	N/A	N/A	CH-47F aircraft production retrofit kits	
US Government (AT-B-BAH)	N/A	N/A	Spare parts package	
Boeing Defence Australia Ltd	**1**	**1**	**CH-47F Avionics System Trainer (training device)**	

Major equipment received and quantities to 30 Jun 16
All seven aircraft and two Transportable Flight Proficiency Simulators, **a** quantity of Repairable Items and Spare Parts.

Notes	
1	**The final aircraft was delivered to Townsville in August 2015.**

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Feb 12	N/A	Apr 12	2	2
	ADF Unique Modifications	Jul 11	N/A	Jul 12	12	3,4
Preliminary Design	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Sep 12	N/A	Feb 13	5	2
	ADF Unique Modification	May 13	N/A	**Aug 15**	18	3,4
Critical Design	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Mar 13	N/A	Jun 13	3	2
	ADF Unique Modifications	Apr 14	N/A	**Jan 16**	18	3,4

Notes	
1	CH-47F Chinook helicopter system requirements and design reviews not required as it is a MOTS aircraft.
2	Rotor brake design has been contracted to Boeing by the US Army. Rotor brake design is a mature design that has been previously certified on other US Army and international Chinook variants. Variance from previous report is associated with changes to aircraft production schedule.

3	**The dates provided for ADF Unique Modifications relate to the three most significant modifications, namely the M134D Minigun, Crashworthy Pilot Seats (CWPS) and cockpit/cabin ballistic protection. These three key modifications, and a range of other minor modifications incorporated during each rebuild, will enable the project to achieve the materiel pre-requisites for Materiel Release 2 (MR2).** **All ADF unique modifications except CWPS are mature designs that have been previously certified on the ADF CH-47D Chinook. A Boeing modification has been developed and the installation kits and cockpit seat ship-sets are currently being delivered, with the first two aircraft installations completed in February and June 2016 respectively.**
4	**A blade fold solution was initially considered in scope for this project, however a commercially available solution does not currently exist. The Project will undertake the required structural analysis on an internally developed design to determine the future viability of CH-47F blade folding options. Though this development effort will not be possible within AIR 9000 Phase 5C delivery timeframes the intent is to align it with the schedule for post production rotor brake system (RBS) modification to aircraft delivered under LAND 4502 Phase 1.**

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Rotor Brake	Nov 11 – Feb 14	N/A	Jul 14 – Oct 14	8	1
	ADF Unique Modifications	Dec 15	N/A	**Dec 16**	**12**	3
Acceptance	CH-47F Chinook helicopter	Mar 14 – Nov 15	N/A	Mar 15 – Aug 15	(3)	2
	Rotor Brake	Apr 14	N/A	**Jul 16**	**27**	1
	ADF Unique Modifications	Jan 16	N/A	**Oct 16**	**9**	3

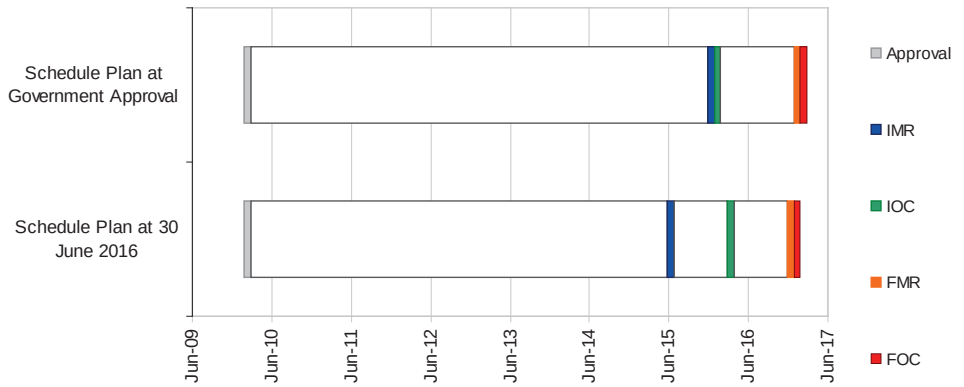
Notes	
1	Rotor brake acceptance dates are dependent upon Boeing and the US Government releasing a **Statement of** Airworthiness Qualification and Substantiation Report. **This report was received in March 2016.** The rotor brake **was** installed on the production line. There will be a limitation preventing use of the rotor brake until it has met Australian Technical Airworthiness requirements, **expected to be achieved in July 2016**. The variance is aligned with the initial aircraft deliveries.
2	ADF acceptance dates provided by US Army. In September 2012 the US Army advised of a change to the aircraft acceptance dates that delayed early deliveries but brought forward later deliveries. US Army acceptance activities with Boeing will occur in the month prior to acceptance.
3	**The ADF Unique Modifications are expected to achieve Design Acceptance in October 2016 and integrated into all seven CH-47F helicopters by December 2016.** Testing and evaluation of ADF Unique Modifications will be performed by the Commonwealth.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jan 16	Jul 15	(6)	1
Initial Operational Capability (IOC)	Jan 16	**Apr 16**	**3**	2
Materiel Release 2 (MR2)	Feb 16	**Jul 16**	**5**	3
Final Materiel Release (FMR)	Jan 17	Jan 17	0	
Final Operational Capability (FOC)	Jan 17	Jan 17	0	

Notes	
1	Variance against IMR is due to redefining the IMR milestone in the latest Materiel Acquisition Agreement with Army V2.3 to better meet project requirements (i.e. aircraft ready to fly in support of New Equipment Training (NET)). Completion of the requirements in the old Materiel Acquisition Agreement will be completed in the same timeframe as originally planned. All of the elements of the IMR were in place by 30 June 2015 and IMR was declared by CASG on 1 July 2015. Endorsement of IMR by the Capability Manager **was achieved on 31 July 2015.**
2	**IOC is the declaration that one CH-47F troop is available for land deployment in a low threat environment. Due to concurrent requirements in late 2015 to support a short notice CH-47D First of Class Flight Trial and completion of CH-47F NET, IOC was declared on 22 April 2016.**
3	MR2 provides an interim milestone to support the delivery to Army of an incremental CH-47F materiel subset (in addition to IMR) that has completed acceptance testing, has achieved appropriate certification and **is** suitable for the conduct of operational testing. **The delay is the result of: unexpected adverse flight test results of the design which required minor redesign; and difficulty in scheduling live fire range activity for stores clearance testing (which is dependent upon resources outside of CASG control). MR2 has been declared by CASG and is expected to be formally approved by Chief of Army in July 2016.**

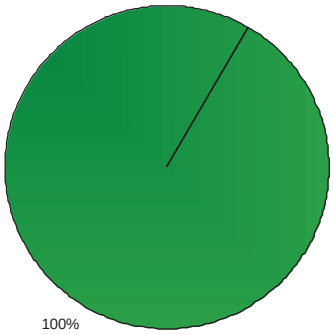
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Project expects to meet capability materiel requirements, as expressed in the Materiel Acquisition Agreement, and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** N/A **Red:** N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Delivery to Army of an initial CH-47F materiel subset that has completed acceptance testing, has achieved appropriate certification in accordance with ADF Regulations and is suitable for the conduct of both: CH-47D to CH-47F transition training, and initial operational testing. Key completion criteria are: 3 x CH-47F aircraft at US Army production configuration in-service, 2 x TFPS configured to support transition training in-service, and a CH-47F **Special Flight Permit** issued.	**Achieved.**
Final Materiel Release (FMR)	Delivery to Army of the final CH-47F materiel subset (additional to MR2) that has completed acceptance testing, has achieved appropriate certification in accordance with ADF Regulations and is suitable for the conduct of operational testing. At FMR the entire CH-47F materiel system will have been delivered and upgraded or modified to the final Australian configuration where necessary. All supplies will be delivered as per the Materiel Acquisition Agreement. Key completion criteria are: 7 x CH-47F at final approved configuration in-service, CH-47F final approved configuration training complete, and support arrangements in place to Materiel Sustainment Agreement.	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the Australian Military Type Certification (AMTC) will be affected by differences / deficiencies in US certification requirements leading to an impact on schedule.	Access to technical data and US Army Subject Matter Experts has been addressed through additional liaison positions, compliance finding visits and Purchase Orders for technical support with OEMs being established. Continue engagement with other countries to leverage off their experience and certification efforts. Maintain configuration commonality with the US Army to prevent ADF unique certification efforts. Continue to engage ADF support agencies to ensure possible issues or testing requirements are identified early. **AMTC Service Release (SR) Airworthiness Board pre-requisites have been met and an AMTC/SR was issued by the Defence Aviation Authority in 18 December 2015. This risk has been retired.**
There is a chance that the ongoing support of the ADF CH-47F will be affected by **timely** transfer of technology and information leading to an impact on **supportability**/capability.	Previous risk treatments are complete. The establishment of a US Army Aircraft Engineering Directorate employed liaison engineer has increased the efficiency and level of technical exchange requests. Technical support contracts with the major OEM are either in place or close to being executed.
There is a chance that the project workforce and resourcing will be inadequate leading to an impact on schedule, cost and reputation/compliance.	Development of a fully resourced schedule to identify true workforce requirements is ongoing. The Project will continue to push for critical Australian Public Service recruitments, the filling of military vacancies and established a contracted workforce as required to execute the Project. **The sourcing and employment of contracted support has been an effective method of risk mitigation in the past year.** Risk treatment strategies partially effective.
There is a chance that the training capability outcome for the qualification of the Australian Transportable Flight Proficiency Simulators (TFPS) may be affected by the US Army design standard of the device leading to an impact on project performance and capability.	ADF TFPS Qualification activities have progressed on schedule for both TFPS installed at RAAF Townsville. Synthetic Training Device Initial Operating Permit achieved for both TFPS in **April 2016.** This risk has been retired.
The delivery of **ASE** support systems (In-Country Reprogramming (ICR)) may be affected by delivery delays in leading to an impact on the scheduled FMR.	**US Army is in contract for the antenna redesign for the APR 39 ICR and delivery is expected by 30 September 2016. The Common Missile Warning System ICR is now the subject of an upgrade to maintain alignment with the US Army configuration and is planned to be transferred to Project Land 4502 Phase 1 as an FMR deliverable under that MAA.** **The risk of late delivery of the APR 39 ICR remains rated medium.**

The maintenance of Aircrew Orders, Instructions and Publications (OIP) may be affected by overtasking of extant resources leading to an impact on continuing airworthiness and timely maturity of the Australian CH-47F AIS.	Directorate of Aviation Capability Management (DACM) Medium Lift Helicopter (MLH) manning has been supplemented by C Squadron allowing for Edition 1 to be released in April 2015 and Edition 2 to be on track for AMTC. **Plan successfully executed and a mature aircrew OIP set was available in support of AMTC SR in 17 November 2015. Following issue of AMTC SR in 18 December 2015 maintenance of aircrew OIP transitioned to the running system under the position of a Staff Officer Grade 1 responsible for standards within the Operational Airworthiness section in Aviation Branch of HQ Forces Command. This risk has been retired.**
AMTC/IOC may be affected by delays in the delivery of Multi-Year 2 (MYII) Interactive Electronic Technical Manuals (IETM) leading to an impact on maintenance supportability.	Significant pre-emptive work is occurring to reduce the turn around time required once the US Army release the Draft IETM as well as improvements to the current Letter of Authorisation (LOA) as a fall back plan. Pre-review of the draft indicates a good product that should be workable until authorised version is released in September/October 2015. Reliant on US Army with no ability to accelerate their schedule. **IETM training in September 2015 identified some changes required in the LOA and a revised LOA was released to BDA and the Unit later in the month. This risk has been retired.**
The provision of crashworthy passenger seating will be affected by delays in both the Main Cabin Upgrade (MCU) and US Army Crash Resistant Troop Seat (CRTS) programs leading to an impact on cost or schedule.	**With no product on the market, a crashworthy passenger seating solution was commissioned for the CH-47D model but failed due to manufacturing delays. The plan was to have a mature product developed and tested in the CH-47D before it was withdrawn from service. This seating would have been modified to fit the CH-47F model under this project but the remaining development has also transferred to the project. The continuing development of the crashworthy passenger seating will leverage off the design work already completed and funded from AIR9000 Phase 5C as it is not feasible to wait for the US Army to develop a solution** **This risk is rated medium to high due to the developmental nature of this seating solution.**
The delivery of an acceptable sustainment training plan may be affected by availability of required training devices leading to an impact on schedule and capability.	Direction to acquire training aids in support of ongoing CH-47F Trade training was confirmed to be within scope of the project in June 2015. Cargo Helicopter Management Unit (CHMU) can now progress activities to acquire necessary equipment through US Army and/or Direct Commercial Sales (DCS).

The development of technician Training Management Plans TPS may be delayed due to limited Subject Matter Expert (SME) availability leading to an impact on schedule and capability.	Options to increase manning and support have been investigated and progress will be closely monitored. **A senior Technician was employed under the Army Aviation Training and Training Support contract to author materials to finalise development. This development work is currently on schedule and the technician is on contract until completion.** **This risk has been retired.**
The currency of ADF's CH-47F aircraft publications may be affected by new restrictions on US Department of Defense (DoD) websites leading to an impact on capability and compliance.	The 'pull' system of US Army publication support has always been a concern; this was escalated when US DoD websites changed their restrictions denying ADF members in Australia access to see when publication updates are released in order to request the update. Limited support from US Army and ADF Supply Liaison Officer (SLO) are not sufficient mitigation. A US Army Aviation and Missile Command (AMCOM) Liaison Officer **was being investigated as a permanent solution in Australia but is no longer being pursued due to lack of value for money. CHMU will continue to ensure regular technical assistance visits are conducted to ensure document configuration alignment is maintained.** **Risk will remains rated high but will be managed through planned regular alignment visits.**
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	**N/A**

5.2 Major Project Issues

Description	Remedial Action
Inadequate performance in project management of the FMS case by the US Army is currently impacting on cost and schedule for the CH-47F Mission and Support Systems and may also impact on capability and reputation if this issue is not appropriately managed.	Continued performance monitoring of US Army project management efforts by the in country ADF **Engineering** Liaison Officer. Increased overseas travel to enable greater level of direct interaction between ADF and US Army. Maintain Resident Project Team, co-located with US Army implementing organisation to provide further oversight. Increased ADF oversight through monthly telecon meeting between Directors, quarterly Interim Program Reviews and establishment of specialist Integrated Product Teams has been effective. US Army team have temporary measures in place to mitigate. This issue has been further treated by the location of a Project Liaison Officer for Project Land 4502 Phase 1 in the US in addition to the Engineering Liaison Officer.

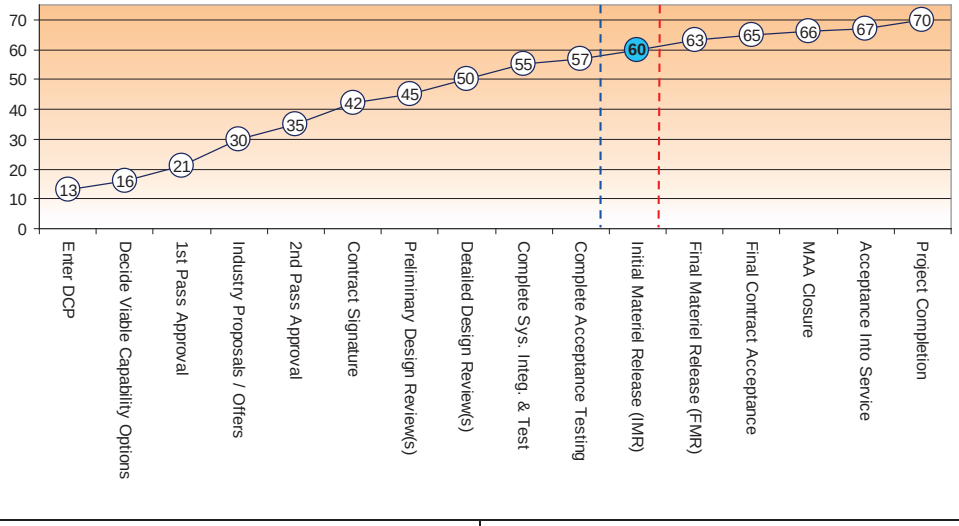
Delays to the commencement of the Parliamentary Standing Committee on Public Works review and approval process for the construction of maintenance facilities at 5 Aviation Regiment Townsville has resulted in an overlap between CH-47F Introduction into Service and the facilities construction phase. This issue will impact on the efficient and effective Introduction into Service of the CH-47F and may impact the schedule to IOC.	The Parliamentary Standing Committee on Public Works sat on 22 May 2014 and construction commenced in December 2014 based on a Parliamentary Expediency Motion in July 2014. Significant work between DMO, Army and Defence Support and Reform Group has developed robust decanting plans to minimise effect of construction on the operational unit and project transition activities. DMO upgrading some existing unit facilities as temporary work areas during the transition and until the facilities program is complete. The project is no longer a stakeholder in the facilities upgrade which is being managed by **E&IG** and Headquarters Forces Command.

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	9	8	**9**	8	**9**	**9**	**61**
	Explanation	• **Schedule:** Some materiel and support systems remain to be delivered, however the project remains confident that FMR will be achieved in January 2017. • **Cost:** FMS commitments have gained significant clarity and almost all associated procurement contracts have been awarded and costs determined. • **Technical Understanding: Completion of New Equipment Training (NET) has ensured all personnel are qualified on the CH-47F to maintain and operate the platform. In addition the increased technical understanding is reflected in the high availability and hours flown on the aircraft since completion of NET.** • **Technical Difficulty:** Conduct of maturing of systems coupled with recent CH-47F training undertaken by project staff with OEM have increased confidence in the management of technical issues that arise. • **Commercial: Nearly all materiel required to be delivered via the Foreign Military Sales case has been shipped. US Government and Boeing have been transparent regarding pricing and delivery schedules throughout.** • **Operations and Support:** CH-47F is currently being supported under CA15 Materiel Sustainment Agreement. Materiel transition process is **transitioning** and support arrangements are well advanced.							



2014-15 MPR Status - - - -	2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Whilst the FMS program affords a number of advantages, it should be recognised that the transfer of a significant majority of ADF Project Management functions to the US Government implementing agency and the weak bargaining position of the Commonwealth, increases the project's exposure to risk (technical, schedule and cost). The resultant level of risk and complexity is often understated and the level of Commonwealth contract management involvement and oversight is very low in comparison to that mandated for other forms of procurement such as Direct Commercial Sale contracts. The early establishment of a robust project contract management regime between the project office and US Government implementing agency is essential to ensure an adequate level of contract management oversight.	Contract Management
A reasonable presence of project staff in the US is required for large or technically complex FMS procurements to enable the Commonwealth adequate insight, influence and progress reporting of the US Army and major OEM activities. In-country presence is required prior to Government second pass approval, particularly during FMS case development and negotiation.	Resourcing
Project Government approval schedules are independent to, and can be out of sync with military posting cycles. This can create significant extended vacancies within the Project workforce following Government Second Pass approval, including key positions such as Project Director and Project Manager.	Resourcing
The recruitment process lead times for candidates not already within the ADF or Australian Public Service can create significant extended vacancies within the Project workforce.	Resourcing
Where replacement capabilities are sought, significant synergetic benefits can be achieved through combining or co-locating the acquisition project team with the extant in-service support organisation.	Resourcing

Recognition of prior certification of MOTS equipment by other airworthiness and technical regulatory authorities should be maximised where possible in order to minimise technical and schedule risk. Early ADF regulator involvement in the formal recognition process is considered essential.	Off-the-shelf Equipment
Supporting science and technology outcome requirements will continue to evolve throughout the Project. These requirements need to be reviewed and updated regularly to ensure they remain relevant in the dynamic project environment.	Requirements Management
The application of US Government contingency is not specifically disclosed to the Commonwealth in a Letter of Offer and Acceptance, therefore project cost estimates provided to Government will typically also include Commonwealth-estimated contingency on each of the major items of supply, on top of US Government contingency. The overall result is that the Commonwealth has excess contingency to what was reasonably required to fulfil the project. For MOTS procurements via FMS, the Commonwealth internal contingency provision should be decreased in recognition that the US Army estimates already include a contingency provision.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	RADM Tony Dalton **(to Oct 15)** **MAJGEN Andrew Mathewson (Oct 15 to current)**
Branch Head	BRIG Andrew Mathewson **(to Oct 15)** **BRIG Anthony McWatters (Oct 15 to current)**
Project Director	COL Jeremy King
Project Manager	LTCOL David Lynch

Project Data Summary Sheet[135]

Project Number	**JP 9000 Phase 7**
Project Name	**Helicopter Aircrew Training System**
First Year Reported in the MPR	2015-16
Capability Type	Replacement
Acquisition Type	Australianised COTS
Service	Australian Army and Royal Australian Navy
Government 1st Pass Approval	February 2007
Government 2nd Pass Approval	August 2014
Total Approved Budget (Current)	$487.6m
2015–16 Budget	$76.2m
Project Stage	Preliminary Design Review
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

JP (AIR[136]) 9000 Phase 7 will provide a new Helicopter Aircrew Training System (HATS) to prepare Navy and Army aircrew for conversion to operational aircraft. JP 9000 Phase 7 will replace the current systems based on Squirrel and Kiowa helicopters.

The project will deliver a total aircrew training solution based around 15 Airbus EC135T2+ helicopters, three Thales Flight Simulators and numerous other synthetic training devices, together with system support and joint delivery for an initial award term of approximately eight years, with further optional award terms of three years recurring.

1.2 Current Status

Cost Performance

In-year

The Year End expenditure of $68.4m represented an underspend of $7.8m against a budget of $76.2m. The Year End variance resulted from slippage of exit dates into 2016-17 for Milestone Operator Training Draft Training Management Plan ($2.6m) and Operating Support Task Analysis Readiness Review ($1.3m), combined with lower than forecast Price Variation (PV) ($2.5m) on invoices paid in June, and other delayed PV invoices due to late publication of foreign indices. There is also slippage of Integrated Support Contract (ISC) Milestones into 2016-17 ($1m), which are dependant on Boeing Defence Australia (BDA) deliverables.

135 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

136 HATS was originally approved as an AIR project but since second pass it has been managed and reported as a Joint project. For finance reporting purposes the title 'AIR' must be retained. The remainder of this report will refer to JP 9000 Phase 7.

Project Financial Assurance Statement

As at 30 June 2016, JP 9000 Phase 7 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency during the financial year.

Schedule Performance

Since completion of the Integrated Baseline Review one month late in June 2015, schedule performance continued to degrade. The Systems Requirement Review was completed four months late in January 2016 and the System Definition Review is forecast to be completed in September 2016, seven months late.

Stop Payment was initiated when Systems Requirement Review did not occur as contracted yet payments resumed on completion in January 2016. Two further Stop Payment Milestones were not achieved. In each case, due to BDA's improving performance, Defence reserved its rights and did not invoke Stop Payment.

At Commonwealth direction BDA developed a Remediation Plan which is intended to ensure the capability milestones 'Piloting Course Readiness – Pilot' and 'Final Acceptance' are delivered as contracted. BDA has repeatedly stated their commitment to achieving these milestones on time and this commitment is evident in the level of management oversight and resources being applied.

A revised Contract Master Schedule was delivered to the Commonwealth in late April 2016 which reaffirmed BDA's commitment to deliver the capability on time.

Materiel Capability Delivery Performance

The first three helicopters have been delivered to Boeing in Nowra, NSW in March 2016. Flight Simulator deficiencies identified through testing are currently being rectified prior to installation.

The forecast delay to System Definition Review and pressure on some mission system delivery schedules continue to present a challenge. BDA has introduced requirements elicitation activities under the Remediation Plan, focussed on quality improvements, and has been transparent in sharing and addressing internal and subcontractor challenges.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

JP 9000 Phase 7 is intended to provide a rotary wing training capability for Navy and Army, to meet the future rotary training needs of the Australian Defence Force (ADF). The Project will deliver a system that encompasses live, synthetic and classroom aviation instruction to overcome the broadening gap between current rotary training systems and the advanced operational helicopters in the current and planned future ADF inventories.

The Project achieved Government First Pass approval in February 2007 and Second Pass approval in August 2014. Both Acquisition and Support Contracts were signed on 14 November 2014.

The Acquisition contract will deliver a total aircrew training solution based around 15 Airbus EC135T2+ helicopters, three Thales Flight Simulators and numerous other synthetic training devices. BDA is responsible for the development and set to work of a training delivery and management system which includes Training Management Plans based on Defence identified competencies and competency levels. Training development is being conducted in accordance with the Defence Training Model.

The Support Contract provides for system support and joint delivery for an initial award term of approximately eight years, with further optional award terms of three years recurring. The Support Contract is performance based with Key Performance Indicators relating to aircraft, simulator and instructor availability and includes a Continuous Improvement and Efficiency Program.

Uniqueness

As a direct capital acquisition utilising ASDEFCON developed performance based contracts there are no truly unique aspects to the project.

Major Risks and Issues

The project is managing one high level issue and monitoring one high level risk. The high level issue is that delivery, by Navy, of the Multi-role Aviation Training Vessel (MATV) is going to be delayed, leading to an inability of the Commonwealth to meet contracted availability requirements. This issue is being managed through early disclosure to the contractor and re-planning trial activities to accommodate the delay. The high level risk being monitored is consequential to the above, in that the contractor will not be able to provide a number of deliverables that rely on the MATV being available. This risk will eventuate if the re-planning is not able to accommodate the delay.

Other Current Sub-Projects

The HATS project influences the following aircraft platforms by providing aircrew training to feed into their operational flying conversions:

- AIR 9000 Phase 8 Future Naval Aviation Combat System Helicopter
- AIR 9000 Phase 2/4/6 Multi-Role Helicopter
- AIR 9000 Phase 5C Additional Medium Lift Helicopters
- AIR 87 Phase 2 Armed Reconnaissance Helicopter

The following projects directly influence HATS:

- MATV (Maritime Aviation Training Vessel)
- J 0028 HATS Facilities Project

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Feb 07	Original Approved		13.6	1
Nov 13	Real Variation – Transfer	(3.2)		2
Jun 14	Real Variation – Transfer	(1.6)		2
Sep 14	Government Second Pass Approval	475.0		
			470.2	
Jul 10	Price Indexation		2.4	3
Feb 16	Exchange Variation		1.4	
Jun 16	**Total Budget**		487.6	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure - Boeing Defence Australia (BDA) - Acquisition Contract	(32.3)		
	Contract Expenditure - BDA - Support Contract Phase In	(0.7)		
	Contract Expenditure – Jacobs Australia	(0.8)		
	Other Contract Payments/Internal Expenses	(10.9)		4
			(44.7)	
FY to Jun 16	Contract Expenditure - BDA - Acquisition Contract	(62.3)		
	Contract Expenditure - BDA - Support Contract Phase In	(2.9)		
	Contract Expenditure – Jacobs Australia	(2.5)		
	Other Contract Payments/Internal Expenses	(0.7)		5

		(68.4)	
Jun 16	**Total Expenditure**	(113.1)	
Jun 16	**Remaining Budget**	374.6	

Notes	
1	The project's original budget amount prior to achieving Second Pass Government approval.
2	Transfer of budget to Defence Support and Reform Group for Facilities Activities.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $2.4m, applied only to the portion of the budget approved at First Pass. From July 2010 all project budgets were approved by Government in out-turned dollars.
4	Other Expenses mainly comprised of Pre Second Pass expenses: Contractor Support ($5.6m), Salaries ($2.9m), Legal ($1.5m), Travel and Training (0.9m).
5	Other expenditure comprises: Contractor Support ($0.4m), and Travel and Training (0.3m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Defence's Explanation of Material Movements
66.8	66.6	76.2	PBS – PAES: No major movement between the PBS and PAES figures. PAES – Final Plan: The increase of $9.6m was due to acceleration of an Aircraft related Milestone for $13.6m, offset by reprogramming and slippage of other Milestones ($3.3m) and lower than forecast Price Variation ($0.7m).
Variance $m	(0.2)	9.6	Total Variance ($m): 9.5
Variance %	(0.2)	14.4	Total Variance (%): 14.2

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(7.8)	Australian Industry	Year End variance resulted from slippage of exit dates into 2016-17 for Operator Training Draft Training Management Package ($2.6m) and Operating Support Task Analysis Readiness Review ($1.3m), combined with lower than forecast Price Variation (PV) ($2.5m) on invoices paid in June, and other delayed PV invoices due to late publication of foreign indices. There is also slippage of ISC Milestones into 2016-17 ($1.0m), which are dependant on BDA deliverables.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
76.2	68.4	(7.8)	Total Variance	
		(10.2)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
BDA – Acquisition	Nov 14	311.6	300.6	Firm	ASDEFCON	1
BDA – Support Phase In	Nov 14	68.6	65.3	Firm	ASDEFCON	1
Jacobs Australia ISC	Dec 14	10.2	12.1	Firm	ASDEFCON	1

Notes	
1	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining

	commitment at current exchange rates, and includes adjustments for indexation (where applicable).			
Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
BDA – Acquisition	Various	Various	15 EC 135 Helicopters 3 Full Flight Simulators 17 associated synthetic training devices 4 Training Management Plans Training Management System	
BDA Support Phase In	N/A	N/A	System support and joint delivery for an initial award term of approximately 8 years.	
Jacobs Australia ISC	N/A	N/A	Provide specialist engineering support, integrated logistics and training design.	
Major equipment received and quantities to 30 Jun 16				
Nil				
Notes				
	N/A			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements	System Requirements Review	Sep 15	N/A	Jan 16	4	1
	System Definition Review	Feb 16	N/A	Sep 16	7	2
Critical Design	Aircraft Replica Trainer	Jan16	Nov 16	Mar 17	14	3
Notes						
1	Variance due to slow ramp up of Contractor workforce and scheduling/resource issues identified through the Integrated Baseline Review and complimentary Schedule Compliance Risk Assessment Methodology (SCRAM) review.					
2	Additional delay to System Definition Review resulted from BDA remediation and re-planning efforts, including emergent issues identified through remediation activities.					
3	Hardware design activity is only applicable to the ART, as all other aspects are predominantly COTS devices/technology. Design review for ART is a combined preliminary and critical process. A Contract Change Proposal was signed in November 2015 to move the ART Design Review so that it logically occurred after the System Design Review.					

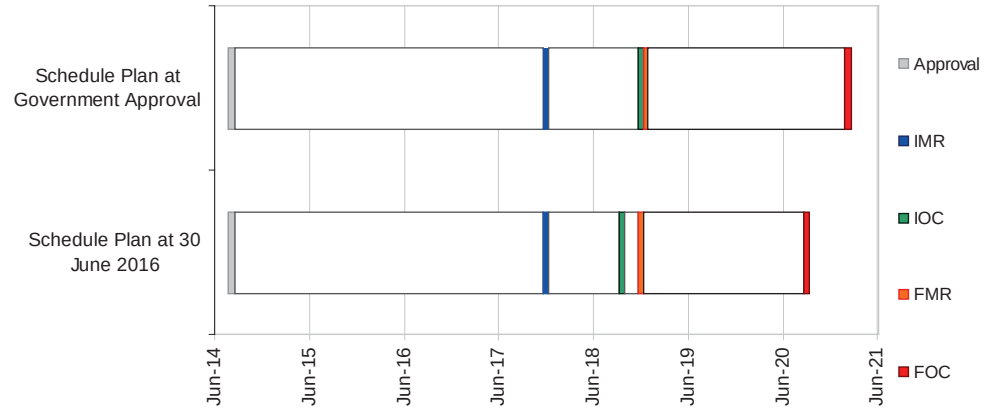
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	Piloting Course Readiness – Pilot	Dec 17	N/A	Nov 17	(1)	
Acceptance	Final Acceptance	Mar 19	N/A	Feb 19	(1)	
Notes						
	N/A					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 17	Dec 17	0	
Initial Operational Capability (IOC)	Dec 18	Sep 18	(3)	
Final Materiel Release (FMR)	Dec 18	Dec 18	0	
Final Operational Capability (FOC)	Dec 20	Sep 20	(3)	

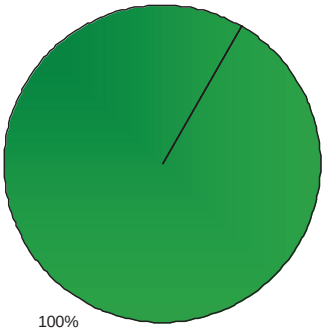
Notes
N/A



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The project expects to meet capability requirements as expressed in the MAA and supporting suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	• 15 helicopters, 2 Full Flight Simulators, 2 Tactical Part Task Trainers, 2 Virtual Reality Trainers (VRT), 1 Marshalling VRT, 1 Helicopter Underwater Egress Training conversion module, 1 Aircraft Replica Trainer and 10 Desktop Trainers ready to	Not yet achieved

	be employed for HATS Piloting courses. • Associated Mission, Support and Training Systems.	
Final Materiel Release (FMR)	• IMR deliverables, plus one additional full flight simulator and transition of all HATS acquisition products (Mission and Support Systems) and materials to their in-service support agency.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
BDA failure to meet contract milestones as a result of MATV schedule slippage. MATV is being provided as Government Furnished Equipment. If this vessel is not available at the scheduled time, the contractor will not be able to meet subsequent milestone deliveries.	1. Early and continuing engagement with MATV Project. 2. Early and continuing engagement with Aviation Capability Implementation Team (AvnCIT). 3. Advise BDA at earliest opportunity of MATV First of Class Flight Trial (FOCFT) dates and work in a collegiate manner to mitigate slip in timings. 4. Set behaviours around ongoing Support contract rather than transfer any potential slip in Acquisition contract.

5.2 Major Project Issues

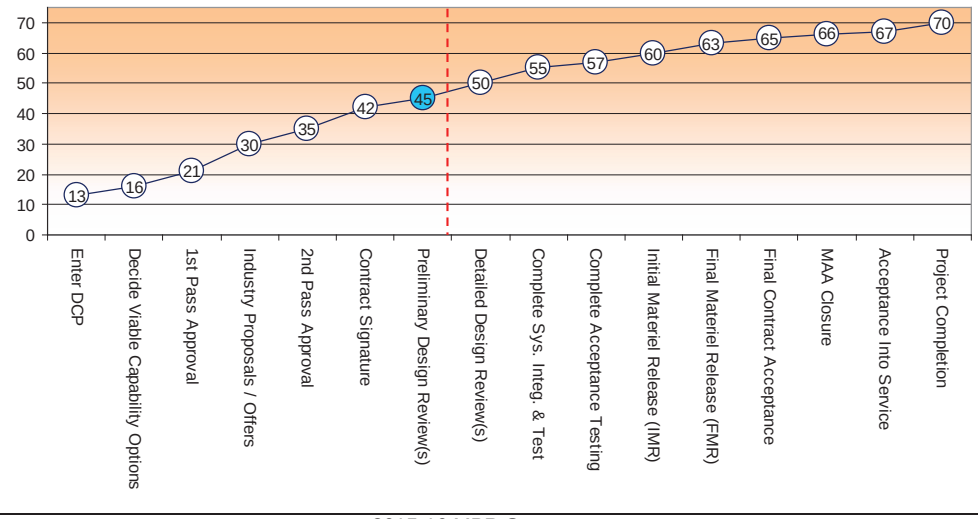
Description	Remedial Action
Availability of MATV for EC135 FOCFT in accordance with the HATS schedule. MATV is being provided as Government Furnished Equipment. If this vessel is not available at the scheduled time, Defence will not be able to conduct contractor supported FOCFT.	1. Early and continuing engagement with MATV Project (PMSG). 2. Early and continuing engagement with AvnCIT. 3. Investigation into graduated piloting course validation that enables FOCFT operations to be conducted at latest possible date.

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	6	6	6	7	6	7	7	45
Preliminary Design Review	Project Status	7	7	6	7	6	7	7	47
	Explanation	• **Schedule:** Performance since implementation of the Remediation Plan has aligned with the aggressive schedule and support achieving the milestone dates which are consistent with the original schedule. The project continues to monitor schedule performance closely. • **Cost:** The project is 18 months into a fixed price contract.							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Where a project has a long gestation period, for whatever reason, the Sponsor and Capability Manager must be closely engaged to ensure the requirements set maintains relevance over time.	Requirements Management
Tenderer/Contractor 'off-the-shelf' claims need to be tested as thoroughly as possible, as soon as possible in the project lifecycle. This requires the availability of, or access to, appropriate and engaged subject matter experts early.	Off-the-Shelf Equipment
Conduct of SCRAM activities during contract negotiation and again prior to IBR were first trialled in this Project, yet the schedule risks were realised very early in the Project. Early use of the SCRAM activity is valuable (risks identified early) and the process should be matured to support selection/negotiation and to baseline activities.	Schedule Management
This Project is one of the first to implement the Integrated Support Contractor (ISC) model to execute traditional Project Office roles. The ISC Contract structure was closely aligned to and reliant on the Prime Contractor's Contract Master Schedule (CMS). Initial CMS deliverables had quality issues manifesting significant second order effects on the ISC contract. Evolution of the ISC construct should recognise risks in lock-stepping the ISC delivery so closely to the Prime Contractor CMS.	Resourcing
The ASDEFCON suite of contract templates are a good initiative for capturing lessons learned from years of project delivery. In endeavouring to capture all lessons the templates have become voluminous with significant inter-relationships. This can make contract execution, and in particular contract changes, very difficult as even a small change in one area may unravel other relationships within the contract suite.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	RADM Anthony Dalton (to Oct 15) MAJGEN Andrew Mathewson (Oct 15–current)
Branch Head	CDRE Colin Lawrence (Jul 15–Dec 15) CDRE Scott Lockey (Dec 15–current)
Project Director	Mr Stuart Harwood
Project Manager	CMDR Anthony Savage (Jul 15–Jan 16) LCDR Darren Murphy (Feb 16–current)

Project Data Summary Sheet[137]

Project Number	**JP 2072 Phase 2A**
Project Name	**BATTLESPACE COMMUNICATIONS SYSTEM**
First Year Reported in the MPR	2012-13
Capability Type	Replacement
Acquisition Type	MOTS
Service	Joint Services (Army lead)
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 11
Total Approved Budget (Current)	**$464.6m**
2015-16 Budget	**$22.2m**
Project Stage	Acceptance Into Service
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

Joint Project 2072 Battlespace Communications System (Land) (BCS(L)) Phase 2A is delivering **approximately 11,000** Combat Radios and ancillary equipment to replace the Wagtail, Pintail and Raven fleets for the majority of the Land Force. Phase 2A is also establishing the mature support system for the new generation Combat and Tactical Data Radios.

1.2 Current Status

Cost Performance

In-year

The project spent $24.2m against a budget of $22.2m. The overspend of $2.0m was due to the contractor achieving milestones ahead of schedule for the acquisition of data radios for Army, this has been somewhat offset by deferring an acquisition of ancillaries whilst nodal designs are finalised

Project Financial Assurance Statement

As at 30 June 2016, Project JP 2072 Phase 2A has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

137 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

Contract Signature (Acquisition) was achieved in March 2012. The first delivery of Phase 2A Combat Radios and ancillaries into service was achieved in November 2012. Contract Signature (Support) was achieved May 2015 **(Harris Mature Support Contract)** for Combat Radio, and forecast for October 2015 for Tactical Data Radio **(Raytheon Mature Support Contract signed December 2015)**. Initial Materiel Release (IMR) and Initial Operational Capability (IOC) were achieved on 30 April 2014. While the IMR and IOC signatures were delayed by seven months due to the acceptance process, the rollout of the capability to units was unaffected.

Preliminary Design Review was achieved in March 2015 establishing a functional baseline from the Functional Performance Specification document. In order to achieve Final Materiel Release in December 2016 full Design Acceptance is required of the six dismounted nodes made from the radio equipment and components introduced into service. This has been the major focus for schedule performance and will exist until Design Acceptance is achieved.

Materiel Capability Delivery Performance

The radio equipment and components that form this capability were already introduced into service under JP 2072 Phase 1 as bearers for the Battle Management System (BMS); Phase 2A extends the utility of the radio equipment for dismounted voice communications. The rollout to end users is effectively complete according to the approved Basis of Issue (the schedule which identifies equipment entitlements by unit); with some specialised ancillaries still being finalised and/or pending technical certification prior to release.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Program Overview

- The overall JP 2072 program, BCS(L), will provide an integrated communications system to support forces deployed in the land environment through a combination of new equipment to replace ageing radio fleets and enhancements/upgrades to current communications systems. Phase 1 provided communication systems for integration into the Battle Group and Below Command, Control and Communications capability being delivered in conjunction with LAND 75 and LAND 125 (the three projects commonly known as LAND 200).

Phase 2A

- Phase 2A is continuing the rollout of products selected during Phase 1 to primarily provide voice services to dismounted users. Phase 2A will also establish a mature support system for ongoing sustainment of the Phases 1 and 2A materiel systems and contribute to ongoing Prime System Integration activities to evolve the BCS(L) design. Investigation and/or market survey activities will be conducted to specify and identify products for potential procurement in future phases.

Acquisition

- The primary objective of Phase 2A is to replace and enhance the existing dismounted voice communications capability currently provided by Wagtail, Pintail and Raven High Frequency (HF) and Ultra High Frequency/Very High Frequency (UHF/VHF) radios for Army, Air Force and Navy units. Phase 2A is also providing equipment for mounted (vehicle) installation and base station (RAAF) however the integration of mounted equipment into vehicles is outside the scope of JP 2072.
- To achieve this objective, Phase 2A maximises commonality and minimises ongoing support costs through delivery of 'more of the same' of the Phase 1 capability including: radios, ancillaries, cryptographic management equipment, load carriage equipment, training and interim support services.

In-Service Support Contract

- Under Phase 1, a three year interim support contract for the support of acquired materiel was executed early 2011. The interim support contract contained provisions for maintenance, training and capability introduction services from both Harris Corporation and Raytheon Australia as the Original Equipment Manufacturers. The mechanism for interim support consisted of Field Service Representatives, plus support staff and three facilities in Southern Queensland at Newstead, Pinkenba (Harris) and Amberley (Raytheon). The mature support acquisition strategy aligns with this interim support model due to

United States (US) International Trade in Arms Regulations (ITAR) constraints.

- Phase 2A enhanced the contract with Harris Corporation to include management and storage of the increased equipment order. Phase 2A **has established** mature support contracts for the ongoing sustainment of the Phases 1 and 2A equipment **with Harris Communications (Australia) and Raytheon Australia**. Phase 2A will also transition management of the mature support contracts to sustainment by Battlespace Communications Operations Group.

Uniqueness

The radios delivered in Phase 2A are subject to US ITAR restrictions and other handling and management requirements. This has limited the options for sourcing of equipment suppliers; required change to the methodologies for supporting and maintaining equipment; affected the transfer of equipment into country and introduced different end user skills, training and working requirements.

Phase 2A procured 'more of the same' radios as originally delivered in Phase 1 and originally defined for interoperability with the BMS. However, the configurations of Phase 2A 'Nodes' or how the equipment is employed needed to be defined prior to achievement of IOC for the BMS**,** therefore changes to the configurations or operation of BMS and communications equipment may have follow on effects to the systems being rolled out under JP 2072. The establishment of mature support therefore incorporates provision for mass upgrades of equipment in minimal timeframes.

Unlike Phase 1, the equipment delivered under Phase 2A is mainly for use in a standalone voice communications role, which requires different ancillaries such as load carriage pouches, headsets and battery chargers. Many of these items required amendment/inclusion into existing design acceptance without affecting fundamental design or introducing new risks.

Major Risks and Issues

While the equipment components are already introduced into service, the specific configurations or 'Nodes' for dismounted voice communications roles are subject to user requirements validation with Army and RAAF. This is reflected in the capability rollout progressing on schedule while the acceptance process for IMR was delayed. In lieu of a formal design acceptance prior to equipment selection, it is expected that this user validation of the baselined Nodes may result in some reconfiguration (limited within approved scope) to address fitness for purpose considerations. **The full extent of this will not be known until Design Acceptance has been achieved (scheduled for late October 2016), however an increased confidence level was achieved through the recent update at the Project Management Steering Group Meeting held on 28 April 2016.**

The project is introducing a high volume of equipment that needs to be sustained in addition to continuing the sustainment of legacy fleets until such time as the legacy fleets are withdrawn. This pressure creates risks to the supportability of legacy, current and future phases by the System Program Office.

The project has very high exposure to risk of key personnel loss and with limited resources is increasingly reliant on contractor support to achieve approved scope.

Other Current Sub-Projects

JP 2072 Phase 1, BCS(L): The initial phase of the JP 2072 program, this project is delivering communications bearers to the BMS, and enhancing communications for Australian Defence Force Land elements through the development of an holistic battlespace communications architecture for the Land environment.

LAND 2072 Phase 2B, BCS(L): Phase 2B will provide the BCS(L) deployed, wide-band backbone by replacing and enhancing the existing Battlefield Telecommunications Network (BTN) capability within Army and Air Force. The end-state is a BTN which provides greater capacity, effective switching, wireless and wired network infrastructure supporting secure voice, data and video services. Phase 2B will also integrate the Second Generation Deployable Local Area Networks, including servers and user terminals, as well as deliver a Terrestrial Range Extension System to extend the range of Phase 1 networks.

LAND 2072 Phase 3, BCS(L): This project will introduce into service a digital communication backbone for land based elements of the Australian Defence Force (ADF) and their enabling elements. The capability is aligned with LAND 75 Phase 4 as part of a second tranche of land networking with the capability being a vital function of the BMS. This phase will enhance the digital communications backbone delivered under previous phases, expand the provisioning to additional land forces and ADF elements, and provide a new capability to support the distribution and data management of the land Battlespace. Phase 3 particularly supports Command and Control, Communications and Battlespace awareness across all Land operations. Only Phase 3 Work Package A has achieved Second Pass Approval.

Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Nov 11	Original Approved		436.4	
Jun 16	Exchange Variation		**28.2**	
Jun 16	Total Budget		**464.6**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Harris Corp – Acquisition	(240.2)		
	Contract Expenditure – Harris Corp – Follow on	(19.2)		
	Contract Expenditure – Harris Corp – Support	(17.9)		
	Contract Expenditure – Harris Corp – Mature Support	(7.0)		
	Other Contract Payments / Internal Expenses	(15.4)		1
			(299.7)	
FY to Jun 16	Contract Expenditure – Harris Corp – Support	**(3.0)**		
	Other Contract Payments / Internal Expenses	**(21.2)**		2
			(24.2)	
Jun 16	**Total Expenditure**		**(323.9)**	
Jun 16	**Remaining Budget**		**140.8**	

Notes	
1	Other expenditure comprised: **Attrition Spares,** travel, introduction into service training expenses, contractor support and JP 2072 Prime Systems Integrator capability studies.
2	**Other expenditure comprises: Harris Corp Standing offer (5.1), Test Sets (4.3), Enhanced Position Location Reporting System (EPLRS) Radios (2.9), Contractor support (2.9), training racks (2.8), Attrition Spares (2.4), freight (0.4) travel (0.3) and minor procurements (0.2).**

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
35.2	**26.9**	**22.2**	**PBS – PAES: Reduction in requirements/early delivery of ancillaries and spares to support Combat Net Radio Equipment. PAES – Final Plan: Delays in achieving design approval for communications nodes resulted in delays in acquiring ancillaries required for the revised design.**
Variance $m	**(8.3)**	**(4.6)**	Total Variance ($m): **(13.0)**
Variance %	**(23.6)**	**(17.3)**	Total Variance (%) **(36.8)**

2.2 B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		2.9	Australian Industry	Raytheon achieved milestones ahead of schedule for the acquisition of data radios for Army, this has been somewhat offset by deferring an acquisition of ancillaries whilst nodal designs are finalised.
			Foreign Industry	
			Early Processes	
		(1.0)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
22.2	24.2	2.0	**Total Variance**	
		(8.8)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Harris Corporation (Acquisition)	Jan 12	226.3	240.1	Firm	ASDEFCON	1, 2
Harris Corporation (Support)	Mar 12	14.6	21.0	Firm	ASDEFCON	1, 2
Harris Corporation (Follow on)	Oct 12	12.2	19.**3**	Firm	ASDEFCON	1, 2
Harris Corporation (Mature Support)	May 15	6.6	7.0	Firm	ASDEFCON	1, 2, 3

Notes

1	The contract with Harris Corporation already established under Phase 1 was utilised to order the Phase 2A supplies. Two key orders were placed under the standing offer provisions of this contract to acquire the Phase 2A equipment and extend the Phase 1 interim support to Phase 2A equipment, including: 1. Order for acquisition of Phase 2A equipment; 2. Order for extension of interim support to cover Phase 2A equipment. Harris Corporation utilise US expatriate personnel and an Australian Subsidiary combined to meet requirements; and 3. Follow-on orders placed against the same contract with Harris, including Waveform upgrade and ancillaries including radio pouches/backpacks and waterproof variants.
2	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
3	The total value of this mature support contract is $69.8m, with $7.0m initial costs funded by the project and the remaining expenditure to be funded out of the ongoing sustainment budget.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Harris Corporation	11,638	11,638	Combat Net Radios, ancillaries and interim support.	1

Major equipment received and quantities to 30 Jun 16

11,638 radios (100 per cent of total Phase 2A radios) comprising:

- 9,157 AN/PRC 152 VHF/UHF radios; and
- 2,481 AN/PRC 150 HF radios.

Notes	
1	Figures include number of radios and exclude number of ancillary items (e.g. antennas, headsets, batteries etc).

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	N/A	N/A	N/A	N/A	N/A	1
Preliminary Design	N/A	N/A	N/A	N/A	N/A	1
Critical Design	N/A	N/A	N/A	N/A	N/A	1
Support System Detailed Design	N/A	N/A	N/A	N/A	N/A	1

Notes	
1	As Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1 there is no **manufacturing** design review.

3.2 Contractor Test and Evaluation Progress

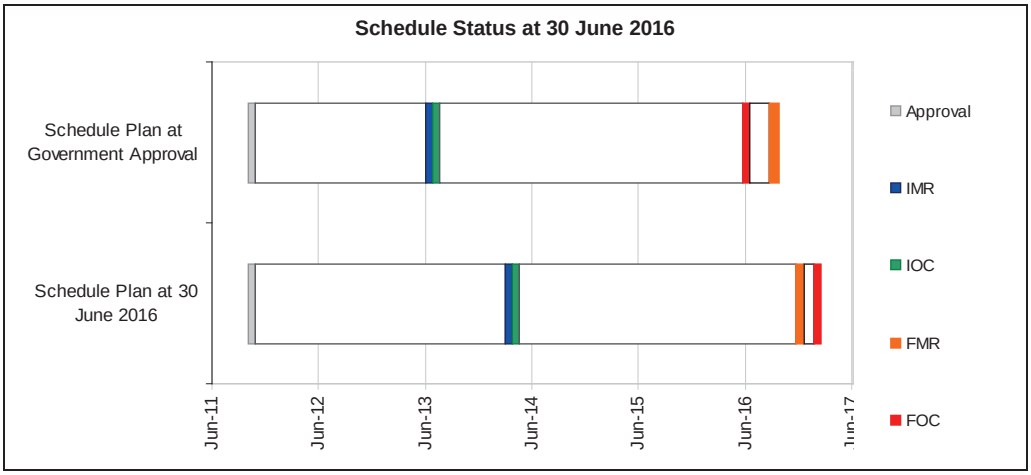
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	N/A	N/A	N/A	N/A	N/A	1
Acceptance	N/A	N/A	N/A	N/A	N/A	1

Notes	
1	As Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1. **Both Harris and Raytheon equipment come complete with full test and evaluation data based upon extensive testing within the Department of Defense (US) and has been given Technical Certification via Capability, Acquisition and Sustainment Group Engineers. Hence** there is no contractor test and evaluation. **Phase 2A will complete Design Acceptance where several combinations of equipment and components already given Technical Certification are approved as fit for purpose.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jul – Sep 13	Apr 14	7	1
Initial Operational Capability (IOC)	Jul – Sep 13	Apr 14	7	1
Final Materiel Release (FMR)	Jul – Sep 16	**Dec 16**	**3**	**2**
Final Operational Capability (FOC)	Apr – Jun 16	**Feb 17**	**8**	2

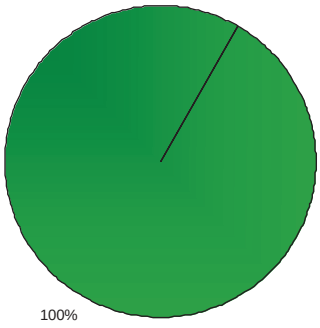
Notes	
1	Equipment was delivered on schedule to IMR units in March 2013, however Capability Manager declaration of IMR and IOC was delayed by extended user acceptance of supporting documentation.
2	**The forcast dates are under review and will be clarified following consultation with the Capability Manager after full Design Acceptance is achieved.**



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** Project is currently meeting capability requirements as expressed in the Materiel Acquisition Agreement (MAA) and supporting suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	IMR comprises the delivery of 1,332 radios and ancillaries to 7 Brigade and selected Training Establishments in accordance with Basis of Provisioning (BoP) to support Capability Manager IOC activities.	Achieved
Final Materiel Release (FMR)	Final delivery of 11,638 radios and ancillaries, development and provision of initial training in accordance with full JP 2072 Phase 2A BoP to support Capability Manager FOC activities. Further, the transition of the mature support contract to the support agencies. FMR is a future dated milestone forecast for **December** 2016, **however this forecast date will be clarified following consultation with the Capability Manager after full Design Acceptance is achieved.**	Not achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that transition of mature support to the sustainment organisation will be affected by its capacity to accept management of mature support contracts in addition to existing contracts for legacy fleets, leading to an impact on supportability.	Continue to work with the sustainment office to address emergent issues through a Transition Working Group. Provide JP 2072 resources as far as possible to assist optimal transition to sustainment. Communicate mature support management requirements to ensure new responsibilities understood whilst maintaining legacy contracts. **With both Mature Support Contracts in place and the Transition Working Group governing the transfer of responsibilities, this risk is now closed.**
There is a chance that loss/exit of key personnel within JP 2072 program will impact on Phase 2A core responsibilities due to limited project staffing.	Introduction Into Service was delayed as far as allowable within defined IMR and FMR timeframes to alleviate pressure on staff. Contractor personnel were/are being engaged (5 to date) and liaising with other projects for potential access to Integrated Support Contracts. Early transition of activities to sustainment being pursued as far as possible (eg involvement in establishing support contracts). Responsibilities shared to promote cross skilling and reduce reliance on key persons.
There is a chance that some Nodes need re-configuration to address fitness for purpose and safety considerations as part of Validation and Verification process.	Engagement with end users to determine intended/actual use and any deficiencies. Army and RAAF user requirements validation workshops were conducted with essential and desirable change requests documented for either: rectification of the nodes, or submission of enhancements to change approval process.
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

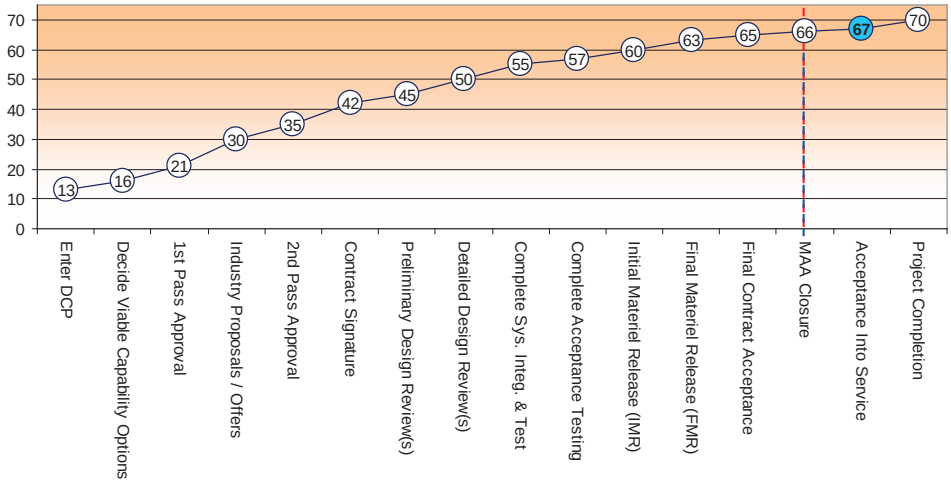
Description	Remedial Action
The rollout of equipment as Nodes (that were identified under LAND 200 pre-IOC) have been affected by the absence of formal design acceptance prior to Phase 2A equipment selection and rollout. This was reflected in the delayed declarations of IMR/IOC and risks to the Technical Certification schedule.	Some ancillaries were withheld from the planned IMR rollout to address issues, however there was no impact on the fundamental function of the capability. Preliminary Design Acceptance was delivered to ensure the safe use of equipment while the user workshops and Nodal Technical Certification process progressed to see the configurations completed. Note that all relevant equipment is already in service as components of other capabilities.

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Acceptance Into Service	Project Status	9	9	10	10	10	9	9	66
	Explanation	• Schedule: Rollout schedule was based on rate of equipment availability however was brought back to minimum MAA requirements due to lack of project resources to process and sustain equipment going into service.							



2014-15 MPR Status - - - -	2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
JP 2072 is required to provide extensive support and advice to other projects procuring or integrating communications equipment via JP 2072 contracts. New project approvals need to include adequate resources for integration and support of communications systems within their own platforms. The sustainment organisation will need to be prepared to provide program, engineering and logistics support beyond the completion of JP 2072 phases.	Resourcing
Phase 2A delivery of More of the Same equipment required Design Acceptance under Phase 1, which was not achieved. Provisional Design Acceptance was put in place however some minor ancillary equipment defined in the capability baseline was withheld due to fitness for purpose issues. New project approvals should consider the necessary design inputs to ensure they are in place before projects proceed and engineering scope then resourced appropriately.	Requirements Management
There was very limited detail on the levels of support agreed or articulated in the Capability Definition Documentation. Adequate support system was therefore not established in time for delivery of materiel. Future phases require the support system better defined prior to approval, and implemented earlier in the project lifecycle.	Requirements Management
The contracted Field Service Representative (FSR) teams have provided high quality service that has been well received by users and the Capability Manager. For example, in most cases it is more cost effective to locate/move FSR around to units than to send high volumes of equipment back to the Original Equipment Manufacturer facilities (domestic and international) for repairs or bulk upgrades. FSR have developed from an Introduction Into Service function into an increasing, ongoing support requirement for the foreseeable future.	Off-The-Shelf Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	**Mr Ivan Zlanbur (Acting Jul 15 – Sept 15)** **RADM Tony Dalton (Oct 15 – current)**
Branch Head	Ms Myra Sefton
Program Director	Mr Peter Henrick (**May 14–Feb 16)** **Vacant (Feb 16–May 16)** **Ms Caroline Stinson (May 16)** **Mr Bob Hutchinson (Jun 16–current)**
Project Manager	Mr Steve Wardle **(Sept 12–Jan 16)** **Mr Jason Cooke (Jan 16–current)**

Project Data Summary Sheet[138]

Project Number	**SEA 1442 Phase 4**
Project Name	**MARITIME COMMUNICATIONS MODERNISATION**
First Year Reported in the MPR	2014-15
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	Dec 10
Government 2nd Pass Approval	Jul 13
Total Approved Budget (Current)	**$456.0m**
2015–16 Budget	**$51.0m**
Project Stage	Preliminary Design Review
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

SEA 1442 Phase 4 will upgrade the communications capability in the **eight** Anzac Class Frigates and address communications system obsolescence in the Class, by modernising it with improved communications management, secure voice and tactical intercom, red/black switching, tactical radios and a high data rate line-of-sight capability. The project will also deliver support systems, a secondary Maritime Tactical Wide Area Network (MTWAN) Shore Gateway and upgrade the Anzac Combat System Trainer Communications Terminals.

1.2 Current Status

Cost Performance

In-year

This year the project has spent **$48.6m** of a budget of **$51.0m**. The **$2.4m underspend is largely due to Foreign Military Sales (FMS) savings (reduction in price of radios) resulting in payments being lower than forecasted, delays to ANZAC Alliance expenditure and project office support costs.**

Project Financial Assurance Statement

As at 30 June 2016, project SEA 1442 Phase 4 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has **not** applied contingency in the financial year.

138 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

Key milestones achieved so far include: MTWAN Secondary Shore Gateway; Prime Contract Integrated Baseline Review (IBR), System Definition Review (SDR) **and Preliminary Design Review (PDR)**. Initial Materiel Release (IMR) is forecast to be achieved as planned in June 2018.

Materiel Capability Delivery Performance

The MTWAN Secondary Shore Gateway has been delivered and is operational. The first Anzac ship capability with associated support systems is scheduled for delivery in June 2018.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

SEA 1442 (Maritime Communications Modernisation) is a multi-phased program that will modernise the Royal Australian Navy's (RAN) communications infrastructure. The preceding phase (Phase 3) delivered an initial MTWAN and Message Handling System to the RAN's Major Fleet Units.

SEA 1442 Phase 4 will address critical obsolescence problems affecting the communication systems in the RAN Anzac Class frigates. The modernised communications system (NewGen MCS) will be highly integrated and automated to deliver more agile and faster communication and reduce operator intervention. The project scope includes upgrade of various communications systems in the **eight** Anzac frigates, establishment of a training system at HMAS *Stirling* and a shore integration and test capability at the prime contractor's facility for in-service support, delivery of a secondary MTWAN shore gateway, and upgrade of the Anzac Combat System Trainer Communications Terminals.

The majority of individual equipment and sub-systems is either Military Off The Shelf (MOTS) or Commercial Off The Shelf (COTS). Some development is required and involves functionality enhancements and Australianisation of the MOTS and COTS. The main complexity is in bringing the sub-systems together as a highly integrated and automated system and installation in the ships, cognisant of existing weapons, sensors, emitters, and specific platform requirements.

Government Second Pass approval was achieved in July 2013. Prime acquisition and 5-year support services contracts were awarded to Selex ES Ltd in November 2013 following an open tender process.

Under the acquisition contract, Selex will: design, develop and install the NewGen MCS into the eight Anzac Class frigates; design, develop and install the support systems (training system and integration and test capability); and develop and deliver integrated logistic support products. The support services contract will become operative following acceptance of the first ANZAC frigate and the support systems.

The project is also managing the acquisition of ARC-210 Gen5 V/UHF multi-band multi-mode software defined radios through FMS with the US Government. The radios form part of the NewGen MCS.

Uniqueness

An advanced feature of the system includes a unique radio frequency distribution system that will allow automated and efficient switching of the multitude of radios and antennae on each ship in order to establish the most effective communications path.

The high data rate line of sight system is a new capability and will be a step towards enabling the RAN to operate in a satellite denied environment and enable more efficient ship-to-ship communication.

Major Risks and Issues

The key risks for this project include: platform integration matters such as varying ship configurations, inadequate power and platform services, other concurrent activities on the ships during installation, and integration into the complex electromagnetic environment of the Anzac Class Frigates; equipment obsolescence due to the length of project; availability of sufficient resources, **and milestone delays due to under-estimating the time required to complete the work. Issues faced by the Project include personnel constraints within the Project Office and the Prime Contractor as well as incomplete analysis of the sustainment budget.**

Other Current Sub-Projects

N/A

Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Dec 10	Original Approved		11.4	
Jul 13	Government Second Pass Approval	374.3		
			374.3	
Jun 16	Exchange Variation		70.4	
Jun 16	**Total Budget**		456.0	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Selex	(41.5)		1
	Contract Expenditure – US Government	(0.3)		1
	Other Contract Payments / Internal Expenses	(11.8)		2
			(53.5)	
FY to Jun 16	Contract Expenditure – Selex	(37.8)		1
	Contract Expenditure – US Government	(8.9)		1
	Other Contract Payments / Internal Expenses	(1.9)		3
			(48.6)	
Jun 16	**Total Expenditure**		(102.1)	
Jun 16	**Remaining Budget**		353.9	

Notes	
1	The scope of this contract is explained further in Section 2.3 – Details of Project Major Contracts.
2	Other expenditure comprises $5.9m for Pre-contract work with Selex, $2.1m for other pre Second Pass studies and work, $0.5m for Shore Gateway West, $0.3m for legal services, $0.2m for the Shore Integration Facility and $2.8m for other minor contract expenditure, project management costs and travel.
3	Other expenditure comprises $1.5m for Viasat modems and $0.4m for other minor contract expenditure, project management costs and travel.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
71.3	56.1	51.0	PBS to PAES decrease was due to savings as a result of reduced cost of V/UHF radios being procured through FMS; the early achievement of the Long Lead Time Item Review Milestone that moved from Financial Year 2015-16 and re-scheduling of some initial spares procurement into 2016-17. PAES to Final Plan estimate decrease can be attributed to a revised FMS schedule and advice for the US Government that the radios were cheaper than originally budgeted.
Variance $m	(15.2)	(5.2)	Total Variance ($m): (20.4)
Variance %	(21.3)	(9.2)	Total Variance (%): (28.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**Total $2.4m underspend is largely due to FMS savings (reduction in price of radios) resulting in payments being lower than forecasted, delays to ANZAC Alliance expenditure and project office support costs.**
		(2.4)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
51.0	48.6	(2.4)	Total Variance	
		(4.7)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Selex	Nov 2013	187.7	215.2	Variable	ASDEFCON Strategic	1, 2, 3
US Government (AT-P-BSH)	Dec 2014	17.0	21.3	Firm	FMS	1, 3

Notes	
1	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
2	In addition to Note 1 above, the increase in Selex contract price at 30 June 2016 includes additional elements, namely UHF MILSATCOM Antennae, Voice Recording System, and ARC-210 mounting and remote control ancillaries.
3	The scope of this contract is explained further below.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Selex	See scope	See scope	8 ship mission systems 1 training system 1 Shore Integration and Test facility 3 deployable High Data Rate line-of-sight systems	
US Government (AT-P-BSH)	131	131	ARC-210 Gen 5 radios, technical data, and technical support.	

Major equipment received and quantities to 30 June 16
MTWAN Secondary Gateway has been accepted.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Requirements	NewGen MCS and Support System	Sep 14	N/A	Dec 14	3	1
Preliminary Design	NewGen MCS and Support System	May 15	Sep 15	Sep 15	4	2
Detailed Design	MTWAN Secondary Gateway	Sep 14	N/A	Jan 15	4	3
	NewGen MCS	Oct 16	N/A	**Nov 16**	**1**	**4**
	Support System	Apr 17	N/A	**Mar 17**	**(1)**	**5**

Notes	
1	Delayed from originally planned due to slow ramp up/contractor performance.
2	Contract schedule re-baselined to reflect previous (SDR) milestone slippage and contractor's improved understanding of the work. No impact on Detailed Design Review milestone as schedule is planned to be recovered by then.
3	MTWAN System Requirements and Preliminary Design addressed prior to Second Pass Approval. In order to minimise risk to the operational network upon connection of the MTWAN Secondary Gateway, a demonstration of the design in the MTWAN shore integration facility was requested prior to design acceptance. This required additional time to complete.
4	**As at 30 June 2016, the Contractor Schedule indicated that the Conduct of the Detailed Design Review (DDR) and its associated system demonstration would occur in November 2016. The Contractor advised that this one month delay to DDR was not expected to adversely impact on subsequent Ship Acceptance activities. This situation is being closely monitored by the Project Office.**
5	**The Contractor Schedule (at June 2016) indicated that the Support System DDR would occur in March 2017 (a month ahead of the Contract Date).**

3.2 Contractor Test and Evaluation Progress

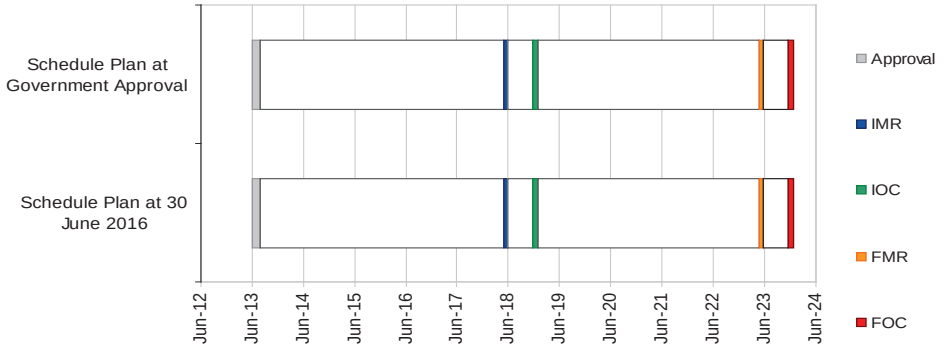
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Integration	NewGen MCS	Jun 18	N/A	Jun 18	0	
Acceptance	MTWAN Secondary Gateway	Apr 15	N/A	Mar 15	(1)	1
	Support System - Training System	Jun 17	N/A	**Dec 17**	**6**	**2**
	Support System - Shore Integration and Test Facility (SITF)	Dec 16	Mar 18	Mar 18	15	3
	Ship #1	Jun 18	N/A	Jun 18	0	4
	Ship #2	Apr 19	N/A	Apr 19	0	4
	Ship #3	Nov 19	N/A	Nov 19	0	4
	Ship #4	Jun 20	N/A	Jun 20	0	4
	Ship #5	Feb 21	N/A	Feb 21	0	4
	Ship #6	Sep 21	N/A	Sep 21	0	4
	Ship #7	Apr 22	N/A	Apr 22	0	4
	Ship #8	Sep 22	N/A	Sep 22	0	4

Notes	
1	MTWAN Secondary Gateway has been accepted and is operational.
2	**The Selex Contract Master Schedule received on 17 June 2016 indicated a December 2017 date for the achievement of this Milestone (the Contract Date is June 2017). Following discussion with the Project Team, the company has subsequently requested permission to raise a Contract Change Proposal to move this Milestone to a more appropriate stage in the life of the Project (i.e. closer to the First of Class Acceptance).**
3	SITF acceptance date initially incorrectly positioned in the contract. Correction made via a formal contract change.
4	Subject to timely availability of ship for installation.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jun 18	Jun 18	0	
Initial Operational Capability (IOC)	Dec 18	Dec 18	0	
Materiel Release 2 – Ship # 2	Apr 19	Apr 19	0	
Materiel Release 3 – Ship # 3	Dec 19	Dec 19	0	
Materiel Release 4 – Ship # 4	Aug 20	Aug 20	0	
Materiel Release 5 – Ship # 5	Apr 21	Apr 21	0	
Materiel Release 6 – Ship # 6	Dec 21	Dec 21	0	
Materiel Release 7 – Ship # 7	Aug 22	Aug 22	0	
Final Materiel Release (FMR)	May 23	May 23	0	
Final Operational Capability (FOC)	Dec 23	Dec 23	0	

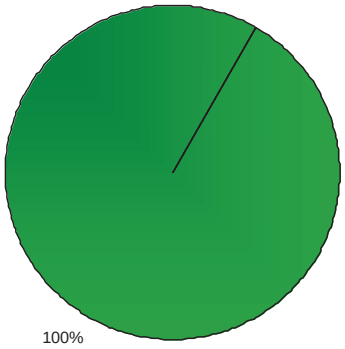
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Project expects to meet capability materiel requirements as per the Joint Project Directive, Materiel Acquisition Agreement and relevant Technical Regulatory Authority. **Amber:** N/A **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Ship 1 acceptance, training system, shore integration and test facility, ship 1 crew training, and support arrangements in place.	Not yet achieved
Final Materiel Release (FMR)	All 8 ships accepted and all support arrangements in place.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Ship availability – There is a chance that ship(s) may not be available in a timely manner to conduct installation due to other priorities.	The establishment of Anzac Life Of Type Assurance Program (LOTAP) has to some extent reduced the likelihood of this risk occurring however, ship availability is beyond the project's control. If one or more ships are not available, revise work program to re-fit when next available and minimise cost impact through reorganisation of tasks and resources. **This risk has been downgraded to medium due to increasing maturity of LOTAP planning.**
Platform Integration – There is a chance that installation will be affected by site or platform issues such as insufficient power, heat and ventilation.	Liaise closely with ANZAC System Project Office (SPO) and the LOTAP, monitor changes and update design accordingly, and integrate into ANZAC SPO's engineering change processes.
Platform Integration – There is a chance that installation completion will be affected by other non-SEA 1442 activities which are being conducted on the ship concurrently with each SEA 1442 installation.	The LOTAP has a number of other significant activities planned during each ship availability. Liaise closely with the LOTAP to limit interruptions and avoid conflicts with other activities. Monitor activities and conduct regular reviews and re-plan if necessary.

Platform Integration – There is a chance that installation will be affected by unknown or late changes to ship configuration.	Maintain close liaison with ANZAC SPO, including through the conduct of ship integration working group workshops. Ensure site surveys are conducted as late as possible prior to installation to verify ship configuration. Modify installation as necessary.
Platform Integration – There is a chance that system performance may be affected by integration into the complex electromagnetic environment of the Anzac Class Frigates.	The Prime Contractor is conducting an Electromagnetic Environmental Effects (E3) program which involves co-site performance analysis, measurements and modelling. If issues arise post design, implement engineering and procedural processes to address the issues.
System Integration – There is a chance that system design will be affected by unavailability, complexity, or changing external and legacy interfaces.	Develop interface control documentation, design and develop interface, or procure alternative solution to remove interface as appropriate. Monitor and manage change.
Obsolescence – There is a chance that retained legacy equipment provided to the Contractor becomes obsolete prior to system acceptance.	Monitor equipment obsolescence and refresh items if obsolete. Change design if necessary and where feasible. **This risk has been downgraded to medium due to improved understanding of likely obsolescence issues.**
Obsolescence – There is a chance that some mission system equipment may become obsolete prior to system acceptance.	Monitor equipment selection to ensure obsolete or equipment likely to become obsolete are not selected. Change design if necessary and where feasible. Spare appropriately.
Resourcing – There is a chance that the project will be affected by a lack of staff.	Recruit to replace as quickly as possible, train and develop graduates within the project, and utilise contracted support as necessary.
Milestone Delay – There is a chance that a milestone is delayed due to under-estimating the time required to complete the work.	**Review critical path to ensure cause for delay are correctly understood, apply appropriate additional resources, work collaboratively with customers and subcontractors, where appropriate, to address root causes and identify relevant remediation strategies.**
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

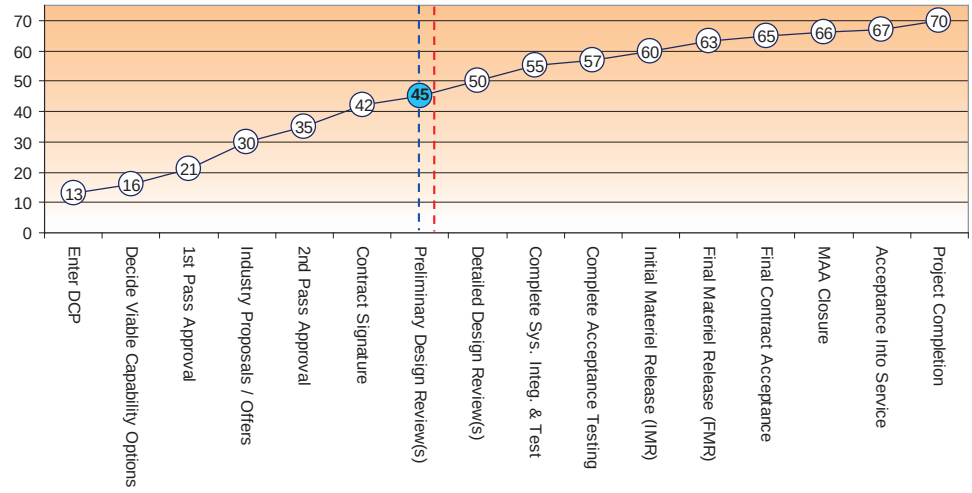
Description	Remedial Action
Vacant positions were late in being filled due to recent constraints on recruitment. In addition, a number of vacant positions were disestablished.	**This issue has been resolved as approval was gained to recruit engineering and logistics positions and this process is now complete. Whilst not ideal and more costly, the use of contractors remains an option should staff attrition arise again.**
The Contractor is under resourced.	**Contractor showing signs it is under resourced in terms of personnel to fulfil its obligations which may result in a delay to the DDR milestone. The Contractor continues to put on more resources to meet contracted deliverables.**
Analysis of non-recurring sustainment costs is incomplete.	**Project Office will raise a submission seeking additional sustainment budget for non-recurring services if required.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	6	6	6	7	6	7	7	45
Preliminary Design Review	Project Status	6	7	7	7	6	6	7	46
	Explanation	• **Cost:** The overall estimate at completion is projected to be within approved project budget. Contingency is deemed adequate to cover risks should they arise. • **Requirement:** Requirements analysis has been completed and preliminary design indicates all operationally critical requirements as per the Operational Concept Document and Function and Performance Specification can be met. • **Commercial:** Contractor has plans in place to undertake work. Some areas are yet to be optimally functional and improvements are being implemented.							



2014–15 MPR Status - - - - 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
It is essential to have a good set of requirements early in the life of the project. In particular, ensure requirements are clear, unambiguous, and a common understanding is established between all parties, be it the Capability Acquisition and Sustainment Group and the end-user or Defence and contractor.	Requirements Management
Interface management is extremely critical for integration projects. Legacy interfaces are not always defined or consistent with the documented definitions. Ensure interfaces are well understood by all parties, and where not possible, risk is recognised with adequate contingency. Attempt to address interfaces as early as possible as the longer they are left unattended, the greater their impact on cost, schedule, and possibly performance.	Requirements Management
The ASDEFCON suite of contracting template is complex and designed as a single source for all types of projects. It must be tailored well to suit individual project context and strategy to avoid unnecessary detail, resource burden, cost and schedule.	Contract Management
De-risk the project as much as possible before contract award. Spend time and resources upfront defining and understanding work and scope, schedule, risk, cost and other aspects of the contract with tenderers. This must include detailed review of the schedule to ensure all work elements have been programmed and the schedule is realistic. The de-risking activity may be through Offer Definition Activities and/or funded pre-contract work.	Contract Management
Pay good attention to schedule and ensure all work is captured, logical and can form a basis for sound management post contract award. There is no substitute for good planning and a realistic schedule.	Schedule Management
Access to good and experienced resources is critical to sound project planning and management, and success. A realistic and achievable plan is more likely if a project has access to knowledgeable and experienced resources.	Resourcing Schedule Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	**Mr Ivan Zlabur (Acting Jul 15–Sep 15)** **RADM Anthony Dalton (Oct 15–current)**
Branch Head	Ms Myra Sefton
Project Director	Mr Guna Gounder (Dec 15–**to Feb 16**) **Mr Peter Henrick (Feb 16–current)**
Project Manager	Mr Norm Ridgway

Project Data Summary Sheet[139]

Project Number	**SEA 1439 Phase 4A**
Project Name	**COLLINS REPLACEMENT COMBAT SYSTEM**
First Year Reported in the MPR	2007-08
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 02
Total Approved Budget (Current)	**$450.6m**
2015–16 Budget	**$0.4m**
Project Stage	Initial Materiel Release
Complexity	ACAT IV

Section 1 – Project Summary

1.1 Project Description

The SEA 1439 Phase 4A Replacement Combat System (RCS) project was established to provide each of the six Royal Australian Navy (RAN) Collins Class submarines with an initial installation of the United States (US) Navy (USN) AN/BYG-1 Combat and Weapon Control System, minor improvements to the combat system augmentation sonar, and shore facilities for integration, testing and training. Shore based systems are located at the Submarine Training and Support Centre at HMAS *Stirling* (WA) and a reference laboratory in the US at the Naval Undersea Warfare Centre. The project required the development of system commonality between the RAN and USN.

1.2 Current Status

Cost Performance

In-year

This year the underspend of $0.1m is primarily due to delays in programmed work by Australian Industry.

Project Financial Assurance Statement

As at 30 June 2016, project SEA 1439 Phase 4A has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

139 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

Project boat installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program, consequently completion dates vary according to boat availability. The RCS schedule has also been impacted by emergent work during each submarine docking. The final boat installation is scheduled for completion in 2018, following the decision to defer the HMAS *Collins* FCD, with Final Materiel Release (FMR) forecast for October 2018 (33 months behind schedule).

Materiel Capability Delivery Performance

CS04

The RCS Project managed the development, installation and integration of the CS04 baseline. The installation in HMA Ships *Waller* and *Farncomb* was approved for Initial Operational Release (IOR) by Chief of Navy (CN) in May 2008 and September 2009 respectively. CN subsequently approved Operational Release (OR) of that baseline in December 2009. The capability delivered in HMA Ships *Waller* and *Farncomb* is consistent with that identified in the project requirement.

CS05

The RCS Project managed the development, installation and integration of the CS05 baseline. Installations and Harbour Acceptance Testing for the upgraded combat system baseline installed in HMA Ships *Dechaineux* and *Sheean* are complete. Sonar towed array trials scheduled for HMA Ships *Dechaineux* and *Sheean* were completed with OR of the Collins Towed Array Processor (CTAP) being awarded on 20 January 2011. IOR approval of the upgraded baseline as installed in HMAS *Dechaineux* occurred on 8 March 2011. **OR of the CS05 baseline is expected to be achieved in July 2016.**

CS06

Installation of the upgraded baseline in HMAS *Rankin* was completed by the RCS Project in May 2014. The development and integration of this baseline is being managed by Sustainment.

Technical Insertion (TI)14

Installation in HMAS *Collins* will be completed by the RCS Project in conjunction with the FCD program. The project schedule is dependent on the boat FCD program; consequently the completion date may vary. The development and integration of this baseline is being managed by Sustainment. Note: This baseline adopts the new TI naming convention beyond CS06.

The remaining project **activity** includes installation of RCS on HMAS *Collins*. Development, installation and integration of all further combat system upgrades is being managed by Sustainment.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Explanation

Background

Risks associated with rapid technology change have been treated by adopting a project management strategy that aligns with the US continuous update program and its two-year update cycle.

The then standard acquisition approach was adapted to enable the project office to establish itself as prime contractor with a series of Integrated Project Teams working at various levels within Defence and industry. This role has required close collaborative relationships to be formed between Defence, the USN and industry partners in Australia and the US.

In July 2001 the Minister for Defence terminated the original tender process for the Collins Class RCS.

In September 2002 the Government approved the project based on the procurement of the following off-the-shelf sub-systems:

- the US Combat and Weapon Control sub-system, consisting of the Combat Control System and the Virginia Class Weapons Integration Panel, to be acquired by Foreign Military Sales (FMS);
- minor improvements to the sonar processing solution currently installed in HMA Ships *Sheean* and *Dechaineux* as part of the Combat System Augmentation initiative; and
- other system support infrastructure and project support.

The USN Combat and Weapon Control System is being supplied under an Armaments Cooperative Project (ACP) which provides for system upgrades developed on a bi-annual basis, whereas the Commonwealth is adopting every second baseline with a four year update cycle. This project provides one system baseline for the first two submarines and later baselines for the remaining four submarines. These initial baselines installed by the RCS Project will be upgraded at some later date as a sustainment activity.

Australian systems are being provided under a combination of contracts. The main Australian contractors include ASC Pty Ltd, Raytheon Australia, Thales Australia and Sonartech Atlas Pty Ltd. Installation is being undertaken in conjunction with SEA 1429 Phase 2 Heavyweight Torpedo at locations in South Australia and Western Australia. Installation in all submarines is coordinated with the FCD program.

The combat system capability enhancement required a significant change to submarine infrastructure that could only be achieved during a major docking. Furthermore, to ensure the required submarine availability was not impacted adversely and to work within the existing workforce at ASC Pty Ltd, it was necessary to couple the installation program to the existing submarine docking program. Although there are significant benefits in coupling the RCS installation schedule to the submarine docking program, that coupling has dictated the delivery schedule of the RCS capability.

Uniqueness

The Commonwealth has undertaken the functions of a prime systems integrator. This role required the Commonwealth project team to manage and coordinate a number of separate contracts and ultimately the integration, installation and testing of the delivered products.

The Project is participating in a Joint Development Program with the USN to introduce hardware and software upgrades for Combat and Weapon Control System and implementing that evolving system baseline into the Collins combat system.

Major Risks and Issues

The small project team is disproportionately affected by turnover of key personnel, leading to an impact on cost and schedule. Mitigation activities are in place, but they do not significantly reduce the risk.

The cost of implementing the RCS modifications on HMAS *Collins* may rise over those predicted as a new contract will need to be negotiated to cover the remaining work. Sufficient Project budget exists to cover a reasonable price increase.

Delays in development or approval of the TI14/Advanced Processor Build (APB) 15 related Configuration Change Proposals (CCPs) by Sustainment could impact the Combat System installation on HMAS *Collins*. This **risk has been downgraded to medium following the** raising **of** a Production Permit to enable installation on HMAS *Collins* ahead of CCP approval.

FMR could be delayed as the current MAA specifies deliverables that are outside of the Project's control, which may not be available in time to meet the FMR timeframe, leading to an impact on cost and schedule. This is being mitigated by amending the MAA.

The Coles Review recommended changes to the submarine docking program that resulted in HMAS *Collins*' implementation completion date slipping from 2016 to 2018, with a corresponding impact on the FMR and Final Operational Capability (FOC) dates.

Other Current Sub-Projects

SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability: SEA 1439 Phase 3 is a program of upgrades to Collins Class platform systems to improve the Fleet's reliability, sustainability, safety and capability.

SEA 1439 Phase 3.1 Collins Obsolescence Management - Integrated Ship Control Management and Monitoring System Obsolescence: Project scope includes remediating obsolescence of the Integrated Ship Control Management and Monitoring System in the Collins Submarines and shore facilities. Stage One includes purchasing two boat sets and completion of the first installation.

SEA 1439 Phase 4B Weapon and Sensor Enhancement Program: Acquire endorsed supplies to address deficiencies identified in the area of Submarine weapons and sensors.

SEA 1439 Phase 5B1 Communications Mast and Antenna Replacement Class Fit: The project aims to fit five submarines with the communications fit developed and tested under Project SEA 1439 Phase 4B, along with one spare antenna, one spare mast raising equipment and spares.

SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Program: The Project scope is to enhance the Communications and Electronic Warfare capabilities of the Collins Class submarine. The project is broken up into two sections - the Modernised Submarine Communications System, an

upgrade to the existing on board communications system, and the Microwave Electronic Support Measures, an enhancement to the existing Electronic Warfare capability.

SEA 1439 Phase RCE3 EHF Communications Capability: Extreme High Frequency (EHF) Communications Capability for a single Collins-class submarine.

SEA 1439 Phase 6 Collins Sonar Capability Assurance Program: The Project scope is to address obsolescence and capability deficiencies in the Collins Class Sonar System and establish an ongoing capability assurance program.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Sep 02	Original Approved		455.3	
May 03	Real Variation – Transfer	(0.9)		1
Aug 04	Real Variation – Budgetary Adjustment	(0.8)		2
			(1.7)	
Jul 10	Price Indexation		56.5	3
Jun 16	Exchange Variation		(59.5)	
Jun 16	**Total Budget**		450.6	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Raytheon Australia	(101.7)		4
	Contract Expenditure – US Government (FMS)	(79.3)		4
	Contract Expenditure – US Government (ACP)	(59.1)		5
	Contract Expenditure – Thales Australia	(26.9)		
	Contract Expenditure – Sonartech Atlas Pty Ltd	(26.8)		
	Other Contract Payments/Internal Expenses	(141.3)		6
			(435.1)	
FY to Jun 16				
	Other Contract Payments/Internal Expenses	(0.3)		7
			(0.3)	
Jun 16	**Total Expenditure**		(435.3)	
Jun 16	**Remaining Budget**		15.2	

Notes	
1	Transfer to the then Defence Science Technology Organisation (DSTO).
2	Administrative savings harvest.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $55.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $1.0m having been applied to the remaining life of the project.
4	The FMS case value is $79.3m (written back from $143.9m - see Note 1 in Section 2.3 below). The supplies remaining under the FMS case would then be delivered under the ACP.
5	The ACP is the main vehicle for supplying equipment and services for the Combat and Weapon Control hardware and software development.
6	Other expenditure of $141.3m includes an amount of $51.5m to ASC Pty Ltd for platform design and installation; a total of $33.6m on supplies and services provided by other Contractors, and $10.2m to Engineering and Scientific Systems for engineering and testing support. The remaining $46.0m of expenditure comprises operating expenditure, consultants, and contingency used in 2009-10.
7	The amount of $0.3m comprises of $0.3m to ASC Pty Ltd.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
0.8	0.7	0.4	The variance for both movements reflects increased cost maturity for work conducted by ASC Pty Ltd on HMAS *Collins*.
Variance $m	(0.1)	(0.3)	Total Variance ($m): (0.4)
Variance %	(8.8)	(42.6)	Total Variance (%): (47.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(0.1)	Australian Industry	The underspend of $0.1m is primarily due to delays in programmed work by Australian Industry.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
0.4	0.3	(0.1)	**Total Variance**	
		(30.9)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
US Government (FMS)	Jun 03	143.9	79.3	Fixed	FMS	1, 6
Sonartech Atlas Pty Ltd	Jun 03	22.5	35.8	Variable	ASDEFCON Strategic	2, 6
Raytheon Australia	Aug 03	53.9	101.7	Variable	ASDEFCON Strategic	3, 6
Thales Australia	Oct 03	22.9	26.9	Variable	ASDEFCON Strategic	4, 6
US Government (ACP)	Nov 04	51.8	61.0	Fixed	ACP	4, 5, 6

Notes	
1	Included on-going involvement in the Combat and Weapon Control hardware and software development process for the duration of the ACP. The FMS Case valued at $143.9m was written back to $79.2m with the introduction of the ACP.
2	The Sonartech Atlas Pty Ltd contract value as at 30 June 2015 includes a Sustainment component of $9.0m.
3	Includes on-going involvement in the Combat and Weapon Control hardware and software development process for the duration of the ACP. This contract also provided for the integration of Electronic Chart Display Information System (ECDIS) master navigation into the combat system at a cost of $2.8m which was not funded by SEA 1439 Phase 4A.
4	The Thales Australia contract valued at $27.3m was written back to $26.9m following delivery of the final contracted supplies.
5	The US Government (ACP) 30 June amount was reported as $121.0m in previous MPRs (to 2012-13), however this figure included sources of funding other than SEA 1439 Phase 4A. SEA 1429 Phase 2 and Sustainment were the other contributors to the ACP costs. The Price Base at Signature has also been revised to reflect only SEA 1439 Phase 4A.

6	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2015 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
US Government (FMS)	7	7	US Combat and Weapon Control sub-system	
Sonartech Atlas Pty Ltd	4	7	Sonar sub-system equipment	1
Raytheon Australia	7	7	Tactical System sub-systems and components	
Thales Australia	7	7	Scylla Sonar and associated sub-systems	
US Government (ACP)	7	7	US Combat and Weapon Control sub-system	

Major equipment received and quantities to 30 Jun 16

Six RCS Ship Sets delivered. Category 5 Sea Acceptance Testing completed. Engineering and maintenance arrangements established.

Notes	
1	The RCS project was funded originally for four Submarine Acoustic Transitory Event Processing System units. The in-service support organisation took advantage of an option in the RCS project acquisition contract with Sonartech Atlas Pty Ltd to replace the ageing Submarine Acoustic Transitory Event Processing System units fitted to the existing submarine combat system. Although the contract value was increased, the additional sets were not funded from project funds.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Combat System	Nov 04	N/A	Nov 04	0	1
System Design	Combat System	May 05	N/A	May 05	0	1
Preliminary Design	20 Separate sub-systems or major components	Oct 03 – Oct 06	N/A	Nov 03 – Oct 06	1	1
Critical Design	20 Separate sub-systems or major components	Nov 03 – Apr 07	N/A	Nov 03 – Apr 07	0	1, 2

Notes	
1	The above data represents rolled up information as the project consists of many sub-systems each of which have independent Preliminary Design Review, Critical Design Review or associated activities. Additionally, these system engineering activities were applied across two system baselines. As a result, there were many individual events within each of the above activities where the schedule was allowed to move provided the critical path for the delivery of capability was not impacted adversely. The critical path was based on the FCD program. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the FCD program. In some instances schedule slip has occurred as a result of project management intervention to delay finalisation of sub-system and major component design until the evolving US Combat and Weapon Control system baseline was mature. The project schedule has been re-baselined following significant events. To progress the Preliminary Design Review and Critical Design Review activity ahead of the US system development would have incurred significant cost. Preliminary Design Review and Critical Design Review slip has not impacted capability delivery because of the dependency on the FCD program to install the RCS equipment.

2	Some sub-systems or major components have several Critical Design Reviews or US equivalent.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Combat System - System Integration Test Phase 1-6	Jun 06 – Apr 08	N/A	Jun 06 – Apr 08	0	
	Combat System - Harbour Acceptance Trials Stage 1-3	Nov 06 – May 08	N/A	Nov 06 – May 08	0	
	Combat System - Sea Acceptance Trials Stage 1-2	Dec 07 – Jun 08	N/A	Dec 07 – Jun 08	0	
	Category 3 System Integration Testing Combat System CS05.00.01 (TI06/APB06)	Apr 09	N/A	Apr 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.00 (TI06/APB06)	Nov 09	N/A	Dec 09	1	1
	Category 3 System Integration Testing Combat System CS05.01 (TI06/APB06)	Jan 09	N/A	Jan 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.01 (TI06/APB06)	Feb 10	N/A	Feb 10	0	
	Category 5 Sea Acceptance Trials Combat System CS05.01 (TI06/APB06)	Apr 10	N/A	Aug 10	4	2, 3

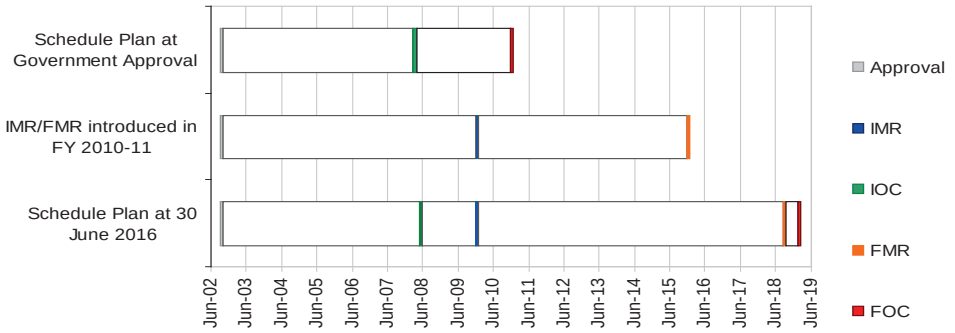
Notes	
1	Combat System CS05 baseline Harbour and Sea Acceptance Trial tests were conducted in two stages to account for weather, submarine defects and support vessel defects. In general, the project test and evaluation program was carried out in conjunction with other post docking activities and the planned testing schedule has been impacted to some extent.
2	Combat System CS05.01 baseline Sea Acceptance Trials and associated shore based analysis were completed in August 2010. The variance for testing is due to HMAS *Dechaineux's* FCD schedule delays and the need to complete additional testing of the Towed Array (TA) (previously delayed because of non project related equipment malfunction) and the ECDIS. The ECDIS and the TA increased the scope of the subsequent sea trials. The outcome of the CS05.01 trials including the ECDIS and TA were successful, with some minor trouble reports noted but not affecting capability. The CS05.01 System Design Certificate was issued 10 September 2010. CS05 Initial Materiel Certification for HMAS *Dechaineux* was achieved 22 September 2010. OR of the CS04 CTAP was awarded on 20 January 2011. CS05 IOR was awarded by CN on 8 March 2011. Additional testing of CS05 (TI06) minor software upgrades were conducted by the Project in 2010 and 2012. CS05 OR **is expected to be awarded in July 2016.**
3	The CS05 Acceptance trials were the last acquisition related testing activity managed by the Project. All further development and testing of the CS06 and TI14 combat system upgrades and beyond is the responsibility of Sustainment. SEA 1439 Phase 4A performed the installation for CS06 on HMAS *Rankin* and will perform the installation for TI14 on HMAS *Collins*.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Dec 09	N/A	1
Initial Operational Capability (IOC)	Mar 08	May 08	2	1
Final Materiel Release (FMR)	Jan 16	Oct 18	33	2
Final Operational Capability (FOC)	2010	Feb 19	98	3

Notes	
1	The RCS baseline (CS04) installed in HMA Ships *Waller* and *Farncomb* was approved for IOR by CN in May 2008 and September 2009 respectively. CN subsequently approved OR of that baseline on 9 December 2009. The capability delivered by the project is consistent with the MAA.
2	FMR date was set at project approval before the submarine FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the RCS installation schedule has been delayed, **with final installation to be completed in HMAS *Collins* in 2018.**
3	FOC date was set at project approval before the submarine FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the RCS installation schedule has been delayed.

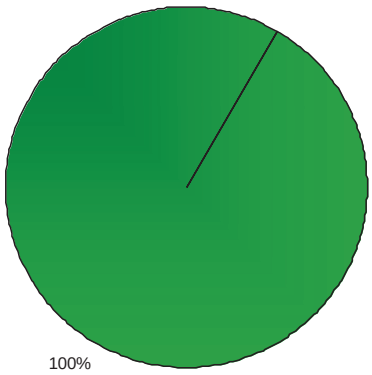
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** Replacement combat systems are being delivered in accordance with the project's approved scope. CN has approved OR for the CS04 baseline installed in HMA Ships *Waller* and *Farncomb* and OR for the CS05 baseline installed in HMA Ships *Dechaineux, Waller* and *Sheean*. The CS06 baseline installed in HMAS *Rankin* is to be certified by Sustainment (i.e not subjected to IOR or OR). **Amber:** N/A **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Provisional acceptance of RCS on HMAS *Waller* achieved December 2009, incorporating completion of CS04 sea trials and CS04 OR.	Achieved
Final Materiel Release (FMR)	Completion of CS04 and CS05 OR and installation of a RCS on each of the six submarines. FMR is planned for October 2018.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	This risk is being mitigated by: • Use of contractors where appropriate; • Use of Reserve personnel where skills are suitable; and • Optimising use of matrix support staff.
There is a distinct risk that the price of implementing RCS modifications on HMAS *Collins* may rise over those predicted.	Sufficient project budget exists to cover a reasonable price increase.
There is a chance that delays in development of approval of the TI14/APB15 related CCPs could impact the Combat System installation on HMAS *Collins*.	This risk has been downgraded to medium following the raising of a Production Permit to enable installation of RCS into HMAS *Collins* ahead of CCP approval.

There is a chance that FMR could be delayed, leading to an impact on cost and schedule.	This risk is being mitigated by updating the MAA to remove deliverables outside of the Project's control.
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

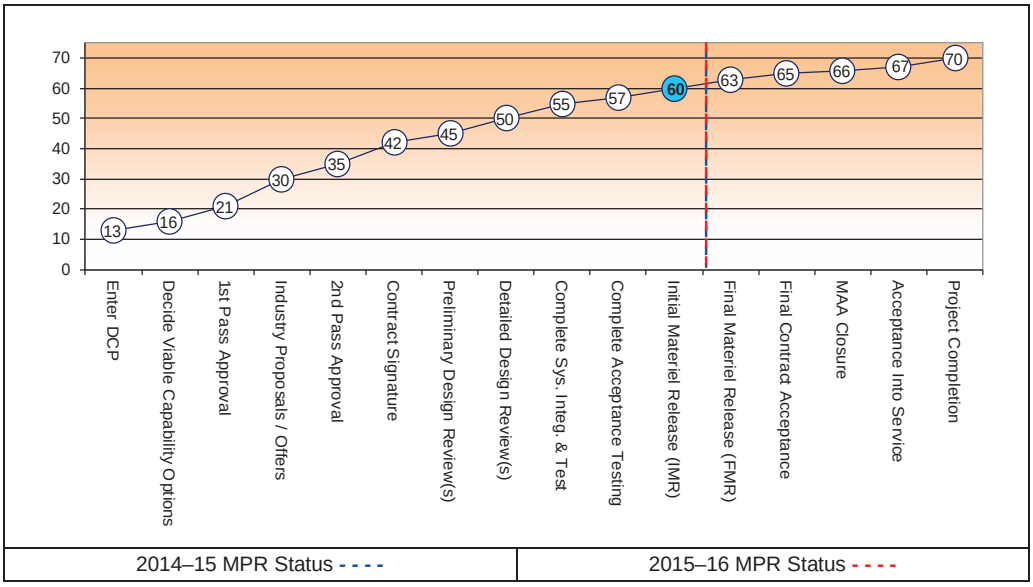
Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the RCS installation schedule.	**The Government has agreed to the amended** implementation dates resulting from previous docking program changes. **A MAA amendment is being staffed to reflect the approved schedule.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	9	9	9	9	8	9	62
	Explanation	• **Schedule:** The last boat installation for the project to achieve FMR is HMAS *Collins*. FCD timings have changed substantially in the past. However, with the introduction of a configuration controlled Collins IMS, the project is now confident that schedule will be met. • **Cost:** The costs for the remaining project work on HMAS *Collins* are known, and the remaining Project budget and contingency is considered adequate to cover reasonable remaining project cost risk. • **Requirement** and **Technical Understanding:** The CS05 baseline has been at sea on operational boats since 2010. Transitioning of the final baseline on HMAS *Collins* is expected in 2018.						



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing and resources are available, in particular if Defence is to be both the prime systems integrator and Project Authority.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule Management
Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US Government International Traffic in Arms Regulation can require up to a year to progress.	Requirements Management
Engaging in a joint development project where Australia is the junior partner and largely dependent on the US Government program can introduce project management, cost, technology, gaps in OQE and schedule risk that needs to be addressed.	First of Type Equipment
Robust procedures, processes and discipline must be implemented when managing requirements for multiple baseline combat systems. Maintaining expertise with a Requirements Management tool is essential to ensure reliable outputs and reduced re-work.	Requirements Management
Discipline in writing robust and understandable descriptions for failed requirements, deficiencies and non compliances is essential. The deficiencies should be written to inform both technical and operational personnel. The benefit is better quality documentation and less re-work by other staff in the future.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	**Mr Stephen Johnson (Nov 15-current)**
Branch Head	Mr David Cochrane
Project Director	CMDR Ian Jimmieson (Acting)
Project Manager	Mr Alan Levy

Project Data Summary Sheet[140]

Project Number	**SEA 1429 Phase 2**
Project Name	**REPLACEMENT HEAVYWEIGHT TORPEDO**
First Year Reported in the MPR	2009-10
Capability Type	Replacement
Acquisition Type	MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jul 01
Total Approved Budget (Current)	**$429.7m**
2015–16 Budget	**$7.6m**
Project Stage	Initial Materiel Release
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project has acquired a Heavyweight Torpedo (HWT) for the six Collins Class submarines to replace the United States (US) Navy's (USN) Mk48 Mod 4 HWT previously in service with the Royal Australian Navy (RAN). The torpedo has been supplied by the US Government under a Memorandum of Understanding (MOU), with work performed by Raytheon US and the US Naval Undersea Warfare Center. The project is also acquiring associated logistic support, weapon system interface equipment, and operational support and test equipment. ASC Pty Ltd is undertaking integration to the Collins Class submarine platform.

1.2 Current Status

Cost Performance

In-year

The project underspend of $0.1m was due to operating costs being less than forecast.

Project Financial Assurance Statement

As at 30 June 2016, project SEA 1429 Phase 2 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

140 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

The HWT project consists of two separate components to deliver the full HWT capability to the RAN. The first component is the modification of each submarine to accommodate and launch the HWT; the second component is the spiral development of the HWT software.

Boat installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program, consequently completion dates vary according to boat availability. The HWT schedule has also been impacted by emergent work, during each submarine docking. As a result of these non project related delays, completion of the submarine modification program has slipped from 2010 to 2018.

The final weapons were delivered to Australia in January 2012. Final Materiel Release (FMR) is forecast for achievement in October 2018 **(59 months behind schedule)**.

Materiel Capability Delivery Performance

The replacement HWT with Spiral 1 software and the integration modifications to Collins Class Submarines were approved for Operational Release (OR) by the Chief of Navy (CN) on 10 March 2010.

The replacement HWT with Advanced Processor Build (APB) 4 software was approved for Initial Operational Release (IOR) by CN on 8 March 2011. APB Spiral 4 OR was approved by CN in March 2014.

Platform modifications have been completed in HMA Ships *Waller*, *Farncomb*, *Dechaineux*, *Sheean* and *Rankin.* Platform modifications in HMAS *Collins* will be completed in conjunction with the FCD program. As first of class specific testing was carried out for HMAS *Waller*, all subsequent testing for platform modifications will be undertaken in conjunction with standard post docking testing.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

Project SEA 1429 Phase 1 was approved in December 1997 to investigate the acquisition of an enhanced torpedo capability including, weapon performance, integration, risk, costs, through-life support, intellectual property and Australian Industry Involvement. In September 1998 the US Government invited the Defence Capability Committee (DCC) to consider pursuing a collaborative development program for the Mk48 Advanced Capability (ADCAP) HWT as the replacement HWT for the RAN. The DCC, although noting the potential benefits, decided against the collaborative program in favour of a competitive tender process.

The solicitation process, which included a Project Definition Study commenced in 1999, but was subsequently abandoned when the Government decided in July 2001 to terminate the competitive tendering process in favour of entering into a cooperative agreement with the US Government.

A Statement of Principles outlining the strategic alliance between the RAN and USN on submarine related issues was signed in Washington DC in September 2001. At the same time, negotiations began with the US Government on a MOU to develop an Armaments Cooperative Project (ACP) for the joint development of the Mk48 ADCAP HWT.

Under the MOU, the Commonwealth and the US Government joined in a partnership for the cooperative development, production, and through-life support of the Mk48 ADCAP torpedo. A Joint Project Office was then established in Washington, DC. Spiral development of the Mk48 ADCAP resulted in the current baseline Mk48 Mod 7 Common Broadband Advanced Sonar System (CBASS) torpedo, incorporating a broadband sonar capability for enhanced target acquisition.

In March 2003, following a Submarine Integration Study, Government approved the scope of the project and delivery of the supplies; including submarine integration with ASC Pty Ltd, a Torpedo Analysis Facility (TAF) at the Defence Science and Technology **Group** (**DSTG**), and upgrades to the Torpedo Maintenance Facility (TMF). The TAF has been formally transitioned to **DSTG**. Upgrades to the TMF and the management responsibility for torpedo maintenance, has been transitioned to Navy Guided Weapons System Program Office. A Portable Tracking Range was completed in December 2006 and responsibility formally transitioned to Maritime Ranges System Program Office. The MOU has been extended for a period of ten years to 2019 following successful negotiation with the US Government.

Uniqueness

Commonwealth participation in a Joint Program with the US Government to develop, produce and support the Mk48 ADCAP torpedo, through an ACP, including evolving capability enhancements, introduced additional complexity to the project. The additional complexity included requiring effective coordination of requirements management, integration, testing, torpedo deliveries and their installation in each boat according to their respective FCD schedule. The performance of the ACP is overseen by an Executive Steering Committee with senior executives from both partners.

Major Risks and Issues

The small project team is disproportionately affected by turnover of key personnel, leading to an impact on cost and schedule. Mitigation activities are in place, but they do not significantly reduce the risk.

The Coles Review recommended changes to the submarine docking program that resulted in HMAS *Collins*' implementation completion date slipping from 2016 to 2018, with a corresponding impact on the FMR and Final Operational Capability (FOC) dates.

The weight of the Mk10 Mod 3 Torpedo Mounted Dispenser has created a manual handling hazard when dispensers are not attached to torpedoes. Feasibility of fibre optic cabling is being investigated to try to reduce the dispenser weight.

As a result of the test coverage limitation declared at OR, more information needs to be collected to fully populate the weapon software model. **DSTG are assessing data collected from firings conducted in 2015 and 2016, with a draft report due by December 2016.**

Other Current Sub-Projects

N/A

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Jul 01	Original Approved		238.1	1
May 03	Real Variation – Scope	213.3		
Aug 04	Real Variation – Budgetary Adjustment	(0.2)		2
Sep 04	Real Variation – Transfers	1.0		3
			214.2	
Jul 10	Price Indexation		99.4	4
Jun 16	Exchange Variation		(122.0)	
Jun 16	**Total Budget**		429.7	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – US Government Initial MOU	(194.9)		
	Contract Expenditure – US Government Follow-on MOU	(39.9)		
	Other Contract Payments/Internal Expenses	(71.4)		5
			(306.2)	
FY to Jun 16	Contract Expenditure – US Government Follow-on MOU	(7.1)		
	Other Contract Payments/Internal Expenses	(0.4)		6
			(7.5)	
Jun 16	**Total Expenditure**		(313.8)	
Jun 16	**Remaining Budget**		115.9	

Notes	
1	Heavyweight Torpedoes purchase under the ACP with the US.
2	Administrative Savings Harvest.
3	Transfer from SEA 1429 Phase 1.
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $91.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $7.9m having been applied to the remaining life of the project.
5	Other expenditure of **$71.4m** includes an amount of **$28.5m** to ASC Pty Ltd for platform design and installation (under the Through Life Support Agreement and In Service Support Contract), $10.0m to L3 Nautronics Pty Ltd, $5.0m RCS/MOU USN, $4.6m paid to DSTO **(now DSTG)** and $3.2m to FMS Case (AT-P-GZU). The remaining expenditure of **$20.1m** covered sundry operating expenditure.
6	The amount of **$0.4m** is predominantly ASC Pty Ltd contract expenditure of **$0.3m**; with the remaining **$0.1m** being for sundry contractor services and operating expenditure.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
7.1	**6.6**	**7.6**	**The variance for both movements reflects increased cost maturity for work conducted in the US.**
Variance $m	**(0.5)**	**1.0**	Total Variance ($m): **0.5**
Variance %	**(6.9)**	**15.3**	Total Variance (%): **7.3**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**Project operating costs such as travel were lower than forecast.**
			Foreign Industry	
			Early Processes	
		(0.1)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
7.6	7.5	(0.1)	**Total Variance**	
		(1.3)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
US Government Initial MOU	Mar 03	336.7	194.9	Fixed	MOU	1, 2
US Government Follow-on MOU	Nov 09	43.8	**72.5**	**Variable**	MOU	2, **3, 4**

Notes	
1	US Government Initial MOU was closed in March 2013 with variance attributable to positive exchange variation.
2	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
3	**Contract value was increased to undertake additional fibre optic development and trials support activities.**
4	**Contract type has been changed to reflect the use of both unique (variable) and shared (fixed) task funding arrangements available under the MOU.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
US Government Initial MOU	Classified	Classified	Heavyweight Torpedoes	
US Government Follow-on MOU	Classified	Classified	Heavyweight Torpedoes	

Major equipment received and quantities to 30 Jun 16
All weapon deliveries complete. Spiral 1 Software baseline achieved. Platform modifications in five submarines completed. APB Spiral 4 software baseline achieved OR endorsement.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Final Design Review	Weapon Handling & Discharge Training Rig Modifications	Jun 05	N/A	Oct 05	4	1
	Submarine Weapon Handling & Discharge System Modifications	Jan 06	N/A	Nov 06	10	1
Acceptance	Weapon Handling & Discharge Training Rig Modifications	Nov 05	N/A	Nov 07	24	1

	Submarine Weapon Handling & Discharge System Modifications	Mar 06	N/A	Jun 07	15	1
Design Review	Mk48 ADCAP Torpedo Specification Compliance	Dec 07	N/A	Feb 08	2	1
	Explosive Ordnance Approval Process (Spiral 1)	Mar 08	N/A	Mar 08	0	1
	Explosive Ordnance Approval Process (APB 4 – Exercise)	Nov 12	N/A	Feb 11	(21)	1
	Explosive Ordnance Approval Process (APB 4 – Warshot)	Jul 13	N/A	Jul 13	0	
Incorporation Approval	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating Spiral 1	May 08	N/A	May 08	0	
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Exercise	Dec 12	N/A	Mar 11	(21)	
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Warshot	Jul 13	N/A	Jul 13	0	

Notes	
1	The above data represents rolled-up information as the project consists of many subsystems each of which has independent design review activities. As the critical path for these activities was defined by the FCD program, individual events within each of the above activities were allowed to move provided the delivery of the capability was not adversely impacted. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the FCD program. Additionally, the reported achieved dates are based on the signature of meeting minutes or reports by external organisations. As such, minor variance in the achievement dates can be attributed to the review and the subsequent approval process as recorded in meeting minutes and reports.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Harbour Acceptance Tests	Weapon Handling and Discharge Systems Post Mk48 Mod 7 HWT Modification Test for HMAS *Waller*	Jan 07	N/A	Apr 07	3	1
Sea Acceptance Trials	Weapon Discharge System Mk48 Mod 7 HWT Modification for HMAS *Waller*	Oct 07	N/A	Dec 07	2	1

Notes	
1	Variance was attributable to the Navy Regulatory Review process and submarine program.

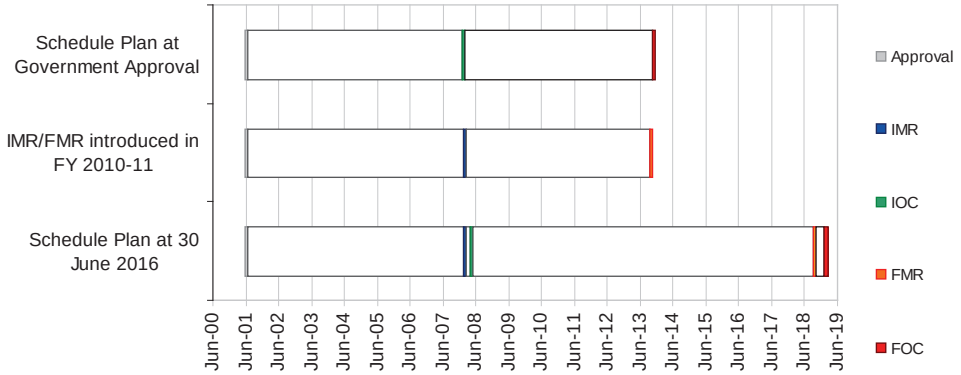
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Mar 08	N/A	
Initial Operational Capability (IOC)				
Platform Modifications and Spiral 1	Feb 08	May 08	3	1
APB 4	Nov 12	Mar 11	(20)	2
Final Materiel Release (FMR)	Nov 13	Oct 18	59	3
Final Operational Capability (FOC)				
Platform Modifications and Spiral 1	Jan 10	Mar 10	2	4

Project FOC	Nov 13	Feb 19	62	5

Notes	
1	Variance was attributable to the Navy Regulatory Review process.
2	Dependent upon US Government acquisition process.
3	FMR date was set before the FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the HWT installation schedule has been delayed.
4	Variance was attributable to the Navy Regulatory Review process.
5	Achievement of FOC is dependent on Navy. The capability delivered by the project is consistent with the MAA and FOC will be achieved when the Capability Manager confirms all other Fundamental Inputs to Capability are complete.

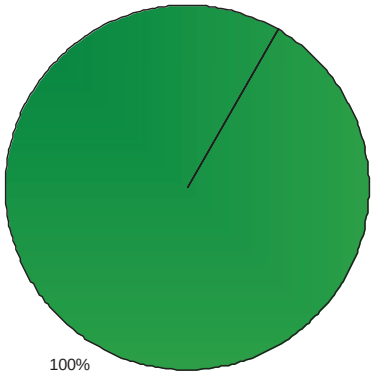
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** Torpedo performance has been endorsed by Navy with the OR of APB Spiral 4, with a caveat that very shallow water performance requires further testing **planned for completion by December** 2016. Training and simulation facilities requirements are currently being met. **Amber:** N/A **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Modification of one Collins Class Submarine and Mk48 Mod 7 CBASS HWT Initial Materiel Certification (awarded under the acceptance system in place prior to the introduction of IMR and FMR).	Achieved
Final Materiel Release (FMR)	Delivery of the approved number of Mk48 Mod 7 CBASS torpedoes, with supporting infrastructure, and acceptance of modifications to all submarines. **FMR is planned for October 2018.**	Not **yet** achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	This risk is being mitigated by: • Use of contractors where appropriate; • Use of Reserve personnel where skills are suitable; and • Optimising use of matrix support staff.
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

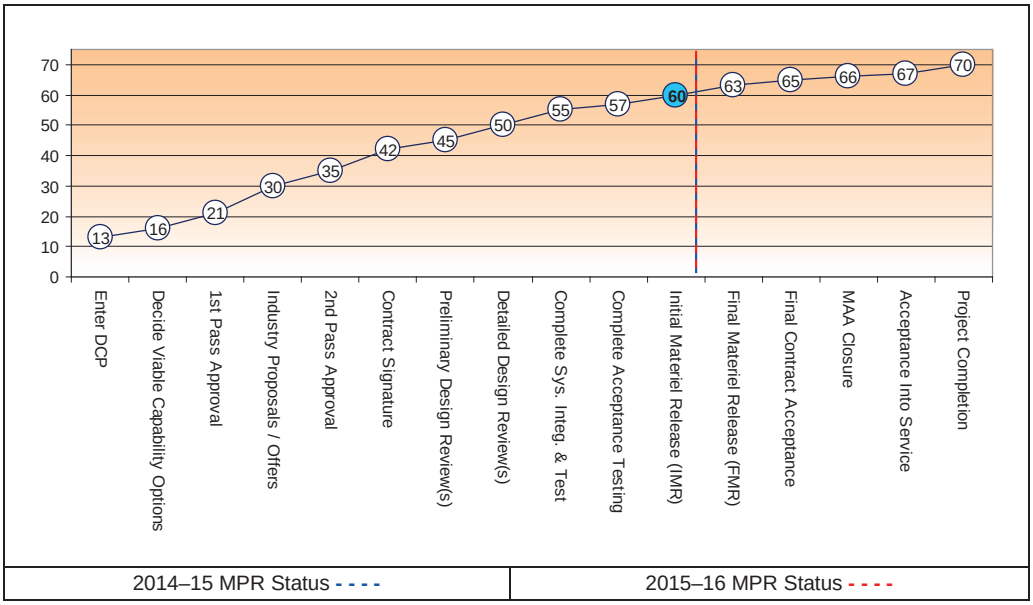
Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the HWT installation schedule.	The Government has agreed to the amended implementation dates resulting from previous docking program changes. A MAA amendment is being staffed to reflect the approved schedule.
Weight of the Mk10 Mod 3 Torpedo Mounted Dispenser has created a manual handling hazard when dispensers are not attached to torpedoes.	The feasibility of replacing the guidance wire with fibre optic cable to reduce weight is being investigated.
As a result of the test coverage limitation declared at OR of APB Spiral 4, more information needs to be collected to fully populate the weapon software model.	DSTG are assessing data collected from firings conducted in 2015 and 2016, with a draft report due by December 2016.

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	8	9	9	9	9	8	9	61
	Explanation	• **Schedule:** FMR date was set before the FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the HWT installation schedule has been delayed. • **Cost:** The completion of APB 4 software operational testing completes a major deliverable. The remaining Project budget and contingency is considered adequate to cover any remaining project cost risk. • **Requirement:** System integration and testing processes have verified the platform modification requirements and those modifications apply to later Spiral baselines. The APB 4 baseline has also been accepted for IOR. • **Technical Understanding:** APB 4 software has completed operational testing.						



2014–15 MPR Status - - - -	2015–16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing is available to execute the project particularly in the start up phase.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule Management
Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US Government International Traffic in Arms Regulation can require up to a year to progress.	Requirements Management
Engaging in a joint development project where Australia is the junior partner and largely dependent on the US Government program, can introduce project management, cost, technology and schedule risk that needs to be addressed.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	**Mr Stephen Johnson (Nov 15–current)**
Branch Head	Mr David Cochrane
Project Director	CMDR Ian Jimmieson (Acting)
Project Manager	CMDR Ian Jimmieson

Project Data Summary Sheet[141]

Project Number	**JP 2008 Phase 5A**
Project Name	**INDIAN OCEAN REGION UHF SATCOM**
First Year Reported in the MPR	2010-11
Capability Type	Upgrade
Acquisition Type	MOTS
Service	Joint Services
Government 1st Pass Approval	Mar 09
Government 2nd Pass Approval	Mar 09 and Mar 10
Total Approved Budget (Current)	**$421.4m**
2015–16 Budget	**$3.0m**
Project Stage	Detailed Design Review
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project will provide the Australian Defence Force (ADF) with twenty 25kHz UHF SATCOM channels on a hosted payload on a commercial Intelsat Satellite (IS-22), to provide coverage of the Indian Ocean Region, and associated ground infrastructure to provide network control.

1.2 Current Status

Cost Performance

In-year

As at 30 June, Final Plan Estimate of $3.0m was achieved.

Project Financial Assurance Statement

As at 30 June 2016, project JP 2008 Phase 5A has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

The IS-22 satellite was successfully launched on 25 March 2012. Materiel Release (MR) for the Indian Ocean Region was achieved on 21 December 2012. In May 2012, additional Network Control System (NCS) design review and test and evaluation milestones were added to the project. In December 2013 a Contract Change Proposal (CCP) was signed causing Final Materiel Release (FMR) for the NCS to move to September 2014. **CCP2 was signed in December 2015 after** the NCS **experienced** software development

141 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report

delays **which resulted** in a slip to FMR (NCS), now forecast to be achieved in **April** 2018 (**49** months behind schedule). **CCP2 introduced two new milestones; the NCS Manager Software Readiness Review (NSWRR) and Software Deployment Readiness Review (SDRR).**

Materiel Capability Delivery Performance

The IS-22 satellite is currently meeting all performance measures, including:

- the hosted payload; and
- the Communications System Monitor (CSM).

The NCS contract was executed on 16 May 2012, factoring United States (US) requirements of Defense Information Systems Agency and Space and Naval Warfare System Command. The implementation strategy was reported to Government. The **Integrated Waveform (IW)** NCS is the largest remaining scope to be delivered. An issue with the modification of Commercial Off The Shelf (COTS) software has caused delay. While the COTS software that is being modified is currently used in other defence departments around the world, it is now considered developmental for this project. **To partially mitigate the impact of the delay part of the final deliverable, IW will be introduced under an interim capability state.**

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The JP 2008 Phase 5 project was created to provide capability originally planned for under the JP 2008 Phase 4 Next Generation SATCOM Capability project (a result of Phase 4 of the project being re-scoped to provide access to the Wideband Global Satellite (WGS) capability).

UHF SATCOM provides critical tactical radio coverage over the Middle East Area of Operations. Coverage was provided by leases on two commercial satellites and channels loaned by the US Government on an availability basis, which proved to be significantly less than the capability needed by the ADF. This project was also formed on the basis that LEASAT 5 would reach end of life in 2011.

A market survey was conducted in September 2008 to inform cost and capability options for JP 2008 Phase 5A. It revealed an opportunity for Defence to host a payload on an Intelsat commercial satellite over the region in mid 2012. A Restricted Request For Tender was subsequently let to ten companies for the capability in November 2008 and Intelsat was selected as the preferred tenderer.

Combined first and second pass Government Approval was given in March 2009 and a contract was signed with Intelsat for eight 25 kHz channels and 15 years support in April 2009.

First pass Government approval was given for the project to pursue a Memorandum Of Understanding with the US to provide global UHF SATCOM coverage using US satellites in return for access to ten 25 kHz channels on IS-22.

A subsequent second pass approval was given in March 2010 which allowed the project to procure the full payload on IS-22.

With the signature of the NCS contract with ViaSat Inc in May 2012, additional design review and test and evaluation milestones were added to the project. **Additional software readiness reviews NSWRR and SDRR were introduced as well as an Interim Capability state that will introduce IW.** These milestones relate to the development and procurement of the UHF Channel Control System.

Uniqueness

The contract with Intelsat is based on the standard ASDEFCON template; however, it required significant tailoring based on input from specialist space lawyers. There are also a number of unique aspects to a contract for a satellite, including the unusual risk profile of the Launch and the corresponding high degree of schedule uncertainty which is typical of a satellite program where product quality requires a high priority.

A UHF Channel Control system was designed and developed to meet the requirements of Australian and US forces.

Major Risks and Issues

The constrained ability of the project to attend previous critical reviews and meetings contributed to the failure of the original NCS design. The project has learned from their limited oversight of the original NCS design by a subcontractor and is determined to ensure there is more face to face communication with the redevelopment of the NCS design. Scope was adjusted between the contractor and subcontractor to reduce risk.

A major issue for the project is the increased resources and associated costs as a result of software development issues. ViaSat are developing the software (instead of their subcontractor) and the testing is no longer independent which requires a greater level of oversight by the project office.

Other Current Sub-Projects

JP 2008 Phase 3E Advanced SATCOM Terrestrial Infrastructure System: This project provides the supporting ground infrastructure for Satellite Communications including UHF, X and Ka band communication services.

JP 2008 Phase 3F ADF SATCOM Terrestrial Enhancements: This project will provide the mature Australian anchoring capability for the WGS constellation.

JP 2008 Phase 4 Next Generation SATCOM Capability: This project provides WGS capability.

JP 2008 Phase 5B1.T1 Transportable Land Terminals: This project will deliver a family of WGS Certified Transportable Land Terminals with advanced waveform capability.

JP 2008 Phase 5B1.T2 Combined Communications Gateway Geraldton (C2G2): This project will provide further Australian western seaboard anchoring capability for the WGS constellation.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Feb 09	Original Approved		4.0	
Apr 09	**Government Initial Second Pass Approval**	269.1		
Apr 10	**Government Subsequent Second Pass Approval**	187.8		1
Jun 14	Real Variation – Real Cost Decrease	(18.0)		2
			439.0	
Jul 10	Price Indexation		18.0	3
Jun 16	Exchange Variation		**(39.7)**	
Jun 16	**Total Budget**		**421.4**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Intelsat Prime	(294.4)		
	Contract Expenditure – ViaSat Prime	(23.8)		4
	Other Contract Payments / Internal Expenses	**(19.7)**		
			(337.9)	
FY to Jun 16	Other Contract Payments / Internal Expenses	**(3.0)**		5
			(3.0)	
Jun 16	**Total Expenditure**		**(340.9)**	
Jun 16	**Remaining Budget**		**80.5**	

Notes	
1	The Initial Second Pass Approval was for eight channels and the Subsequent Second Pass Approval was for the remaining channels of the hosted payload.
2	Real Cost Decrease was a result of Project Office negotiating insurance for payload launch into the contract. Separate launch insurance is no longer needed.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $16.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further ($19.6m) having been applied to the remaining life of the project. For this project, that process was incorrectly executed but corrected in January 2012 by returning $30.9m to the budget; $21.1m and $9.9m for impacts of price and exchange variations respectively.
4	This contract has been in Stop Payment since July 2014.
5	Other Contract Payments / Internal Expenses of **$3.0m** comprise of other Capital and Operating Expenditure related to contractor support services provided by Nova Defence.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
11.1	**2.8**	**3.0**	**PBS-PAES: Due to the delays with the software development, milestone payments have moved to subsequent financial years.** **PAES–Final Plan: 2015-16 budget increased due to the increased effort required by Contractors to support the project.**
Variance $m	**(8.3)**	**0.2**	Total Variance ($m): **(8.1)**
Variance %	**(74.5)**	**7.3**	Total Variance (%): **(72.7)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	**As at 30 June, Final Plan Estimate of $3.0m was achieved.**
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
3.0	**3.0**	**(0.0)**	**Total Variance**	
		(0.0)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Intelsat	Mar 09	202.5	**367.5**	Firm	ASDEFCON (COMPLEX)	1, 3
ViaSat	May 12	36.5	**43.5**	Firm	ASDEFCON (COMPLEX)	2, 3

Notes	
1	The projected Intelsat Contract Price at 30 June **2016** includes Acquisition lines totalling $**294.4m** and Sustainment lines totalling $**73.1**m. The increase in contract price is due to a Contract Change Proposal in 2010 which included 12 additional hosted UHF payload channels and a Communications System Monitor.

2	The projected ViaSat Contract Price at 30 June **2016** includes Acquisition lines totalling $**38.5**m and Sustainment lines totalling $**5.0**m. CCP2, approved in **December** 2015**, was** a nil cost CCP, related to the redevelopment of the NCS design.
3	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Intelsat	8	20	25kHz UHF SATCOM channels on IS-22 Hosted Payload	
ViaSat	N/A	N/A	NCS comprising three channel control sites, and a Test and Training System for support.	

Major equipment received and quantities to 30 Jun 16
All 20 channels were delivered successfully on 25 May 2012 and are now operational.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	IS-22 Hosted Payload	Jun 09	N/A	Jun 09	0	
	NCS	Aug 12	N/A	Aug 12	0	
Preliminary Design	IS-22 Hosted Payload	Nov 09	N/A	Oct 09	(1)	
	CSM	Oct 10	N/A	Nov 10	1	1
Critical Design	IS-22 Hosted Payload	Sep 10	N/A	Sep 10	0	
	CSM	Mar 11	N/A	Mar 11	0	
	NCS	Mar 13	N/A	Mar 13	0	
NCSM Software Readiness	**NCS**	**Jul 16**	**N/A**	**Oct 16**	**3**	**2, 3**
Software Deployment Readiness	**NCS**	**May 17**	**N/A**	**May 17**	**0**	**2**

Notes	
1	The review was conducted in October 2010 but approval by the Project Office did not occur until November 2010 due to a number of issues with requirements traceability that required rectification.
2	**Additional milestones introduced following the signing of CCP2 in December 2015.**
3	**Three month variance based on forecast date in the Contract Master Schedule. Contract milestone is subject to formal contract change and approvals process.**

3.2 Contractor Test and Evaluation Progress

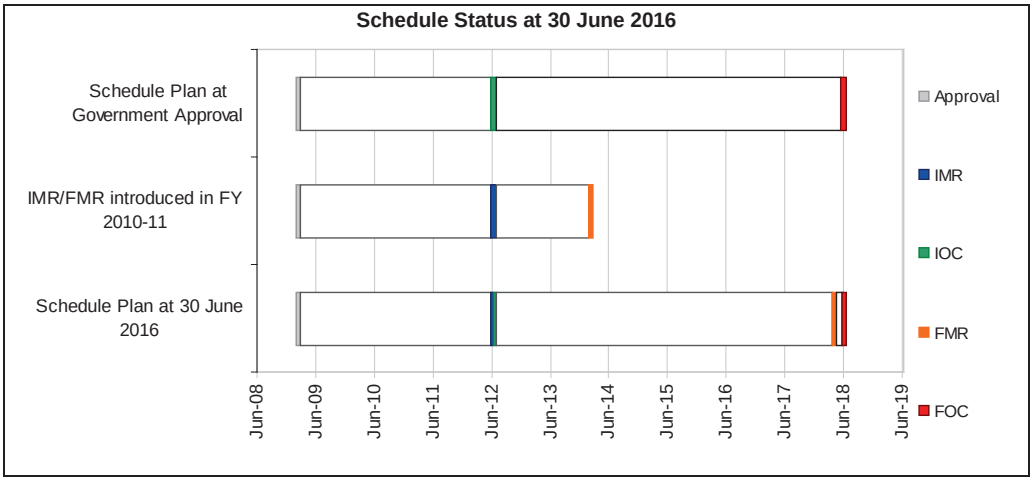
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	IS-22 Hosted Payload	Nov 10	N/A	Feb 11	3	1
	CSM	Sep 11	N/A	Oct 11	1	2
	NCS	Nov 13	Sep 14	**Apr 17**	**41**	3
Acceptance	IS-22 Hosted Payload	Jun 12	N/A	May 12	(1)	
	CSM	Jul 12	N/A	Jun 12	(1)	
	NCS	Mar 14	Sep 14	**Dec 17**	**45**	3

Notes	
1	Delay to commencement of integration was driven by a number of delays in sub system deliveries forming part of the hosted payload including C and Ku antennas (not forming part of this capability) and the UHF antenna.
2	While installation commenced in September 2011, testing to confirm that the installation met requirements was completed in October 2011.
3	In February 2014 ViaSat advised the Commonwealth of software design delays affecting the NCS schedule. In February 2015 ViaSat advised the Commonwealth of their decision to take on elements of work previously contracted to their sub-contractor and continue the software development in house. **Variance is a result of software design delays captured in CCP2 signed in December 2015.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jul 12	Jul 12	0	
Initial Operational Capability (IOC)	Jul 12	Jul 12	0	
Materiel Release (MR) # 1 (Indian Ocean)	Sep 12	Dec 12	3	1
Operational Capability (Indian Ocean)	Sep 12	**Jun** 18	**69**	2
Final Materiel Release (FMR) # 2 (Network Control System)	Mar 14	**Apr** 18	**49**	3
Final Operational Capability (FOC) (Pacific Ocean)	Jun 18	Jun 18	0	4

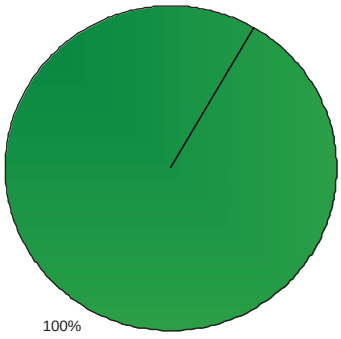
Notes	
1	MR was claimed on 28 September 2012. Chief Information Officer Group (CIOG) requested additional information which was supplied and MR was achieved on 21 December 2012.
2	Operational Capability (Indian Ocean) is scheduled to be declared in **June** 2018.
3	It is anticipated **that the software delays noted in Section 3.2 Note 3** will impact FOC however, the magnitude of the delay is yet to be determined.
4	CIOG will be in a position to acquire agreed UHF capacity from the US as their capacity builds up in the region. A review of project submission documents to Government highlighted the omission of some key milestone dates in the PDSS.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green**: Materiel will meet overall performance requirements which are determined by the hosted payload.
	Amber: N/A
	Red: N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	In Orbit Test of hosted payload.	Achieved
Final Materiel Release (FMR #1)	1. 20 channels on a UHF Hosted Payload, including Operational Support Services for life-of-type in place, telemetry feed operational and initial training for telemetry feed 2. Upgrade of legacy NCS 3. CSM and initial training for CSM	Achieved
Final Materiel Release (FMR #2)	NCS comprising three channel control sites, and NCS/NCS Manager (IW) training package	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk that the redevelopment of the NCS design will fail due to Defence's lack of presence at critical reviews and meetings.	Increased use of video conferences, teleconferences and face-to-face reviews.
There is a risk that delays to CCP2 will inhibit the Commonwealth's ability to implement effective system engineering controls.	**Risk retired following the signing of CCP2 in December 2015.**
There is a risk that previously deemed COTS software, which is now developmental software will result in increased engineering effort, causing schedule delay.	Developmental engineering controls **were inserted via** CCP2. **This risk has been downgraded to medium following the signing of CCP2.**
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	**N/A**

5.2 Major Project Issues

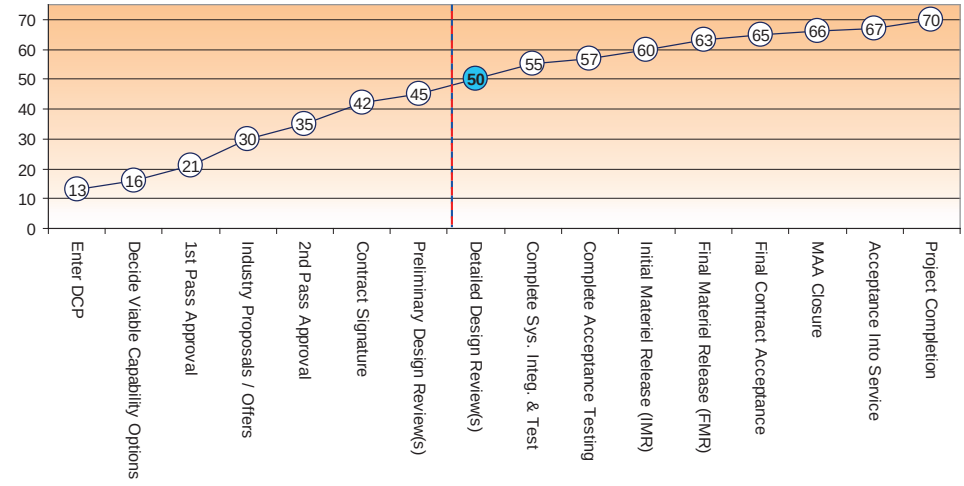
Description	Remedial Action
Defence's lack of presence at critical reviews and meetings contributed to the Project's limited contractor oversight for the original NCS design.	This issue has been retired following the signing of CCP2 and a new risk is being managed.
Increased resources and cost to the CoA due to software issues. Viasat now produces and tests its own software.	**CCP2 provisions allow CoA engineers to obtain monthly software development metrics, send engineers to observe testing for build releases, early release of builds to CoA engineers for in-house review. These provide early insight into software process and capabilities which enable CoA engineers to more thoroughly monitor progress before roll-out.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	6	8	8	7	6	6	7	48
	Explanation	• **Schedule:** The schedule for the NCS has slipped 45 months. • **Cost:** IS-22 and the NCS are on firm fixed price contracts**.** • **Requirement:** IS-22 has been launched and the NCS is expected to fulfil requirement. • **Technical Understanding: Interim operation and support of the capability has been established with a** long term Through Life Support contract **to be established**. • **Technical Difficulty:** Core software product previously under development has ceased. Software development has restarted with Prime Contractor **using alternative base product**. • **Commercial:** The contract milestones will be delayed							



2014-15 MPR Status - - - -	2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	**Mr Ivan Zlabur (Acting Jul 15–Sep 15)** **RADM Anthony Dalton (Oct 15–current)**
Branch Head	Ms Myra Sefton
Project Director	Mr Paul Davies
Project Manager	Mr David Dixon

Project Data Summary Sheet[142]

Project Number	**SEA 1439 Phase 3**
Project Name	**COLLINS CLASS SUBMARINE RELIABILITY AND SUSTAINABILITY**
First Year Reported in the MPR	2009-10
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 00
Total Approved Budget (Current)	$411.7m
2015-16 Budget	**$10.2m**
Project Stage	Integration and Test
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

SEA 1439 Phase 3 is a program of upgrades to Collins Class platform systems and shore infrastructure to improve the Class reliability, sustainability, safety and capability for each of the six submarines.

1.2 Current Status

Cost Performance

In-year

This year the underspend of **$5.6m was primarily driven by the lower than anticipated spend within the second year of the three-year performance period contract with ASC.**

Project Financial Assurance Statement

As at 30 June 2016, project SEA 1439 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

Project SEA 1439 Phase 3 does not have a formal contingency allocation.

142 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

The project consists of 22 separate sub-projects of which the outstanding elements are aligned to the Collins Class Submarine Integrated Master Schedule (IMS). The IMS depicts the submarine maintenance periods where project implementation can be performed. Submarine installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program **and Enterprise priorities**, consequently completion dates vary according to **the** maintenance **program and the focus of ensuring submarines availability targets are achieved**.

Installation of engineering enhancements **are progressing as planned in the High Level Work Program for the In-Service Support Contract (ISSC) Performance Period Two (PP2). Progress continues for activities of project scope implementation on HMAS *Farncomb* in FCD and HMAS *Collins* pre-FCD maintenance periods.** The project continues to progress non-platform activities pertaining to the Diesel Land Based Test Facility with completion of the diesel engine and **generator integration. The project is experiencing a schedule delay related to the Special Forces Exit and Re-entry modifications due to a persistent defect within the conning tower which is prohibiting progress towards manned sea verification trials**. Final Materiel Release (FMR) is expected to be achieved in August 2022.

Materiel Capability Delivery Performance

Only two sub-projects provide new capabilities; Special Forces Upgrade and the Torpedo Decoy. The remaining sub-projects are medium to low complexity engineering enhancements. The Special Forces upgrade provides three capabilities. Two have achieved Operational Release (OR), while the remaining capability (Exit & Re-entry) has been delayed due to the requirement to implement safety modifications identified during the manned Sea Verification Trial. These safety modifications have been installed and harbour and sea acceptance testing on HMAS *Dechaineux* **were conducted** post Mid-Cycle Docking (MCD) in June 2015. **A persistent defect in the Exit and Re-entry modification within the conning tower was identified during the sea trails which lead to further investigation and minor redesign. This has caused an impact in achieving Materiel Release of this capability. Project has rectified the defect and conducted subsequent sea verification trials however have not been able to conduct the required manned sea verification trials to satisfy the requirement for system safety and fitness for purpose.**

Torpedo Decoy received Initial OR on 2 May 2014 by Chief of Navy.

Fourteen engineering enhancements have been completed by the project. The remaining enhancements will be implemented progressively until 2022 subject to the submarine availability and the FCD program.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

In 1999, Government sponsored the '*McIntosh and Prescott Report'* into submarine capability, which was followed by a subsequent review by Head Submarine Capability Team who identified capability, reliability and sustainability issues with the Collins Class platform and associated shore infrastructure. In 2000, Government approved project funds to design and implement engineering enhancements for as many of these capability and materiel deficiencies as possible within the allocated budget. Government also approved a "global budget" whereby Head Maritime Systems could approve transfer of funding between SEA 1439 Phase 3, SEA 1439 Phase 4B (Improvements to Collins Sensors), SEA 1439 Phase 4A (Replacement Combat Systems) and SEA 1429 (Replacement Heavyweight Torpedo) to achieve optimum capability. Under the global budget there have been reductions in funding allocations to SEA 1439 Phase 3 in favour of SEA 1439 Phase 4A and SEA 1429, with a commensurate reduction in the number of engineering enhancements to be implemented through SEA 1439 Phase 3.

The scope of this project is limited to the reliability and sustainability issues identified in the 1999 review and not the more contemporary reliability and sustainability issues relating to diesel engines, generators, batteries or the main motor; those issues are being addressed under the submarine sustainment program.

Many of the engineering enhancements can only be installed during the submarine FCD program and although most design and development activities are complete, submarine upgrades are contingent on the FCD program, which will run to 2022.

A total of 24 platform upgrades were originally identified in the initial MAA. However, two were removed due to one being technically infeasible and the other overlapping with another project. The remaining 22, consisting of two new capabilities and 20 engineering enhancements, have been identified for action under

the project. Fourteen engineering enhancements have been completed and the two new capabilities are being implemented. However, completion of the remaining six engineering enhancements **are** priority driven and will be continually reassessed throughout the project.

The two new capabilities and core engineering enhancements managed by the SEA 1439 Phase 3 project, which represent the highest priority and spend profile, and specifically disclosed in this report include:

1. **Special Forces Upgrade (New Capability):** To provide three basic levels of capability and to further enhance the capabilities to a fully deployable state in two submarines.
2. **Torpedo Counter Measures Internal Stores (Torpedo Decoy) (New Capability):** To provide a programmable counter measure against torpedos.
3. **Fire Fighting Upgrade (Engineering Enhancement):** Upgrade to the fire fighting systems onboard, including greater protection from fire and its toxic by-products.
4. **Sewage System Upgrade (Engineering Enhancement):** Automation of the sewage discharge system and thereby reduce the risks of exposure to toxic gases.
5. **Fast-Track modifications to HMA Ships *Collins, Farncomb, Waller and Rankin* (Engineering Enhancement):** Address platform build deficiencies in a holistic get-well program.

The remaining platform upgrades (engineering enhancements) are outlined in ANAO Report No. 17 2010-11: *2009-10 Major Projects Report.*

Uniqueness

Project SEA 1439 Phase 3 installs prioritised engineering enhancements and acquires replacement materiel as a part of ensuring continuous improvement of the Submarine fleet**.** Engineering enhancements were undertaken by ASC Pty Ltd (ASC) under an annualised cost-plus Through Life Support Agreement (TLSA); however as of 1 July 2012 this work is now contracted under an ISSC initially as a **performance based and** cost-reimbursement arrangement with a subsequent three year target based incentive period. Implementation of the ASC contract scope of work is linked to the boat IMS and driven by availability requirements mandated by Chief of Navy and General Manager Submarines.

Budget management under the cost reimbursement arrangement of the ISSC presents a major challenge for the project in achieving monthly expenditure. This is due to the alignment of **linear** phased expenditure and the supplier's ability to move work within the total work program to achieve **Enterprise agreed objectives and** contracted performance goals.

Major Risks and Issues

Engineering enhancements are managed on a prioritised basis within the funding and skilled resources available, with implementation aligned to the IMS which is not controlled by the project. Where schedule slip occurs, there is the potential for impact on project cost **and schedule** performance.

An emergent risk has been identified pertaining to the HALON actuation panel upgrade as there is a chance that the desired discharge time may not be achievable. Additionally the current design of the Outboard Stowages and installation options may be deficient in a number of areas. **Preliminary design review has been conducted utilising a** design option~~s~~ to mitigate these risks.

The schedule delay related to the Special Forces Exit and Re-entry conning tower modification defect has developed into an issue because of delays in verifying the system prior to HMAS *Dechaineux* Intermediate Docking commencing. This docking will be completed after Materiel Release milestone has past. Verification testing will recommence once the submarine has completed the docking.

Other Current Sub-Projects

SEA 1439 Phase 3.1 Collins Obsolescence Management - Integrated Ship Control Management and Monitoring System Obsolescence: Project scope includes remediating obsolescence of the Integrated Ship Control Management and Monitoring System in the Collins Submarines and shore facilities. Stage One includes purchasing two boat sets and completion of the first installation.

SEA 1439 Phase 4A Replacement Combat System: To provide Collins Class Submarines with the US Navy Tactical Command and Control System: minor improvements to the Combat System Augmentation; sonar and shore facilities for integration, testing and training.

SEA 1439 Phase 4B Weapons and Sensor Enhancements: Acquire endorsed supplies to address deficiencies identified, in the area of Submarine weapons and sensors.

SEA 1439 Phase 5B1 Communications Mast and Antenna Replacement Class Fit: The project aims to fit five submarines with the communications fit developed and tested under Project SEA 1439 Phase 4B, along with one spare antenna, one spare mast raising equipment and spares.

SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Program: The Project scope is to enhance the Communications and Electronic Warfare capabilities of the Collins Class submarine. The project is broken up into two sections - the Modernised Submarine Communications System, an upgrade to the existing on board communications system, and the Microwave Electronic Support Measures, an enhancement to the existing Electronic Warfare capability.

SEA 1439 Phase RCE3 EHF Communications Capability: Extreme High Frequency (EHF) Communications Capability for a single Collins Class Submarine.

SEA 1439 Phase 6 Collins Sonar Capability Assurance Program: The project scope is to address obsolescence and capability deficiencies in the Collins Class Sonar System and establish an ongoing capability assurance program.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Sep 00	Original Approved		72.0	
Apr 01	Real Variation – Transfers	3.7		1
Jul 01	Real Variation – Scope	302.8		2
Sep 02	Real Variation – Transfers	(42.0)		3
Aug 04	Real Variation – Budgetary Adjustments	(0.3)		4
Aug 05	Real Variation – Budgetary Adjustments	(0.5)		5
Oct 06	Real Variation – Scope	7.5		6
			271.2	
Jul 10	Price Indexation		74.4	7
Jun 16	Exchange Variation		(5.9)	
Jun 16	**Total Budget**		**411.7**	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – ASC Pty Ltd	(241.8)		
	Other Contract Payments / Internal Expenses	(113.0)		8
			(354.8)	
FY to Jun 16	Contract Expenditure – ASC Pty Ltd	(4.0)		
	Other Contract Payments / Internal Expenses	(0.6)		
			(4.6)	
Jun 16	**Total Expenditure**		(359.4)	
Jun 16	**Remaining Budget**		52.3	

Notes	
1	Transfer from SEA 1439 Phase 1B.
2	Implementation of a reliable and sustainable Platform (full scope).
3	Transfer to SEA 1439 Phase 4A as part of initial approval.
4	Administrative Savings harvest.
5	Skilling of Australia's Defence Industry harvest.
6	Real Cost Increase for Special Forces Upgrade modification to an additional Collins Class submarine.
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $66.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $7.7m having been applied to the remaining life of the project.
8	Other expenditure comprises **$54.7m** against multiple minor contracts with Defence companies (including Australian companies), contractor and consultancy services associated with the delivery of this project and project specific travel expenses. Other examples of significant expenditure include $12.3m for the Propulsion Control Reference System, $11.7m to L3 Nautronix Ltd for the underwater communications system and sonobuoy, $9.3m for the Towed Array Handling System, $7.4m for general operating expenditure, $4.7m for contractor service providers, $4.1m for minor contracts, $3.7m with Thales for the Underwater Telephone, $3.1m for Torpedo decoy procurement, and **$2.0m** for generator procurement.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
8.4	10.5	10.2	PBS-PAES: Committed funding of ($2.1m) rolled over into financial year 2015-16 for the ASC ISSC three year performance period. PAES-Final Plan: Estimates revised down ($0.3m) in year for Materials and Sub-Contractor support for the design and development of the Fire Fighting Upgrade HALON actuation, Special Forces External Stowage, and Explosive Ordnance Locker sub-projects.
Variance $m	2.1	(0.3)	Total Variance ($m): 1.8
Variance %	24.8	(2.9)	Total Variance (%): 21.1

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(5.6)	Australian Industry	An end of financial year variance of ($5.6m) was primarily driven by the lower than anticipated spend within year two of the three-year performance period of contract with ASC.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support in Operations	
			Additional Government Approvals	
10.2	4.6	(5.6)	**Total Variance**	
		(54.9)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
ASC Pty Ltd	Jul 12	N/A	N/A	Variable (Cost Reimbursement)	ASDEFCON	1

Notes	
1	The contract is comprised of five year Performance Periods from 1 July 2014 - Target Cost Incentive Model arrangements with Direct Project Costs (DPCs) reimbursed subject to defined rules and constraints and an agreed Target Cost Estimate of DPCs for the five year Period, reset at the end of three years

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
ASC Pty Ltd	N/A	N/A	See 1.3 Project Context: Background for further information.	

Major equipment received and quantities to 30 Jun 16
A total of 22 platform upgrades (consisting of two new capabilities and 20 engineering enhancements) continue to be progressed for each of the six submarines - subject to the IMS.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned (Note 1)	Achieved/Forecast (Note 1)	Variance (Months)	Notes
Final Design Review	Special Forces Upgrade	N/A	N/A	Dec 04	N/A	2
	Torpedo Decoy	Jun 10	N/A	Jul 10	1	
	Fire Fighting Upgrade	N/A	N/A	Jun 04	N/A	2
	Sewage System Upgrade	N/A	N/A	Nov 04	N/A	2
	Fast Track Enhancements	N/A	N/A	N/A	N/A	
First of Class Implementation	Special Forces Upgrade (COLLINS)	Jun 05	N/A	Oct 07	28	3, 4
	Torpedo Decoy	Jun 10	N/A	Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Jul 06	N/A	Oct 07	15	
	Sewage System Upgrade (WALLER)	Jul 06	N/A	Jul 08	24	
	Fast Track Enhancements (RANKIN)	May 01	N/A	Jun 06	61	
Full Class Implementation	Special Forces Upgrade (COLLINS)	May 08	May 18	May 18	120	3, 4
	Torpedo Decoy	Oct 13	N/A	Dec 13	2	5
	Fire Fighting Upgrade (DECHAINEUX)	Sep 22	N/A	May 22	(4)	6
	Sewage System Upgrade (COLLINS)	Mar 17	N/A	May 18	14	7
	Fast Track Enhancements (WALLER)	Jul 06	N/A	Nov 07	16	

Notes	
1	The above data represents rolled-up information within the listed sub-projects each of which has many independent design review activities associated with over 100 Configuration Change Proposals. As the critical path for these sub-projects was broadly defined by the submarine docking program, individual activities within each of the above sub projects were allowed to move provided the delivery of the capability was not impacted adversely by delaying the completion of the specific docking. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the submarine docking program.
2	In some instances, the original planned schedule for sub projects was incorporated into the submarine maintenance schedule which was maintained by ASC. ASC update the maintenance schedule annually and do not retain original schedule information. Consequently, apart from post June 2005 activities supported by a MAA, it is not possible to provide the original planned dates for some platform upgrade projects, which were scheduled to occur during an unstable FCD Program. Fast Track was initially installed on two submarines and managed under SEA 1446 Phase 1 Collins Class Interim Minimum Operating Capability. SEA 1439 Phase 3 is responsible for rolling out those changes to the remaining four submarines. As such, all design and associated design review and approval was achieved under SEA 1446 Phase 1.

3	HMAS *Collins* received modifications for Multi Swimmer Release and Float on/Float off which comprise two of the three Special Forces capabilities. The third (Exit and Re-entry) required redesign to increase diver safety following sea trials conducted in HMAS *Collins* in 2008. **The redesigned safety modifications identified were installed on HMAS *Dechaineux* MCD (completed December 2014). These modifications are planned for HMAS *Collins* FCD which is scheduled to complete May 2018 in accordance with the current IMS.**
4	The Special Forces Upgrade safety modifications identified during the manned Sea Verification Trial have been installed and harbour and sea acceptance testing on HMAS *Dechaineux* completed post MCD in June 2015. **This capability is still undergoing sea trials to determine system safety and fitness for purpose as required to achieve Initial OR. Full class implementation will be achieved on completion of HMAS *Collins* FCD which is scheduled for May 2018, and excludes the activities required to achieve Initial OR and OR.**
5	Full class implementation has been achieved with the approval of the Configuration Change Instruction. Variance is a result of minor delays in the Configuration Management process.
6	Installation of Fire Fighting Upgrades are planned to be finalised early on HMAS *Sheean* during MCD (January 2018) with final class installation on HMAS *Dechaineux* occurring during FCD (May 2022).
7	Full class implementation will be achieved on the completion of HMAS *Collins* FCD which is scheduled for May 2018 in accordance with the IMS.

3.2 Contractor Test and Evaluation Progress

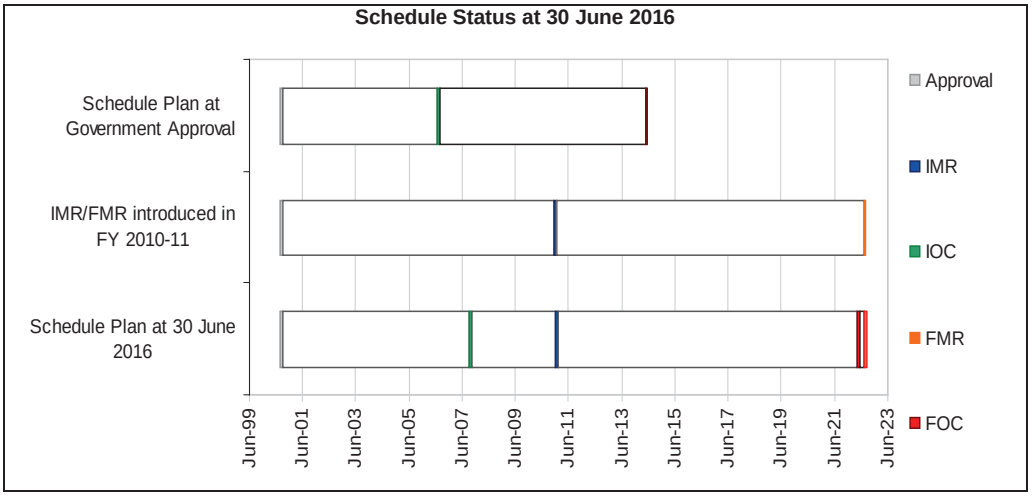
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned (Note 1)	Achieved/Forecast (Note 1)	Variance (Months)	Notes
Harbour Acceptance Test (HAT)	Special Forces Upgrade (COLLINS)	Jun 05	N/A	Sep 06	15	
	Torpedo Decoy	Jun 10	N/A	Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Oct 13	May 14	May 14	7	2
	Sewage System Upgrade (WALLER)	Jul 06	N/A	Mar 07	8	
	Fast Track Enhancements	N/A	N/A	N/A	N/A	
Sea Acceptance Test (SAT)	Special Forces Upgrade (COLLINS)	Aug 05	N/A	Dec 07	28	3
	Torpedo Decoy	Jul 10	N/A	Jul 10	0	
	Fire Fighting Upgrade	N/A	N/A	N/A	N/A	
	Sewage System Upgrade (WALLER)	Aug 06	N/A	Oct 07	14	
	Fast Track Enhancements	N/A	N/A	N/A	N/A	

Notes	
1	**Refer** Section 3.1 **Note 2**. Fast Track was initially installed on two submarines and managed under SEA 1446 Phase 1. SEA 1439 Phase 3 is responsible for rolling out those changes to the remaining four submarines. As such, HAT and SAT was achieved under SEA 1446 Phase 1.
2	Variance was attributed to the change in schedule completion of HMAS *Rankin* FCD from October 2013 Version (IMS V3.3) and the current baselined IMS.
3	**Refer Section 3.1 Note 3 and 4 and Section 3.3 Note 1.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Jan 11	N/A	
Initial Operational Capability (IOC)				
Initial Operational Release Special Forces Upgrade (DECHAINEUX)	Nov 10	**Mar 17**	**76**	1
Initial Operational Release Torpedo Decoy	Aug 10	May 14	45	2
Fire Fighting Upgrade (RANKIN)	Oct 13	May 14	7	3
Sewage System Upgrade (WALLER)	Aug 06	Oct 07	14	4
Fast Track Enhancements	N/A	N/A	N/A	5
Final Materiel Release (FMR)	Oct 22	Aug 22	(2)	6
Final Operational Capability (FOC)				
Operational Release of Special Forces Upgrade	Jun 07	**Jun 19**	**145**	7
Operational Release of Torpedo Decoy	Jun 14	**Jul 17**	**37**	8
Fire Fighting Upgrade (DECHAINEUX)	Jun 14	May 22	95	9
Sewage System Upgrade (COLLINS)	Jun 14	May 18	47	9
Fast Track Enhancements (WALLER)	Jul 06	Nov 07	16	10

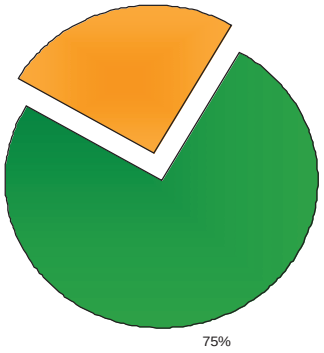
Notes	
1	Special Forces Upgrade modifications have been delayed due to the requirement to implement safety modifications identified during the manned Sea Verification Trial. These safety modifications have been installed and harbour and sea acceptance testing on HMAS *Dechaineux* completed post MCD in June 2015. **However, a persistent defect within the safety modifications has impacted schedule as the project conducts further sea verification trails. Access to the submarine and necessary resources has further impacted the schedule which has subsequently pushed out the forecast by 12 months to provide sufficient time to conduct the necessary trials to verify the system is safe and fit for purpose.**
2	Torpedo Decoy received Initial OR on 2 May 2014 by Chief of Navy. The delay in schedule has been due to a combination of delays in acceptance of the safety case and a delay in approval of the OR due to the appointment of a new Chief of Navy.
3	IOC is linked to successful completion of the HAT, where any variance will be caused through movement in the docking maintenance schedule. These dates are based on the IMS**.**
4	IOC is linked to completion of the FOC SAT. Variance due to changes in docking maintenance schedule since original MAA.
5	Fast Track initially installed on two submarines and managed under SEA 1446 Phase 1. SEA 1439 Phase 3 is responsible to roll out to remaining four submarines. IOC was the responsibility of SEA 1446 Phase 1.
6	FMR dates have now been aligned to **the current baselined** IMS and reflected in the MAA.
7	The MAA delivery date was for HMAS *Collins* only. HMAS *Dechaineux* implementation through MAA amendment created variance. The delay was further influenced by contractor workforce constraints and the phased delivery of capability enhancements to the Special Forces systems. **Operational Test and Evaluation estimated to take twelve months dependent on submarine availability and other resources. Forecasted date twelve months post HMAS *Collins* FCD.**
8	Delay in achieving IOR for the Torpedo Decoy has caused a delay to OR to allow for Navy to conduct the required Operational Test and Evaluation Period. **Operational Test and Evaluation is underway however a completion date is currently unknown to the project.**
9	Variance due to changes in docking maintenance schedule since original MAA. **Forecast date linked to FCD completion.**
10	Fast Track initially installed on two submarines and managed under SEA 1446 Phase 1. This project installed the Fast Track upgrades across the remaining four submarines. Variance due to changes in docking maintenance schedule since original MAA.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** **The project is currently meeting capability requirements as expressed in the MAA except for the achievement of materiel release of the** Special Forces Exit and Re-entry safety modifications on HMAS *Dechaineux.* **Refer Section 1.2 Materiel Capability Delivery Performance.** **Amber:** **A persistent defect in the Special Forces Exit and Re-Entry modification in HMAS Dechaineux was identified during the sea trails which lead to further investigation and minor redesign. This has impacted the Material Release of this capability. Project has recently rectified the defect and conducted subsequent sea verification trials however have not been able to conduct the required manned sea verification trials to ensure system safety and fitness for purpose.** **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Completion of the following platform upgrades on all submarines unless otherwise specified: • Special Forces Upgrade: Multi swimmer release and Float On/Float Off; • Torpedo Countermeasures; • Fire Fighting Upgrade: HMA Ships *Waller, Dechaineux and Sheean*; • Sewage System Upgrade: HMA Ships *Waller* and *Dechaineux*; • Fast-Track modifications: HMA Ships *Collins Farncomb*, *Waller* and *Rankin*; and • Other remaining subordinate projects relating to platform build deficiencies in a holistic get-well program.	Achieved
Final Materiel Release (FMR)	Completion of **previous Materiel Releases (Refer Section 1) and** dockings up to and including HMA Ships *Waller* and *Dechaineux* FCD consisting of: • Special Forces Upgrade – Outboard Stowage: HMA Ships *Collins* and *Dechaineux;* • Special Forces Upgrade – Explosive Ordnance: HMA Ships *Collins* and *Dechaineux;* and • Diesel Engine Upgrades: All Submarines (expected end HMAS *Waller* FCD (May 2020)). FMR is planned for August 2022.	Not **yet** achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance of delays to the FCD schedule due to other non-project related activities or other higher priority Program activities that reduce the contractors' ability to undertake project activities which would result in a schedule and cost impact to the Project.	This risk is being treated by: • **Aligning Project schedule with Program schedule (IMS);** • **Ensuring all Project Configuration Change Instructions are approved and planned into the FCD Advance Planning Letter, Maintenance Availability Change Proposal 1 & 2;** • **Ensure Project Materials are available for the FCD; and** • **Ensure the off boat and on boat activities are understood and where possible off boat work is done ahead of target FCD.**

There is a chance that **Program priorities and** competing workload demands **of** skilled resources **will impact on the availability to undertake project activities as planned because of competing priorities within the Program and the limited number of skilled resources available which would result in a schedule and cost impact to the project.**	This risk is being treated by: • Resolving design issues with engineering enhancements early to improve design maturity. • Coordinating the engineering enhancement workload on the ASC capped workforce. • **Aligning Project schedule with Program schedule (IMS).** • **Ensuring all Project Configuration Change Instructions are approved and planned into the FCD Advance Planning Letter, Maintenance Availability Change Proposal 1 & 2.** • **Utilise other skilled resources where possible (either direct or indirect).**
There is a chance that the current design of the Outboard Stowages and installation options will be deficient in a number of areas (weight and pressure) **due to current design solutions being unable to meet original user requirements. As a result, the number of pressure vessels may need to be reduced to overcome weight and user requirements may need to be revisited.**	This risk is being treated by: Project Office to seek clarification of Special Forces and platform requirements /constraints to re-confirm feasibility of design options **and user requirements.** • **Destructive testing and modelling of preliminary design solution.**

Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
There is a chance that Wormald HALON actuation solution does not meet the required discharge time due to system integration issues or capacity. As a result, the Fire Fighting HALON system will not comply to the agreed Standard, requiring further re-design.	**This risk is being treated by:** • **Compliance requirement flowed to Wormald who have to demonstrate how this can be achieved.** • **System engineering (Preliminary and Detailed Design Reviews etc) will be adhered to ensure adequate review and acceptance is carried out during the design process.**

5.2 Major Project Issues

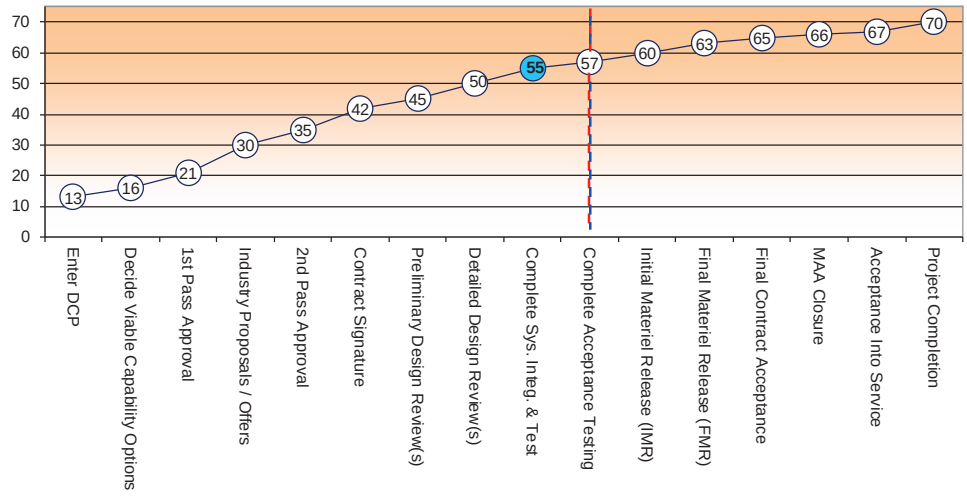
Description	Remedial Action
Special Forces Exit and Re-entry capability manned sea verification Trial was not conducted prior to HMAS *Dechaineux* Intermediate Docking due to delays in proving the system fit for purpose, driven by the continued defect of the conning tower compressible volume curtain. As a result, this capability will not meet the MAA date.	**This issue is being treated by:** • **Update all Special Forces documentation associated with the operation and support of the Special Forces Exit and Re-entry capability.** • **Engage SUBSAFE Board to ensure expectations are being managed and stakeholders are aligned.** • **Ensure configuration change instructions are approved for the design** • **Assist ASC where possible in rectifying the compressible volume curtain defect and facilitate boat access to conduct required repairs and testing.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	7	8	8	8	8	8	55
Integration and Test	Project Status	8	8	8	8	8	8	9	57
	Explanation	• **Cost:** Project scope contracted through the ISSC with ASC in 5 yearly performance periods thus providing a more robust cost and estimate to complete. • **Operations and Support:** Project has achieved IMR for a number of sub-project enhancements and is now primarily in the implementation phase.							



2014-15 MPR Status - - - - | 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that all capability requirements are clearly defined, approved and appropriately funded before detailed acquisition planning commences.	Requirements Management
Ensure that maintenance period schedule dependencies are identified and appropriate risk management strategies developed.	Schedule Management
Consider the impact associated with long term sole source cost plus contracts.	Contract Management
Understand the competing priorities within a program (ISS Performance Term Contract) and how they will impact on individual project performance.	**Schedule Management Contact Management**

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	**Mr Stephen Johnson (Nov 15-current)**
Branch Head	**CDRE John Chandler (Jul 15-current)**
Project Director	Mr Brad Hajek (Acting)
Project Manager	Mr Brad Hajek

Project Data Summary Sheet[143]

Project Number	**SEA 1448 Phase 2A**
Project Name	**ANZAC ANTI-SHIP MISSILE DEFENCE**
First Year Reported in the MPR	2009-10
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 03
Total Approved Budget (Current)	$386.8m
2015-16 Budget	**$30.9m**
Project Stage	Initial Materiel Release
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA 1448 Phase 2 project will provide the ANZAC Class Frigates with an enhanced level of self defence against modern anti-ship missiles. There are two sub-phases of SEA 1448 Phase 2. Phase 2A of the ASMD Project, is to upgrade all eight of the ANZAC Class Ship's existing Combat Management Systems (CMS) and fire control systems, and install an Infra-Red Search and Track (IRST) System which will provide improved detection of low level aircraft and anti-ship missiles when the ship is close to land.

1.2 Current Status

Cost Performance

In-year

As at 30 June the project has an underspend of $9.0m. This underspend is due to the inability to process a planned closing pain/gain share payment to industry participants. A review of the pain/gain share final payment has identified significantly complex errors that have not been resolved within the 2015-16 Financial Year. It is expected that the reconciliation process will be completed by September 2016 and will be transferred into the 2016-17 budget estimates.

143 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Project Financial Assurance Statement

As at 30 June 2016, project SEA 1448 Phase 2A has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has applied contingency in the financial year **for the treatment of pain/gain share adjustments as discussed above. Contingency was also applied to reconcile project financial approvals and purchase order values between this project and project SEA 1448 Phase 2A.**

Schedule Performance

The systems being provided under Phase 2A are being delivered to current schedule. Overall, due to the interdependence of Phase 2A with Phase 2B, the Government approving a change of acquisition strategy for Phase 2B in August 2009 and the Real Cost Increase for Phase 2B for the follow on ships 2-8 in November 2011, there is now a 70 month variance to the original **approved date for Final Operational Capability (FOC)** for this Phase of the Project. During 2014-15, due to pressures from the large sustainment package of work, a revised schedule **was** developed for ships four onwards. Recent achievements include the Materiel Release (MR) of the **fourth ship HMAS *Warramunga* in October 2015, and the fifth ship** HMAS *Ballarat* **in May 2016.** HMAS *Parramatta* the sixth ship **and HMAS *Toowoomba* the seventh ship are both well into the upgrade, with the final ship HMAS *Stuart* due to enter the program in mid 2016**. The project remains on track to deliver Final Operating Capability by October 2017.

Materiel Capability Delivery Performance

The Initial Materiel Release was claimed for Stage 1 Capability on HMAS *Perth* on 24 June 2011. The Chief of Navy formally provided Initial Operational Release (IOR) for ASMD upgrade capability delivered to HMAS *Perth* and its associated support systems on 16 August 2011. The Project has now completed Operational Test & Evaluation (OT&E) for the final Stage 2 Capability. Initial Operational Capability (IOC) **was achieved in** September 2015.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Explanation
Background The need for an ASMD capability in the Royal Australian Navy's (RAN) surface fleet was first foreshadowed in the 2000 Defence White Paper. SEA 1448 Phase 2A is the initial phase of the ANZAC ASMD Program, performed by the ANZAC Alliance (Commonwealth plus BAE Systems (previously Tenix) and Saab Systems), to provide ship systems capable of integrating missile defence systems. Phase 2A was approved by Government in November 2003 for $449.0m (December 2003 prices). This included an element for the Very Short Range Air Defence (VSRAD) System (two per ship) of $155.4m, which was quarantined pending the outcome of investigations into an active Phased Array Radar system (PAR) (referred to as CEAFAR) and its Sea trials conducted in 2004, which was subsequently approved in the SEA 1448 Phase 2B Second Pass Approval. SEA 1448 Phases 2A and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. Phase 2A represents a low risk due to its in-service equipment. As a result of technical issues in the integration of the phased array radar into the Class with Phase 2B of the ASMD Project in 2007, a change to the Phase 2B Project acquisition strategy caused delays in the installation of the equipment being purchased under Phase 2A. These delays do not impact on the delivery of the Phase 2A equipment, which is being delivered into store and appropriately maintained until the Phase 2B acquisition strategy calls on the equipment for installation. To support the upgraded Mk3E Combat Management System and Infra-Red Search and Track (IRST), a combined ASMD Integration and Training Centre was built by the then Defence Support Group (DSG) in 2006. This building was added to the existing ANZAC System Support Centre located at HMAS *Stirling* in Western Australia. This facility was made available for lead ship training between September 2010 and April 2011 and was formally handed to Navy in August 2011. The support for the Mk3E Combat Management System is already in contract as there is an existing sustainment support contract with Saab Systems (Australia) for the existing Saab Mk3 Combat Management System that is already installed in the ANZAC Class. The IRST will be supported through the current ANZAC Alliance arrangements. **The lead ship, HMAS *Perth,* successfully underwent acceptance testing between October 2010 and June 2011 with the Chief of Navy accepting IOR in August 2011. IOC was achieved in September 2015.**
Uniqueness The Phase 2A Combat Management System upgrade is the next generation of the Mk3E system initially installed on the final ANZAC Class Frigate (HMAS *Perth*). The Mk3E was the first Windows XP based Commercial-Off-The-Shelf combat management system in the RAN and was initially installed in HMAS *Perth* as part of a de-risking trial. This Phase of the ASMD Project is currently fully contracted through the ANZAC Ship Alliance.
Major Risks and Issues The major risks and issues for SEA 1448 Phase 2A are: • Unplanned work being activated during an ASMD refit period, predominantly through the concurrent sustainment program; and • With multiple ships now in the ASMD program, managing the demands of competing resources across complex activities including major sustainment programs.
Other Current Sub-Projects **SEA 1448 Phase 2B** - This Phase completes the ASMD Upgrade by delivering a Phased Array Radar (PAR) System consisting of a target indication and tracking radar titled CEAFAR and a missile illuminator system, titled CEAMOUNT which will provide mid-course guidance and terminal illumination to the Evolved Sea Sparrow Missile (ESSM). This phase also replaces the existing ANZAC Class navigation radar. **SEA 1448 Phase 4A** –This Phase complements the ASMD Upgrade by delivering a contemporary Electronic Support Measures (ESM) system. This Phase is being managed through Electronic Systems Division (ESD).

Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Jan 04	Original Approved		449.0	
Aug 04	Real Variation – Budgetary Adjustments	(0.1)		
Mar 06	Real Variation – Transfers	(155.4)		1
Feb 07	Real Variation – Transfers	(4.4)		2
			(159.9)	
Jul 10	Price Indexation		101.3	3
Jun 16	Exchange Variation		(3.6)	
Jun 16	**Total Budget**		386.8	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – SAAB Systems Pty Ltd (CMS)	(109.6)		4
	Contract Expenditure – BAE Systems Australia (IRST)	(93.8)		
	Contract Expenditure – BAE Systems Australia (Follow On)	(50.8)		4
	Contract Expenditure – BAE Systems Australia (First of Class)	(36.9)		4
	Contract Expenditure – SAAB Systems Pty Ltd (First of Class)	(23.2)		4
	Other Contract Payments / Internal Expenses	(18.5)		4, 5
			(332.8)	
FY to Jun 16	Contract Expenditure – BAE Systems Australia (Follow On)	(18.5)		
	Other Contract Payments / Internal Expenses	(3.4)		6
			(21.9)	
Jun 16	**Total Expenditure**		(354.7)	
Jun 16	**Remaining Budget**		32.1	

Notes	
1	$155.4m transferred to Project SEA 1448 Phase 2B for phased array radar procurement with procurement of VSRAD capability as directed by Government.
2	Transferred to the then DSG for facilities funding of the ASMD Systems Integration and Training Centre.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $88.8m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $12.5m having been applied to the remaining life of the project.
4	**The amounts for each contract differ from prior years due to a revalidation of life to date expenditure. It should also be noted that the amount for SAAB Follow On is now included within "Other Expenditure".**
5	**Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned top five contracts and minor contract expenditure.**

6	Other expenditure comprises: AAB Australia Pty Ltd (CMS ISS) (1.0m), BAE Systems Australia (CSTT) ($0.9m), operating expenditure, contractors and other capital expenditure not attributable to the aforementioned top five contracts.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
25.4	23.3	30.9	PBS - PAES: The ($2.0m) variance is due to the application of the outcomes of the lessons learned Program, in conjunction with the proactive management of the ASMD production and refit schedule. PAES - Final Plan: The $7.6m variance is predominantly due to the addition of $11.9m projected gain share into the Project budget. Additionally, ($5.3m) was identified as being incorrectly allocated to Phase 2A. The remainder of the variance was due to revised phasings.
Variance $m	(2.0)	7.6	Total Variance ($m): 5.5
Variance %	(8.0)	32.3	Total Variance (%):21.8

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		(9.0)	Australian Industry	The project has an underspend of $9.0m which is predominately due to the inability to process a planned closing pain/gainshare payment to industry participants. A review of the pain/gainshare final payment has identified significantly complex errors that will not be resolved within the 2015-16 Financial Year. It is expected that the reconciliation process will be completed by September 2016. Industry Participants have also indicated efficiencies resulting in an underspend for the project.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
30.9	21.9	(9.0)	**Total Variance**	
		(29.3)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
SAAB Systems Pty Ltd (CMS)	Apr 05	123.1	109.6	Variable	Alliance	1
BAE Systems Australia (IRST)	Apr 05	104.9	93.8	Variable	Alliance	2
BAE Systems Australia (First of Class)	May 06	26.0	40.3	Variable	Alliance	1, 2, 3

SAAB Systems Pty Ltd (First of Class)	**May 06**	**6.8**	**25.9**	Variable	Alliance	**1, 3**
BAE Systems Australia **(Follow on Ships)**	Jan 12	74.9	**84.4**	Variable	Alliance	1, 2

Notes	
1	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).
2	These contracts are listed with BAE Systems Australia, formerly Tenix Defence.
3	**The contract signature dates and values differ from the prior year reflecting that the previously reported dates and figures related to the contract version at the time of the project entering the MPR, rather than the original signed contract.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
SAAB Systems Pty Ltd **(CMS)**	8	8	Combat Management Systems and Fire Control System upgrades	1
BAE Systems Australia **(IRST)**	8	8	Infra-red Search and Track Systems	1
BAE Systems Australia **(First of Class)**	**1**	**1**	First of Class Installation	
SAAB Systems Pty Ltd **(First of Class)**	**1**	**1**	First of Class Installation	
BAE Systems Australia **(Follow on Ships)**	7	7	FON Ships 2-8 Installation	

Major equipment received and quantities to 30 Jun 16	
1	Equipment has been delivered into store and is being appropriately maintained until required by Phase 2B for its installation. Installation has been completed for First of Class ship, HMAS *Perth*, HMAS *Arunta*, HMAS *ANZAC*, **HMAS *Warramunga*** and HMAS Ballarat

Notes	
1	$155.4m transferred to Project SEA 1448 Phase 2B for phased array radar procurement with procurement of VSRAD capability as directed by Government

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track – Stage 1 (Requirements Review)	Feb 04	N/A	Aug 05	18	1
	Mk3E Combat Management System/Fire Control Director – Stage 1 (Functional Review)	Apr 05	N/A	Aug 06	16	1
	Mk3E Combat Management System/Fire Control Director – Stage 1 (System Performance Review)	N/A	N/A	Nov 06	N/A	
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	N/A	May 06	N/A	
Preliminary Design	Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track System – Stage 1	Nov 05	N/A	Aug 07	21	1
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	N/A	Nov 06	N/A	
Critical Design	Stage 1 Critical Design Review – Part 1 (All except Phased Array Radar in the AFT mast)	Sep 06	N/A	May 08	20	1
	Stage 1 Critical Design Review –	N/A	N/A	Aug 08	N/A	

	Part 2 (Remaining components of AFT mast)					
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	N/A	Jun 07	N/A	

Notes	
1	Variances indicated are directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.

3.2 Contractor Test and Evaluation Progress

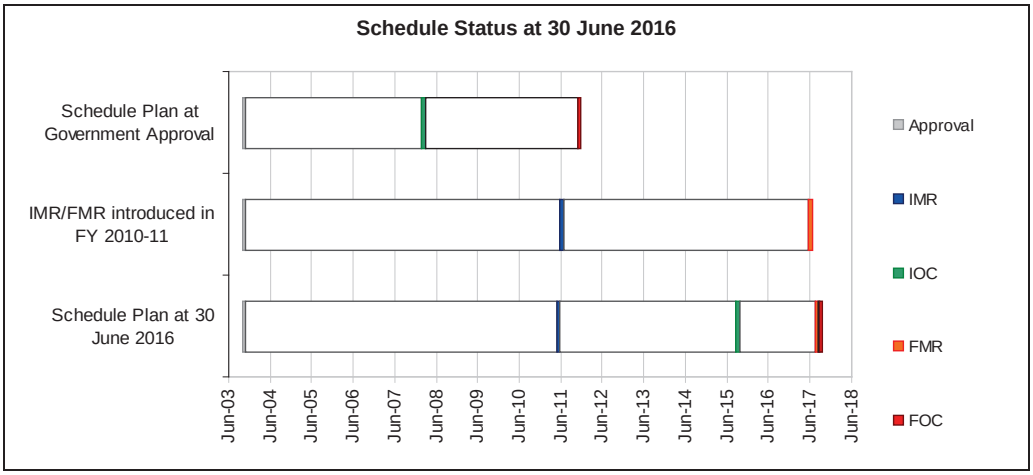
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Nov 07	N/A	Mar 11	40	1, 2
Acceptance	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Apr 08	Jun 11	Jun 11	38	1

Notes	
1	Variance indicated **was** directly linked to the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.
2	Additional variance of one month due to production completion delay of one month in lead ship HMAS *Perth*.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Jun 11	N/A	
Initial Operational Capability (IOC)	Mar 08	Sep 15	89	1
Final Materiel Release (FMR)	Jul 17	**Sep 17**	**2**	2
Final Operational Capability (FOC)	Dec 11	Oct 17	70	3

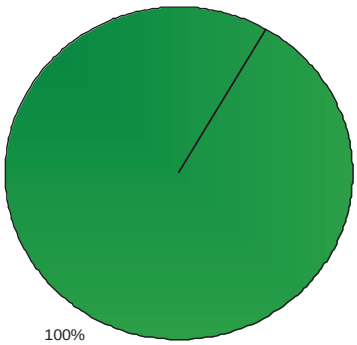
Notes	
1	Variance **was** directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform. The previous variance was linked to the updated Materiel Acquisition Agreement (MAA) which moved IOC until after PAR System has been proven against Super Sonic Targets.
2	This variation is due to the approval of ships 2-8 by Government.
3	Variance is a result of the ASMD Project Management Stakeholder Group agreeing to link the completion date of this Phase of the Project with that of Phase 2B **and** the approval of ships 2-8 by Government.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The Project is meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** N/A **Red:** N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Provisional acceptance of the ASMD upgraded HMAS *Perth.*	Achieved
Final Materiel Release (FMR)	Acceptance of the ASMD upgraded ship 8, HMAS *Stuart,* scheduled for **September** 2017.	Not Yet Achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Recognising that the IRST System being installed under Phase 2A is a new capability being fielded by the RAN for the first time, there is a chance it will not operate to the expectations.	Successful completion of acceptance testing for HMAS *Perth* has seen all systems achieving initial materiel certification in June 2011. Subsequent at sea operations by HMAS *Perth* has proven the system meets initial capability requirements. This risk **has been retired as the achievement of IOC has confirmed the performance of the IRST system.**
Unplanned work is activated during an ASMD refit period, predominantly though the concurrent sustainment program.	Where possible limit any additional work that has the potential to impact the ASMD schedule. In consultation with Navy, review, revise and validate an extended schedule to facilitate a larger sustainment program.
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	**N/A**

5.2 Major Project Issues

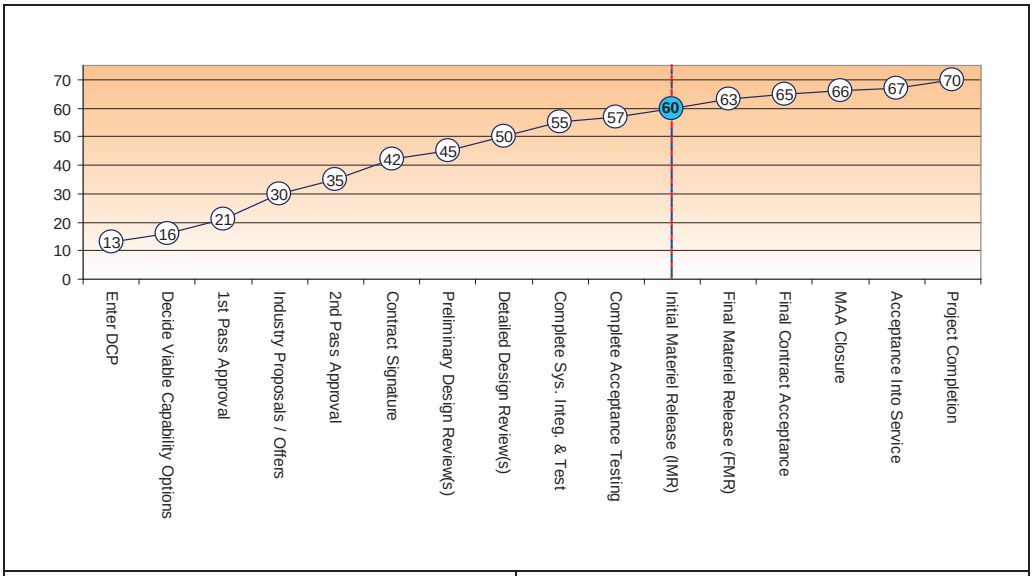
Description	Remedial Action
N/A	N/A

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	8	8	9	9	9	8	9	60
	Explanation	1. **Schedule:** Schedule is mature and there remains a further **three** ships to upgrade. 2. **Requirement:** **Based on the completion of OT&E, the requirements of Phase 2A are clearly understood.** 3. **Technical Understanding:** Successful OT&E completed in August 2013.							



2014-15 MPR Status - - - -	2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Adequate implementation of Project Systems Engineering processes. In light of this, the ASMD Project has rigidly followed a disciplined systems engineering process that has ensured the complete traceability from requirements through to final acceptance testing.	Requirements Management
Ensuring that stakeholder engagement at all levels (engineering and strategic) is culturally embedded within the Project Team.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	RADM Mark Purcell, RAN **(to Dec 15)** **RADM Adam Grunsell, RAN (Dec 15-current)**
Branch Head	CDRE Steve Tiffen, RAN
Project Director/Manager	Mr Mark Simmonds **(to Mar 16)** **Mr Michael Welsh (Acting Mar 16-current)**

Project Data Summary Sheet[144]

Project Number	**LAND 75 Phase 4**
Project Name	**Battlefield Command Systems**
First Year Reported in the MPR	2015-16
Capability Type	New
Acquisition Type	Australianised MOTS
Service	Australian Army, Royal Australian Air Force
Government 1st Pass Approval	Aug 13
Government 2nd Pass Approval	Aug 13 (Work Package A)
Total Approved Budget (Current)	$372.8m
2015–16 Budget	$108.6m
Project Stage	Initial Materiel Release (IMR)
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

AND 75 Phase 4 aims to increase and enhance the Army's networked force acquired under Land 75 Phase 3.4. The Battle Management System Command and Control (BMS-C2) will provide tactical and operational commanders with enhanced situation awareness tools, evolved command and control, extend the capability into the armoured fighting vehicle fleets and enrich training and simulation to provide a collaborative approach to complex warfighting.

LAND 75 Phase 4 has been divided into four work packages consisting of:

- Work Package Alpha (WP-A) - **Approved**. This work package **is expanding** the basis of provisioning for M113AS4 (Armoured Personnel Carriers), Protected Mobility Vehicles and G-Wagon.
- Work Package Bravo (WP-B) - **Unapproved**. This work package seeks to integrate the BMS-C2 into additional vehicle platforms.
- Work Package Charlie (WP-C) - **Unapproved**. This work package seeks to implement a mature BMS-C2 training solution.
- Work Package Delta (WP-D) - **Unapproved**. This work package seeks to extend the functionality of the BMS-C2 to support formation headquarters and enhance the dismounted Battlefield Management System.

144 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

LAND 75 Phase 4 Work Package Alpha is a continuation of LAND 75 Phase 3.4 from the Major Projects Report of 2014-15. Under LAND 75 Phase 3.4, the Commonwealth implemented the core Battle Group and Below – Command, Control and Communications (BGC3) system capability for the Australian Defence Force's Land Force.

LAND 75 Phase 4 WP-A is scoped to provide additional quantities of BGC3 to:

- 294 M113AS4 (Armoured Personnel Carriers),
- 255 Protected Mobility Vehicles,
- 401 G-Wagon Vehicles, and
- 10 Engineering kits.

LAND 75 Phase 4 WP-A will also:

- Design BGC3 to be integrated into the Protected Mobility Vehicle Air Defence Variant (PMADV), and
- Enhance the BGC3 capabilities through extension of the BGC3 Variable Message Format (VMF).

In October 2014, Government approved project closure arrangements for LAND 200 Tranche 1 that finalised the transfer of M113AS4 BGC3 installation activities to LAND 75 Phase 4 from LAND 75 Phase 3.4 that was originally agreed by Government as part of the 2012 Federal Budget.

1.2 Current Status

Cost Performance

In-year

In-year expenditure, to 30 June 2016, of $108.3m resulted in an underspend of $0.3m against a budget of 108.6m. The variation was due to foreign exchange movement.

Project Financial Assurance Statement

As at 30 June 2016, project LAND 75 Phase 4 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations for this project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has applied contingency in the financial year for the treatment of the extension of instructional support to Army, movement of vehicles in support of regionally based installation activities and offer definition and improvement activities.

Schedule Performance

In the 2012 Federal Budget, the Government moved Battle Management System (BMS) installation into M113AS4 from LAND 75 Phase 3.4 to the then unapproved LAND 75 Phase 4 WP-A, leaving design activities with LAND 75 Phase 3.4. In the Government Approval of WP-A in 2014 the remaining M113AS4 design work was transferred from LAND 75 Phase 3.4 to LAND 75 Phase 4 WP-A.

LAND 75 Phase 4 WP-A has achieved Initial Materiel Release (IMR), with the completion of 36 PMV Command Variant vehicles. The project continues to install the BGC3 system into vehicles in accordance with the materiel release milestones.

The project achieved Detailed Design Review (DDR) for the PMADV variant in March 2016 and commenced test and evaluation activities.

The project has conducted design and internal system testing on the full scope of VMF messages being delivered under WP-A. The project will conduct formal VMF regression testing in June 2016 and system level regression testing (Conformance to standard testing) is planned for September 2016.

In the 2013 Government Approval of LAND 75 Phase 4 there is no Initial Operational Capability (IOC) and Final Operational Capability (FOC) linked to LAND 75 Phase 4 WP-A. IOC and FOC are linked to WP-B-D, which is the element of LAND 75 yet to be approved by Government.

Materiel Capability Delivery Performance

The project achieved Initial Materiel Release (IMR) of 36 PMCV BGC3 installed vehicles in June 2016.

Final Materiel Release (FMR) for the project is scheduled to be achieved by June 2017.

Note
Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

LAND 75 Phase 4 WP-A received Government Combined First and Second Pass Approval in August 2013. LAND 75 Phase 4 WP-A is a Contract Change Proposal (CCP) to the BGC3 Contract and the CCP was executed with the Prime Contractor on 19 December 2013.

LAND 75 Phase 4 WP-A has delivered additional BGC3 installed into the following platforms:

- 36 Protected Mobility Command Vehicle (PMCV),
- 109 Protected Mobility Troop Vehicle (PMTV),
- 12 Protected Mobility Electronic Warfare (PMVEW) vehicle installation kits,
- 5 PMCV engineering vehicle installation kits,
- 5 PMTV engineering vehicle installation kits,
- 26 G-Wagon General Service Vehicles,
- 110 G-Wagon Manoeuvre Vehicles,
- 117 G-Wagon upgrades from General Service Vehicle to Manoeuvre Vehicle,
- 129 G-Wagon Command and Control vehicle installation kits, and
- 21 M113AS4 Armoured Personnel Carriers.

Uniqueness

The capability being delivered under LAND 75 Phase 4 WP-A is a continuation of the capability delivered under LAND 75 Phase 3.4. LAND 75 Phase 4 WP-A does contain design development for the PMADV variant of Bushmaster, which is based largely on the PMCV design delivered under LAND 75 Phase 3.4. The software development of enhanced VMF BGC3 capability does introduce software engineering development scope.

Major Risks and Issues

Nil.

Other Current Sub-Projects

Nil.

Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Nov 13	Original Approved		319.0	1
Jun 15	Real Variation – Real Cost Increase		8.5	2
Jun 16	Exchange Variation		45.3	
Jun 16	**Total Budget**		372.8	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Elbit Systems Limited	(179.1)		3
	Other Contract Payment / Internal Expenses	(6.2)		4
			(185.3)	
FY to Jun 16	Contract Expenditure – Elbit Systems Limited	(94.9)		3
	Other Contract Payment / Internal Expenses	(13.4)		5
			(108.3)	
Jun 16	**Total Expenditure**		(293.7)	
Jun 16	**Remaining Budget**		79.1	

Notes	
1	This project's original budget amount represents a combined First and Second Pass for Work Package Alpha as well as a First Pass for Work Package Bravo to Delta.
2	Real Cost Increase for M113AS4 design effort from LAND 75 Phase 3.4.
3	Expenditure against LAND 75 Phase 4.
4	Other expenditure comprises: Contractor Support ($4.3m), Consultants ($1.5m), Minor Capital ($0.3m), Operating Expenditure ($0.1m) and expenditure not attributable to the Prime contract.
5	Other expenditure comprises: Contractor Support ($4.7m), Consultants ($2.2m), Operating Expenditure ($6.2m), and Minor Capital ($0.3m), expenditure not attributable to the Prime contract.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Defence's Explanation of Material Movements
101.9	109.9	108.6	PBS-PAES: The variation is due to a new requirement to move vehicles for the BMS Installation and the exchange rate. PAES-Final Plan: No significant change from PAES.
Variance $m	7.9	(1.2)	Total Variance ($m): 6.7
Variance %	7.8	(1.1)	Total Variance (%): 6.6

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	The $0.3m underspend was due to a Foreign exchange movement.
		(0.3)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
108.6	108.3	(0.3)	**Total Variance**	
		(0.3)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Elbit Systems Limited	Dec 13	204.3	325.0	Variable	ASDEFCON	1,2

Notes	
1	This includes escalation on the Milestone as the contract is in Base Date Quarter three 2007 prices.
2	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Elbit Systems Limited	666	960	BGC3 installed into M113, PMV and G-Wagons	1,2

Major equipment received and quantities to 30 Jun 16
Protected Mobility Vehicle Command Variant (PMCV) – 36 Protected Mobility Vehicle Troop Variant (PMTV) – 109 Protected Mobility Vehicle Electronic Warfare (PMEW) – 12 Protected Mobility Vehicle Command Variant (Engineering Quantities) – 5 Protected Mobility Vehicle Troop Variant (Engineering Quantities) – 5 G-Wagon General Service Variant – 26 G-Wagon Manoeuvre Variant – 110 G-Wagon General Service Variant to Manoeuvre Variant Upgrade – 117 G-Wagon Command and Control Variant – 129 M113AS4 Armoured Personnel Carrier – 21

Notes	
1	CCP 019 executed on 19 December 2014 for the supply of BGC3 vehicle installation kits for M113AS4.
2	CCP 022 executed on 9 December 2015 for the installation of BGC3 vehicle installation kits into the M113AS4.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Preliminary Design	PMADV	Jun 14	Sep 14	Jan 15	7	1
Detailed Design	M113AS4	Dec 11	N/A	Feb 15	38	2
	PMADV	Dec 15	Nov 15	Mar 16	6	3
Functional Configuration Audit	M113AS4	Sep 15	N/A	Oct 15	1	
	PMADV	Nov 15	Apr 17	Apr 17	0	
	VMF Software	Mar 17	N/A	Jun 17	3	4
Physical Configuration Audit	M113AS4	Sep 15	N/A	Oct 15	1	5
	PMADV	Nov 15	Apr 17	May 17	1	
	VMF Software	Mar 17	N/A	Jul 17	4	4

Notes	
1	Delays due to the availability of Government Furnished Equipment.
2	Delays in LAND 75 Phase 3.4 due to complex design issues.
3	Delays by contractor not achieving entry criteria for Detailed Design PMADV.
4	Delays due to synchronisation with In Service Support software release.
5	Delays due to approval of user handbooks and manuals.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Conformance to Standard Testing	VMF Software	Nov 16	N/A	Sep 16	(2)	1
First Article Factory Testing	PMADV	Jul 16	N/A	Nov 16	4	

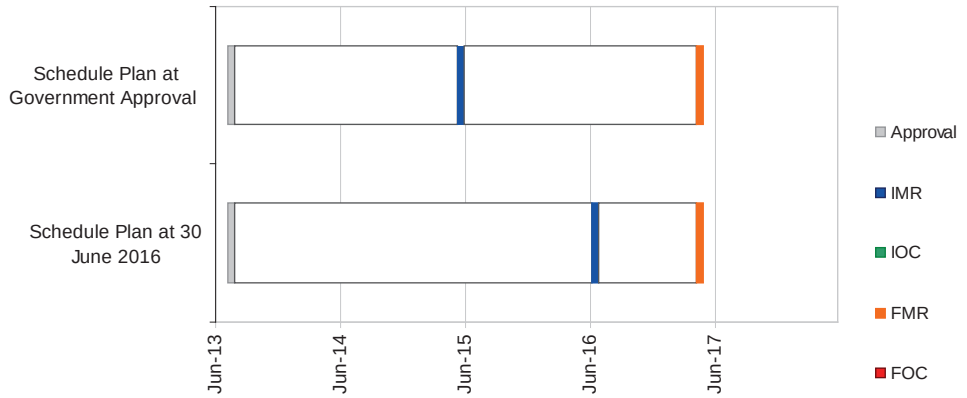
Notes	
1	System integration was completed under LAND 75 Phase 3.4.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jun 15	Jun 16	12	1
Materiel Release 2	Feb 16	Aug 16	6	2
Materiel Release 3	Mar 16	Jul 16	4	3
Materiel Release 4	Nov 16	Jul 16	(4)	
Materiel Release 5	Dec 16	Dec 16	0	
Materiel Release 6	Mar 17	Jan 17	(2)	
Final Materiel Release (FMR)	Jun 17	Jun 17	(0)	4

Notes	
1	Installations for IMR were delivered in July 2015, However the achievement of IMR did not occur until June 2016 after design acceptance was achieved.
2	Delayed due to provision of Government Furnished Equipment to Contractor.
3	Delayed due to provision of Government Furnished Equipment to Contractor.
4	In the 2013 Government Approval of LAND 75 Phase 4 there is no Initial Operational Capability (IOC) and Final Operational Capability (FOC) linked to LAND 75 Phase 4 WP-A. IOC and FOC are linked to WP-B-D, which is the element of LAND 75 yet to be approved by Government.

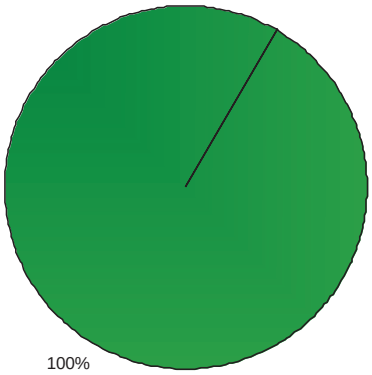
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The project is currently meeting capability requirements as expressed in the Material Acquisition Agreement and supporting suite of capability definition documentation.
	Amber:
	Red:
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Delivery of 36 installed BGC3 PMCV vehicles. Installations for IMR were delivered in July 2015. However, the achievement of IMR did not occur until June 2016 after design acceptance was achieved.	Achieved.
Final Materiel Release (FMR)	FMR requires the following to be delivered: 36 installed BGC3 PMCV vehicles, 126 BGC3 G-Wagon upgrades from GSV to MNV vehicles, 123 installed BGC3 G-Wagon MNV vehicles, 26 installed BGC3 G-Wagon GSV Dual Cabin vehicles, 126 installed BGC3 PMTV vehicles, 12 BGC3 PMVEW vehicle installation kits, 5 BGC3 PMCV engineering vehicle installation kits, 5 BGC3 PMTV engineering vehicle installation kits, 129 BGC3 G-Wagon Command and Control vehicle installation kits, 294 installed BGC3 M113AS4 Armoured Personnel Carriers, additional VMF messages and 20 installed BGC3 PMADV vehicles.	Not yet achieved.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

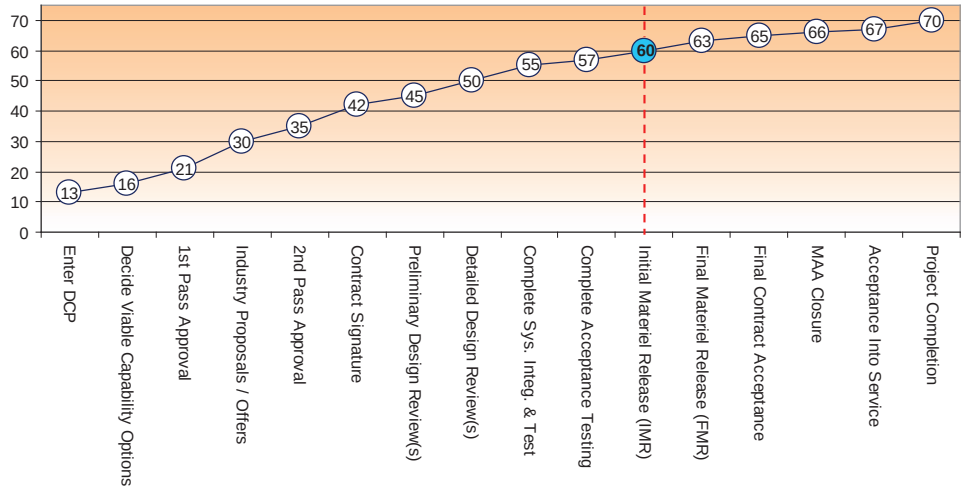
Description	Remedial Action
N/A	N/A

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	10	8	8	8	9	8	9	60
	Explanation	N/A							



2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	Mr Ivan Zlabur (Acting Jul 15–Sep 15) RADM Tony Dalton (Oct 15–current)
Branch Head	Mr Roger Grose (Acting to Aug 15) Mr Brad Flux (Sep 15–Feb 16) Mr Roger Grose (Mar 16–current)
Project Director	LTCOL Rob Gunn
Project Manager	Mr Paul Spencer

Project Data Summary Sheet[145]

Project Number	**JP 2048 Phase 3**
Project Name	**AMPHIBIOUS WATERCRAFT REPLACEMENT**
First Year Reported in the MPR	2013-14
Capability Type	Replacement
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	Feb 09
Government 2nd Pass Approval	Sep 11
Total Approved Budget (Current)	**$237.9m**
2015–16 Budget	**$27.6m**
Project Stage	Initial Materiel Release
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

The JP 2048 Phase 3 project will provide the Amphibious Deployment and Sustainment capability with a new breed of watercraft that will be organic to the two new Canberra Class Amphibious Assault Ships, Landing Helicopter Dock (LHD), acquired under JP 2048 Phase 4A/4B. The craft will be known as LHD Landing Craft (LLC). The LLC will interface and operate with the LHD ships and will enable transport of personnel and equipment from the LHD ships to the shore, including where there are no fixed port facilities or prepared landing facilities. The LLC have an in-service date of 2014–2016.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2016 the project experienced an underspend of $1.7m against an in-year budget of $27.6m, which was due to exchange rate gains and lower than planned expenditure against minor contracts.

Project Financial Assurance Statement

As at 30 June 2016, project JP 2048 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the Financial Year.

145 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Schedule Performance

Major project milestones achieved in **2015-16** include:

- Completion of Acceptance Test and Evaluation activities for LLC **09-12** in Spain;
- Completion of LLC crew training;
- **Navy acceptance of LLC 05-08;**
- **Achievement of Initial Operational Capability (IOC) (12 months behind schedule);**
- **Completion of Military communication and navigational display systems installation on LLC 09-12; and**
- **Navy acceptance of LLC 09-12.**

Final Operational Test and Evaluation for the LHD/LLC interface trials occurred in May 2016. These trials were incomplete with a new trial date to be re-scheduled which may delay Final Materiel Release (FMR) as forecast and is likely to delay Final Operational Capability (FOC) to first half 2017.

Materiel Capability Delivery Performance

The project remains on track to deliver the materiel capability as approved at Second Pass.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

A Request for Information and Optimisation Study was conducted before developing a Preliminary Function Performance Specification from the Operational Concept Document. A Request for Proposal (RFP) was released in November 2007. The RFP evaluation determined the Navantia proposed LCM-1E series watercraft was the most suitable design, as it is a Military off the Shelf (MOTS) solution and already in service with the Spanish Armada.

The project received First Pass approval in February 2009. Government approved the Navantia LCM-1E MOTS solution as the most suitable capability option and the project released a direct source Request for Tender to Navantia in May 2009. The Evaluation Report was endorsed by the Capability Development Stakeholder Group in July 2010.

The project received Second Pass approval in September 2011 and a contract was signed between the Commonwealth and Navantia in December 2011 for the acquisition of 12 LHD Landing Craft (LLC) built in Spain, based on the LCM-1E series watercraft with Australian modifications for the Royal Australian Navy (RAN) together with associated supplies and Integrated Logistic Support.

In accordance with the project Materiel Acquisition Agreement (MAA) the 12 LLC **were** delivered in three batches of 4 craft:

- Batch 1 (LLC 01-04) scheduled for April 2014 (achieved on schedule);
- Batch 2 (LLC 05-08) scheduled for March 2015 (achieved ahead of schedule); and
- Batch 3 (LLC 09-12) scheduled for January 2016 **(achieved ahead of schedule)**.

Uniqueness

While the LLC is based on an existing Spanish LCM-1E series watercraft design, in addition to the Spanish requirements the LLC will be built to Classification Society standards.

Major Risks and Issues

The project has accepted **all** batches of LLCs (**12 LLCs** in total) from Navantia in Australia.

The delay to schedule of Navy Operation Test and Evaluation (NOTE) from Quarter four 2015 to Quarter two 2016, was due to unavailability of military assets and Navy introducing into service this new capability. FMR was scheduled for February 2016 is now forecast for June 2016. The Project is still working towards achieving FMR as forecast, however it may not be acknowledged by Navy until Quarter four 2016.

This risk 'Inability to verify system and functionality requirements during NOTE' is due to be retired as all system and functional requirements have been verified using evidence from the LLC Contractor acceptance trials conducted in Spain 2013 – 2014 and the LHD/LLC interface trials conducted by Navy in 2016.

Other Current Sub-Projects
JP 2048 Phase 4A/4B: The acquisition of two Canberra Class Amphibious Assault Ships, LHDs and associated supplies and support. The LLC are required to integrate with the LHD ships.
Note
Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Jul 09	Original Approved		2.9	1
May 11	Real Variation – Scope	(0.7)		2
Sep 11	**Government Second Pass Approval**	233.5		
Aug 13	Real Variation – Transfer	(7.7)		3
			225.1	
Jul 10	Price Indexation		0.1	4
Jun 16	Exchange Variation		9.7	
Jun 16	**Total Budget**		237.9	
	Project Expenditure			
Prior to Jul 15	Contract Expenditure – Navantia	(128.4)		
	Other Contract Payments / Internal Expenses	(21.9)		5
			(150.3)	
FY to Jun 16	Contract Expenditure – Navantia	(21.8)		
	Other Contract Payments / Internal Expenses	(4.1)		6
			(25.9)	
FY to Jun 16	**Total Expenditure**		(176.3)	
Jun 16	**Remaining Budget**		61.6	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	Removal of requirement for Project to fund APS salaries – approved May 2011.
3	A real decrease of ($7.7m) was approved vide MAA V2.1 dated August 2013 as the Second Pass Approval Agreement Price did not match the Transfer Price from Capability Development Group. The real decrease corrected this.
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $0.1m.
5	Other prior year expenditure comprises: Operating Expenditure, Military Communication System contract ($9.1m), Customs Duty ($5.3m), Navigation Display System contract ($2.4m), Minor Capital expenditure not attributable to the Prime contract ($2.1m), Contractor Support ($1.7m) and Pre Second Pass activities ($1.3m).
6	Other current year expenditure comprises: Customs Duty ($2.8m), Navigation Display system contract ($0.6m), Military Communication System contract ($0.2m) Contractor Support ($0.4m) and Minor Capital expenditure not attributed to the Prime contract ($0.1m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
35.5	27.1	27.6	PBS–PAES: The variation is due to the rescheduling of the testing of LLC 09 and 10 forward into 2014-15 and the subsequent estimate reduction for 2015-16. PAES–Final Plan: The variation is due to exchange rate changes.
Variance $m	(8.4)	0.6	Total Variance ($m): (7.8)
Variance %	(23.7)	2.1	Total Variance (%): (22.1)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Exchange rate gains on foreign currency transactions ($1.1m) and lower than planned expenditure against major contracts for commercial operation costs of the landing craft ($0.6m).
		(1.1)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
		(0.6)	Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
27.6	25.9	(1.7)	**Total Variance**	
		(6.2)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 16 $m	Type (Price Basis)	Form of Contract	Notes
Navantia	Dec 11	148.9	150.4m	Variable	ASDEFCON	1,2

Notes	
1	Amendments to the Contract since signature include execution of contracted options for long lead time items, spares and training delivery.
2	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2016 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 16	Scope	Notes
Navantia	12	12	LHD Landing Craft and Support System	

Major equipment received and quantities to 30 Jun 16

Project acceptance of LLC 01-04 achieved in April 2014, LLC 05-08 in February 2015 and LLC 09-12 in November 2015. Construction of all 12 LLCs complete.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirement	Mission System	Dec 11	N/A	Dec 11	0	
	Support System	Dec 11	N/A	Dec 11	0	
Preliminary	Mission System	Jun 12	N/A	Aug 12	2	1

Design	Support System	Jun 12	N/A	Jun 12	0	
	Navigational Display System	Jul 13	N/A	Oct 13	3	1
Critical Design	Mission System	Nov 12	N/A	Nov 12	0	
	Support System	Nov 12	N/A	Dec 12	1	1
	Military Communication System – Mission System	Mar 13	N/A	Jul 13	4	2
	Military Communication System – Support System	Jun 13	Dec 13	May 14	11	3
	Navigational Display System	Oct 13	N/A	Dec 13	2	1

Notes	
1	This design review was formally exited following the completion of actions identified within the exit criteria and/or other action items identified during the review.
2	Elbit Systems of Australia (ELSA) Mission System Detailed Design Review (DDR) was scheduled to be conducted in late March 2013, however, this coincided with a Navantia Mandated System Review and key project members were not available to attend. The ELSA DDR was rescheduled to the earliest mutually convenient date. This design review was formally exited following the completion of actions identified within the exit criteria during the review.
3	ELSA Support System DDR was not conducted in December 2013 as ELSA's planned prototyping activity in Spain was delayed due to Navantia's delay in production schedule. March 2014 was the earliest mutually convenient date. This design review was formally exited following the completion of actions identified within the exit criteria during the review.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LLC 01-04	Feb 14	N/A	Feb 14	0	1
	LLC 05-08	Dec 14	N/A	Dec 14	0	1
	LLC 09-12	Oct 15	N/A	Aug 15	(2)	1
Acceptance	LLC 01-04 Project Acceptance	Apr 14	N/A	Apr 14	0	
	LLC 05-08 Project Acceptance	Mar 15	N/A	Feb 15	(1)	2
	LLC 09-12 Project Acceptance	Jan 16	N/A	**Nov 15**	**(2)**	2

Notes	
1	System Integration refers to Navantia test and evaluation of the LLC and does not include the Battle Management System (BMS) or Navigational Display System (NDS). The BMS and NDS **were** installed on **LLC 01-12**, after acceptance of the craft by the CoA from Navantia.
2	The production of the **second and** third batch of 4 LLC **were completed ahead of** schedule.

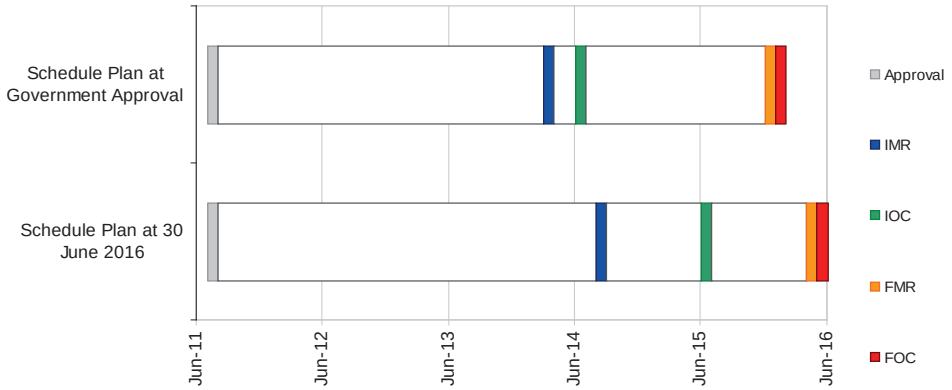
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	May 14	Oct 14	5	1
Initial Operational Capability (IOC)	Aug 14	Aug 15	12	1
Materiel Release 2 (MR2)	Apr 15	Jun 15	2	**2**
Final Materiel Release (FMR)	Feb 16	**Jun 16**	**4**	**3**
Final Operational Capability (FOC)	Feb 16	**Jun 16**	**4**	**3**

Notes	
1	IMR was submitted on 20 June 2014 and was accepted by Navy on 10 October 2014 following the

	review of Initial Operational Release (IOR) documentation. This has had a flow on effect to activities, including IOC.
2	Lessons learnt from IMR indicated that the MR2 schedule was too optimistic and this resulted in a two month variance.
3	**Final Operational Test and Evaluation for the LHD/LLC interface trials occurred in May 2016. These trials were incomplete with a new trial date to be re-scheduled which may delay FMR as forecast and is likely to delay FOC to first half 2017. As at 30 June 2016, the Capability Manager has not advised that either FMR or FOC had been achieved.**

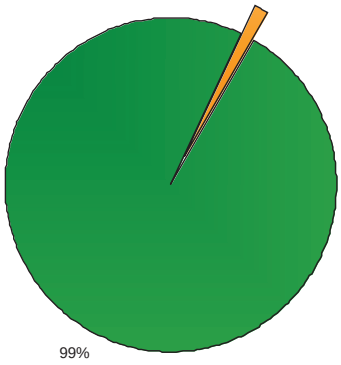
Schedule Status at 30 June 2016



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** **The designs' operational envelope has been certified by a Classification Society and the Contractor's acceptance test activities have been completed which has proven the Materiel Capability Performance. Navy plan to complete the LHD/LLC interface trials Quarter four 2016 to support achievement of Final Operational Capability.** **Amber:** **The trials in May 2016 were not completed as planned for safety reasons. Navy is planning to complete the trial and confirm existing OQE for LLC in early 2017.** **An IFF capability for the LLC is not in the scope of JP2048 Phase 3 and will be addressed as part of Project SEA 2048 Phase 6 with funding being transferred from SEA 2048 Phase 3 to SEA 2048 Phase 6 when the latter becomes an 'approved project'. In the interim the LLC will be accepted by Navy without the IFF capability noting that the vessels are fitted with the Army Battle Management System (BMS) and Automatic Identification System (AIS) which will provide situational awareness for the vessels.** **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	• LLC 01-04 (installed communications, BMS, navigation system and armament) delivered ready for Training, work-up, Operational Test and Evaluation. • LLC Support System sufficient to support Operational Testing on 4 LHD Landing Craft, including transition to sustainment.	Achieved
Final Materiel Release (FMR)	• LLC 09-12 (inclusive of communications, BMS, navigation system and armament) delivered ready for Training. • LLC Support System sufficient to support 12 Landing Craft, including transition to sustainment.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Inability to verify system and functionality requirements during Naval Operation Test and Evaluation (NOTE).	**This risk is due to be retired as all system and functional requirements have been verified using evidence from the LLC Contractor acceptance trials conducted in Spain 2013 – 2014 and the LHD/LLC interface trials conducted by Navy in 2016.** **The delay of NOTE from Quarter four 2015 to Quarter two 2016 was due to unavailability of military assets and Navy introducing into service this new capability. FMR was scheduled for February 2016 and forecast for June 2016. The MAA is being updated to adjust FMR from February 2016 to June 2016. The Project is still working towards achieving FMR as forecast, however, it may not be acknowledged by Navy until Quarter four 2016.** **Navy notes the Naval Operational Test and Evaluation has not yet been completed.**
Emergent Risks (risk not previously identified but has emerged during 2015-16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

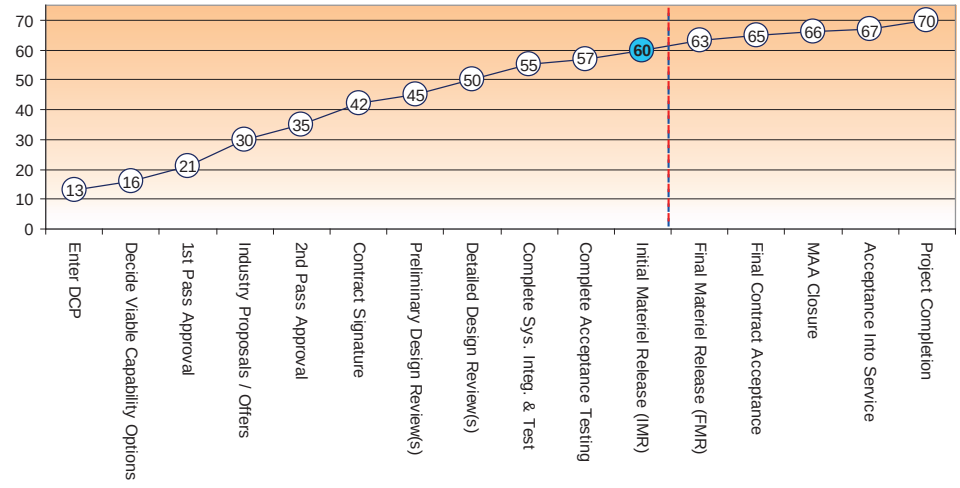
Description	Remedial Action
LLC 01-04 are not correctly supported with supplies.	The project office to fast track the approval process for spares procurement. The project is investigating local acquisition of those spares assessed as critical to initially support the LLC. **This issue is now closed as all spares have been delivered to the Commonwealth and the** SPO has established a supply chain to procure spares locally.
Failure to complete all certification testing by FMR.	**This issue is due to be retired as all certification is complete using evidence from the LLC Contractor acceptance trials conducted in Spain 2013 – 2014 and the LHD/LLC interface trials conducted by Navy in 2016.** **Certification for the carriage of 50 and 65 tonne loads interfacing with the LHD during NOTE was planned for Quarter four 2015, and rescheduled to Quarter two 2016 which has impacted schedule. FMR has been delayed from February 2016 and forecast for June 2016. The MAA is being updated to adjust FMR from February 2016 to June 2016. The Project is still working towards achieving FMR as forecast, however, it may not be acknowledged by Navy until Quarter four 2016.**

Note
Major risks and issues in Section 5 are excluded from the scope of the review.

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	8	9	8	9	9	9	61
	Explanation	• **Schedule**: Confident that the project remains on track to deliver the materiel capability as approved at Second Pass. • **Requirement**: Integration and testing processes have verified achievement of endorsed requirements. • **Commercial**: Project acceptance of LLC 01-04 achieved in April 2014, LLC 05-08 in February 2015 **and LLC 09-12 in November 2015**.							



2014-15 MPR Status - - - - | 2015-16 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management in 2015-16

Position	Name
Division Head	RADM Mark Purcell **(to Dec 15)** **Mr Alan Nicholl (Dec 15 to current)**
Branch Head	Mr Patrick Fitzpatrick **(to Dec 15)** **Mr Peter Croser (Dec 15 to current)**
Project Director	Mr Patrick Fitzpatrick **(to Dec 15)** **Mr Peter Croser (Dec 15 to current)**
Project Manager	Mr Paul Hegarty

Part 4. JCPAA 2015–16 Major Projects Report Guidelines

Australian Government
Department of Defence

Australian National Audit Office

2015–16 Major Projects Report Guidelines

Endorsed by the Joint Committee of Public Accounts and Audit

October 2015

Contents

Introduction

1.1 Given the recommendations of the First Principles Review, on 1 July 2015, the Defence Materiel Organisation (DMO) was delisted and its responsibilities merged back into the Department of Defence (Defence).[1] However, and consistent with past practice, the Defence Major Projects Report (MPR) will form part of the Australian National Audit Office's (ANAO) 2015–16 MPR, which is to be tabled in Parliament by the Auditor-General. It reports on the performance of selected major Defence equipment acquisition projects (Major Projects) since Second Pass Approval, and associated sustainment activities (where applicable), managed by Defence.[2] The summary project data is prepared by Defence and reviewed by the ANAO.[3]

1.2 The Major Projects selected for reporting are proposed by Defence based on criteria agreed with the Joint Committee of Public Accounts and Audit (JCPAA), and provided by the ANAO to the JCPAA for endorsement. Since its inception, the number of projects included in the MPR is as follows:

- 9 projects in the 2007–08 MPR;
- 15 projects in the 2008–09 MPR;
- 22 projects in the 2009–10 MPR;
- 28 projects in the 2010–11 MPR;
- 29 projects in the 2011–12 and 2012–13 MPRs;
- 30 projects in the 2013–14 MPR; and
- 25 projects in the 2014–15 MPR.

The 2015–16 MPR will report on 26 projects as endorsed by the JCPAA.

1.3 Project data is presented by way of Project Data Summary Sheets (PDSSs) supported by appropriate evidence. The Secretary of the Department of Defence (Secretary) is responsible for ensuring that the PDSSs are prepared in accordance with these Guidelines, as endorsed by the JCPAA, and for ensuring that the PDSSs and supporting evidence provided to the ANAO for review are complete and accurate.

1.4 The ANAO will review the PDSSs in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information.* The ANAO's review is designed to enable the ANAO to obtain sufficient appropriate evidence to form a conclusion that nothing has come to the ANAO's attention which indicates that the information in the PDSSs, that is within the scope of the review, has not been prepared, in all material respects, in accordance with the Guidelines.

1 The Department of Defence will ensure that there are appropriate resources to deliver the 2015–16 MPR, but certain elements of these Guidelines may be altered to ensure that the MPR is aligned with the Department of Defence's transitions under the First Principles Review.

2 For the purposes of the MPR, a project is defined as the acquisition or upgrade of Specialist Military Equipment, which normally excludes facilities and other Fundamental Inputs to Capability.

3 The MPR will include a summary of the ANAO's review and analysis, and the Auditor-General's Independent Review Report.

1.5 These Guidelines:

(a) define the criteria for project selection and provide the list of projects for the 2015–16 MPR;

(b) define the roles and responsibilities of Defence in the production and review of the 2015–16 MPR;

(c) provide requirements for the preparation of the PDSSs;

(d) provide the PDSS template; and

(e) provide an indicative program schedule in support of a November 2016 tabling.

1.6 Each year the MPR Guidelines are reviewed and amended to reflect lessons learned, in order to improve the MPR processes. As the Guidelines are now a stable document reflecting the requirements of the MPR, and in the interests of administrative efficiency, the ANAO has taken administrative responsibility for updating the Guidelines annually and submitting them to the Committee for endorsement.

Criteria for Project Selection

1.7 The inclusion of projects in the MPR is based on the projects included in the Defence Capability Plan and subject to the following criteria:

(a) Projects only admitted one year after Year of Decision (Second Pass Approval);

(b) a total approved project budget of > $150m;

(c) a project should have at least three years of asset delivery remaining;

(d) a project must have at least $50m or 10% (whichever is greater) of their budget remaining over the next two years; and

(e) a maximum of five new projects in any one year.

1.8 All projects for inclusion in the MPR will be proposed by Defence based on the above criteria, and provided to the JCPAA for endorsement, by the ANAO by 31 August in the year to which the MPR relates.

1.9 The removal of projects from the MPR is based on achievement of Final Operational Capability (FOC) or on a post-Final Materiel Release (FMR) risk assessment of the timely achievement of FOC and subject to the following criteria:

(a) the outstanding deliverables post-FMR, against the relevant Materiel Acquisition Agreement (MAA)[4] and/or Joint Project Directive (JPD)[5];

4 The MAA will detail the scope and cost of the capability to be acquired, and will commit the signatory agencies to completing assigned tasks and providing the necessary resources and assets to ensure effective management of the Acquisition Phase. Department of Defence, *Defence Capability Development Handbook 2014,* June 2014, p. 78.

5 Following Second Pass Approval by Government, the Secretary, Department of Defence and the Chief of the Defence Force will issue a JPD that covers the time from Second Pass Approval to the closure of the project business case. The post-Second Pass JPD assigns accountability and responsibility to:

a. the Capability Manager/Project Realisation Manager for overall responsibility for the realisation of the capability through to declaration of FOC;

Footnote continued on the next page…

(b) the remaining schedule post-FMR, against the relevant MAA and/or JPD;

(c) the remaining budget post-FMR, against the relevant MAA and/or JPD;

(d) the remaining project risks and issues; and

(e) the Capability Manager's assessment, including overall risk rating and the extent to which this risk rating relates to the Capability Acquisition and Sustainment Group (CASG's) responsibilities.

1.10 All projects selected for removal from the MPR will be proposed by Defence based on the above criteria, and provided to the JCPAA for endorsement, by the ANAO by 31 August in the year to which the MPR relates.

1.11 Once projects have met the exit criteria, they should be removed from the PDSSs and information included within Defence's section of the MPR in the subsequent year.

2015–16 Project Selection

1.12 The following table reflects projects selected for addition and removal in the 2014–15 and 2015–16 MPRs. For each project which has been removed, the lessons learned at both the project level and the whole-of-organisation level should be included as a separate section in the following MPR.

Table 1: Project Selection for the 2014–15 and 2015–16 MPRs

MPR	New projects added	Project PDSSs removed
2014–15	• AIR 7000 Phase 2B Maritime Patrol and Response Aircraft System • SEA 1442 Phase 4 Maritime Communications Modernisation	• AIR 5376 Phase 2 F/A-18 Hornet Upgrade • SEA 1390 Phase 2.1 Guided Missile Frigate Upgrade Implementation • JP 2008 Phase 4 Next Generation SATCOM Capability • JP 2043 Phase 3A High Frequency Modernisation • SEA 1390 Phase 4B SM-1 Missile Replacement • LAND 17 Phase 1A Artillery Replacement • AIR 5418 Phase 1 Follow On Stand Off Weapon
2015–16	• AIR 9000 Phase 7 Helicopter Aircrew Training System • LAND 75 Phase 4 Battle Management System • AIR 7403 Phase 3 Additional KC-30A Multi-role Tanker Transport	• AIR 5077 Phase 3 Airborne Early Warning and Control Aircraft • LAND 75 Phase 3.4 Battlefield Command Support System

b. the Acquisition Agency for acquisition responsibilities. Where DMO is the acquisition agency, the CEO DMO for materiel acquisition (which is implemented through the terms and conditions in the (post Second Pass) MAA);

c. other key enablers, such as the Chief Information Officer, Deputy Secretary Defence Support and Reform and Chief Defence Scientist responsible for the provision of elements of Fundamental Inputs to Capability; and

d. Deputy Secretary Defence People for the management of the Department's workforce allocations via the Workforce Guidance Trails.

Department of Defence, *Defence Capability Development Handbook 2014*, June 2014, pp. 78–79.

1.13 The 23 'repeat' projects in the table below, appeared in the 2014–15 MPR and will be updated for the 2015–16 MPR.

Table 2: Repeat projects for the 2015–16 MPR

Project Number	Project Name	Defence Abbreviation
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter
SEA 4000 Phase 3	Air Warfare Destroyer Build	AWD Ships
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System	P-8A Poseidon
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy
AIR 9000 Phase 8	Future Naval Aviation Combat System Helicopter	MH-60R Seahawk
JP 2048 Phase 4A/4B	Amphibious Ships (LHD)	LHD Ships
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler
AIR 87 Phase 2	Armed Reconnaissance Helicopter	ARH Tiger Helicopters
AIR 5402	Air to Air Refuelling Capability	Air to Air Refuel
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter
LAND 116 Phase 3	Bushmaster Protected Mobility Vehicle	Bushmaster Vehicles
LAND 121 Phase 3A	Field Vehicles and Trailers	Overlander Light
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2B
AIR 9000 Phase 5C	Additional Medium Lift Helicopters	Additional Chinook
JP 2072 Phase 2A	Battlespace Communications System	Battle Comm. Sys. (Land)
SEA 1439 Phase 4A	Collins Replacement Combat System	Collins RCS
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	Hw Torpedo
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S
SEA 1448 Phase 2A	ANZAC Anti-Ship Missile Defence	ANZAC ASMD 2A
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft

1.14 The format of the PDSS is contained at page 477.

Defence's Roles and Responsibilities

1.15 Defence will develop each project's PDSS for the ANAO's review (optimum length 10 pages). The Secretary is responsible for ensuring that the PDSSs are prepared in accordance with these Guidelines and that the PDSSs and supporting evidence provided to the ANAO for review are complete and accurate. The Secretary is also responsible for formally presenting Defence's sections of the MPR to the ANAO on completion of the PDSSs and associated commentary.

1.16 The Defence Deputy Secretary Capability Acquisition and Sustainment Group (DS CASG) is the Business Process Owner for the MPR. The Director General Business Services and Assurance (DGBSA) has management responsibility for the preparation of the MPR and is the key point of contact for the ANAO. The DGBSA has assigned responsibility to the Director MPR for managing the MPR process with the ANAO's MPR team at the operational level. Defence is responsible for ensuring information of a classified nature is made available to the ANAO for review, as it relates to the data contained within the PDSSs. Data of a classified nature is to be prepared in such a way as to allow for unclassified publication.

1.17 Defence's positions, roles and responsibilities in relation to the MPR are outlined in Table 3, below.

Table 3: Defence's Positions, Roles and Responsibilities

Position	Role	Responsibility
Secretary of Defence	Defence accountability	• Sign off on the Statement by the Secretary • Primary accountability for the completeness and accuracy of the Defence MPR
Defence Deputy Secretary Capability Acquisition and Sustainment Group	Business Process Owner	• Executive direction in CASG
Chief Finance Officer Defence	Financial advice and assurance	• Overall responsibility for giving strategic financial advice and information in Defence[6] • In consultation with the ANAO, arrange for independent financial assurance for an appropriately selected sample of projects[7]
Director General Business Services and Assurance	CASG accountability for the MPR	• Liaison with ANAO senior management • Advice to DS CASG and Secretary • Guidance to the Director MPR • Clearance of the PDSS suite and Defence's sections of the MPR
Director MPR	MPR management, coordination and liaison	• Responsible for the overall coordination, preparation and achievement of the Defence MPR • Guidance and direction to project offices • Manage the MPR Program with the ANAO MPR team • Configuration management of the MPR and PDSS suite • Review of PDSS suite and evidence packs to ensure completeness and accuracy • MPR schedule management • Development of Defence's sections of the MPR
Project Directors/Managers	PDSS development and generation of evidence packs	• Develop and produce the project's PDSS and associated evidence packs • Review of the project's PDSS and evidence packs to ensure completeness and accuracy • Actively engage the ANAO MPR team in its review of the project's PDSS
Chief Finance Officer Group	Provision and coordination of corporate budget information	• Provide relevant budget data as indicated in the PDSS suite • Assist the ANAO MPR team in their review of budget data
Project line management	Assurance	• Assurance of data and content in the PDSS suite

6 Department of Defence, *Defence Annual Report 2013–14*, October 2014, p. 70.

7 Department of Defence, Executive minute on JCPAA Report No. 436 Review of the 2011–12 Defence Materiel Organisation Major Projects Report, 29 November 2013, p. 1.

MPR Process

1.18 The JCPAA identified the MPR as a Priority Assurance Review in Report 429 *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*. Consequently, Section 33 of the *Auditor-General Act 1997* requires Defence to provide full and free access to premises and to any documents in the conduct of the review. This will be facilitated by the Director MPR.

1.19 Defence has developed an indicative schedule for the MPR program in consultation with the ANAO contained at page 484. The schedule provides for a pre-30 June site visit period for the ANAO to conduct PDSS reviews of all projects. All project data should be prepared for this period at the date selected for the ANAO's review, without anticipating outcomes for the post-30 June review. A second period will be set aside after the end of the financial year for reviewing completed PDSSs.

1.20 Normally, at least five working days prior to the commencement of a project site visit, Defence will provide the ANAO with a Defence reviewed copy of the PDSS together with the relevant evidence pack (in soft copy). The evidence pack will be appropriately structured and mapped to the PDSS for efficient review.

1.21 In accordance with natural justice provisions, contractors named within a PDSS will be consulted before Defence finalises the PDSS. The aim of the consultation is to provide the contractor with an opportunity to comment on relevant extracts from a project's PDSS. Defence will request contractors to provide the ANAO with a copy of their comments (including nil returns) in relation to any errors or misstatements in the PDSS. Defence may wish to have regard to contractors' comments received within specified and reasonable time limits. Defence will also keep the ANAO apprised on how Defence intends to deal with the contractor responses to the PDSS suite.

1.22 The ANAO may also directly engage with contractors to seek any clarification on their comments on the project data, and will keep Defence apprised on feedback and outcomes.

Other Items to Note

1.23 As the PDSS is part of a public document, the use of acronyms and jargon must be avoided. The following style conventions must be followed:

(a) Acronyms are not to be used where possible. When acronyms are used, the first use must be spelt out in full.

(b) Project names should be written in full or the approved Defence abbreviation and should be presented with an initial capital, e.g. Joint Strike Fighter.

(c) All costs should be shown as $m (millions) and be rounded to one decimal place (i.e. to the nearest $100,000), with negative amounts in brackets.

(d) Dates in the PDSS narratives should be presented as Month 20yy, and dates in the PDSS tables should be presented as mmm yy (e.g. Jul 09). Time variations should be shown as full months.

(e) Any cells in a table not containing data should be shown as 'N/A'.

(f) PDSSs should be kept to an optimum length of 10 pages and focus on key information.

Requirements for the Preparation of the Project Data Summary Sheets (PDSS)

Heading	Data	Definition/Description
Project Header	Project Number	The number of the project as approved by government.
	Project Name	The name of the project as approved by government.
	First Year Reported in the MPR	The year the project was first reported in the MPR. Use 20xx-xx date format.
	Capability Type	One of the following: • New; • Replacement; or • Upgrade.
	Acquisition Type	One of the following: • MOTS (Military-Off-The-Shelf); • Australianised MOTS; or • Developmental.
	Service	Either one or a combination of: • Royal Australian Navy; • Australian Army; • Royal Australian Air Force; • Chief Information Officer Group; or • Joint Services.
	Government 1st Pass Approval	The date Government First Pass Approval was given.
	Government 2nd Pass Approval	The date Government Second Pass Approval was given.
	Total Approved Budget (Current)	The current approved project budget. This amount should agree to the Total Budget in Section 2.1 Project Budget (out-turned) and Expenditure History.
	2015–16 Budget	The estimated project expenditure for 2015–16 as per the Portfolio Budget Statements (PBS) and/or the Portfolio Additional Estimates Statements (PAES), or other official budget tool when not available in the PBS or PAES.[8] This amount should agree to the Estimate Final Plan in Section 2.2A and Section 2.2B.
	Project Stage	The Life Cycle Gate as reported in the Monthly Reporting System (MRS). This should agree to Section 6.1 Project Maturity Score and Benchmark.
	Complexity	The Acquisition Categorisation (ACAT) level of the project.
	Project Image	Image of the project to be provided to the ANAO by the Defence MPR team in a separate file as a high resolution JPG.

8 This amount may include updates since the last PAES, such as foreign exchange under the Government's 'no win, no loss' policy, or budget impacts resulting from other government decisions.

Heading	Data	Definition/Description
SECTION 1 – PROJECT SUMMARY		
Section 1.1 Project Description	Description	A short description of the project, which summarises capability delivery and, where appropriate, equipment quantities. This information should be consistent with other sections of the PDSS.
Section 1.2 Current Status	Cost Performance	In-year At a strategic level, state the project's current progress against its in-year budget, and provide a succinct explanation of causes for variations. Note: For the pre-30 June PDSS, projects should use the part-year result. Project Financial Assurance Statement An additional 'project financial assurance statement' on the projects' budget performance should be disclosed, noting whether the budget remaining, together with the estimated future expenditure and current known risks, is sufficient for completing the project.[9] In consultation with the ANAO, the Chief Finance Officer Defence will also arrange for independent financial assurance for an appropriately selected sample of projects. Contingency Statement State whether the project has/has not applied contingency funds this financial year. Note that disclosure of contingency amounts is not required. Standard text: [positive case]: The project has applied contingency in the financial year primarily for the treatment of [a risk category[10]] risk [and where possible include linkage to Section 5 – Major Risks and Issues and specified remediation activities]; or [negative case]: The project has not applied contingency in the financial year. This section must be consistent with the data in Section 2 – Financial Performance.
	Schedule Performance	At a strategic level, briefly describe key schedule milestones achieved so far and issues facing the project in achieving future milestones. Milestone achievements or non-achievements in the current year should also be explained and include the variance in months. This section must be consistent with what is stated in Section 3 – Schedule Performance.
	Materiel Capability Delivery Performance	At a strategic level, provide a brief update on the materiel capability delivered to date, and expected future delivery. Detailed technical performance of systems is to be avoided and classified information is not to be disclosed. This section must be consistent with what is stated in Section 4 –

9 Department of Defence, Defence Materiel Instruction (Finance), DMI (FIN) 01-0-044, *Project Assurance Statements*, August 2012, provides instructions on the standard of review and expenditure forecasting required, standard text and consultation requirements.

10 Refer to the Department of Defence, Defence Materiel Manual Project, DMM (PROJ) 11-0-002, *Project Risk Management Manual (PRMM) 2013*, July 2013, Annex G, for guidance.

Heading	Data	Definition/Description
		Materiel Capability Delivery Performance.
Section 1.3 Project Context	Background	A succinct summary level statement that covers Government approvals history and any strategic changes that have occurred since approval. For post-2011–12 MPR projects, if the projects' classification is not MOTS, an explanation must be provided to ensure that these options were explicitly considered and eliminated for particular reasons before final procurement decisions have been made.[11] Note: Stop payments or liquidated damages should be referred to here or elsewhere in Section 1 (disclosure of amounts is not required).
	Uniqueness	A brief explanation of the particular aspects that make the project unique.
	Major Risks and Issues	A succinct summary of the major risks and issues disclosed in Section 5 – Major Risks and Issues.
	Other Current Sub-Projects	List the current approved projects (i.e. Second Pass has been achieved) relating to the same platform, with the same main project number (e.g. SEA xxxx), including the phase of the project, and provide a brief description of the capability (i.e. one or two short sentences).
SECTION 2 – FINANCIAL PERFORMANCE		
Section 2.1 Project Budget (out-turned) and Expenditure History	**Project Budget**	
	Original Approved	The approved estimated cost for the project element at Government Approval.
	Real Variation	The variations to be included are shown below where they are applicable to the project: **"Scope"** changes are attributable to changes in requirements by Defence and government. These generally take the form of changes in quantities of equipment, a change in requirements that result in specification changes in contracts, changes in logistics support requirements or changes to services to be provided which are accompanied by a corresponding budget adjustment. Where the original approved amount above is not Government Second Pass Approval, projects are to disclose the actual Government Second Pass Approval amount as such in the description column (in bold) and not as a real scope variation. **"Transfers"** occur when a portion of the budget and corresponding scope is transferred to or from another approved project or sustainment product in CASG or to another Group in Defence in order to more efficiently manage delivery of an element of project scope and to vest accountability for performance accordingly. **"Budgetary Adjustment"** is made to account for corrections resulting from foreign exchange or indexation accounting

11 JCPAA, Report 429, Review of the 2010–11 Defence Materiel Organisation Major Projects Report, May 2012, p. 25.

Heading	Data	Definition/Description
		estimation errors that might occur from time to time. Also included under this heading are administrative decisions that result in variations such as efficiency dividends imposed on project budgets or adjustments made to fund Defence initiatives. **"Real Cost Increases"** attributed to any negotiated Foreign Military Sales (FMS) or commercial contracts. These funds have been approved by government to increase the Project's budget. **"Real Cost Decreases"** attributed to any negotiated FMS or commercial contracts. These funds have been handed back to the Defence Portfolio. The elements above are to be subtotalled to give a single amount for all real variations (including Government Second Pass Approvals).
	Price Indexation	Variations to the Original Approved project cost due to price indexation and out-turning adjustments, to take account of variations in labour and materiel indices over time. This is disclosed where applicable, i.e. not for projects approved post-July 2010 in out-turned prices.
	Exchange Variation	Variations to the Original Approved project cost due to foreign exchange adjustments brought about by changes in foreign exchange rates for payments in foreign currency.
	Total Budget	The sum of the above. Note: For the pre-30 June PDSS, this amount and its components noted above should reconcile to the current BORIS Project Approvals extract at Additional Estimates, and should agree to the part-year result stated under 'Year To Date – Gross Plan' in the MRS Majors Budget Performance Total report.
	Project Expenditure	
	Prior to Jul 15	This item comprises all amounts incurred in all periods prior to the current reporting period (i.e. expenditure up to 30 June 2015). All expenditure is to be presented in brackets to indicate a negative figure. Reporting of expenditure is to be split into the following: **"Contract Expenditure"** against each of the top 5 contracts, restricted to contracts valued at greater than or equal to $10m. Contract expenditure should be listed from highest to lowest value. **"Other Contract Payments / Internal Expenses"** which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. It is generally expected that 'other' expenditure will not exceed 10% of total prior period expenditure. However, in the event that 'other' expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the expenditure including amounts to bring the amount of unexplained 'other' below 10%. The two expenditure elements above are to be subtotalled to give a single amount for all prior period expenditure.

Heading	Data	Definition/Description
	FY to Jun 16	This item comprises all amounts incurred in the current reporting period (i.e. contract level expenditure from 1 July 2015 to 30 June 2016). All expenditure is to be presented in brackets to indicate a negative figure. Reporting of expenditure is to be split into the following: **"Contract Expenditure"** against each of the top 5 contracts, restricted to contracts valued at greater than or equal to $10m. Contract expenditure should be listed from highest to lowest value. **"Other Contract Payments / Internal Expenses"** which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. It is generally expected that 'other' expenditure will not exceed 10% of total expenditure in the current reporting period. However, in the event that 'other' expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the expenditure including amounts to bring the amount of unexplained 'other' below 10%. The two expenditure elements above are to be subtotalled to give a single amount for Financial Year (FY) expenditure. Note: For the pre-30 June PDSS, this amount should reconcile to the year to date expenditure in ROMAN and agree to the Actual in Section 2.2B In-year Budget/Expenditure Variance. In addition, any stop payments or liquidated damages should be referred to in the Notes (disclosure of amounts is not required).
	Total Expenditure	This item discloses total project expenditure as at the reporting date (i.e. 30 June 2016) and is the sum of prior period and current period expenditure reported above. All expenditure is to be presented in brackets to indicate a negative figure. Note: For the pre-30 June PDSS, this amount should reconcile to the life to date expenditure in ROMAN.
	Remaining Budget	The subtraction of total expenditure from total budget, thus showing the unspent portion of the approved budget, as at 30 June.
	Notes	For additional information as required, e.g. the breakdown of 'Other Contract Payments/Internal Expenses'.
Section 2.2A In-year Budget Estimate Variance	Estimate PBS $m	The initial budget estimate for 2015–16, as published in the PBS.
	Estimate PAES $m	The mid-year revised budget estimate for 2015–16, as published in the PAES. The variance, as an amount and percentage, should be calculated between the Estimate PAES and Estimate PBS.
	Estimate Final Plan $m	The final revised budget estimate for 2015–16. The variance, as an amount and percentage, should be calculated between the Estimate Final Plan and Estimate PAES. Note: For the pre-30 June PDSS, projects should use the part-year result.

Heading	Data	Definition/Description
	Total Variance	Budget estimate variances, and corresponding variance percentages, are to be disaggregated and disclosed separately. The variance, as an amount and percentage, should be calculated between the Estimate Final Plan and Estimate PBS.
	Explanation of Material Movements	The explanations for the material variance/s noted above, as published in appropriate supporting documentation, e.g. the PAES.
Section 2.2B In-year Budget/ Expenditure Variance	Estimate Final Plan $m	The estimated project expenditure for 2015–16. The data needs to present the project's 'Year to Date' performance in financial terms. It must explain the difference between the 'Latest Plan' in the MRS Majors Budget Performance Total report and/or BORIS and the End of Financial Year Actual Expenditure. This amount should agree to the Estimate Final Plan in Section 2.2A In-year Budget Estimate Variance. Note: For the pre-30 June PDSS, projects should use the part-year result.
	Actual $m	The actual project expenditure incurred in the current reporting period (i.e. 2015–16). This amount should agree to the FY to Jun 16 Total Expenditure in Section 2.1 Project Budget (out-turned) and Expenditure History. Note: For the pre-30 June PDSS, projects should use the part-year result (i.e. 'Actual Total' in the MRS Majors Budget Performance Total report, or ROMAN).
	Variance $m	Budget expenditure variances are to be disaggregated and disclosed separately as per the variance factors described below. The sum of these should give a total variance equal to the difference between the Estimate and Actual expenditure. The variance percentage should also be calculated between the Estimate and Actual expenditure.
	Variance Factor	This section provides a range of factors attributable to the cause of the variances between the Budget Estimate and Actual expenditure. These are expressed as the standard variance factors of: • Australian Industry; • Foreign Industry; • Early Processes; • Defence Processes; • Foreign Government Negotiations/Payments; • Cost Saving; • Effort in Support of Operations; and • Additional Government Approvals.
	Explanation	Explanations must address all of the variance factors noted above, where relevant. Material changes following the publication of the PAES may require an explanation.

Heading	Data	Definition/Description
Section 2.3 Details of Project Major Contracts	Contractor[12]	List the contractors for the top 5 contracts valued at greater than or equal to $10m. Contractors should be listed in order of signature date (in ascending order). The top five contracts listed should agree to the contracts listed in Section 2.1 Project Budget (out-turned) and Expenditure History.
	Signature Date	The date the contract was signed.
	Price at Signature $m and 30 Jun 16 $m	Signature $m The value of the contract at signature. 30 Jun 16 $m The value of the contract at 30 June 2016 (i.e. value spent as per Section 2.1 Project Budget (out-turned) and Expenditure History plus remaining commitment as at the spot exchange rate as recorded in ROMAN at 30 June 2016). Note: For the pre-30 June PDSS, projects should use the life to date expenditure per Section 2.1 plus remaining commitment in ROMAN as above.
	Type (Price Basis)	Choices for this include: • Firm (or Fixed); • Variable; • Cost Ceiling (capped); or • Reimbursement (for FMS). For further information including definitions refer to the Defence Procurement Policy Manual.
	Form of Contract	This refers to the contract template used, e.g. DEFPUR 101, ASDEFCON (Strategic, Complex). For unique arrangements such as Alliance or Public Private Partnership, they would need to be specially treated (noting the key signatories to the arrangement). Projects should seek the advice of the Defence Major Projects Report Directorate. For Foreign Military Sales, declare "FMS". For Memorandum of Understanding, declare "MoU".
	Notes	For additional information as required, e.g. description of new contract or contract changes.
	Contractor	List the contractors for the top 5 contracts valued at greater than or equal to $10m. Contractors should be listed in order of signature date (in ascending order), i.e. same order as above. The top five contracts listed should agree to the contracts listed in Section 2.1 Project Budget (out-turned) and Expenditure History.
	Quantities as at Signature and 30 Jun 16	The quantity of major equipment under contract as at the date the contract was signed and also as at 30 June 2016. The quantity of contracted equipment should only be provided at a summary level.

12 The definition of 'contractor' in Section 2.3 Details of Major Project Contracts, includes contractors from direct commercial sales, and also foreign government arrangements such as Memoranda of Understanding, FMS or Cooperative Programs.

Heading	Data	Definition/Description
	Scope	Generally only include hardware in this section and restrict it to a platform level summary, disclosing only major prime mission and support system elements, e.g. Two Joint Strike Fighter aircraft delivered.
	Notes	For additional information as required.
	Major equipment received and quantities to 30 Jun 16	Detail the major equipment and quantities the project has received to 30 June 2016.
	Notes	For additional information as required.
SECTION 3 – SCHEDULE PERFORMANCE		
Section 3.1 Design Review Progress	Review	The events to be included are shown below as they are applicable to the project: • System Requirements; • Preliminary Design; and • Critical Design. Other or alternative reviews, for instance for unique arrangements or redesigns, should also be included.
	Major System/ Platform Variant	State the major system that the design review refers to. Significant variants for the major systems should also be included.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Planned	Replanned dates as evidenced by a contract amendment.
	Achieved/Forecast	Achieved: The date the event was achieved, or Forecast: The expected date for achievement.
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved/Forecast dates, and any additional background information as required.
Section 3.2 Contractor Test and Evaluation Progress	Test and Evaluation	The events to be included are shown below as they are applicable to the project: • System Integration; and • Acceptance. Other or alternative test and evaluation activities, for instance for unique arrangements or activities associated with redesign, should also be included.
	Major System/ Platform Variant	State the major system that the Test and Evaluation event refers to. If there are significant variants for the major systems, then state what they are.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Planned	Replanned dates as evidenced by a contract amendment.
	Achieved/Forecast	Achieved: The date the event was achieved; or Forecast: The expected date for achievement.
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.

Heading	Data	Definition/Description
	Notes	A top level description of the reasons for the variance to Achieved/Forecast dates, and any additional background information as required.
Section 3.3 Progress Toward Materiel Release and Operational Capability Milestones	Item	Represented at a whole of capability level, unless key milestones are broken out under individual Mission or Support Systems.
	Original Planned	The original date on which the Materiel Release or Operational Capability milestone was scheduled for achievement.
	Achieved/Forecast	Achieved: The date the event was achieved; or Forecast: The expected date for achievement.
	Variance (Months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for and implications of the variance to 'Achieved/Forecast' dates.
Schedule Status at 30 June 2016	Graph	The Defence Major Projects Report Directorate will use the projects existing detail on: Second Pass Approval, Initial Materiel Release (IMR), Initial Operational Capability, Final Materiel Release (FMR) and Final Operational Capability, to produce the graph.
SECTION 4 – MATERIEL CAPABILITY DELIVERY PERFORMANCE		
Section 4.1 Measures of Materiel Capability Delivery Performance	Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	Capability Pie Chart and associated narratives will provide a percentage breakdown of the Materiel Release Milestones and Completion Criteria, as identified in the MAA and/or JPD, at 30 June 2016. The pie chart analysis/narrative (Green, Amber and Red) is to be provided at the strategic level, including: • Issues impacting the achievement of Materiel Release Milestones and Completion Criteria; and • Remedial activity to recover performance. Where there is no data insert 'N/A'. Detailed technical performance of systems is to be avoided, and classified information is not to be disclosed. Where the project has not yet achieved IMR, the statement against the Green traffic light should be written in future tense, i.e. *"The project expects to meet capability requirements as expressed in the Materiel Acquisition Agreement…"*, as opposed to *"The project is currently meeting…"*. Note: The analysis and narrative disclosures should agree to the information in the current MRS Majors Capability report.
Section 4.2 Constitution of Initial Materiel Release and Final Materiel Release	Item	Represented at a whole of capability level, i.e. IMR and FMR.
	Explanation	A top level description of the capability elements which constitute IMR and FMR as stipulated in the MAA, at 30 June 2016, including an indication of whether or not these milestones have been achieved. If the milestone has not been met, include a statement to indicate when the IMR or FMR milestone is expected to be achieved. Note: Where the project has achieved a milestone with caveats, a brief description of the caveats should be added.
	Achievement	Standard text, i.e. Achieved; Not yet achieved; or Achieved with caveats.

Heading	Data	Definition/Description
SECTION 5 – MAJOR RISKS AND ISSUES		
Section 5.1 Major Project Risks	Identified Risks (risk identified by standard project risk management processes)	Description: A major project risk is one that is rated high or extreme pre-mitigation. Remedial Action: The risk mitigation/treatment proposed for the risk identified (these must be actionable measures). If the risk has been retired or the pre-mitigation rating has been downgraded to medium, this should be documented along with the reason; the risk can then be removed in the subsequent MPR. Note: All high and extreme risks require disclosure (and may be aggregated). In addition, a mapping of all risks from project risk logs to the PDSS is required.
	Emergent Risks (risk not previously identified but has emerged during 2015–16)	Description: A major project risk that was not previously identified in the risk log but has emerged this year, rated as high or extreme pre-mitigation. Remedial Action: The risk mitigation/treatment proposed for the risk identified (these must be actionable measures). The risk becomes an Identified Risk in the subsequent MPR. Note: All high and extreme emergent risks require disclosure (and may be aggregated). In addition, a mapping of all emergent risks from project risk logs to the PDSS is required.
Section 5.2 Major Project Issues	Description	Issues are high or extreme risks that have been realised or issues that have arisen that require management action to address. Note: All high and extreme issues require disclosure. In addition, a mapping of all issues from project issues logs to the PDSS is required.
	Remedial Action	The remediation action proposed for the issue identified. If the issue has been resolved or downgraded to medium, this should be documented along with the reason; the issue can then be removed in the subsequent MPR.
SECTION 6 – PROJECT MATURITY		
Section 6.1 Project Maturity Score and Benchmark	Project Stage	The Life Cycle Gate stage applicable to the project according to the Maturity Score procedure.[13] This should agree to the Project Header.
	Benchmark	The Benchmark Maturity Score applicable to the project according to the Maturity Score procedure.
	Project Status	The maturity score recorded in the June 2016 MRS Majors Master Data report.
	Explanation	A short explanation is required for each attribute of the Maturity Score (Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, and Operations and Support) where there is a difference between the Project Status and Benchmark scores, explaining the reasons for the variance.
	Graph	The Defence Major Projects Report Directorate will use the prior and current year 'Project Status' scores, to produce the graph.
SECTION 7 – LESSONS LEARNED		

13 Refer to the Department of Defence, Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates,* September 2010, for guidance.

Heading	Data	Definition/Description
Section 7.1 Key Lessons Learned	Project Lesson	Describe the project lesson (at the strategic level) that has been learned.
	Categories of Systemic Lessons	Select from the following 'Systemic Lessons'[14] categories where they are applicable to the project: • Requirements Management; • First of Type Equipment; • Off-The-Shelf Equipment; • Contract Management; • Schedule Management; • Resourcing; and/or • Governance.
SECTION 8 – PROJECT LINE MANAGEMENT		
Section 8.1 Project Line Management in 2015–16	Position and names of the Project's Line Management	List the names of the senior management team as appropriate to the project. This should include: • Division Head or Program Manager; • Branch Head; • Project Director; and • Project Manager. This list will contain those persons who occupied their respective position during the course of 2015–16, and applicable dates of change, for example: CMDR {First Name} {Last Name} (to Jan 16) Mr {First Name} {Last Name} (Acting Feb 16–Apr 16) Ms {First Name} {Last Name} (May 16–current) Where the Project Director and Project Manager are the same, combine as 'Project Director/Manager'.

14 ANAO Report No.13 2009–10, *2008–09 Major Projects Report*, November 2009, Part 3, paragraph 3.25, p. 122.

Project Data Summary Sheet Template

Project Number	
Project Name	
First Year Reported in the MPR	
Capability Type	
Acquisition Type	
Service	
Government 1st Pass Approval	
Government 2nd Pass Approval	
Total Approved Budget (Current)	
2015–16 Budget	
Project Stage	
Complexity	

Project Image.

Section 1 – Project Summary

1.1 Project Description

1.2 Current Status

Cost Performance In-year Project Financial Assurance Statement Contingency Statement
Schedule Performance
Materiel Capability Delivery Performance
Note
The capability assessments and forecasts by the project are not subject to the ANAO's assurance review.

1.3 Project Context

Background
Uniqueness
Major Risks and Issues
Other Current Sub-Projects

Section 2 – Financial Performance

[Presentation for Projects who received Government approval PRE-JULY 2010]:

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m	Notes
	Project Budget		
	Original Approved		
	Real Variation – Scope		
	Real Variation – Transfer		
	Real Variation – Budgetary Adjustment		
	Real Variation – Real Cost Increase / Decrease		
Jul 10	Price Indexation*		
Jun 16	Exchange Variation		
Jun 16	**Total Budget**		
	Project Expenditure		
Prior to Jul 15	Contract Expenditure – Contractor 1		
	Contract Expenditure – Contractor 2		
	Contract Expenditure – Contractor 3		
	Contract Expenditure – Contractor 4		
	Contract Expenditure – Contractor 5		
	Other Contract Payments / Internal Expenses		
FY to Jun 16	Contract Expenditure – Contractor 1		
	Contract Expenditure – Contractor 2		
	Contract Expenditure – Contractor 3		
	Contract Expenditure – Contractor 4		
	Contract Expenditure – Contractor 5		
	Other Contract Payments / Internal Expenses		
Jun 16	**Total Expenditure**		
Jun 16	**Remaining Budget**		

Notes	
1	
2	
3	
4	

*Note – Those projects approved in 'out- turned' dollars will not contain an entry for 'Price Indexation'.

[Presentation for Projects who received Government approval POST-JULY 2010]:

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m	Notes
	Project Budget		
	Original Approved		
	Real Variation – Scope		
	Real Variation – Transfer		
	Real Variation – Budgetary Adjustment		
	Real Variation – Real Cost Increase / Decrease		
Jun 16	Exchange Variation		
Jun 16	**Total Budget**		
	Project Expenditure		
Prior to Jul 15	Contract Expenditure – Contractor 1		
	Contract Expenditure – Contractor 2		
	Contract Expenditure – Contractor 3		
	Contract Expenditure – Contractor 4		
	Contract Expenditure – Contractor 5		
	Other Contract Payments / Internal Expenses		
FY to Jun 16	Contract Expenditure – Contractor 1		
	Contract Expenditure – Contractor 2		
	Contract Expenditure – Contractor 3		
	Contract Expenditure – Contractor 4		
	Contract Expenditure – Contractor 5		
	Other Contract Payments / Internal Expenses		
Jun 16	**Total Expenditure**		
Jun 16	**Remaining Budget**		

Notes	
1	
2	
3	
4	

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
Variance $m			Total Variance ($m): XXX
Variance %			Total Variance (%): XXX

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
			Total Variance	
			% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 16 $m			
Contractor 1						
Contractor 2						
Contractor 3						
Contractor 4						
Contractor 5						

Notes	
1	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 16		
Contractor 1				
Contractor 2				
Contractor 3				
Contractor 4				
Contractor 5				

Major equipment received and quantities to 30 Jun 16

Notes	
1	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Requirements						
Preliminary Design						
Critical Design						

Notes	
1	
2	
3	
4	

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration						
Acceptance						

Notes	
1	
2	
3	
4	

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)				
Initial Operational Capability (IOC)				
Final Materiel Release (FMR)				
Final Operational Capability (FOC)				

Notes	
1	
2	
3	
4	

Schedule Status at 30 June 2016

Defence MPR Team to insert graph

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
Defence MPR Team to insert Pie Chart	**Green:**
	Amber:
	Red:

Note
This Pie Chart does not necessarily represent capability achieved. The capability assessments and forecasts by the project are not subject to the ANAO's assurance review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)		
Final Materiel Release (FMR)		

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action

5.2 Major Project Issues

Description	Remedial Action

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark								
	Project Status								
	Explanation	•							
Defence MPR Team to insert graph									

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	
Branch Head	
Project Director	
Project Manager	

Indicative 2015–16 MPR Program Schedule

Event	Start Date	End Date
Planning for the 2015–16 MPR (including review of outcomes of the 2014–15 program)	Dec 15	Jan 16
Defence and ANAO finalise preparations for the 2015–16 MPR program in time for the JCPAA Hearing	Jan 16	Mar 16
Defence MPR provide program advice to the project offices	Feb 16	Feb 16
Defence MPR management finalise preparation with the project offices	Feb 16	Feb 16
Project site visits conducted by the ANAO	Mar 16	Jun 16
End Of Financial Year advice to project offices	Jul 16	Jul 16
Post-30 June PDSS reviews	Jul 16	Sep 16
ANAO submits 2016–17 MPR Guidelines and Project Selection to the JCPAA	Aug 16	Aug 16
Development of the Defence 2015–16 MPR	Aug 16	Oct 16
ANAO develops its Assurance, Review and Analysis for provision to the Secretary	Aug 16	Oct 16
Secretary submits formal draft Defence section of the 2015–16 MPR to the Auditor-General	Oct 16	Oct 16
Defence response to the ANAO Assurance, Review and Analysis for provision to the Auditor-General	Oct 16	Oct 16
ANAO internal clearance of the 2015–16 MPR (Publication and Tabling)	November 2016	