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Assurance Report

2010–11 Major Projects Report

Defence Materiel Organisation

Australian National Audit Office

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Australian National Audit Office

Canberra ACT
20 December 2011

Dear Mr President
Dear Mr Speaker

The Australian National Audit Office has undertaken a review of the status of selected Defence equipment acquisition projects as at 30 June 2011 as presented by the Defence Materiel Organisation in accordance with the authority contained in the *Auditor-General Act 1997*. Pursuant to *Senate Standing Order 166* relating to the presentation of documents when the Senate is not sitting, I present the report of this review to the Parliament. The report is titled *2010–11 Major Projects Report*.

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

Yours sincerely

Ian McPhee
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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Abbreviations

AMOTS	Australianised Military-Off-The-Shelf
ANAO	Australian National Audit Office
AOR	Acquisition Overview Report
ARH	Armed Reconnaissance Helicopter
ASAE	Australian Standard on Assurance Engagements
ASMD	Anti-Ship Missile Defence
AWD	Air Warfare Destroyer
C-17	Boeing C-17 Globemaster III aircraft
COTS	Commercial-Off-The-Shelf
DEFMIS	Defence Financial Management Information System
DMO	Defence Materiel Organisation
ERMF	Enterprise Risk Management Framework
EVMS	Earned Value Management System
FFG	Fast Frigate Guided (Guided Missile Frigate)
FIC	Fundamental Inputs to Capability
FMR	Final Materiel Release
FMS	Foreign Military Sales
FOC	Final Operational Capability
HF	High Frequency
Hw	Heavyweight

IMR	Initial Materiel Release
IOC	Initial Operational Capability
JCPAA	Joint Committee of Public Accounts and Audit
JSF	Joint Strike Fighter
LHD	Landing Helicopter Docks
MAA	Materiel Acquisition Agreement
Major Projects	Major Defence equipment acquisition projects
MOTS	Military-Off-The-Shelf
MOU	Memorandum Of Understanding
MPR	Major Projects Report
MRH90	Multi-Role Helicopter
MRM	Materiel Release Milestone
PDSS	Project Data Summary Sheet
RCS	Replacement Combat System
ROMAN	Resource and Output Management and Accounting Network
R&S	Reliability and Sustainability
SADI	Skilling Australia's Defence Industry
SATCOM	Satellite Communication
SMEWA	Specialist Military Equipment Weighted Average

Part 1: ANAO Overview

Auditor-General's Foreword

Managing major Defence equipment acquisitions that successfully deliver front line capability for the Australian Defence Force represents a significant challenge, not unique to Australia. As major Defence equipment acquisitions are often expensive and technically complex, there are significant risks, not only to delivering within budget and on schedule, but also to delivering the required capability.

This fourth review of the status of selected Defence equipment acquisition projects builds on the work undertaken by the Defence Materiel Organisation (DMO) and the Australian National Audit Office (ANAO) to improve the transparency and public accountability for major Defence equipment acquisitions. The 2010–11 Major Projects Report (MPR) includes 28 projects with approved budgets totalling $46.1 billion, which is over half of the approved budget for the DMO's major capital investment program ($79.5 billion).

The preparation of the MPR has received strong ongoing support from the Government and the Joint Committee of Public Accounts and Audit (JCPAA). In April 2011, the second examination of the MPR by the JCPAA culminated in the publishing of JCPAA Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*. Report 422 made nine recommendations to further progress and improve the transparency and accountability of major Defence equipment acquisitions. Action already taken by the DMO to implement the JCPAA's recommendations contributed to the enhancement of this MPR, in terms of improved reporting on each of the three key elements of the MPR: cost, schedule and capability. As the DMO further progresses the implementation of these recommendations, future MPRs will also benefit.

In addition, the Foreign Affairs, Defence and Trade References Committee is currently undertaking an inquiry into *Procurement procedures for Defence capital projects*. This report, which covers DMO's most significant procurements, along with other ANAO reports on Defence acquisitions, provides relevant information to assist the Committee in its deliberations.

This year's review continued the strong working relationship between the DMO and the ANAO in the preparation of the report. Defence and industry stakeholders also provided valuable input to assist with the review.

I would like to thank the former Chief Executive Officer of the DMO, Dr Stephen Gumley AO, and the acting Chief Executive Officer of the DMO, Mr Warren King, and their staff at the corporate and project levels for their work on this report, and the assistance provided to the ANAO staff in conducting the project reviews.

Ian McPhee
Auditor-General

14 December 2011

Summary

Introduction

1. Major Defence equipment acquisition projects (Major Projects) are the subject of considerable Parliamentary and public interest, in view of their high cost, planned contribution to national security and the challenges involved in completing Major Projects within budget, on time and to the required level of capability.

2. The Defence Materiel Organisation (DMO) contributes to the development and sustainment of capability for the Australian Defence Force (ADF) and expended some $5.6 billion on major and minor capital acquisition projects in 2010–11.[1]

3. Over the next 15 years, the Government intends to replace or upgrade up to 55 per cent of the ADF's equipment.[2] This will include the purchase of equipment in all of the major elements of ADF capability, including Land, Air, Sea and Joint capabilities, as publicised in the Defence White Paper. These procurements by the DMO do not generate new capability for the Defence Organisation until they have been successfully introduced into service with the ADF. Thus, while the DMO's role is only part of the introduction into service of new capability, it is a significant one.

2010–11 Major Projects Report projects

4. This fourth report covers 28 of the DMO's Major Projects, an increase of six projects on last year's report and an increase of 19 projects when compared to the first Major Projects Report (MPR), which was tabled in Parliament in November 2008. The 28 Major Projects and their approved budgets are set out in Table 1.

5. In total, the approved budgets for the 28 Major Projects amount to $46.1 billion, as at 30 June 2011. This represents over half of the budget for the DMO's approved major capital investment program ($79.5 billion).

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1 Department of Defence, *Defence Annual Report 2010–11*, Volume 2 Defence Materiel Organisation, p. 25.

2 Minister for Defence Materiel, the Hon. Jason Clare MP, *Defence Skills Plan to Meet the Challenges Ahead*, Brisbane 2011.

6. The ANAO's review of these Major Projects is in addition to its regular program of performance audits and financial statement audit work conducted in the Defence portfolio.

Role of the Joint Committee of Public Accounts and Audit

7. The Joint Committee of Public Accounts and Audit (JCPAA) has been influential in establishing the MPR, and has taken an active role in the development of the MPR program.[3] In April 2011 the Committee published its second report on its review of the annual MPR.[4] The report made nine recommendations to further progress and improve the accountability and transparency of major Defence equipment acquisitions including with respect to the presentation of financial data by the DMO, which was the subject of audit qualification in prior years.

8. The Committee commented that the third report built on the level and presentation of information provided in previous MPRs, which in turn improved its readability and utility. The Committee has indicated its intention to review this report, the 2010–11 MPR, in the new year.

[3] The guidelines for the 2010–11 MPR, which were endorsed by the JCPAA in May 2011, set out the requirements for the DMO project offices to provide complete and accurate Project Data Summary Sheets and supporting information for the ANAO to review.

[4] Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, p. iii.

Table 1

2010–11 MPR projects and approved budgets at 30 June 2011

Project	DMO Abbreviation	Approved Budget $m
Air Warfare Destroyer Build (SEA 4000 Ph 3)	AWD Ships	7 931.8
Airborne Early Warning and Control Aircraft (AIR 5077 Ph 3)	Wedgetail	3 859.5
Multi-Role Helicopter (AIR 9000 Ph 2/4/6)	MRH90 Helicopters	3 753.7
Bridging Air Combat Capability (AIR 5349 Ph 1/2)*	Super Hornet	3 578.5
Field Vehicles and Trailers (LAND 121 Ph 3)	Overlander Vehicles	3 263.9
Amphibious Ships (LHD) (JP 2048 Ph 4A/4B)	LHD Ships	3 122.6
New Air Combat Capability (AIR 6000 Ph 2A/2B)*	Joint Strike Fighter	2 666.8
Armed Reconnaissance Helicopter (AIR 87 Ph 2)	ARH Tiger Helicopters	2 060.3
F/A-18 Hornet Upgrade (AIR 5376 Ph 2)	Hornet Upgrade	1 917.5
C-17 Globemaster III Heavy Airlifter (AIR 8000 Ph 3)	C-17 Heavy Airlift	1 848.9
Air to Air Refuelling Capability (AIR 5402)	Air to Air Refuel	1 828.5
Guided Missile Frigate Upgrade Implementation (SEA 1390 Ph 2.1)	FFG Upgrade	1 528.9
F/A-18 Hornet Upgrade Structural Refurbishment (AIR 5376 Ph 3.2)	Hornet Refurb	951.3
Bushmaster Protected Mobility Vehicle (LAND 116 Ph 3)	Bushmaster Vehicles	929.8
Next Generation SATCOM Capability (JP 2008 Ph 4)	Next Gen Satellite	880.9
High Frequency Modernisation (JP 2043 Ph 3A)	HF Modernisation	670.8
SM-1 Missile Replacement (SEA 1390 Ph 4B)*	SM-2 Missile	612.0
Additional Medium Lift Helicopters (AIR 9000 Ph 5C)*	Additional Chinook	584.6
Armidale Class Patrol Boat (SEA 1444 Ph 1)	Armidales	537.2
ANZAC Anti-Ship Missile Defence (SEA 1448 Ph 2B)	ANZAC ASMD 2B	462.0
Collins Replacement Combat System (SEA 1439 Ph 4A)	Collins RCS	450.4
Replacement Heavyweight Torpedo (SEA 1429 Ph 2)	Hw Torpedo	425.4
Collins Class Submarine Reliability and Sustainability (SEA 1439 Ph 3)	Collins R&S	411.4
Indian Ocean Region UHF SATCOM (JP 2008 Ph 5A)*	UHF SATCOM	407.2
ANZAC Anti-Ship Missile Defence (SEA 1448 Ph 2A)	ANZAC ASMD 2A	389.5
Follow On Stand Off Weapon (AIR 5418 Ph 1)	Stand Off Weapon	343.3
Artillery Replacement (LAND 17 Ph 1A)*	155mm Howitzer	326.1
Battlefield Command Support (LAND 75 Ph 3.4) *	Battle Comm. Sys.	325.9
Total		**46 068.7**

Source: 2010–11 MPR, Part 3, Project Data Summary Sheets.

Note: *Indicates the project is included in the MPR program for the first time in the 2010–11 Report. For Bridging Air Combat Capability (AIR 5349), only Phase 2 was reported for the first time in 2010–11.

Report objective and review scope

9. The objective of this report is to provide:

- a formal conclusion on the review of the Project Data Summary Sheets (PDSSs) by the Auditor-General (contained in Part 3 of this report);
- comprehensive information on the status of projects as reflected in the PDSSs prepared by the DMO;
- ANAO analysis on the three key elements of the MPR: cost, schedule and capability, in particular longitudinal analysis of projects over time; and
- further insights and context by the DMO on issues highlighted during the year (not included in the scope of the review by the ANAO).

10. The ANAO's review of the PDSSs was conducted under an agreement with the DMO, and was performed in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000.[5] The agreement excluded from the scope of the ANAO's review PDSS data on the achievement of future dates or events (including forecasts on delivering key capabilities, also called Measures of Materiel Capability Performance), and major risks and issues. By its nature, this information relates to events and depends on circumstances that have not yet occurred or may not occur, or have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information.[6]

11. While our work is appropriate for the purpose of providing a review report in accordance with ASAE 3000, our review is not as extensive as individual project performance audits conducted by the ANAO, in terms of the nature and scope of project 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 28 Major Projects is less than that typically provided by our performance audits.

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5 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.

6 Further information on the scope of the review is set out in paragraphs 1.9 and 1.10.

Overall conclusion

12. This fourth MPR has progressed the development of an annual reporting program focused on improved transparency and accountability for performance relating to cost, schedule and progress towards delivering the key capabilities of Defence Major Projects. The report builds on the data analysis introduced in the 2008–09 MPR and provides a basis for greater longitudinal analysis of project performance in future years.

13. Overall, the program is well placed to incorporate a further two new projects in the 2011–12 MPR and the removal of one project, to bring the total number of Major Projects reported to 29.[7]

Review conclusion

14. Under arrangements with the DMO, the ANAO has agreed to review specified PDSS data and present a formal review conclusion.

15. The conclusion of the review of the PDSSs was that, except for the non-inclusion of project expenditure history in Section 2.2 expressed in base date dollars[8] for three of the 11 Major Projects specified in the guidelines as being required to report expenditure in base date dollars (as explained further in paragraph 1.23), nothing has come to the attention of the ANAO that causes us to believe that the information in the PDSSs, within the scope of our review, has not been prepared, in all material respects, in accordance with the guidelines on completing the PDSSs.

Projects' performance

16. The data reviewed in the PDSSs centre on three major dimensions of project performance: cost, schedule, and the progress towards delivering the planned capability.

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[7] The JCPAA endorsed the inclusion of the Future Naval Aviation Combat System Helicopter project (AIR 9000 Phase 8) and Counter Rocket Artillery & Mortar project (LAND 19 Phase 7A) and the removal of the Hornet Structural Refurbishment project (AIR 5376 Phase 3.2), in September 2011, as proposed by the DMO in consultation with the ANAO.

[8] By converting the actual expenditure on a project to base date dollars, an assessment is able to be made of the performance of the project against its originally approved budget (base date dollars). Base date dollars is the amount, adjusted for the impact of inflation (prices) and foreign exchange movement over the period from a specified date (usually Second Pass Approval). In order that the initial budgeted cost of a project can be compared to the actual expenditure over time, in like terms, the financial tables in the PDSSs also adjust for real variations to budgeted costs, which involve: changes in the quantities of equipment or capability; transfers to the Defence Support Group to fund the acquisition of facilities and transfers to other projects; and budgetary adjustments such as the impact of efficiency dividends.

Overview

17. The management of projects' budgeted cost has been, to a significant degree, assisted by routine budget supplementation to deal with both price changes (via price indexation) and foreign exchange movement (via a whole-of-government 'no win/no loss' policy[9]); and the coverage of certain operating costs, such as staffing, from outside projects' budgeted cost. In this context, while projects' budgeted cost requires careful management by the DMO, this dimension of project performance has not been a major issue to date.[10]

18. From 1 July 2010, all projects' approved budgets include the total price indexation, adjusted for the Specialist Military Equipment Weighted Average (SMEWA)[11] or other appropriate index, to the point of the project's forecast Final Operational Capability (FOC). This is defined as the budget being 'out turned'.[12] In 2010–11, this indexation adjustment resulted in a one-off variation to projects' total approved budgets of $1.16 billion. Under this model of price indexation, projects will only receive further indexation for fluctuations in the agreed index, or by Government approved real cost increase, where contingency funding has been exhausted or cannot be sourced internally by the DMO. Once the forecast FOC has passed, projects will be expected to manage price increases beyond the agreed index within their existing budget. This will require close management by the DMO to avoid project budget deficits, particularly in an environment of regular project slippage.

19. While none of the Major Projects in this report has exceeded its approved budgeted cost[13], the ANAO's analysis identified that the DMO had received a total of $295 million in price indexation, between the forecast FOC and the year ending 30 June 2011, for projects in the MPR sample, which are yet to achieve FOC.

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9 *Defence Portfolio Budget Statements 2010–11*, p. 26.

10 In the 2010–11 MPR, the DMO is reporting less than one per cent negative variation in the total approved budgeted cost and the total current budgeted cost for the 28 Major Projects. The net variation involves budgeted cost movements between Second Pass Approval to 30 June 2011 that are not due to price indexation, foreign exchange, government approved scope changes and transfers to other areas of Defence. See 2010–11 MPR, Part 2, DMO Executive Summary, Table 1, p. 106.

11 Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, paragraph 2.9, p. 148.

12 Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, paragraph 1.79, p. 136.

13 See Table 4, p. 51.

20. Maintaining Major Projects on schedule, the second major dimension of project performance, remains the most significant challenge for the DMO and industry contractors; in turn affecting when the capability is made available for operational release and deployment. The DMO data indicates that at 30 June 2011, the total time for the 28 Major Projects to achieve their FOC date is expected to be almost one-third longer than was originally planned.[14]

21. In relation to the third major dimension of project performance, capability, the DMO expects to deliver almost all capabilities associated with the Major Projects in this report.[15] This assessment by the DMO was outside the scope of the ANAO's review as explained in paragraph 10. Nevertheless, the ANAO continues to engage with the DMO on developments regarding materiel capability measures and the revised Materiel Acquisition Agreement (MAA) framework in order to enhance our understanding of the DMO's assessment of its own performance in the delivery of the materiel element of key capabilities.

22. There are some indications that the assessment of capability is overly optimistic in some cases. Analysis of the information available indicates that some critical capabilities have been unavailable or are expected to be delivered below that initially approved. For example, numerous recent issues in the sustainment of the submarine capability have gained significant public and political attention, and have limited the availability of this capability to the Navy. Similarly, in respect of the MRH90 Helicopters, ARH Tiger Helicopters and Air to Air Refuel projects, the DMO's assessment of the capability expected to be delivered has declined in 2010–11 as compared to the original planned key capabilities for these platforms (refer to PDSSs in Part 3).

23. Table 2 provides aggregate DMO data on the approved budgeted cost, schedule performance and progress toward delivering capabilities for the Major Projects covered in this year's report.

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[14] FOC is the point in time at which the final subset of a capability system that can be operationally employed is realised. FOC is a capability state endorsed by the government at Second Pass Approval and reported as having been reached by Defence's capability manager (usually the Service Chief). Major capital equipment can be in Defence service use before formally achieving FOC, such as in the case of Bushmaster Vehicles which are in active use by the ADF but have not achieved FOC.

[15] This is discussed further in paragraphs 37 to 39.

Table 2

Longitudinal analysis of schedule performance

	2007–08 MPR	2008–09 MPR	2009–10 MPR	2010–11 MPR
Number of Projects	9	15	22	28
Total Approved Budgeted Cost	$13.5 billion	$37.8 billion	$40.8 billion	$46.1 billion
Approved Budgeted Cost Increase/Decrease (In-year)[1]	$1.1 billion (8.5 per cent)	$4.8 billion (14.5 per cent)	-$3.3 billion (-7.5 per cent)	-$0.1 billion (-0.3 per cent)
Schedule Slippage (Total)[1]	308 months (37 per cent increase)	378 months (28 per cent increase)	688 months (31 per cent increase)	760 months (31 per cent increase)
Average Schedule Slippage per Project[1]	39 months	25 months	34 months	30 months
Schedule Slippage (In-year)	-	119 months (7 per cent)	39 months (2 per cent)[2]	72 months (3 per cent)[3]
Progress toward Delivering Key Capabilities • High level of confidence that will be delivered (Green)	80 per cent	86 per cent	89 per cent	94 per cent
• Under threat but still considered manageable (Amber)	13 per cent	13 per cent	10 per cent	5 per cent
• At this stage unlikely to be met (Red)	7 per cent	1 per cent	1 per cent	1 per cent

Sources: 2007–08, 2008–09, 2009–10 and 2010–11 MPRs, Parts 2 and 3.

Note 1: As the data for the 28 Major Projects in the 2010–11 MPR compares results with subsets of projects in the 2009–10 MPR (22 of the current 28 Major Projects), the 2008–09 MPR (15 of the current 28 Major Projects) and the 2007–08 MPR (nine of the current 28 Major Projects), a comparison of the data across years should be interpreted in this context.

Note 2: Based on the same 15 projects from the 2008–09 MPR.

Note 3: Based on the same 22 projects from the 2009–10 MPR.

Note 4: The grey section of the table covers data that is not within the scope of the ANAO's assurance review. It should also be noted that the measures used to record progress towards delivering the key capabilities in the grey section of the table can change from year to year. Any comparison of the data across years should therefore be treated with caution.

Cost

24. The total budgeted costs for the Major Projects included in this year's MPR have increased by $7.8 billion (20 per cent) since these projects received Second Pass Approval. The $7.8 billion is comprised of price (materials and labour) variation increases of $7.6 billion[16], real variation (such as scope changes and budget transfers between projects) increases of $3.7 billion, and foreign exchange rate movement decreases of $3.5 billion.[17] Three projects have had a real budgeted cost increase since Second Pass Approval of greater than $500 million, namely the MRH90 Helicopters, the Hornet Refurb and Bushmaster Vehicles (additional quantities/upgrades).

25. Compared to 2009–10, the strengthening Australian dollar had less impact on project budgeted costs in 2010–11. In 2009–10, the budgeted cost of the 22 projects decreased by $3.8 billion (11 per cent) as a result of foreign exchange movements. In 2010–11, the reduction of the total budgeted cost for the 28 projects as a result of foreign exchange movements was $1.1 billion (three per cent), although this was offset by a $1.1 billion increase in the budgeted cost due to price indexation. In general, this again highlights the year-to-year volatility that can arise with projects exposed to foreign currency movements.[18]

26. In terms of forecast and actual expenditure, in total, the expenditure for the 28 projects at 30 June 2011 was $3.7 billion, against an initial forecast expenditure of $5.0 billion and half-year revised forecast of $4.0 billion. The main factors contributing to the variance were production/schedule delays, lower than anticipated Foreign Military Sales (FMS) disbursements, the transfer of funding of activities to sustainment, and foreign exchange fluctuations.

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16 Including $1.16 billion in out turning indexation as discussed in paragraphs 18 and 2.22.

17 An explanation of the definition of real budgeted cost variations is included in paragraph 2.18.

18 As Defence projects usually extend over a number of years, supplementation to project budgets to deal with labour and material price changes and foreign exchange variations is a standard budget feature. Out turned budgets include indexation that is provided at the inception of the project, based on the expected project completion date (see paragraph 18).

Schedule

27. The ANAO's analysis of the lead or main capability for the 28 Major Projects covered in the 2010–11 MPR shows that 14 projects have experienced schedule slippage. The total slippage across the Major Projects amounts to 760 months, which represents a 31 per cent increase on the original planned schedule for achieving FOC.[19]

28. However, some of the additional projects included in this year's MPR are at a comparatively early stage. The impact of 'new' projects, which are less likely to have yet recorded schedule slippage, will tend to reduce the average overall. As the 2010–11 MPR has reached a point where total project numbers have predominantly stabilised, this impact should be limited in future years.

29. The projects currently forecast to experience delays of four or more years are: High Frequency (HF) Modernisation (134 months); Collins Reliability and Sustainability (99 months); FFG Upgrade (84 months); Collins Replacement Combat System (72 months); ANZAC Anti-Ship Missile Defence (ASMD) Phase 2A (72 months); ANZAC ASMD Phase 2B (57 months) and Wedgetail (48 months).

30. Analysis of the 2010–11 PDSSs indicates that seven of the 28 projects in this report have experienced in-year schedule slippage totalling 72 months. These involve: HF Modernisation (14 months); Air to Air Refuel (12 months); AWD Ships (12 months); C-17 Heavy Airlift (11 months); ANZAC ASMD Ph 2A (eight months); ANZAC ASMD Ph 2B (eight months) and Hornet Upgrade (seven months). In contrast, the expected FOC date for the Armidales project decreased by one month.

31. As shown in Chapter 2, 61 per cent of the total schedule slippage relates to the initial nine projects reported on in the 2007–08 MPR.

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[19] Source 1: In the instances where a Major Project has multiple segments/capabilities with separate FOC dates, the ANAO has used the project's current lead/main capability FOC for calculating schedule performance. The DMO's approach is to use the final FOC date for a project listed in the 2010–11 PDSSs. These two approaches, which are both valid measures, lead to a small difference in the calculated percentage by which the Major Projects' total schedule has slipped for the 2010–11 MPR (ANAO – 31 per cent; and DMO – 28 per cent). For example, the ANAO's methodology results in a slippage of 37 months for Bushmaster Vehicles based on production period 1, while the DMO's methodology results in 0 months slippage based on production period 4, which was approved in 2011.

Source 2: The Joint Strike Fighter, Hornet Refurb and UHF SATCOM projects do not have an FOC date and therefore are not included in schedule calculations.

32. Further disaggregation according to a project's Second Pass Approval shows that 88 per cent of the total schedule slippage across the Major Projects covered in the 2010–11 MPR is made up of projects approved prior to the DMO's demerger from the Department of Defence, in July 2005. This is a positive indicator of the benefits that the DMO, as a specialist acquisition and sustainment organisation, is able to bring to complex Defence procurement.

33. The reasons for schedule slippage vary but primarily reflect the underestimation of both the scope and complexity of work by industry and the Defence Organisation. PDSS data shows that for more complex projects, the ability of industry to meet the capacity required (AWD Ships) and the technical specification involving system design and integration (Wedgetail), is often significantly underestimated compared to the original planned schedule.

34. The Defence Organisation's standard practice does not involve an independent third party review of a project's planned schedule prior to the provision of the forecast project schedule to government for approval at Second Pass. In the last few years, the DMO has introduced the option for a DMO Gate Review Assurance Board considering the readiness of a project to proceed to Second Pass and to request an independent review (known as a non-advocate review) if this is considered necessary.

35. The DMO classifies projects as Military-Off-The-Shelf (MOTS), Australianised Military-Off-The-Shelf (AMOTS) or Developmental.[20] These classifications are a generic indicator of the level of difficulty in the procurement process. Following the Kinnaird and Mortimer reviews, increasingly government has required the Defence Organisation to pursue MOTS/Commercial-Off-The-Shelf (COTS) capability solutions, where such solutions exist that can deliver the required capability.[21] The intention of this policy is to reduce the risk associated with the acquisition of new capability by limiting the Defence Organisation's exposure to the additional risk associated with Developmental projects.

36. However, where acquisitions are inappropriately classified as MOTS but are actually Developmental in nature, significant schedule slippage is likely. The ANAO identified a significant example of the impact of such misclassification in its 2009–10 performance audit of Joint Project

[20] Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, p. 108.

[21] Defence Materiel Organisation, *Defence Procurement and Sustainment Review*, September 2008, p. 39.

2070—Lightweight Torpedo Replacement.[22] Further examples of projects that have suffered from schedule slippage on similar grounds are the ARH Tiger Helicopters and the MRH90 Helicopters. As reflected in Table 4.2 of the 2009–10 MPR, the ARH Tiger Helicopters were far more developmental than envisaged at contract signature.[23] The MRH90 Helicopters were originally categorised as an AMOTS solution but have now been assessed to be Developmental.[24]

Progress towards delivering key capabilities

37. A further dimension in assessing the status of Major Projects is the progress towards delivering the key capabilities specified by the ADF to be delivered by each project.

38. The 2010–11 MPR provides unclassified data on the DMO's level of confidence with achieving each project's key capability attributes (Measures of Materiel Capability Performance). These measures predominantly focus on the future achievement of certain technical, functional and safety requirements associated with the platform or system. As this data concerns forecasting future achievements, it has been excluded from the scope of the ANAO's review.[25]

39. Across the Major Projects in the 2010–11 MPR, the DMO's assessment is that it has a high level of confidence in delivering 94 per cent of the key capabilities associated with the projects. While the delivery of five per cent of the key capabilities is considered to be under threat, the risk is still considered manageable and able to be met.[26] The DMO's key capability data shows three projects are assessed by the DMO as unlikely to meet some elements (one per cent) of capability. These are: Wedgetail, where the performance of the phased array radar will not meet the contracted specification at final delivery; MRH90 Helicopters, where the delivery of conforming supplies is

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22 ANAO Audit Report No.37 2009–10, *Lightweight Torpedo Replacement Project*, pp. 15-16.

23 Australian National Audit Office, *2009–10 Major Projects Report*, Part 3, p. 219.

24 Gate Review Assurance Board, *MRH90 Gate Review Outcomes*, 15 April 2011.

25 ANAO analysis of the DMO's Measures of Materiel Capability Performance is set out in paragraphs 2.66 to 2.68.

26 Noting the caution that needs to be exercised with year-to-year comparisons of Measures of Materiel Capability Performance, previously Measures of Effectiveness (MOEs) data (see Table 2, Note 1), in the 2009–10 MPR, the DMO stated it had a high level of confidence in delivering 89 per cent of key capabilities for the 21 projects with MOEs.

highly unlikely to be achieved for the first maritime and land operational capabilities; and 155mm Howitzer, where some elements of capability are not currently available in the market place.[27]

Governance and business processes

40. Consideration of the DMO's governance and business processes is fundamental in both gaining the necessary understanding of the operations of the entity, and designing and implementing a test program for the ANAO's review. This test program includes the examination of the DMO's financial control framework, enterprise risk management arrangements and formal assurance mechanisms. Additionally, this year's report continues to monitor the effectiveness of Earned Value Management Systems (EVMS) data in the interest of improving the accountability and transparency of the management of Major Projects as highlighted by the JCPAA.[28]

41. Other relevant governance and business process areas covered in the ANAO's review included:

- the Gate Review process, which is designed to provide the Chief Executive Officer (CEO) of the DMO 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 various stages of its life cycle;
- the Ministers' Projects of Concern process, which is designed to address project issues of concern to the DMO and the Government relating to cost, schedule and capability[29];
- the DMO's business systems rationalisation, which is aimed at consolidating processes and systems in order to provide a more manageable system environment; and

[27] Changes in the method of measuring Materiel Capability Performance have also impacted on this analysis, and are further discussed in paragraphs 2.65 to 2.68.

[28] Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, p. 36.

[29] The Minister for Defence and the Minister for Defence Materiel maintain a process by which an increased focus on projects and industry is implemented in order to address project issues seen as significant by the CEO DMO and the Government.

- the project skills professionalisation and development program in the DMO and industry, which is directed at enhancing the skill sets available to manage the DMO's Major Projects.

42. During the 2010–11 MPR review, the ANAO continued to observe a lack of consistency at a project level in the application of various policies, practices and systems that are relevant to the provision of assurance over the information contained in the PDSSs. This extends to areas such as financial management, where some projects adopted a variety of financial management policies and plans; and to risk management, where a diversity of approaches at a project level impact on a consistent and strategic risk management approach at the whole of the DMO level.[30]

43. The ANAO also identified that, for some projects, there are issues with the accuracy and completeness of information in the current DMO systems for reporting on project status to senior management. This was highlighted in the case of reporting on Measures of Materiel Capability Performance, where indicators in the DMO's Monthly Reporting System did not always correspond with those presented in Acquisition Overview Reports (AORs) provided to the relevant Ministers.[31]

44. Nevertheless, there are a range of enterprise and project-level acquisition governance initiatives underway, although some, such as the inclusion of project level Gate Reviews in the DMO's risk control framework, are still in their formative stages. It is expected to take a number of years for the results of the Gate Review process to flow through across the portfolio of the DMO's Major Projects. An initial assessment of these governance initiatives and the outcomes they have been able to achieve, from the results made available, are outlined in Chapter 3.

45. From 1 July 2010, all projects' approved budgets include the total price indexation, adjusted for the SMEWA[32] or other appropriate index, to the point

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30 Aspects of risk management in DMO Major Projects were also examined in ANAO Audit Report No.57 2010–11, *Acceptance into Service of Navy Capability*, pp. 114-117.

31 Source 1: The need for the enhancement of the DMO's project reporting and monitoring mechanisms has been highlighted in previous ANAO reports (see for example, ANAO Audit Report No.37 2009–10, *Lightweight Torpedo Replacement Project*, p. 20).

Source 2: The DMO has advised that, from the beginning of 2011, it has changed its monthly project reporting template to be more key metric focused and less narrative. The results of this enhancement have not yet been provided for review.

32 Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, paragraph 2.9, p. 148.

of the project's forecast FOC. This is defined as the budget being 'out turned'.[33] In 2010–11, this indexation adjustment resulted in a one-off variation to projects' total approved budgets of $1.16 billion. Previously, periodic[34] price updates to budgets reflected movements in the Non-Farm Gross Domestic Product (NFGDP) implicit price deflator.[35] As this new indexation measure has only recently been implemented, the ANAO has also reviewed how indexation is being managed at a project level, and the impact in areas such as the use of contingency budgets and general contract management, as part of its review for the 2010–11 MPR.

[33] Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, paragraph 1.79, p. 136.

[34] Australian National Audit Office, *2010–11 Major Projects Report*, Part 3, PDSS, Section 2.1.

[35] In the five-year period 2004–05 to 2008–09, the NFGDP implicit price deflator's average annual increase was 4.8 per cent (Australian Bureau of Statistics, *Australian System of National Accounts*, Cat. no. 5204.0, 2008–09, Table 26).

1. 2010–11 MPR Review

Introduction

1.1 This chapter provides an overview of the report structure, the approach adopted by the ANAO in the review of the 2010–11 Project Data Summary Sheets (PDSSs) and the outcomes of the review.

1.2 The chapter also examines administrative issues raised in earlier reviews by the ANAO, and the Defence Materiel Organisation's (DMO's) progress in addressing these during 2010–11. In particular, the 2009–10 Major Projects Report (MPR) highlighted issues with the governance of Major Defence equipment acquisition projects (Major Projects) that presented challenges to the DMO including:

- the consistency within the financial control framework;
- the inherent uncertainty of prospective information (particularly in relation to developmental aspects of projects and schedule achievement); and
- the maturity of the Enterprise Risk Management Framework (ERMF).

1.3 These areas have remained challenging for the DMO and are discussed later in this chapter, along with further issues arising from the 2010–11 review. Additionally, the chapter makes reference to other areas of focus raised by the JCPAA for consideration in the development of this and future MPRs.

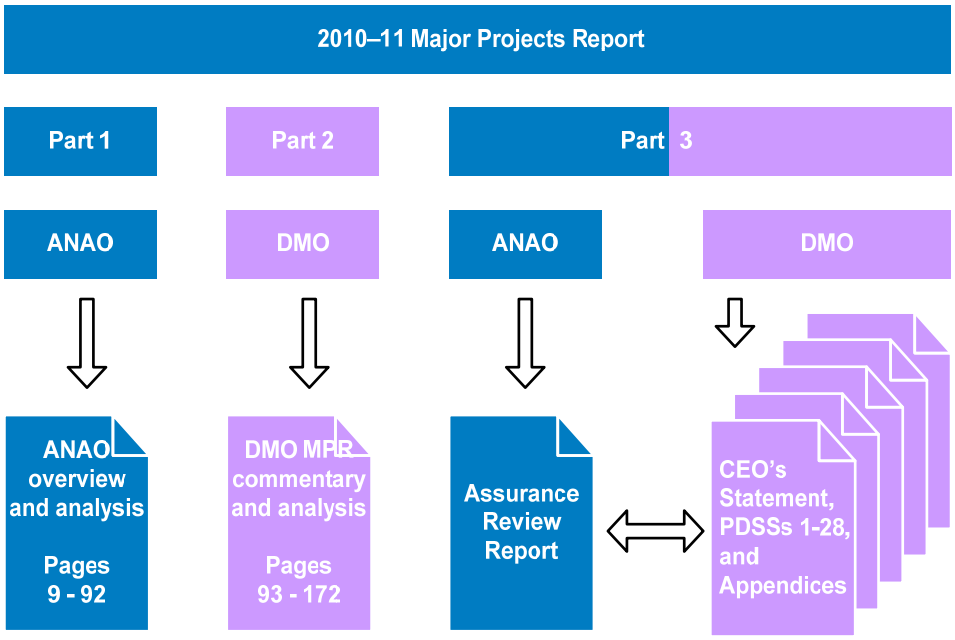
Report structure

1.4 This report is organised into three parts as shown in Figure 1:

- Part 1 comprises the ANAO's overview, incorporating a Summary, Chapter 1 *2010–11 MPR Review*, Chapter 2 *Projects' Performance*, and Chapter 3 *Governance and Business Processes*;
- Part 2 comprises the DMO's commentary and analysis (not included within the scope of the Auditor-General's formal review); and
- Part 3 incorporates the Auditor-General's assurance review report; a statement by the Chief Executive Officer (CEO) of the DMO; and the 28 PDSSs prepared by the DMO as part of the assurance review process.

Figure 1

Report structure



1.5 The PDSSs describe each project and contain information on individual project performance according to the approved budgeted cost and expenditure, schedule and the DMO's assessment of progress toward delivering those aspects of key capabilities for which the DMO is responsible. This information has been prepared by the DMO having regard to the guidelines provided to project offices for completing the PDSSs.[36] Each PDSS comprises:

- Section 1—a summary of the project, including project description, the project's current status, project context, unique project features, major challenges, and reference to other projects that depend on the reported project to achieve their objectives;

[36] The guidelines for the 2010–11 MPR, which were endorsed by the JCPAA in May 2011, set out the requirements for the DMO project offices to provide complete and accurate Project Data Summary Sheets and supporting information for the ANAO to review.

- Section 2—an outline of the project's budget and expenditure, and variances that have occurred over the life of the project to date, as well as major contracts in place (and quantities delivered as at 30 June 2011);
- Section 3—information on the project's design development and test and evaluation status; forecasts of the expected timing of projects achieving Initial Operational Capability (IOC)[37] and Final Operational Capability (FOC)[38]; and, for the first time, forecasts of the expected timing of projects achieving Initial Materiel Release (IMR)[39] and Final Materiel Release (FMR)[40] are also included;
- Section 4—a summary of the DMO's assessment of progress on delivering key capabilities (also referred to as Measures of Materiel Capability Performance);
- Section 5—an outline of the major risks and issues faced by the project;
- Section 6—a summary of project maturity and comparison to benchmark;
- Section 7—an outline of the key lessons that have been learned; and
- Section 8—a summary of the project's line management details.

1.6 The statement by the acting CEO DMO (p. 180) lists significant events that have taken place affecting the status of projects as set out in the PDSSs, since 30 June 2011.

1.7 Understandably, and consistent with the guidelines, information of a classified nature has been excluded from the PDSSs.

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[37] Initial Operational Capability (IOC): The point in time at which the first defined subset of a capability system that can be operationally employed is realised. IOC is a capability state endorsed at project approval at Second Pass, and reported as having been achieved by the Capability Manager. *Defence Portfolio Budget Statements 2010–11*, p. 152.

[38] Final Operational Capability (FOC): The point in time at which the final subset of a capability system that can be operationally employed is realised. FOC is a capability state endorsed at project approval at Second Pass, and reported as having been reached by the Capability Manager. *Defence Portfolio Budget Statements 2010–11*, p. 152.

[39] Initial Materiel Release (IMR): A milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of Initial Operational Release. *Defence Portfolio Budget Statements 2010–11*, p. 152.

[40] Final Materiel Release (FMR): A milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of FOC. *Defence Portfolio Budget Statements 2010–11*, p. 152.

Review approach

1.8 In accordance with the provisions of section 20(1)(c) of the *Auditor-General Act 1997*, the ANAO and the DMO have entered into an agreement facilitating this review. The ANAO's review of the individual PDSSs (contained in Part 3 of this report) has been 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.

1.9 The agreement for the ANAO's review of the PDSSs excludes from the review's scope future dates or events (including forecasts on delivering the capability set out in Measures of Materiel Capability Performance), risks and issues. By its nature, this information relates to events and depends on circumstances that have not yet occurred or may not occur, or have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information.

1.10 Table 3 below lists the PDSS items which are out of scope for the review due to their high levels of inherent uncertainty.

Table 3

ANAO's review of 2010–11 PDSSs: Items in the PDSS that are out of scope

PDSS Section	Out of Scope	Reference in ANAO Review Conclusion – 'Scope'
1.3 Project Context	Future dates	(c)
1.3 Major Challenges	Complete table	(a)
3.1 Design Review Progress	Future dates	(c)
3.2 Contractor Test and Evaluation Progress	Future dates	(c)
3.3 Progress Toward Materiel Release and Operational Capability Milestones	Future dates	(c)
4.1 Measures of Materiel Capability Performance	Complete table	(b)
5.1 Major Project Risks	Complete table	(a)
5.2 Major Project Issues	Complete table	(a)

1.11 The DMO, as part of the review process and in consultation with the ANAO, developed an MPR Work Plan which incorporates the PDSS guidelines. The PDSS guidelines provide direction to the DMO's project offices in providing complete and accurate PDSSs and supporting information for the ANAO to then review.

1.12 The PDSS guidelines, which were endorsed by the JCPAA in May 2011, set out the requirements for the DMO project offices to provide complete and accurate PDSSs and supporting information for the ANAO to review. JCPAA Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, also made nine recommendations to further improve the transparency and accountability of the PDSSs.

1.13 Our review of the information presented in the individual PDSSs included:

- an examination of each PDSS;
- a review of relevant processes and procedures used by the DMO in the preparation of the PDSSs;
- an assessment of the systems and controls that support project financial management, risk management, and project status reporting;
- a review of documents and information relevant to the PDSSs;
- interviews with persons responsible for the preparation of the PDSSs and those responsible for the management of the 28 projects;
- taking account of industry contractor comments provided to the DMO on draft PDSS information;
- sign-offs by the DMO managers attesting to the accuracy of the PDSSs;
- an examination of confirmations from the Australian Defence Force (ADF) Capability Managers relating to each project's progress toward IMR, FMR, IOC and FOC; and
- an examination of the statement and management representations by the acting CEO DMO.

1.14 While our work is appropriate for the purpose of providing a review report in accordance with ASAE 3000, our review is not as extensive as individual project performance audits conducted by the ANAO, in terms of the nature and scope of project 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 28 Major Projects is less than that typically provided by our performance audits.

Areas of review focus

1.15 The initial stage of the ANAO's development of processes and procedures to provide independent assurance over the PDSSs focused on reviewing the DMO's project management and reporting arrangements, and the number and nature of different processes in place that contribute to the overall governance of Major Projects within the DMO. This encompassed the following, to the extent that they impact on the preparation of the PDSSs:

- the specific control framework applied to progress tracking and payment systems, including prime contractor progress payments and the reporting of the financial information contained within Section 2 of the PDSSs;
- ongoing review of the ERMF and major risk and issue data contained in the PDSS from each project;
- specific programs for the management of acquisitions such as: Gate Reviews, the tailored oversight arrangements for projects on the Projects of Concern list, assurance mapping processes and skilling initiatives within the Commonwealth and industry;
- as recommended by the JCPAA[41]:
  - the difference in the scale, size and incidence of requirements to be completed between FMR and FOC[42];
  - base date, out turned and current dollar reporting of expenditure for the 11 projects as listed in the guidelines for 2010–11;
  - Measures of Materiel Capability Performance data (previously Measures of Effectiveness) and the transition to the new Materiel Acquisition Agreement (MAA) template incorporating this change; and

[41] Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, p. xi.

[42] Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, paragraph 2.22, p. 157.

- the review also involved analysis of the use of the Earned Value Management System (EVMS) and contingency management following the JCPAA's interest in these subjects.

1.16 This review informed the ANAO's understanding of the DMO systems and processes used to populate the PDSSs for 2010–11, and highlighted issues in those systems and processes that could be beneficially addressed by the DMO in the longer term.

Efficiency of the MPR development process

1.17 The compilation and review of the MPR continues to improve in terms of efficiency, with six extra projects being incorporated in 2010–11, bringing the total number to 28. The DMO prepared indicative PDSSs and supporting evidence packs, which were reviewed by the ANAO during visits to project offices prior to 30 June 2011. This activity was largely completed within the agreed schedule and as a result, the ANAO observed that efficiencies realised in the prior year were maintained.

1.18 However, it will be important that the DMO ensures adequately experienced and skilled resources are allocated to the management of the DMO MPR development and compilation process going forward, as the MPR process requires sound project management, financial reporting and extensive stakeholder liaison throughout the preparation of the DMO section of the report. Additionally, as reporting requirements evolve it will be important that the DMO Executive maintain their involvement and allocate sufficient appropriate resources to the MPR process.

1.19 The DMO proposed to the JCPAA in September 2011 the inclusion of an additional two new projects and the removal of one project for the 2011–12 MPR. This proposal followed consultation with the ANAO, against the criteria specified by the JCPAA in its Report 422.[43] The JCPAA agreed to these variations to the list of projects for inclusion in the 2011–12 MPR.

[43] Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, p. 10.

Review outcomes

Financial control framework

1.20 The ANAO reviewed the financial control framework supporting the DMO's management of its Major Projects. In particular, this review sought to reassess the prior year qualification for the non-disclosure of information in relation to prime contract expenditure in base date dollars for those 11 projects nominated by the DMO and endorsed by the JCPAA in the 2010–11 guidelines.[44] The review also sought to assess the process in place for reporting on out turned dollars[45] in this and future MPRs if agreed to by the JCPAA. The ANAO's review included:

- identification of key controls;
- establishing the aim of each control, including whether the control was preventative or detective, and how frequently the control was applied;
- identification of the implications of failure of each of these controls; and
- identifying, in light of the findings of this review, any significant control weaknesses.

1.21 The application of the financial control framework differed in respect of each of the projects examined, with a wide range of corporate and project management systems being employed and the varying financial management policies adopted across project offices. As a result, there was inconsistency between the information produced by each project's record keeping systems, and any efficiencies which might have been gained by adopting a consistent approach to reviewing each PDSS were limited.

1.22 The difficulties encountered by the DMO in presenting PDSS data in the 2010–11 MPR included:

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[44] By converting the actual expenditure on a project to base date dollars, an assessment is able to be made of the performance of the project against its originally approved budget (base date dollars). Base date dollars is the amount, adjusted for the impact of inflation (prices) and foreign exchange movement over the period from a specified date (usually Second Pass Approval). In order that the initial budgeted cost of a project can be compared to the actual expenditure over time, in like terms, the financial tables in the PDSSs also adjust for real variations to budgeted costs, which involve: changes in the quantities of equipment or capability; transfers to the Defence Support Group to fund the acquisition of facilities and transfers to other projects; and budgetary adjustments such as the harvesting of efficiency dividends.

[45] Out turned prices are estimates adjusted to incorporate the expected rate of inflation. *Defence Portfolio Budget Statements 2007–08*, p. 346.

- projects where the DMO was the systems integrator often involved different contractors and/or Foreign Military Sales (FMS) cases, had different contract base dates, in addition to contract amendments at differing base dates to the original contracts[46];
- legacy system issues, where projects utilised the Defence Financial Management Information System (DEFMIS), the financial management information system used by the DMO prior to the introduction of the Resource and Output Management and Accounting Network (ROMAN) in 2000, and therefore could not readily disaggregate progress payment information[47];
- projects involving FMS cases and Memoranda of Understanding (MOUs), for which records were kept in then-year dollars (that is, including price escalation), rather than in base date terms, as a result of requirements of the US Government[48]; and
- for some projects, while contracts may have been struck and managed in base date terms, transactions were not subsequently recorded in a way that supports the disclosure of base date dollars.[49]

1.23 As a result of the above issues, in the 2009–10 MPR the review conclusion was qualified as the information on expenditure and contract prices in base date dollars was not presented in accordance with the guidelines endorsed by the JCPAA. The project financial information for 19 of the 22 projects did not provide project expenditure history in base date dollars, and for four projects the prime contract price in base date dollars was not provided.

1.24 To address these issues, the 2010–11 MPR guidelines allowed for contract prices to be expressed in current dollars for those projects unable to make this disclosure in base date dollars, thus resolving the prior year qualification on this issue.

1.25 In an effort to overcome the prior year qualification on project expenditure history, and as recommended by the JCPAA in Report 422[50], only

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46 This applies to the Hornet Upgrade, Hornet Refurb, SM-2 Missile and Collins RCS projects.

47 This applies to the FFG Upgrade and High Frequency (HF) Modernisation projects.

48 This applies to the Next Gen Satellite, Hw Torpedo, UHF SATCOM and Stand Off Weapon projects.

49 This applies to the Overlander Vehicles, Collins R&S and Bushmaster Vehicles projects, and Wedgetail for the 'other' component of the financial year to the end of June 2011 expenditure.

11 of the 28 projects in the 2010–11 MPR were required to report expenditure in base date dollars (these projects being Wedgetail, MRH90 Helicopters, LHD Ships, ARH Tiger Helicopters, C-17 Heavy Airlift, Air to Air Refuel, Bushmaster Vehicles, Next Gen Satellite, Armidales, ANZAC ASMD 2A and 2B). Of these, three were unable to comply with the Guidelines (Wedgetail, Next Gen Satellite and Bushmaster Vehicles), and hence the review conclusion was again qualified in respect of these projects. Positively, the DMO was able to report base date dollar expenditure for six additional projects (AWD Ships, Super Hornet, Joint Strike Fighter, Additional Chinook, 155mm Howitzer and Battle Comm. Sys.).

Prospective information

1.26 Statements about the future, by their very nature, involve uncertainty and rely on circumstances that may or may not occur. From an assurance review perspective, the risk of misstatement about future occurrences is higher than the risk of a misstatement about an event that has occurred and where sufficient documentary evidence can be provided. Generally, the longer the timeframe involved in the forecast the more uncertain are the underpinning assumptions, and the greater the risk of actual outcomes differing materially from forecast outcomes.

1.27 Some information in the DMO's PDSSs contains forecasts for achieving project milestones (for example, FOC) and expected developments which may impact on the project (for example, technology development). Presently, this information draws on a large range of the DMO and contractor systems and processes, with varying levels of internal control. As schedule is the major issue for the management of the DMO's Major Projects[51], alternative processes to obtain confidence in the prospective information are available to the DMO, for example the Wedgetail project where independent experts were consulted on the ability to achieve the technical solution, and thereby the implications for the final schedule.

1.28 The risks for an assurance review in relying on the underpinning assumptions in relation to prospective information reported about projects have been highlighted on three recent occasions. This has been due to the

[50] Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, p. xii.

[51] Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, p. 102.

discovery, after relevant projects have been approved by government, that the assumed risk profile for the projects was not soundly based because these projects were in fact acquiring equipment that was developmental when the proposal to acquire the equipment was approved based on the understanding that it was Military-Off-The-Shelf (MOTS). Greater levels of internal and independent validations of assumptions in relation to projects, including in relation to the developmental maturity of the equipment offered, would need to be available to include them within the assurance review scope.

1.29 In accordance with the agreement between the DMO and the ANAO, the review of prospective information has been excluded from the scope of our review. Nevertheless, the ANAO and the DMO have continued to invest resources in this area as part of the development of the 2010–11 MPR. However, the ANAO's assessment of the systems and processes currently in place is that they do not provide sufficient documentary evidence over prospective information within the PDSSs to support the information being included in the review by the ANAO.

Major risks and issues

1.30 In the 2009–10 MPR, the ANAO's review concluded that while the DMO was working to improve the standard of risk management arrangements applying to Major Projects, the inherently uncertain nature of risks and issues meant that PDSS data could not be considered complete because of unknown risk and issue events that may emerge in the future. For this reason, major risks and issues were placed outside the scope of the ANAO's review.

1.31 Under arrangements with the DMO for this year's review, major risks and issues data in the PDSSs continue to remain out of scope.

1.32 Nevertheless, over the course of the year, the ANAO engaged with the DMO on developments with risk management at an enterprise and project level in order to continue to develop its understanding of the DMO's risk management systems and processes.

1.33 The development of the DMO's ERMF was identified in 2008–09 by the ANAO as a challenging but necessary step for the DMO in striving to achieve its goal of improving project management, which was consistent with advice from the DMO that it would take some time before reliance could be placed on

the framework.[52] The ANAO highlighted particular challenges, such as the gap between risk management practices and those preferred practices as set out in the ERMF.[53]

1.34 This year's review continues to note a strong corporate focus on these challenges, although broader executive and organisational engagement was less evident. Work continues to be undertaken by the DMO to better understand and map the business and its controls in the context of enterprise risk management. This includes examining models and approaches that can generate improvements in risk management behaviour and considering how this will be tested within the organisation before the broader adoption of an improvement program.

1.35 At a more applied level, work is being undertaken to improve management's awareness of enterprise risk management and engagement across the organisation. Nevertheless, considerable work remains to be undertaken before effective enterprise risk management is in place to assist the DMO to improve its approach to the identification and management of risks to the delivery of the Major Projects.

1.36 At the project level, the ANAO's review continues to indicate that there has been little progress in improving the consistency of risk management across the Major Projects, as the organisation continues to employ a number of risk management tools. The DMO's main risk management software tool had ongoing operational problems, such as slow response times, and caused a degree of frustration at the project level among competing priorities. Following last year's software upgrade, timely access to risk management training for project staff was again an issue noted during the ANAO's review.

1.37 In 2011–12, the ANAO will continue to review the DMO's progress on risk management across the Major Projects.

Project key capability measures—Materiel Release Milestones and Completion Criteria

1.38 The DMO's assessment of the likelihood of delivering the key capabilities (or Measures of Effectiveness (MOEs), now referred to as Materiel

[52] Dr SJ Gumley, *Official Committee Hansard*, Joint Committee of Public Accounts and Audit Hearing, 15 March 2010.

[53] Australian National Audit Office, *2008–09 Major Projects Report*, Part 1, pp. 38-39.

Release Milestones (MRMs)), for major capital acquisitions, was specified publicly at the project level for the first time in the 2009–10 MPR. This data was set out as a 'traffic light' percentage pie chart in Section 3.5 of each project's PDSS. It is important to emphasise that MOEs/MRMs predominantly focus on the expected future achievement of certain technical, regulatory and operational requirements. Budgetary and schedule requirements are generally not included.

1.39 As at 30 June 2010, while some MOEs were historical (for example, that a certain capability is satisfied by a date which has passed), the majority of other MOEs required the DMO project managers to assess the likelihood of delivering in the future the aspects of the key capability for which the DMO is responsible.

1.40 Necessarily, this data usually involves making certain assumptions in forecasting achievements and is therefore subjective in approach (noted by the DMO in the 2008–09 MPR).[54] In light of this subjectivity and inherent uncertainty, this information continued to be excluded from the scope of the ANAO's review. Nevertheless, noting this caveat, the ANAO included analysis of the DMO's data relating to its capability forecasts in addition to our analysis of projects' performance in regard to budgeted cost and schedule in Chapter 2.

1.41 In 2009–10, the ANAO's examination of MOEs, which were drawn from the MAAs between the Defence Organisation's Capability Development Group (as the purchaser) and the DMO (as the supplier), noted that the MOE framework was not sufficiently developed to ensure consistency in the level and scope of MOEs across projects.

1.42 The DMO subsequently advised that it was unlikely that MOEs would be reported in their previous form in the 2010–11 MPR as the DMO had established a new MAA template during 2009–10 for implementation in 2010–11.[55] The new template does not include MOEs, but instead requires the specification of completion criteria for the achievement of materiel release to the ADF. In this context, the issue of key capability measures was to be a matter for consideration by the JCPAA and further examination by the ANAO in the 2010–11 MPR.

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[54] Australian National Audit Office, *2008–09 Major Projects Report*, Part 2, p. 121.

[55] *Defence Portfolio Budget Statements 2010–11*, p. 152.

1.43 The MRMs and Completion Criteria are designed to define at a strategic level the key elements required to achieve IMR and FMR, which supports the achievement of IOC and FOC respectively. The DMO advised that the introduction of IMR and FMR milestones would provide greater clarity of responsibilities between the DMO, Capability Development Group and Capability Managers; set the two key milestones for delivering the materiel elements of capability to the Capability Manager; and provide a direct and more effective measurement of DMO performance. Further ANAO analysis of capability performance is set out from paragraph 2.49.

2. Projects' Performance

Introduction

2.1 Key project performance information is important in monitoring each of the three major dimensions of a project, i.e. whether Major Projects are within budget, on schedule and expected to deliver the required level of capability. Such information provides an indication of project performance and a focus for management attention.

2.2 In analysing the three major dimensions of a project, three key indicators have been derived from data in the PDSSs to provide snapshots on project performance. These indicators are:

- the percentage of budgeted cost expended—measures the total expenditure as a percentage of the total current budget;
- the percentage of scheduled time elapsed—measures the percentage of time elapsed from original approval to the forecast Final Operational Capability (FOC); and
- the percentage of key capabilities expected to be delivered—is the DMO's assessment of the likelihood of delivering the required level of capability specified in the Materiel Acquisition Agreement (MAA).

2.3 In addition, the ANAO has included an analysis of the above indicators against an assessment of project maturity, based on project managers' judgement at defined milestones, as a percentage of the total score available.[56] The maturity score is one of the key indicators outlined by DMO management to assess the status of major acquisition projects.

2.4 The first snapshot, Figure 2, provides an overview and sets out the percentage of budgeted cost expended, the percentage of the scheduled time elapsed and the percentage of key capabilities expected to be delivered by the

[56] Source 1: The project maturity score comprises a matrix of seven attributes (Cost, Requirements, Technical Understanding, Schedule, Technical Difficulty, Commercial and Operations and Support). The level of maturity that a project reaches at a milestone for each of these attributes is judged by the project manager on a scale of 1-10. Australian National Audit Office, *2008–09 Major Projects Report*, p. 55.

Source 2: The maturity score is defined by the DMO as the maturity of a project by way of an objective score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. Australian National Audit Office, *2010–11 Major Projects Report*, p. 524. The more accurate the maturity score then the more reliable the estimate of a project's progress and the greater the confidence the project team would have in pursuing outstanding requirements.

DMO.[57] Firstly, the figure shows that, for most projects, the budgeted cost expended is broadly in line with the proportion of time that has elapsed in the project's schedule.[58]

2.5 The exceptions continue to include the two Collins Class Submarine projects (replacement combat system, and reliability and sustainability enhancements), where most of the materiel has been acquired and expenditure undertaken, but there have been difficulties in obtaining sufficient time in the submarines' full cycle docking program to complete the project.

2.6 Exceptions, where time elapsed is approximately 20 per cent greater than budget expended, include:

- MRH90 Helicopters, where developmental issues delayed schedule;
- Overlander Vehicles, where contracting of major components of capability (Medium/Heavy Capability) have had schedule delay;
- C-17 Heavy Airlift, which has experienced schedule delays in the delivery of long lead spares and the Cargo Compartment Trainer;
- SM-2 Missile, which is anticipating a real cost decrease as a result of cost savings;
- Additional Chinook, where no major milestones have yet been reached under the Foreign Military Sales (FMS) case to trigger payment; and
- Battle Comm. Sys., which is exposed to multiple platform design authorities, adding to schedule delays.

2.7 Figure 2 also shows that the DMO's assessment is that 25 of the 28 projects will deliver all of their key capability requirements. Those not expected to deliver all their key capability requirements include:

- Wedgetail, where the performance of the phased array radar will not meet the specification at final delivery;

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[57] Source 1: A project's budgeted cost and schedule data is the position as at 30 June 2011, and may differ from originally approved budgets and schedules.

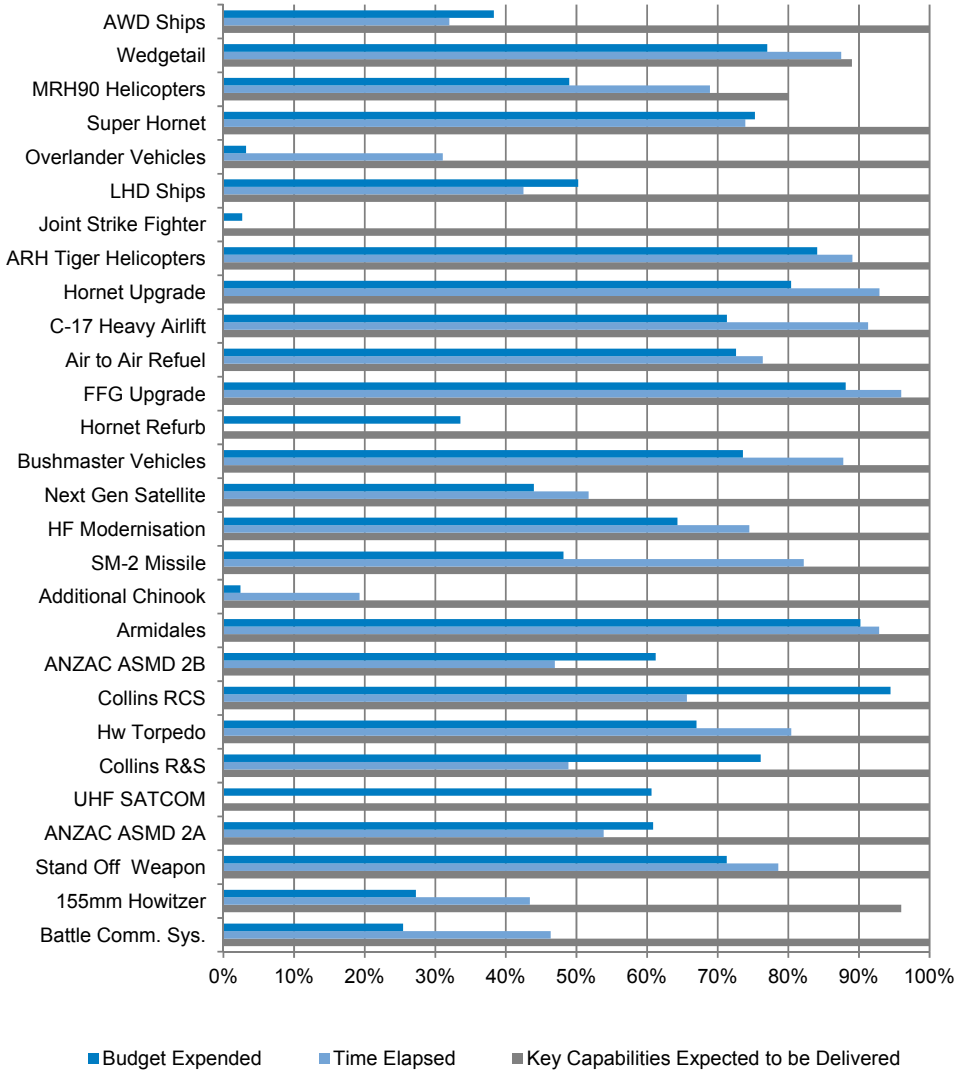
Source 2: As the DMO's assessment of the likelihood of delivering key capabilities involves high levels of uncertainty which may cause actual outcomes to differ materially from that stated in the PDSSs, this data and the DMO's assessment is outside the scope of the ANAO's assurance review for the 2010–11 MPR.

[58] A project's budgeted cost expended is accrual based. In cases where pre-payments/committed funds have been made but have not been expensed/amortised (for example, the Super Hornet, AWD Ships, LHD Ships and C-17 Heavy Airlift projects), cash paid by a project will be greater than the percentage of budget expended as shown in Figure 2.

- MRH90 Helicopters, where a number of aircraft systems issues are impacting on achieving the required level of aircrew training; and
- 155mm Howitzer, where the Course Correcting Fuze capability is currently not available for sale through the FMS procurement process.

Figure 2

Project snapshot—Budget expended, time elapsed, and key capabilities expected to be delivered by the DMO (percentage)



Source: 2010–11 Major Projects Report (MPR) and Australian National Audit Office (ANAO) analysis.

Note 1: The Joint Strike Fighter and Hornet Refurb projects do not have an FOC date as they do not introduce a new or complete capability. UHF SATCOM does not have an FOC date as one was not defined at government approval.

Note 2: The key capability assessment for Wedgetail has been against the Supplies section of the MAA, which lists the equipment to be delivered.

Cost performance

Project snapshot—Budget expended and project maturity progress

2.8 The second snapshot, Figure 3, sets out each project's budgeted cost expended against the project's maturity score progress.[59] As noted previously, Figure 2 shows that, for most projects, the budgeted cost expended is broadly in line with the proportion of time that has elapsed in the project's schedule. However, Figure 3 shows that the project maturity score progress leads budgeted cost expended for the majority of the projects, and can vary significantly when compared to the budgeted cost expended.

2.9 This variance is a result of projects being awarded 50 per cent of the total maturity score by project managers at Second Pass Approval, which is normally prior to entering into a contract and making contractual payments. While both the project's maturity score progress and budgeted cost expended are indicators of a project's overall performance, by benchmarking the project maturity score progress against the budgeted cost expended, the variance provides an indication of the potential front-loading of the maturity score.

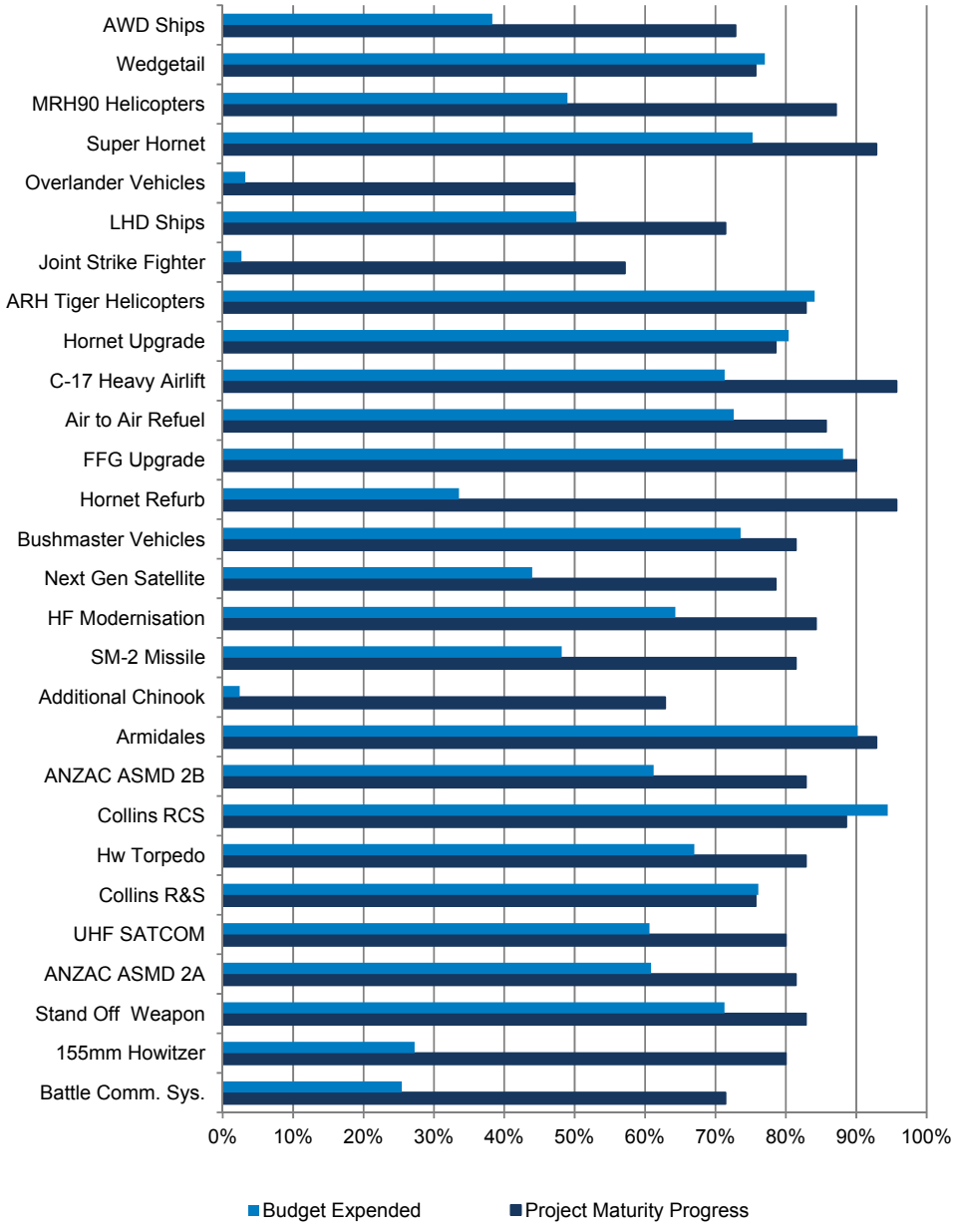
2.10 Projects where an approximate differential of 20 per cent existed at 30 June 2011 include: AWD Ships; MRH90 Helicopters; Overlander Vehicles; LHD Ships; Joint Strike Fighter; C-17 Heavy Airlift; Hornet Refurb; Next Gen Satellite; HF Modernisation; SM-2 Missile; Additional Chinook; ANZAC ASMD 2B; ANZAC ASMD 2A; 155mm Howitzer; and Battle Comm. Sys.

2.11 This analysis provides an indication of projects where overly optimistic assessments of a project's maturity may have been made, particularly during the early stages of a project's life cycle.

[59] The DMO have advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 8, and 12.

Figure 3

Project snapshot—Budget expended and project maturity progress (percentage)



Source: 2010–11 MPR and ANAO analysis.

Second Pass and 30 June 2011 approved budgeted cost

2.12 For the 28 Major Projects covered in the 2010–11 MPR, Figure 4 compares each project's approved budgeted cost at Second Pass Approval (main investment decision by government) and their approved budgeted cost at 30 June 2011. The total approved budgeted costs for the 28 projects at 30 June 2011 was $46.1 billion, a net increase of $7.8 billion compared to their Second Pass approved budgeted cost ($38.3 billion). The $7.8 billion comprises price variation increases of $7.6 billion[60], real variation[61] increases of $3.6 billion, and foreign exchange rate movement decreases of $3.4 billion.

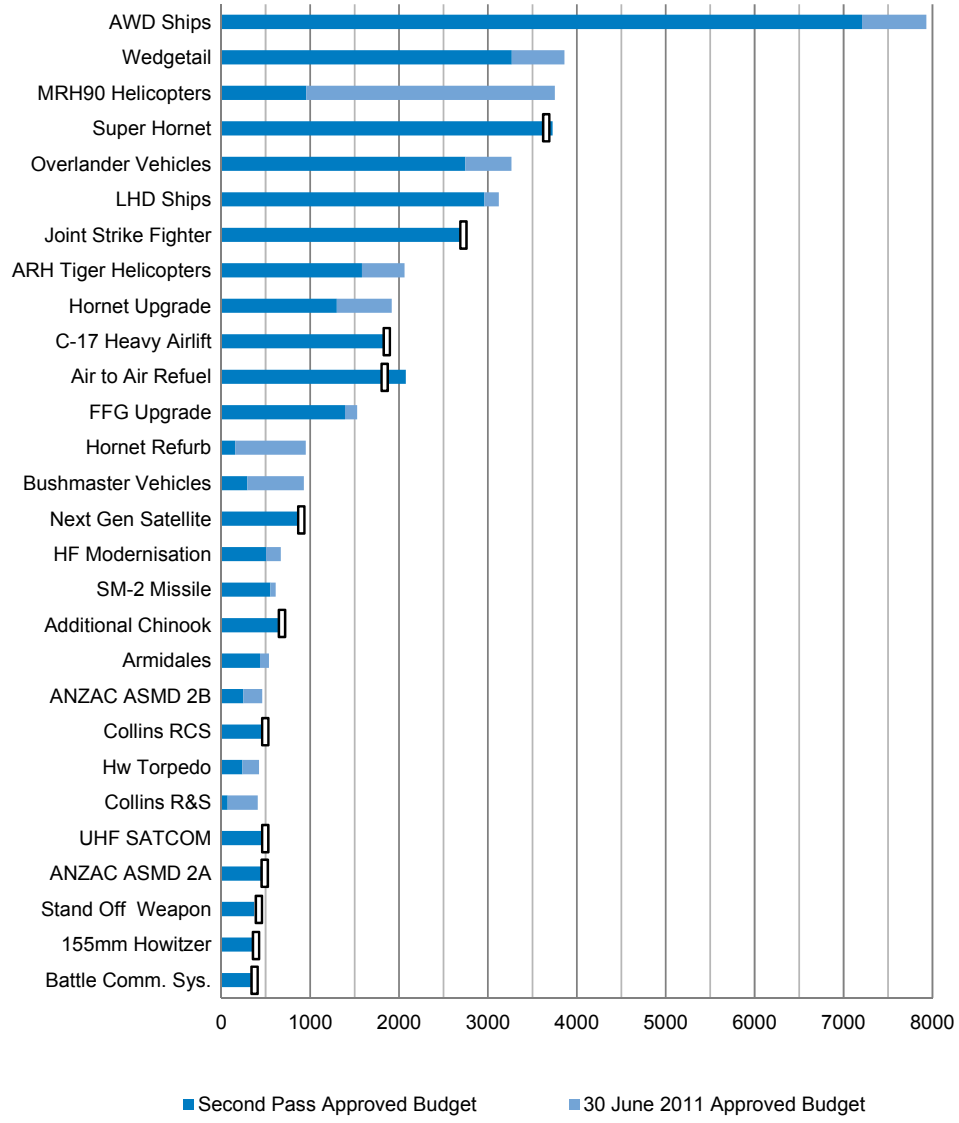
2.13 Additional quantities of equipment being ordered after Second Pass Approval can result in a real budget increase. For Wedgetail, the real budgeted increase was due to the inclusion of two additional aircraft after Second Pass Approval with a further real budgeted increase of $226 million recorded under the project's budget approval history in June 2004. For MRH90 Helicopters, a real budgeted increase of $2.6 billion (June 2006 price) post Second Pass Approval, was as a result of a government decision to increase the quantity of aircraft from 12 to 46. More recently for Bushmaster Vehicles, a real budgeted increase was due to Government approval of additional production runs.

[60] In July 2010, DMO moved to financially managing its acquisition budget on an out turned price basis (this is further discussed in paragraph 2.17). This resulted in a price variation increase for each project by way of out turning indexation adjustment.

[61] Real variations in a project's budgeted cost are due to government approved changes, transfers within the portfolio and other administrative decisions post Second Pass Approval.

Figure 4

Projects' second pass and 30 June 2011 approved budgeted cost ($m)



Source: 2010–11 MPR.

Note: ▯ indicates that the budgeted cost for the project at 30 June 2011 (Super Hornet, Joint Strike Fighter, C-17 Heavy Airlift, Air to Air Refuel, Next Gen Satellite, Additional Chinook, Collins RCS, UHF SATCOM, ANZAC Anti-Ship Missile Defence (ASMD) 2A, Stand Off Weapon, 155mm Howitzer and Battle Comm. Sys.) is less than the original budgeted cost.

Impact of project slippage

2.14 The ANAO's review has confirmed that none of the Major Projects in this report have exceeded their approved budgeted cost. However, the cost of schedule slippage provided for in budgetary adjustments can be significant.

2.15 The ANAO's analysis at Table 4 identifies that the DMO had received a total of an additional $295 million in price indexation, between the forecast FOC and the year ending 30 June 2011, for projects in the MPR sample, which are yet to achieve FOC.[62] These projects are: Wedgetail ($115.2 million); ARH Tiger Helicopters ($12.5 million); FFG Upgrade ($97.6 million); HF Modernisation ($63.4 million); Armidales ($4.6 million); and Collins RCS ($1.8 million).

Table 4

Price Indexation received since project's original FOC date

Project	Price Indexation to Original FOC ($m)	Price Indexation at 30 June 2011 ($m)	Price Indexation received since original FOC date ($m)
Wedgetail	607.8	723.0	115.2
ARH Tiger Helicopters	405.7	418.2	12.5
Air to Air Refuel	484.1	484.1	0.0
FFG Upgrade	132.7	230.3	97.6
HF Modernisation	84.7	148.1	63.4
Armidales	69.9	74.5	4.6
Collins RCS	54.7	56.5	1.8
Stand Off Weapon	62.6	62.6	0.0
TOTAL	**1 902.1**	**2 197.2**	**295.1**

Source: 2010–11 MPR and Project Cost Approval Histories.

[62] Sourced from the DMO's Project Cost Approval History statements and calculated on the supplementary price indexation the projects received after their original FOC date. This figure does not include additional costs incurred to run the project office, i.e. project staff salary and wages.

Project budgeted cost variance

2.16 Approved budgeted cost variations are disaggregated by the DMO into three main factors: price (material and labour) indexation, exchange rate variation and real variation. The first two factors are generally standard provisions in acquisition projects that extend over a number of years, and essentially represent budgeted cost variations that are outside the direct control of project management.[63]

2.17 As previously explained, from 1 July 2010, all projects' approved budgets include the total price indexation, adjusted for the Specialist Military Equipment Weighted Average (SMEWA)[64] or other appropriate index, to the point of the project's forecast FOC. This is defined as the budget being 'out turned'.[65] In 2010–11, this indexation adjustment resulted in 23 of the 28 projects having received a one-off variation totalling $1.16 billion. Five projects which had been originally approved in out turned prices had their approved out turned budgets confirmed.[66]

2.18 Real variations in project budgeted costs primarily reflect changes in the scope of projects, transfers between projects for approved equipment/capability, and budgetary adjustments such as administrative savings decisions.

2.19 Of particular note in previous MPRs, and again for the 2010–11 report, is the impact of the exchange rate on projects' budgets. Exchange rate variations in project budgeted costs are a result of projects' exposure to foreign currencies and movement in foreign exchange rates. The Australian dollar was slightly stronger throughout the 2010–11 financial year, exceeding parity with the US dollar for a considerable period of time.

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

64 Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, paragraph 2.9, p. 148.

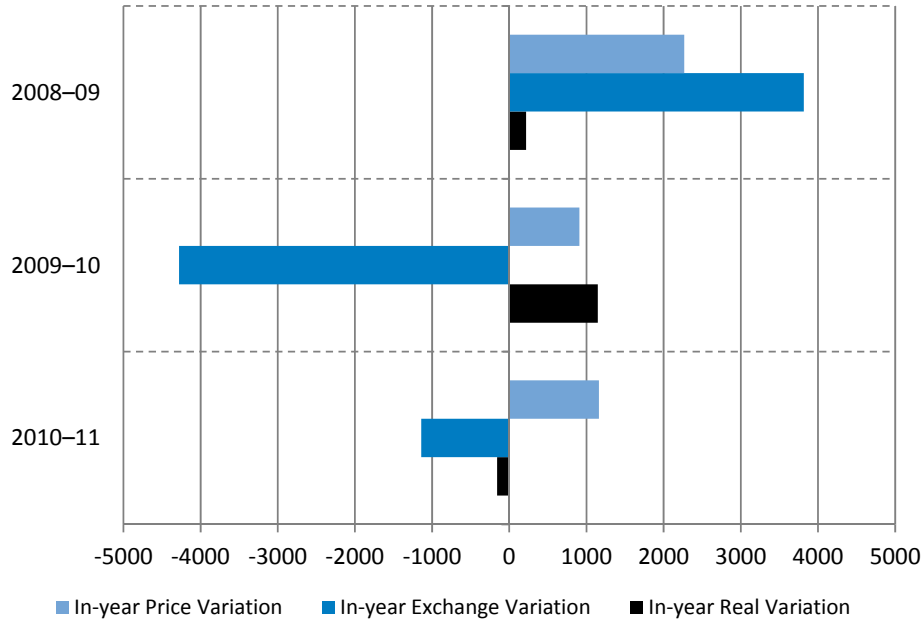
65 Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, paragraph 1.79, p. 136.

66 This resulted in UHF SATCOM receiving a negative adjustment. See Part 2, Table 2.5, p. 149.

2.20 Figure 5 examines the three main factors contributing to budgeted cost variations in each of the last three years, and highlights the significant in-year impact of variations for the 28 projects in the 2010–11 MPR.

Figure 5

In-year (2008–09, 2009–10 and 2010–11) budgeted cost changes ($m)



Source: 2010–11 MPR and Project Cost Approval Histories.

2.21 In 2008–09, for the 28 projects covered by the 2010–11 MPR, total project budgeted costs increased by $3.8 billion due to foreign exchange movements. In 2009–10, a stronger Australian dollar led to a $4.3 billion decrease in project budgeted costs. In 2010–11, project budgeted costs have again decreased by $1.1 billion due to foreign exchange movements.

2.22 Overall, the 30 June 2011 approved budgeted cost of the 28 projects in the 2010–11 MPR decreased by $135.1 million or 0.3 per cent, compared to their 30 June 2010 approved budget. This was driven by a decrease in foreign exchange variations of $1.14 billion and real decreases of $0.16 billion and offset by a $1.16 billion increase due to price indexation.

2.23 Figure 6 sets out the foreign exchange and price variation movement for each of the 28 projects' budgeted cost. Projects with significant movement in price variation, as a result of the out turning indexation adjustment, include:

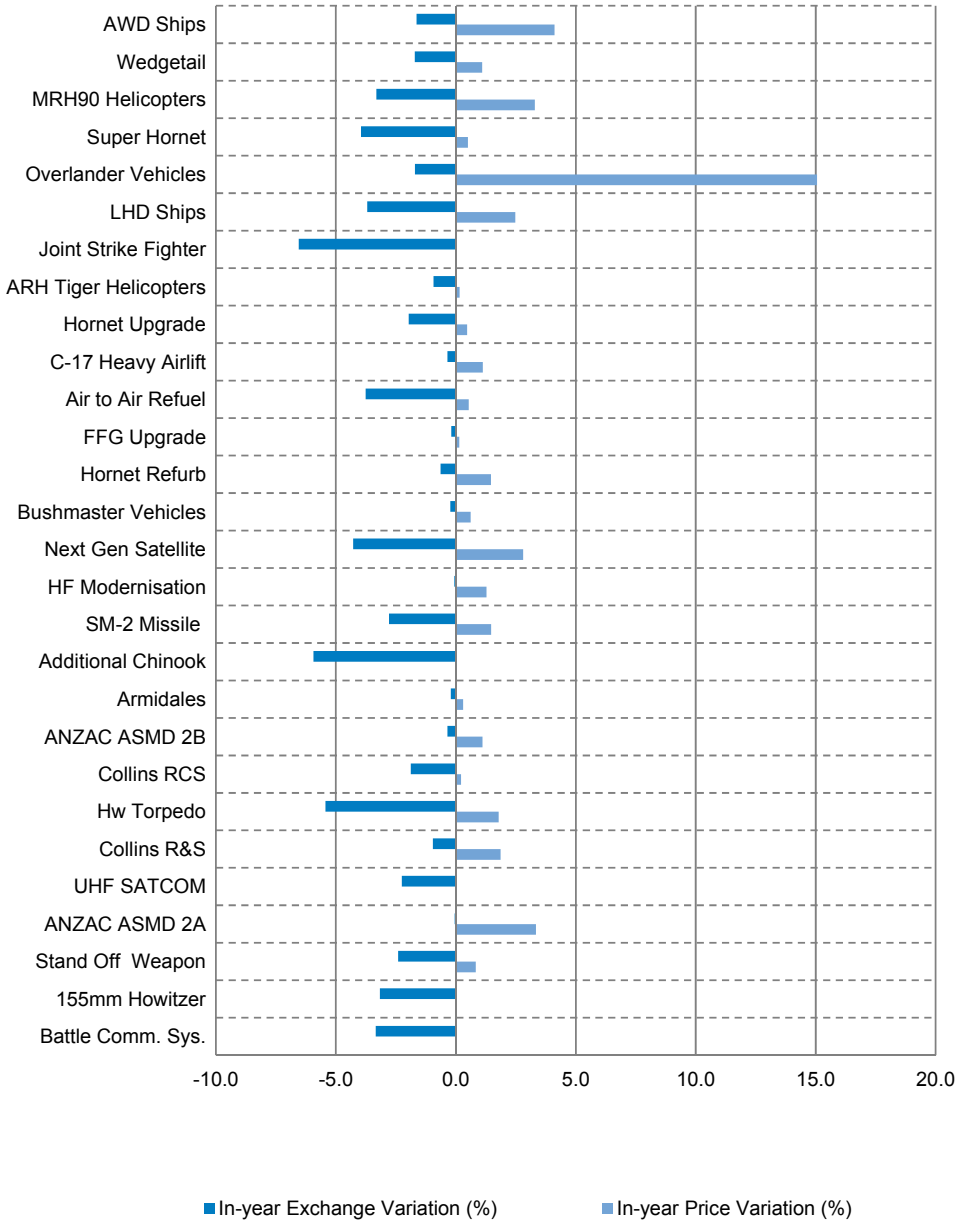
- Overlander Vehicles ($433.6 million, or 15.1 per cent increase in budgeted cost);
- AWD Ships ($318.4 million, or 4.1 per cent increase in budgeted cost); and
- MRH90 Helicopters ($123.7 million, or 3.3 per cent increase in budgeted cost).

2.24 Projects with significant movement in foreign exchange, as a result of the stronger Australian dollar, include:

- Joint Strike Fighter ($186.8 million, or 6.5 per cent decrease in budgeted cost);
- Additional Chinook ($36.9 million, or 5.9 per cent decrease in budgeted cost); and
- Hw Torpedo ($24 million, or 5.4 per cent decrease in budgeted cost).

Figure 6

In-year (2010–11) budgeted cost changes (percentage variation by factor)



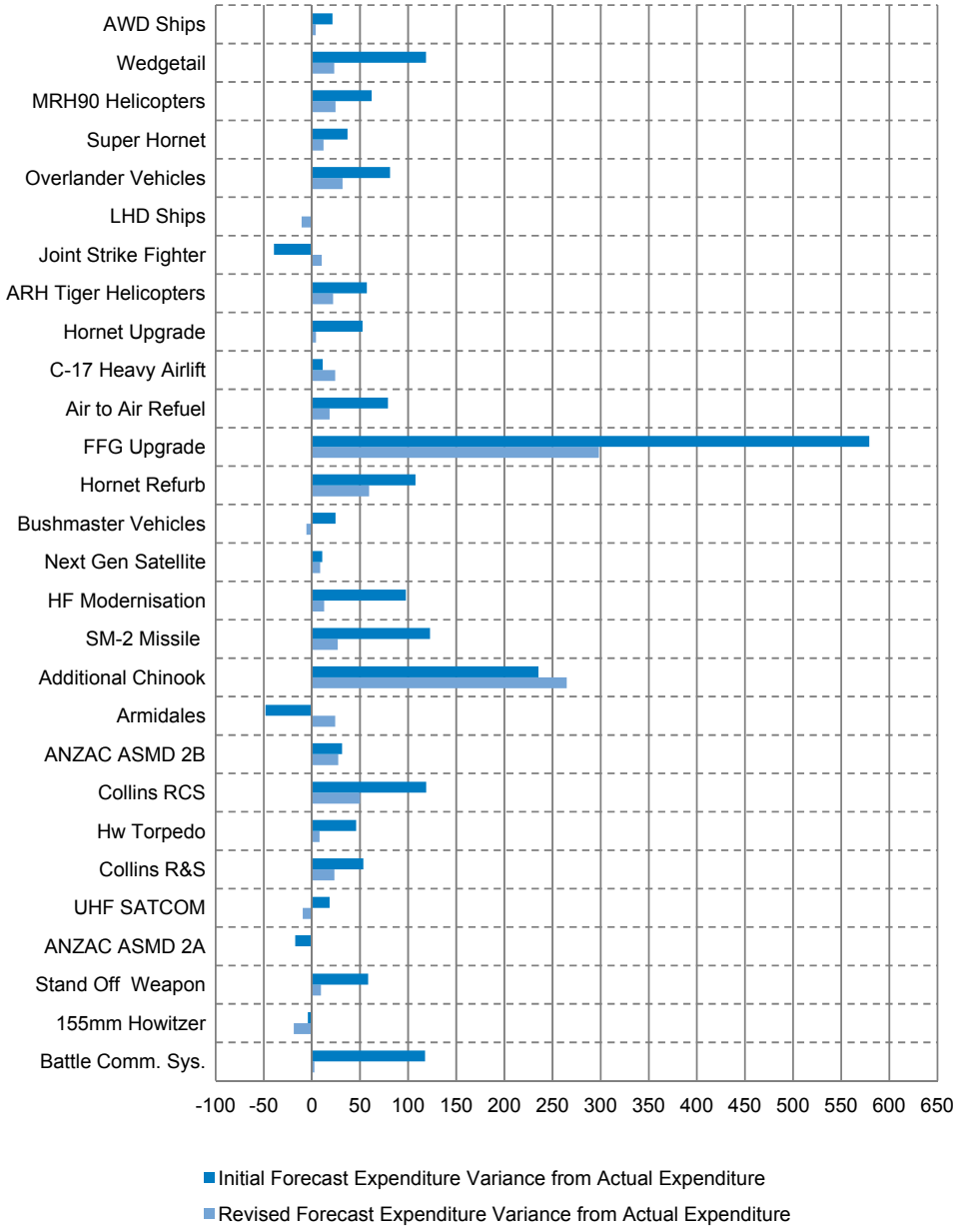
Sources: 2010–11 MPR and Project Cost Approval Histories.

Forecast and actual expenditure

2.25 Accurately forecasting expenditure is an important element in the effective management of a portfolio of projects and understandably receives close attention within the Defence Organisation and by key stakeholders. Figure 7 sets out the expenditure forecasting performance of each project against the actual expenditure for the 2010–11 financial year. In total, the actual expenditure for the 28 projects at 30 June 2011 was $3.7 billion, against an initial forecast expenditure of $5.0 billion and half-year revised forecast of $4.0 billion. The main factors contributing to the variance were production/schedule delays, lower than anticipated FMS disbursements, the transfer of funding of activities to sustainment, and foreign exchange fluctuations.

Figure 7

In-year (2010–11) projects' forecast expenditure performance compared to actual expenditure (variance percentage)



Sources: 2010–11 MPR, Portfolio Budget Statements and ANAO analysis.

Schedule performance

Project snapshot—Time elapsed and project maturity progress

2.26 The DMO has acknowledged that schedule remains its biggest concern in delivering and sustaining equipment for the Australian Defence Force (ADF).[67]

2.27 The third snapshot, Figure 8, sets out each project's percentage of scheduled time elapsed against the project's maturity score progress.[68] This highlights a variance between some projects' scheduled time elapsed and the maturity scores, which is a result of projects receiving 50 per cent of the total maturity score at Second Pass Approval. By benchmarking the maturity score progress against the scheduled time elapsed, any indication of potentially overly optimistic assessments of a project's maturity can be assessed.[69]

2.28 While both the project maturity score progress and a project's scheduled time elapsed are indicators of a project's overall performance, the ANAO's analysis indicates that the application of a preset benchmark score for all types of projects may not depict a project's progress to FOC as accurately as an objective assessment.

2.29 Lead times and developmental risks vary considerably between the various types of procurement within the Australian Defence Organisation, i.e. between projects classified from Military-Off-The-Shelf (MOTS) to Developmental. In developmental projects a greater period of time is required for arriving at the Capability Managers' agreed requirements and specifications than for Off-The-Shelf acquisitions, and also for the production and integration of elements of the project.

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[67] Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, Submission No.3: *Materiel Organisation*.

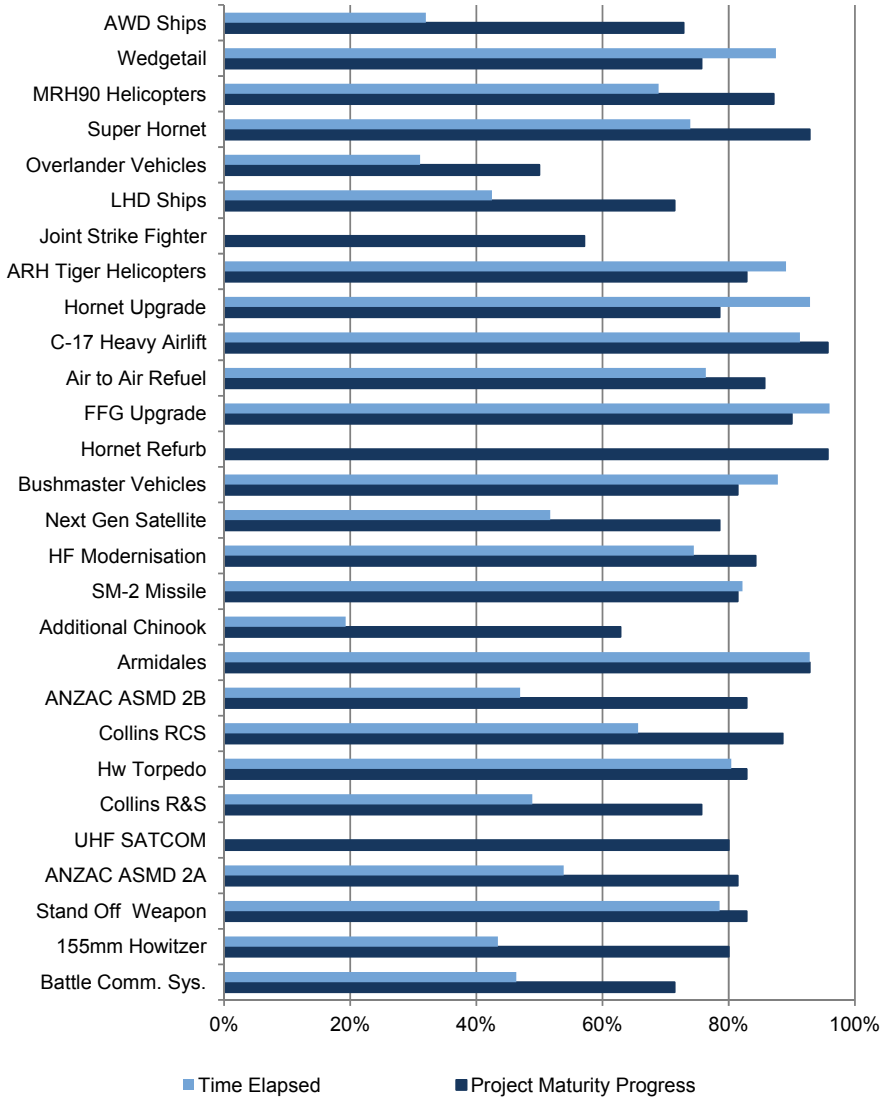
[68] The DMO have advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 8, and 12.

[69] Source 1: Second Pass Approval is the point at which the government approves a project proceeding to the acquisition phase. Responsibility, authority and accountability for management of the acquisition phase of the materiel life cycle are vested in the DMO's line management, the focal point of which is the designated Project Manager for an acquisition project (*DMO Acquisition and Sustainment Manual, p. 65*).

Source 2: The maturity score is defined by the DMO as the maturity of a project by way of an objective score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. Australian National Audit Office, *2010–11 Major Projects Report*, p. 524. The more accurate the maturity score then the more reliable the estimate of a project's progress and the greater the confidence the project team would have in pursuing outstanding requirements.

Figure 8

Project snapshot—Time elapsed and project maturity progress (percentage)



Source: 2010–11 MPR and ANAO analysis.

Note 1: The Time Elapsed and Maturity Score data is sourced from each project's PDSS in Part 3 of this report.

Note 2: The Joint Strike Fighter and Hornet Refurb projects do not have an FOC date as they do not introduce a new or complete capability. UHF SATCOM does not have an FOC date as one was not defined at government approval.

2.30 Figure 9 re-orders the projects by their procurement types, as reported by the DMO i.e. MOTS, Australianised MOTS (AMOTS) and Developmental[70], and presents the variance between the maturity score progress and the scheduled time elapsed for each project. This allows for a comparison between project types.

2.31 In the case of Additional Chinook and 155mm Howitzer, which the DMO classifies as MOTS, a preset benchmark of 50 per cent of maturity for Second Pass Approval provides a significant variance between the reported maturity score progress and the scheduled time elapsed which, as indicated above, is an indication of a potentially overly optimistic assessment of project maturity. For example, the variance between the maturity score progress percentage and scheduled time elapsed percentage for Additional Chinook is 44 per cent and in the case of 155mm Howitzer is 37 per cent.[71]

2.32 This is similar for projects classified by the DMO as AMOTS. For example, the variance between the maturity score progress percentage and scheduled time elapsed percentage for AWD Ships is 41 per cent and in the case of LHD Ships is 29 per cent.

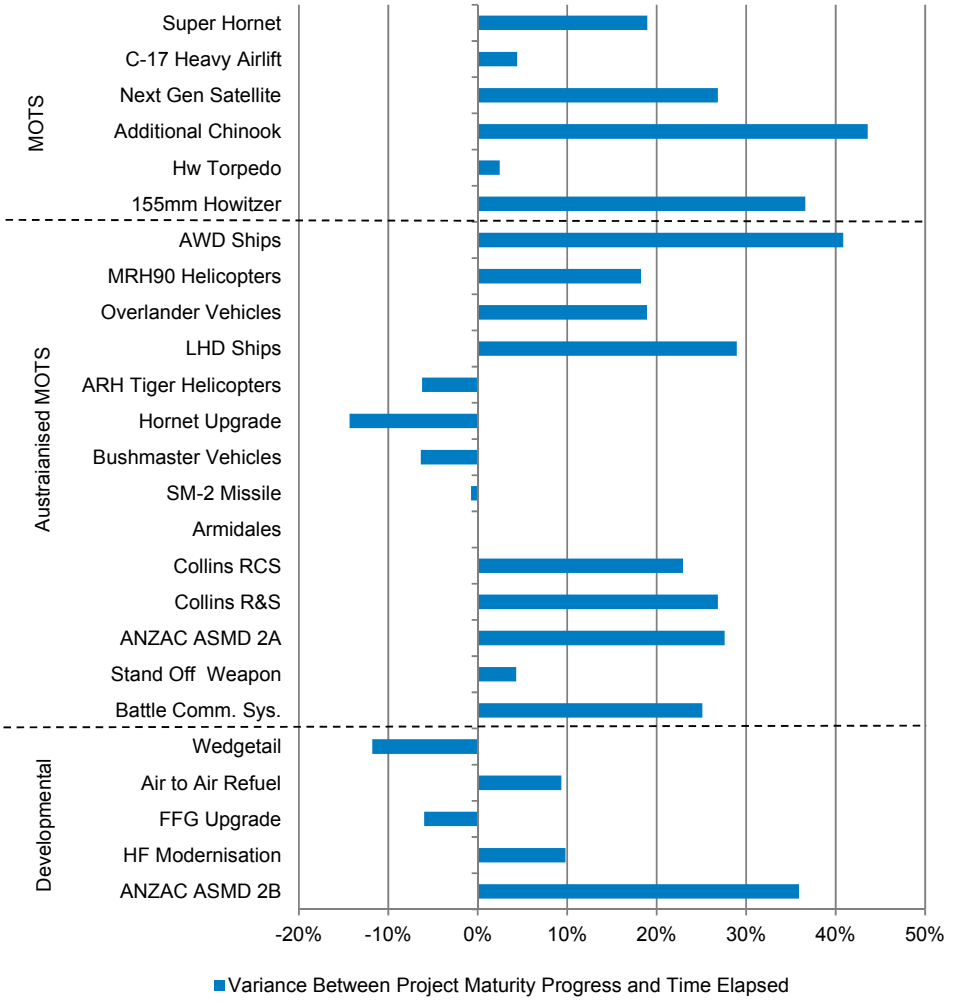
2.33 For the majority of projects classified by the DMO as Developmental, the variance between the maturity score progress percentage and scheduled time elapsed percentage are much closer as a comparative indicator of the progress of the procurement process than for MOTS projects. For example, the variance between the maturity score progress percentage and scheduled time elapsed percentage for Air to Air Refuel is nine per cent and in the case of HF Modernisation is 10 per cent.

[70] Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, Table 2.3, p. 146.

[71] Variances for Figure 9 have been derived from the data in Figure 8, i.e. for Additional Chinook the maturity score progress percentage (63 per cent) has had the scheduled time elapsed percentage (19 per cent) subtracted from it to give a total variance of 44 per cent.

Figure 9

Selected project snapshot—Variance between maturity score progress and time elapsed (percentage)



Source: 2010–11 MPR and ANAO analysis.

Note 1: The Time Elapsed and Maturity Score data is sourced from each project's PDSS in Part 3 of this report.

Note 2: The Joint Strike Fighter and Hornet Refurb projects do not have an FOC date as they do not introduce a new or complete capability. UHF SATCOM does not have an FOC date as one was not defined at government approval.

Note 3: The FOC for ANZAC ASMD 2B is currently scheduled for December 2017, but is dependant on government approval for the capability to be rolled to ships 2-8, while the Maturity Score is based on the progress of ship 1.

Life to date schedule performance

2.34 Schedule delays increase the overall cost of project delivery as both the DMO and industry staffing and administrative resources are tied up for longer than planned. Schedule delay has also previously had an impact on a project's budget in real terms when project expenditure occurred at a date later than planned. However, the recent move to out turning of the project budgets to their approved FOC date will limit future budget effects of schedule delays, and will place additional pressure on the DMO in relation to funding when schedule slippage occurs.

2.35 Figure 10 presents information on the projects' original and 30 June 2011 forecasts for achieving FOC. The total schedule slippage for the 28 Major Projects to date is expected to be 760 months when compared to the initial prediction when first approved. This slippage represents a 31 per cent increase on the expected schedule since the main investment decision.[72] Across the 28 Major Projects, 14 projects have experienced a schedule slippage in expected FOC achievement.

2.36 Assuming soundly-based schedule forecasts, the reasons for schedule slippages can include technical factors such as design problems, industry capacity and capability, difficulties in integrating different systems to achieve the required capability, or emergent work associated with upgrades. In other cases, a project's ability to gain access to the platform can impact on the schedule (for example, the two Collins submarine projects).

2.37 Further analysis performed by the ANAO revealed that the schedule slippage across the Major Projects in the 2010–11 MPR was 390 months for the Initial Operational Capability (IOC) milestone. Of the 13 projects that have experienced, or are reporting an IOC schedule slippage, six projects are reporting a greater FOC schedule slippage, five projects are showing a reduced FOC schedule slippage and for two projects the schedule slippage remains constant. There are also three projects reporting no IOC schedule slippage that are reporting an FOC schedule slippage.

2.38 A closer examination of the reasons for schedule slippage shows the importance of initial assessments of the purchase type, i.e. MOTS,

[72] In instances where a Major Project has multiple segments/capabilities with separate FOC dates, the ANAO has used the project's current lead/main capability FOC for calculating schedule performance. The DMO's approach is to use the final FOC date for a project listed in the 2009–10 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 2010–11 MPR (ANAO – 31 per cent; DMO – 28 per cent).

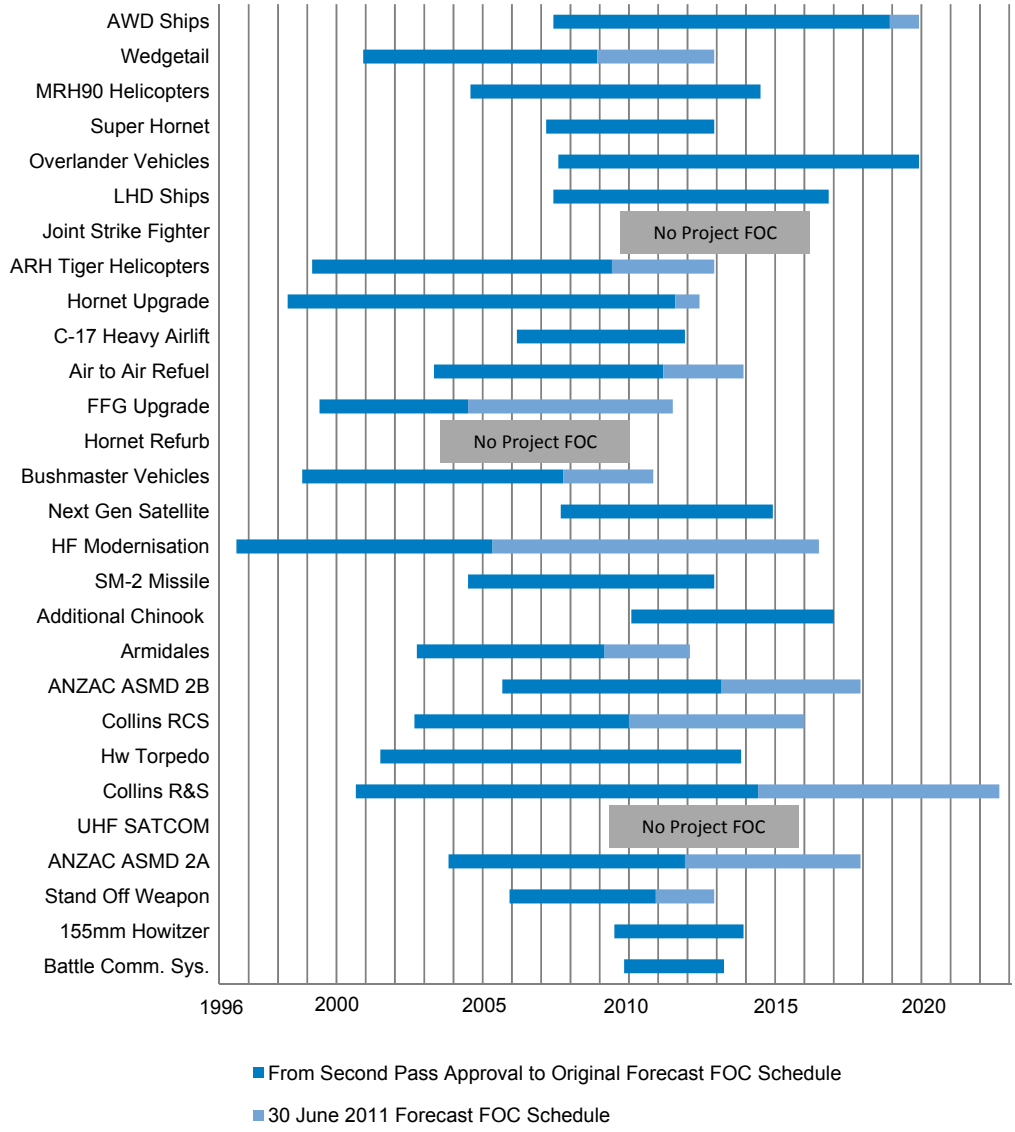
Commercial-Off-The-Shelf (COTS) or Developmental. Instances of misclassification in this respect have resulted in extended schedule slippage for both the Lightweight Torpedo Replacement (which is not included in the MPR) and ARH Tiger Helicopter. As this is an issue for MRH90 Helicopters, it could be expected that this project will also incur additional project slippage if current remediation action is not successful.[73]

2.39 Project slippage in these areas could effectively introduce a capability gap or require extension to the planned withdrawal date for those platforms being replaced, i.e. the planned withdrawal date for the Sea King helicopter and Black Hawk helicopter fleets include consideration of the introduction of replacement capability.

[73] Further information on MRH90 Helicopters can be found in ANAO Audit Report No.48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*.

Figure 10

Projects' original and 30 June 2011 forecast schedule for FOC



Source: 2010–11 MPR.

Note 1: Hornet Upgrade FOC date relates to Phase 2.3.

Note 2: Bushmaster Vehicles FOC date relates to production period 1. The FOC date for production period 4, which was approved in 2011, is April 2014.

In-year schedule performance

2.40 In 2010–11, there was a total of 72 months slippage in the forecast achievement of FOC for the 22 projects that were also included in the 2009–10 MPR. This represents a three per cent increase in the scheduled timeframe for this group of projects. However, this also includes C–17 Heavy Airlift, which is now forecast to achieve FOC in line with its original schedule.[74]

2.41 Figure 11 shows that the in-year schedule slippage involved the following projects:

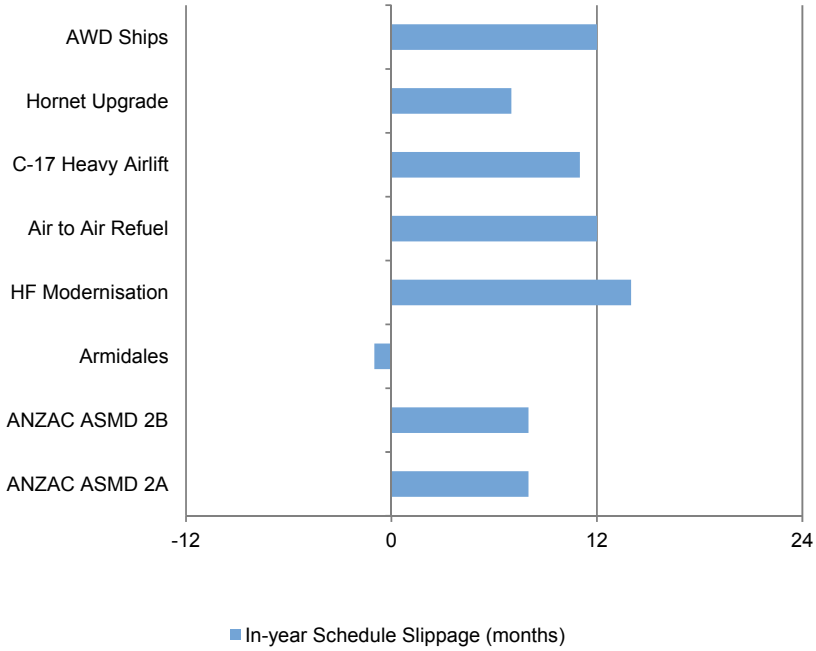
- AWD Ships (delays due to issues experienced with the initial block production and shipyard capacity);
- Hornet Upgrade (the project is waiting on the completion of Operational Test and Evaluation and other work by the Royal Australian Air Force (RAAF));
- C-17 Heavy Airlift (the project is waiting on the RAAF to declare FOC);
- Air to Air Refuel (further work required to the military avionics and boom refuelling system);
- HF Modernisation (delays in gaining scope change approval and available skilled project office personnel); and
- ANZAC ASMD 2B, and ANZAC ASMD 2A (delays linked to the change in the projects' acquisition strategy).

2.42 In contrast, the Armidales project's forecast FOC schedule decreased in-year due to a successful rectification program.

[74] In the 2009–10 MPR, the C-17 Heavy Airlift project was reported as being forecast to achieve FOC 11 months ahead of schedule. Australian National Audit Office, *2009–10 Major Projects Report*, p. 250.

Figure 11

In-year (2010–11) schedule changes to achieving FOC (months increase/ decrease in schedule)



Source: 2010–11 MPR.

Note1: The ANAO review indicates that 17 of the 25 MPR projects with FOC dates did not record changes to the relevant FOC dates during the year. In the case of new projects included in the 2010–11 MPR, the PDSSs do not require projects to outline their schedule status as 30 June 2010 and so do not enable the ANAO to establish whether in-year schedule changes had occurred in 2010–11.

Longitudinal schedule performance

2.43 Tables 5, 6 and 7 show the schedule slippage of those Major Projects included in the 2007–08, 2008–09, and 2009–10 MPRs across the four reports up to and including the 2010–11 MPR. While the information in these tables link to Table 2 on page 20 they are included to present further detail.

2.44 Table 5 tracks the schedule slippage of the initial nine projects[75] included in the 2007–08 MPR across the subsequent reports. The table shows that the total schedule slippage for the initial nine projects in 2007–08 was 308 months and that the total schedule slippage for the initial nine projects in 2010–11 was 463 months (an increase of 155 months over three years).

2.45 Table 6 tracks the schedule slippage of the 15 projects[76] included in the 2008–09 MPR across the subsequent reports. The table shows that the total schedule slippage reported in 2008–09 was 378 months and that the total schedule slippage for the 15 projects in 2010–11 was 508 months (an increase of 130 months over two years).

2.46 Table 7 tracks the slippage progress of the 22 projects[77] included in the 2009–10 MPR across the subsequent report. The table shows that the total schedule slippage reported in 2009–10 was 688 months and that the total schedule slippage for the 22 projects in 2010–11 was 760 months (an increase of 72 months).

2.47 The tables show that 61 per cent (463 months) of the total schedule slippage across the Major Projects covered in the 2010–11 MPR (760 months) is made up of the schedule slippage from the initial nine projects reported in the 2007–08 MPR.

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[75] The nine projects reported in the 2007–08 MPR were Wedgetail, Armidales, HF Modernisation, Bushmaster Vehicles, Hornet Upgrade, Collins RCS, ARH Tiger Helicopters, C-17 Heavy Airlift, and FFG Upgrade.

[76] The 15 projects reported in the 2008–09 MPR were the nine projects reported in the 2007–08 MPR, plus AWD Ships, Super Hornet, MRH90 Helicopters, LHD Ships, Air to Air Refuel and Hornet Refurb.

[77] The 22 projects reported in the 2009–10 MPR were the 15 projects reported in the 2008–09 MPR, plus Overlander Vehicles, Next Gen Satellite, ANZAC ASMD 2B, Hw Torpedo, Collins R&S, ANZAC ASMD 2A and Stand Off Weapon.

Table 5

2007–08 MPR projects: Schedule slippage across years

	2007–08 MPR	2008–09 MPR	2009–10 MPR	2010–11 MPR
Number of Projects	9	9	9	9
Schedule Slippage (Total)	308 months (37 per cent increase)	360 months (43 per cent increase)	431 months (51 per cent increase)	463 months (55 per cent increase)
Average Schedule Slippage per Project	39 months	45 months	54 months	58 months
Schedule Slippage (In–year)	-	52 months (4 per cent)	71 months (5 per cent)	32 months (2 per cent)

Source: 2010–11 MPR and ANAO analysis.

Table 6

2008–09 MPR projects: Schedule slippage across years

	2008–09 MPR	2009–10 MPR	2010–11 MPR
Number of Projects	15	15	15
Schedule Slippage (Total)	378 months (28 per cent increase)	452 months (33 per cent increase)	508 months (37 per cent increase)
Average Schedule Slippage per Project	25 months	30 months	34 months
Schedule Slippage (In–year)	-	74 months (5 per cent)	56 months (4 per cent)

Source: 2010–11 MPR and ANAO analysis.

Table 7

2009–10 MPR projects: Schedule slippage across years

	2009–10 MPR	2010–11 MPR
Number of Projects	22	22
Schedule Slippage (Total)	688 months (31 per cent increase)	760 months (35 per cent increase)
Average Schedule Slippage per Project	34 months	38 months
Schedule Slippage (In–year)	-	72 months (3 per cent)

Source: 2010–11 MPR and ANAO analysis.

2.48 Further disaggregation according to a project's Second Pass Approval date, shown in Table 8, shows that 88 per cent of the total schedule slippage across the Major Projects covered in the 2010–11 MPR is made up of projects approved prior to the DMO's demerger from the Department of Defence, in July 2005.

Table 8

Project slippage: Project's approved pre and post DMO demerger

Project	No. of months between Approval and Original FOC date	No. of months between Approval and 30/6/11 FOC date	No. of months slippage between Original FOC and 30/6/11 FOC date
Projects Approved pre-July 2005			
Wedgetail	96	144	48
ARH Tiger Helicopters	123	165	42
Hornet Upgrade	159	169	10
Air to Air Refuel	94	127	33
FFG Upgrade	61	150	84
Bushmaster Vehicles	107	144	37
HF Modernisation	105	239	134
SM-2 Missile	101	101	0
Armidales	77	112	36
Collins RCS	88	160	72
Hw Torpedo	148	148	0
Collins R&S	165	264	99
ANZAC ASMD 2A	97	169	72
Sub Total - Projects Approved pre-July 2005	**1 421**	**2 092**	**667**
Percentage of Total - Projects Approved pre-July 2005	**57%**	**64%**	**88%**
Projects Approved post-July 2005			
AWD Ships	138	150	12
MRH90 Helicopters	119	119	0
Super Hornet	69	69	0
LHD Ships	113	113	0
Overlander Vehicles	148	148	0
C-17 Heavy Airlift	69	69	0
Next Gen Satellite	87	87	0
Additional Chinook	83	83	0
ANZAC ASMD 2B	90	147	57
Stand Off Weapon	60	84	24
155mm Howitzer	53	53	0
Battle Comm. Sys.	41	41	0
Sub Total – Projects Approved post-July 2005	**1 070**	**1 163**	**93**
Percentage of Total – Projects Approved post-July 2005	**43%**	**36%**	**12%**
Total – All Projects With Slippage	**2 491**	**3 255**	**760**

Source: 2010–11 MPR and ANAO analysis.

Capability performance

Project snapshot—Key capabilities expected to be delivered and project maturity progress

2.49 The ADF defines capability as the capacity or ability to achieve a particular operational effect.[78] An operational effect is achieved by combining the eight Fundamental Inputs to Capability (FIC): organisation; personnel; collective training; supplies; facilities; major systems; support and command; and management.[79]

2.50 In acquiring Defence platforms and systems, a range of documentation (including capability definition documents, operational concept documents, functional and performance specification and test concept documents) is developed and sets out the detailed requirements/performance attributes to be achieved. In the case of an aircraft, for example, this would include elements such as its range and speed, handling characteristics, self protection abilities, requirements for runway length and other ground support, civil and military communications and guidance systems, maximum takeoff weights, cargo capacity, maintenance requirements and compliance with military and civil certification regulations and requirements.

2.51 Depending on the nature of the information, it can be classified for national security reasons and therefore may not be publicly available.

2.52 The fourth snapshot, Figure 15, sets out the DMO's assessment of the likelihood of delivering all of the key capability expected to be delivered and the project maturity score progress.[80] For 27 of the 28 projects, the DMO's assessment of the likelihood of delivering capability is against the Materiel Release Milestones (MRMs) and Completion Criteria specified in each project's MAA. The exception being Wedgetail, where the assessment has been against the Supplies section of the MAA, which lists the equipment to be delivered. The project maturity score is based on the project manager's judgement at

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78 Department of Defence, *Defence Capability Development Handbook 2011*, p. 2.

79 Defence Instructions (General) OPS 45–2, *Capability Acceptance into Operational Service*, paragraph 1.

80 Source 1: As the DMO's assessment of the likelihood of delivering key capabilities involves high levels of uncertainty which may cause actual outcomes to differ materially from that stated in the PDSSs, this data and the DMO's assessment is outside the scope of the ANAO's assurance review for the 2010–11 MPR.

Source 2: The DMO have advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 8, and 12.

defined milestones in the project's capability development and acquisition phases.[81]

2.53 The complexity and type of acquisition (MOTS, AMOTS or Developmental) is a significant factor affecting the likelihood of delivering all key capabilities; the risk is appreciably higher for more developmental projects. The DMO's assessment of the likelihood of any project delivering all the key capability requirements should become better informed as a project matures along its capability development and acquisition lifecycle.

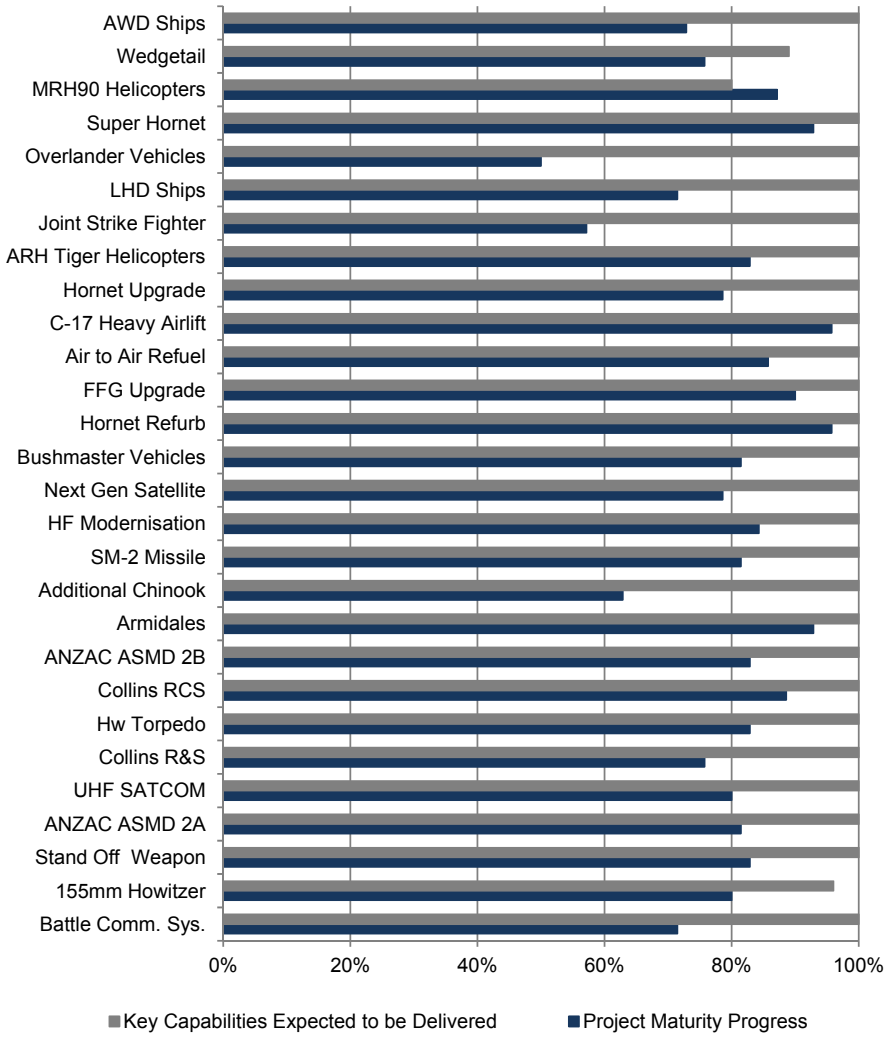
2.54 The DMO's key capability measures should be interpreted with some caution due to their lack of rigour as a data system and the high level of uncertainty in forecasting outcomes.

2.55 Overall, the DMO's assessment is that 25 of the 28 projects with key capability data in this year's MPR will deliver all their key capability requirements. The projects that are not expected to deliver all their key capability requirements are Wedgetail, MRH90 Helicopters and 155mm Howitzer.

[81] This score can then be compared against an ideal or benchmark score for that milestone to indicate the project's relative performance.

Figure 12

Project snapshot—Key capabilities expected to be delivered and project maturity progress (percentage)



Source: 2010–11 MPR and ANAO analysis.

Note 1: Wedgetail—the system's radar performance is not expected to meet the originally required specification at final delivery.

Note 2: MRH90 Helicopters—the delivery of conforming supplies is highly unlikely to be achieved for the first maritime and land operational capabilities.

Note 3: 155mm Howitzer—some elements of the capability sought are not currently available in the market place.

2.56 During 2010–11, 26 of the 28 Major Projects transitioned to a new MAA.[82] Each of the new MAAs was signed by a delegate of the Chief Capability Development Group (as the purchaser), Chief Executive Officer (CEO) of the DMO (as the supplier), and the relevant Capability Manager (as the customer).

2.57 One change introduced by the new MAA was the inclusion of MRMs and Completion Criteria, which replaced Measures of Effectiveness (MOEs), and were designed to overcome deficiencies perceived in the MOE framework. However, the DMO has acknowledged that for one project the MRMs and Completion Criteria were poorly designed and as a result, the DMO has reverted to the MOEs framework as the capability measure for this report.[83]

2.58 The MRMs and Completion Criteria are designed to define at a strategic level the key elements required to achieve Initial Materiel Release (IMR) and Final Materiel Release (FMR).[84]

2.59 In general, the MRMs and Completion Criteria focus on the achievement of certain technical, regulatory or operational requirements. Where key requirements are not achieved, this could be expected to have a significant effect on a system's likely suitability for acceptance into operational service.

2.60 In the 2009–10 MPR, the ANAO observed that there was considerable diversity across the projects in the number, level of specification and focus for MOEs. This observation is maintained for the MRMs and Completion Criteria. The ANAO continues to observe that there is not a clear underlying consistency in the identification and articulation of the MRMs and Completion Criteria in the MAAs. For example, AWD Ships currently has four MRMs (IMR—Ship 1, MR 2—Ship 2, MR 3—Ship 3 and FMR), while 155mm Howitzer reports on 23 MRMs.

2.61 The MRMs and Completion Criteria are assessed using traffic light indicators by the DMO's project management, and reported monthly within

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82 The MAA for Bushmaster Vehicles was signed during July 2011 and August 2011. Hornet Refurb was not required to transition to the new MAA due to its expected completion date.

83 DMO have used Section 4 of Wedgetail's MAA (Supplies) to assess Section 4 (Measures of Materiel Capability Performance) of the project's PDSS.

84 IMR is achieved on the delivery of the DMO Acquisition Project supplies that have been identified within the MAA as required to support the achievement of Initial Operational Release (IOR). FMR is achieved on the delivery of all the DMO Acquisition Project supplies specified within the MAA to support the achievement of Final Operational Capability (FOC). Defence Materiel Instruction (PROJ) 11-0-001, *Management of DMO Acquisition Project Schedules*, Table 1.

the DMO and the Defence Organisation. The June 2011 traffic light assessment is represented in the PDSS as Measures of Materiel Capability Performance.

2.62 As the Measures of Materiel Capability Performance's assessment concerns forecasting future achievements, it has been excluded from the scope of the ANAO's formal review.[85] However, the ANAO has been provided with data from the DMO's reporting systems in order to examine the accuracy of the disclosure in the PDSSs.

2.63 Due to national security considerations, only the overall status from each project's assessment of the likelihood of delivering the required materiel capability is disclosed in the 2010–11 MPR and earlier reports. Figures 16 and 17 present the DMO's assessment of the percentage of materiel capability that:

- has a high level of confidence will be delivered (green);
- are under threat but still considered manageable (amber); and
- at this stage are unlikely to be met (red).

2.64 For example, Figure 14 shows the assessment for MRH90 Helicopters as at 30 June 2011, as having a high level of confidence in delivering 60 per cent of the materiel capability, while 20 per cent of the materiel capability is under threat but still considered manageable, and 20 per cent of the materiel capability at this stage is unlikely to be met. This is a reduction in the expected capability to be delivered from the 2009–10 MPR.

Capability performance to date of MPR projects

2.65 A multi-year comparison of capability performance needs to be treated with caution due to year-to-year changes in the basis of MOEs or Materiel Capability milestones previously reported and the recent move to reporting Measures of Materiel Capability Performance.

2.66 This fourth MPR continues to examine the broad trends in the DMO's assessment of the likelihood of projects delivering the required capabilities over time. This comparison can be achieved by examining this year's PDSSs and data reported in previous MPRs.

2.67 Figure 13 examines the DMO's assessment of the likely delivery of the materiel capability for the 28 Major Projects reported in the 2010–11 MPR; the

[85] See paragraph 1.9 for PDSS items out of scope for the ANAO's assurance review.

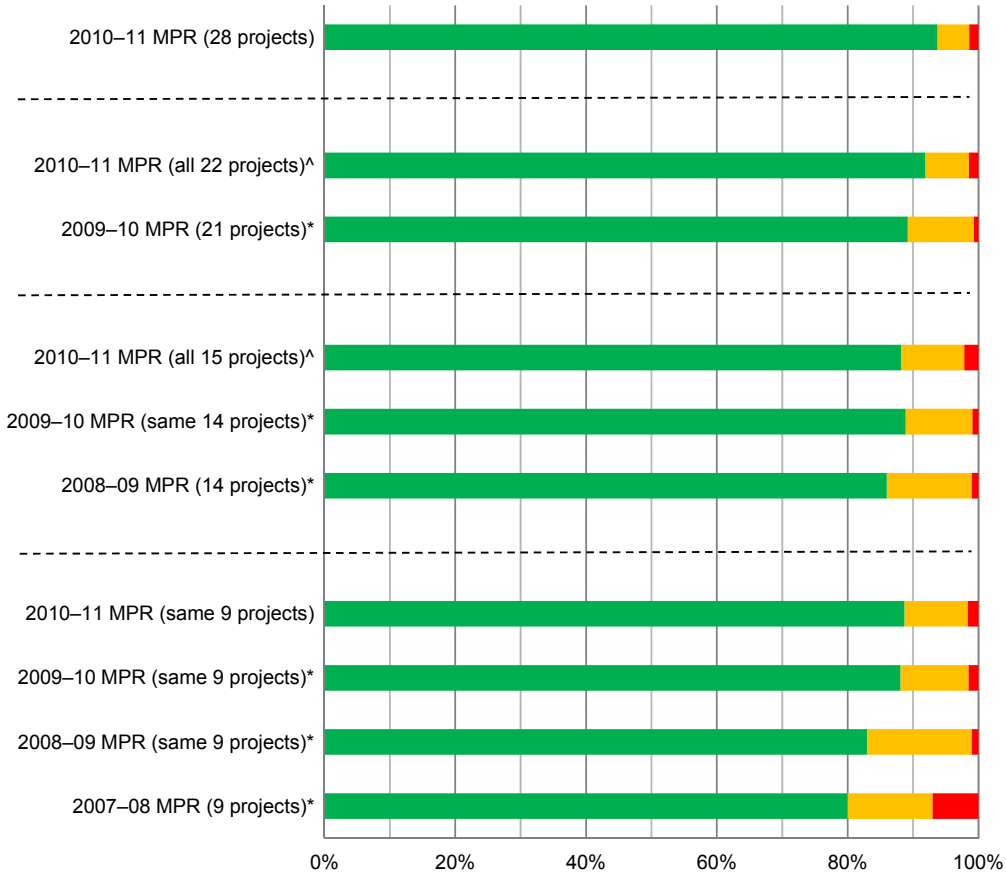
MOEs for 21 of the 22 Major Projects in the 2009–10 MPR; 14 of the 15 Major Projects in the 2008–09 MPR[86]; and the nine Major Projects in the 2007–08 MPR.

2.68 The DMO's data suggests that there is greater confidence in the level of materiel capability that will be delivered, shown by the growing percentage of measures assessed as green. However, since the 2008–09 MPR there is also a growing number of measures assessed as unlikely to be met.

[86] The DMO advised that the Super Hornet did not have endorsed MOEs because of its MOTS nature. The Super Hornet capability does have Measures of Materiel Capability Performance.

Figure 13

Projects' measures of materiel capability performance—The DMO level of confidence in their delivery in 2008, 2009, 2010 and 2011 (percentages: Green, Amber and Red)



Sources: 2007–08, 2008–09, 2009–10 and 2010–11 MPRs.

Note 1: Measures of Materiel Capability Performance concern the forecasting of future achievements and are outside the scope of ANAO's review.

Note 2: It should be noted that what are defined as a project's MOEs or Measures of Materiel Capability can change from year-to-year. Therefore, any comparison of an individual or a group of projects' MOEs or Measures of Materiel Capability data across years should be treated with caution as this may not involve comparing 'like with like'.

Note 3: * The ANAO did not examine the accuracy of the recording of this data in previous MPRs.

Note 4: ^ Super Hornet did not have MOEs but does have Measures of Materiel Capability Performance in the latest MAA.

Note 5: The key capability assessment for Wedgetail has been against the Supplies section of the MAA, which lists the equipment to be delivered.

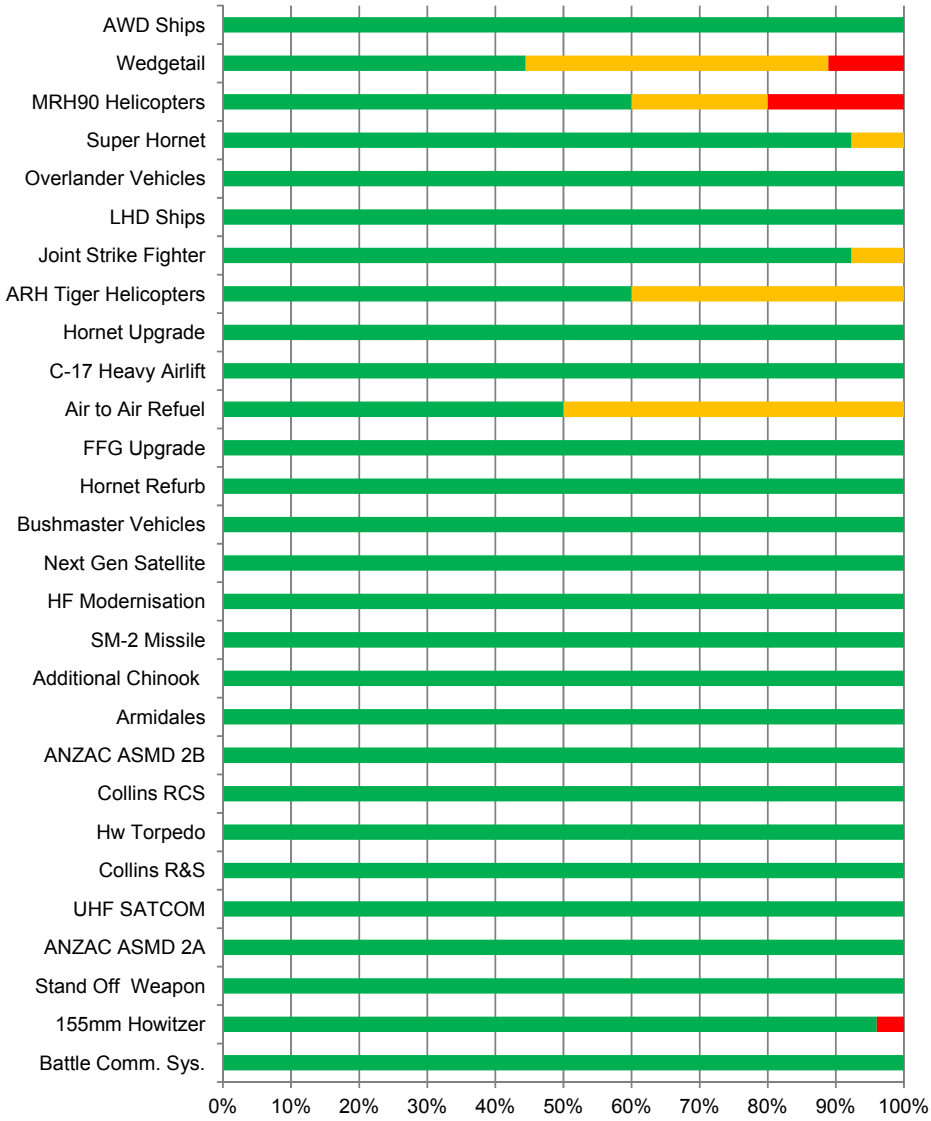
In-year capability performance

2.69 Figure 14 highlights that there are seven Major Projects experiencing challenges in delivering elements of their system's planned capability. These projects are:

- Wedgetail—the performance of the phased array radar, which is central to the surveillance capability, will not meet the specification at final delivery. A radar remediation program is providing the basis for further work on improving the system's performance. Other current technical challenges involve the development of the electronic support measures, electronic warfare self-protection and ground support systems.
- MRH90 Helicopters—a number of aircraft systems issues are impacting on achieving the required level of aircrew training.
- Super Hornet—some elements of capability are currently in the developmental test and evaluation process and will be delivered after the FMR date.
- Joint Strike Fighter—a Technical Baseline Review conducted on the US JSF Program has resulted in the extension of the development and operational test schedules. Potential changes to software scope, development and release could threaten its ability to meet Australia's requirements.
- ARH Tiger Helicopters—the delivery of long lead repairable items and support and test equipment is currently forecast to occur after the FMR date.
- Air to Air Refuel—there is a risk that the project will not provide all materiel capability required due to the acceptance of aircraft in an initial configuration. There is also a risk that the Aerial Refuelling Boom System's non-conformances and improvements will not be remediated.
- 155mm Howitzer—the Course Correcting Fuze capability will provide Army with improved ammunition precision to minimise collateral damage, avoid incidents of friendly fire and increase lethality against high value targets. However, the capability is currently not available for sale through the FMS procurement process.

Figure 14

Projects' measures of materiel capability performance—The DMO level of confidence in their delivery as at June 2011 (percentages: Green, Amber and Red)



Source: 2010–11 MPR.

Note 1: The Measures of Capability Performance concern forecasting future achievements and are outside the scope of ANAO's review.

Note 2: The key capability assessment for Wedgetail has been against the Supplies section of the MAA, which lists the equipment to be delivered.

3. Governance and Business Processes

Introduction

3.1 Defence Major Projects are often large and complex procurement activities. They can be high cost and are generally very technical acquisitions which, more often than not, are delivered over a long period by domestic and/or overseas suppliers. These characteristics pose significant challenges to the effective governance of these projects and highlight the importance of applying a robust governance framework to them. Such a framework has the capacity to enhance transparency and accountability, and support consistent assessment of the progress of Major Projects across the whole portfolio of projects.

Governance framework for Major Projects

3.2 The ANAO reviewed key governance aspects including: Gate Review Boards; management of Projects of Concern; business systems; measures to improve the clarity of financial information in the Major Projects Report (MPR); the identification of projects' emergent risks; contingency budgets; the use of Earned Value Management Systems (EVMSs); and skills development, to gain a greater understanding of the DMO's business to assist in the development of the most efficient and effective review process and to provide evidence for the review conclusion. These matters are discussed in the following paragraphs.

Gate Review Boards

3.3 Gate Reviews, undertaken at specified points in a project's life cycle, were being implemented in 2008 (during the time of the Mortimer Review) for selected high value and highly complex projects.[87] Their purpose is to provide a mechanism whereby, particularly in respect of critical 'gates', the Chief Executive Officer (CEO) of the DMO is provided with assurance that all the identified risks for a project (cost, schedule, technical/capability) are manageable, and that the project is ready to proceed to the next stage.[88]

[87] *Defence Procurement and Sustainment Review 2008*, p. 35.

[88] A gate is a key project decision point or milestone.

3.4 Following the initial limited implementation of the Mortimer recommendation, where Gate Reviews were largely ad hoc, the decision was made to strengthen the process and expand it to all Major Projects managed by the DMO at least once a year. This expansion followed a directive from the Government in July 2011 through the establishment of an Independent Project Performance Office (IPPO)[89], whose responsibilities also included overseeing the remediation of all Projects of Concern and implementing the new Early Indicator and Warning system designed to help identify and correct potential problems with projects.[90]

3.5 Gate Reviews are undertaken by DMO-appointed Gate Review Boards which normally comprise senior line management, relevant people with key skill sets from other parts of the DMO, and at least two external independent members with extensive Defence or commercial experience. For Acquisition Category (ACAT) I and II projects and selected ACAT III and IV projects, the IPPO will appoint a Senior Project Analyst to conduct an independent analysis of preparedness and identify key issues to bring to the Board's attention.[91]

3.6 Accountability for the conduct and findings of a Gate Review rests with the Chair who, on completion of the review and on advice from the Board, will make a formal recommendation to the relevant DMO executive as to the fitness of the project to proceed to the next stage in the project life cycle. Gate Review Board clearance may be conditional on the completion of a number of actions noted during the Board meeting.

3.7 Gate reviews are mandatory for Major Projects at six specified gates and optional at other gates, depending on the outcomes of the project risk assessment. A project is not permitted to proceed to the next stage of its life cycle until it is cleared by the Gate Review Board. Mandatory gates are: Defence Capability Plan entry; Options Review Committee consideration; First Pass Approval; Second Pass Approval; Contract Solicitation; and Contract

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89 Minister for Defence, the Hon. Stephen Smith MP, and the Minister for Defence Materiel, the Hon. Jason Clare MP, *Independent Project Performance Office to oversee major Defence projects established*, June 2011.

90 Minister for Defence, the Hon. Stephen Smith MP, and the Minister for Defence Materiel, the Hon. Jason Clare MP, *Strategic Reform Program*, 6 May 2011.

91 The DMO categorises its acquisition projects into one of four Acquisition Categories (ACATs) to differentiate between the complexity of business undertakings, focus management attention, provide a basis for professionalising its workforce and facilitate strategic workforce planning.

Negotiation. To date, some fifty projects have been subjected to Gate Reviews, including ten in the 2010–11 MPR.[92]

3.8 The ANAO assessed the material considered in the Gate Reviews and the outcomes of each review conducted to gain assurance that the information presented was consistent, in all material respects, with the information in the 2010–11 MPR. Part of the assessment revealed the developmental nature of the MRH90 helicopter system, and therefore the misclassification of the type of purchase as Australianised MOTS (AMOTS). The review conducted in April 2011 was directed to address delays to the project due to a series of key issues. A further review was conducted in September 2011 to examine the effectiveness of the action taken and whether further action was necessary to remediate the project.[93]

3.9 In 2011–12 the ANAO will further assess the Gate Review process for potential efficiencies in our review procedures. Additionally, a performance audit to examine and report on the development and effectiveness of DMO's implementation of the enhanced Gate Review processes and the associated administrative arrangements is currently underway.

Projects of Concern

3.10 The Projects of Concern list was established in 2008 to focus the attention of senior management within the Defence Organisation and industry on solving the issues required to remediate listed projects. Projects are placed on the list by the Minister for Defence and the Minister for Defence Materiel on the recommendation of the CEO DMO. Projects are put on the list when, for example, there are significant challenges with cost, schedule or capability delivery.[94]

3.11 Government reforms to further strengthen the Project of Concern process were released in June 2011.[95] These reforms include:

- tightening the processes for adding and removing projects from the list;

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92 AWD Ships, MRH90 Helicopters, LHD Ships, Joint Strike Fighter, Hornet Upgrade, High Frequency (HF) Modernisation, ANZAC Anti-Ship Missile Defence (ASMD) Phases 2A and 2B, Stand Off Weapon and 155mm Howitzer.

93 Minister for Defence Materiel, the Hon. Jason Clare MP, *Diagnostic Review of MRH-90 Multi Role Helicopter Program,* 16 September 2011.

94 Minister for Defence, the Hon. Stephen Smith MP, and the Minister for Defence Materiel, the Hon. Jason Clare MP, *Projects of concern - Update,* 15 October 2010.

95 Minister for Defence, the Hon. Stephen Smith MP, *Reforms to Projects of Concern,* 29 June 2011.

- where a company has a project on the list, weighing their performance in remediating the project when evaluating tenders for other projects; and
- holding bi-annual reviews with Defence and industry representatives which will give the Minister for Defence Materiel a better understanding of the progress of remediation strategies.

3.12 During 2010–11 fieldwork the ANAO observed that six MPR projects were Projects of Concern.[96] Projects are removed from the Projects of Concern list once the Minister is satisfied that remediation activity has been completed successfully or the Government has decided to cancel the project. Subsequently in June 2011, the Minister for Defence announced that HF Modernisation was no longer a Project of Concern following the negotiation of a revised schedule and subsequent milestones being achieved 13 months ahead of time.[97]

3.13 The ANAO has been provided with access to the reporting framework for the six MPR projects listed as Projects of Concern, to gain assurance that the information presented is consistent with the information presented in the 2010–11 MPR.

Business Processes for Major Projects

Business systems

3.14 In the 2009–10 MPR, the ANAO reported that the control environment of each examined project differed, due to the large range of corporate and project management IT applications being employed by the different project offices. During the 2010–11 review, the same observations apply across the 28 Major Projects. This has again resulted in an inconsistency between the information produced by each of the project's IT systems (i.e. risk management, financial management, and document management systems) and highlights an issue for the DMO in ensuring reliable and consistent information to properly inform project management and decision making in relation to Major Projects.

3.15 Since the inception of Phase 1 and 2 of the 'As Is System Mapping Project' (which commenced in 2006), the DMO has been rationalising its

[96] Wedgetail, Overlander Vehicles, Air to Air Refuel, HF Modernisation, ANZAC ASMD 2B and Stand Off Weapon.

[97] Minister for Defence, the Hon. Stephen Smith MP, *Reforms to Projects of Concern,* 29 June 2011.

business systems. The number of business systems was identified (and recently expanded to include spreadsheets and databases) and mapped against various business processes within the DMO's business model (i.e. contract and procurement, finance, human resources, acquisition, risk management, industry engagement, etc). The ANAO observed in the 2009–10 MPR that the DMO's focus was on the finance domain, however the DMO has advised that limited progress has been made overall towards rationalisation, and that further ownership and guidance would be required within the organisation in order to achieve the desired outcome.

3.16 To address this issue the Chief Financial Officer of the DMO has established a Financial Systems Governance Board and Finance Information Management Improvement Program with the purpose of facilitating and managing the development, coordination, standardisation and, where appropriate, integration of the DMO's finance system requirements.

3.17 In 2011–12, DMO's business systems will again be a focus of the ANAO's review.

Improving financial information in the PDSSs

3.18 In its report on the 2007–08 MPR, the JCPAA identified some shortcomings present in the financial information included in the MPR.[98] To address the JCPAA's concerns, the DMO and the ANAO worked together to redevelop a number of the Project Data Summary Sheets (PDSSs) Section 2 financial performance tables.

3.19 In the 2009–10 MPR, in Section 2 of the PDSS, the DMO included contract prices and subsequent expenditure for the top five contractors for each project. In addition, the non-contract element of project budgets and expenditure were separately disclosed in the line item 'Other', which includes items such as operating expenditure; contingencies; legal costs; purchases of minor equipment; consultancies, contractors and professional service providers; and other operating and capital expenditure not attributable to the top five contracts.

3.20 While these disclosures are valuable in increasing the transparency of project financial management, further development of the tables in Section 2 of the PDSS is still required to achieve the full level of visibility over Major

[98] Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, p. 9.

Project expenditures that the JCPAA requested.[99] Some examples of this increased level of clarity could include facilities, in-service support, maintenance and spare parts and other inputs to capability.

3.21 In its Report 422, the JCPAA recommended that the DMO present the findings on its examination of the presentation of financial data on all possible methods for project expenditure information (e.g. base date, out turned and current dollars), including a preferred method and proposal for transition towards the proposed new arrangement.[100]

3.22 Following this recommendation, a further enhancement to the presentation of financial data in the 2010–11 MPR has been the inclusion of out turning indexation, to assist in comparisons between the amount of remaining budget and (i) remaining schedule and (ii) the materiel element of capability yet to be delivered.

3.23 The JCPAA is yet to receive the findings of DMO's examination referred to in paragraph 3.21 at the date of this report. However, the DMO and the ANAO continue to work together to ensure that Section 2 of the PDSS provides the information the Parliament and other stakeholders are seeking in order to make sound judgements concerning the financial management status of projects.

Emergent risks

3.24 An enhancement to the area of risk identification in the 2009–10 MPR was the inclusion of emergent risks for projects. These are risks that had not been previously identified but emerged as major risks during the year. This enhancement was intended to address the JCPAA's interest in improved clarity of the emergence of risks over the course of a project's duration.

3.25 To some degree, major risks will emerge as part of a project's normal acquisition life cycle. For example, as the DMO prepares to enter into a contract with industry, risk management processes should be able to clearly identify the nature and severity of contract risks, which may then take on a focus as one of the areas of major risk management for the project at that time. However, as a project progresses, risks associated with achieving the expected capability can arise, and it is not uncommon for previously unanticipated

[99] Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, p. 9.

[100] Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, p. xii.

major risks to emerge despite the risk management processes in place to identify and manage risks.

3.26 Emergent risks listed in the 2010–11 PDSSs cover new major risk entries not previously listed by the project as at 30 June 2010. The ANAO expects that further development and tracking of emergent risk data over the next few years could support analysis around the type of major risks that emerge each year and how well risk management mechanisms are anticipating major risks.

Contingency budgets

3.27 A project's total approved budget can be disaggregated into two elements:

- the programmed budget, which covers the project's approved activities, including approved actions to treat risks that were identified prior to the budget's approval; and
- the contingency budget, which is provided to cover the costs of any approved actions for new technical, financial and schedule risks or emerging issues that arise within the approved project scope.

3.28 As a result of the JCPAA's interest in the DMO providing only a high level disclosure of projects' contingency budgets in the MPR[101], the ANAO examined the contingency log for each project reviewed in 2010–11.[102] The observations made by the ANAO included the following:

- where projects had used contingency funds, the purpose appeared to be within the approved scope of the project, with appropriate formal sign-off required before the contingency funds could be spent;
- the method for managing and recording a project's contingency budget varied, with some projects demonstrating a direct link between the contingency log and the approved risks identified in the risk log, while for other projects there was a less direct relationship;
- the recording of contingency budget allocations within contingency logs as required by DMO Finance Instructions[103];

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[101] Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, pp. 13-14.

[102] A contingency log is used to record the use of contingency budget.

[103] Defence Materiel Instruction (DMI), *Management of Contingency Budget in DMO Acquisition Projects*; and *DMO Project Risk Management Manual (PRMM) 2010*, Chapter 9 – Contingency Budgets, p. 111.

- where projects allocated contingency funds to mitigate or address an actual risk, the method for assigning costs also varied. Some projects attributed contingency budget on the actual expected costs of the risk treatment, while other projects used a proportionate allocation based on the likelihood of the risk eventuating; and
- the ANAO observed that some project contingency budgets include provision for an anticipated difference between price variation obligations built into current supplier contracts with industry[104], and the total price indexation, adjusted for the Specialist Military Equipment Weighted Average (SMEWA)[105] or other appropriate index, to the point of the projects' forecast Final Operational Capability (FOC). Prior to 1 July 2010, the DMO was supplemented for price indexation based on the Non-Farm Gross Domestic Product (NFGDP) deflator, on a periodic[106] basis. The change to out turned budgeting will highlight areas of insufficient indexation as contingency budgets are utilised or project deficits occur.

3.29 The management of contingency to deal with any indexation gap is also highlighted in the *Defence Procurement Policy Manual,* which states:

> Procurement Officers should ensure that where indices for variation in the cost of labour and/or materials are proposed to be included in their contracts, the project has sufficient contingency in their budget to cover future increases in their agreed labour and materials indices.[107]

3.30 The ANAO notes that the emergence of any indexation gap would to some extent change the nature and use of the contingency budget, from dealing with project risk management to broader price management, and will require project staff to have a greater understanding of the factors that influence indices and their likely movement over the life of the project.

3.31 Further information on contingency management has been provided by the DMO at Part 2, paragraphs 2.51 to 2.54 of this report.

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[104] Contract escalations are usually based on indices linked to the price of labour and materials.

[105] Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, paragraph 2.9, p. 148.

[106] Australian National Audit Office, *2010–11 Major Projects Report*, Part 3, PDSSs, pp. 183-508.

[107] Defence Materiel Organisation, *Defence Procurement Policy Manual* (July 2011), Section 3, Chapter 3.3 Financial Policy and Advice in the Procurement Process, paragraph 15.

Earned Value Management Systems

3.32 EVMS is a method of using actual cost and schedule information to measure and report project performance, as well as forecast future performance, and can be used to ensure that project payments do not exceed the value of work performed.

3.33 In November 2009, the JCPAA asked the DMO and the ANAO to investigate the possible inclusion of data from EVMS in the PDSSs and in April 2011, requested this information be included in the 2011–12 MPR.[108] As a result, during the course of the 2010–11 MPR review, the ANAO monitored the extent to which EVMS was being used in projects and the effectiveness of EVMS data in improving the accountability and transparency of the management of Major Projects.

3.34 The Defence Procurement Policy Manual (DPPM) states that projects must apply earned value management to all contracts valued at $20 million or more, except where the procurement has been categorised as low risk and the responsible Division Head has approved the decision not to use EVMS.[109] In this context, the ANAO noted that 15[110] of the 28[111] projects reviewed have at one stage used, or intend to use EVMS to either make contract payments or as part of their project or contractor's performance management.

3.35 It was also noted that where projects' contracts and schedules had been re-baselined, EVMS was no longer linked to contractor payments, and instead those projects use a milestone-only approach (that is, all payments are made on the achievement of the agreed milestones).[112] Information on the application of EVMS by the DMO at an enterprise and project level has been provided by the DMO at Part 2, paragraphs 2.55 to 2.59 of this report.

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[108] Source 1: Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, pp. 12-13.

Source 2: Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, p. 36.

[109] Defence Materiel Organisation, *Defence Procurement Policy Manual* (July 2011), Section 3, Chapter 3.4 Earned Value Management.

[110] AWD Ships, MRH90 Helicopters, Wedgetail, ARH Tiger Helicopters, Air to Air Refuel, FFG Upgrade, HF Modernisation, LHD Ships, Overlander Vehicles, Next Gen Satellite, ANZAC ASMD Phase 2A, ANZAC ASMD Phase 2B, Collins RCS, Collins R&S and Battle Comm. Sys.

[111] It should be noted that projects with Foreign Military Sales (FMS) cases and Memorandum Of Understanding (MOU) arrangements would not use EVMS, which would include Super Hornet, C-17 Heavy Airlift, SM-2 Missile, Additional Chinook, Hw Torpedo, Stand Off Weapon and 155mm Howitzer.

[112] ARH Tiger Helicopters, FFG Upgrade, HF Modernisation and Collins RCS.

Skills development

3.36 A key challenge for both DMO and the Australian Defence industry is to improve the project management, scheduling, logistics, procurement and engineering services provided to the Australian Government, within current and future workforce constraints. For the past several years, it has been one of the DMO's goals to professionalise and up-skill their workforce[113], as well as to increase the quality and quantity of skilled personnel available to the Defence industry.

3.37 To assist with professionalising DMO staff, the DMO's Directorate of Professionalisation and Staff Development is responsible for the development of certification programs that focus on developing specific competencies and gaining professional qualifications across the Leadership and Executive Management, Logistics, Project Management, Engineering, Commercial and Procurement streams.

3.38 Currently, over 1 400 DMO staff[114] have either been certified or are enrolled in a certification program with a professional body compared with 1 200 staff in 2009–10. In contrast, prior to the start of the initiative in 2005, the DMO had only 153 staff certified in areas of project management, engineering, and accounting.[115]

3.39 To assist with the development of participants within the Defence industry, the Skilling Australia's Defence Industry (SADI) program was established by the Australian Government in 2005. The aim of the SADI program is to up-skill existing employees, improve the quality and quantity of skills training in the Defence industry; and generate additional skilled positions.[116]

3.40 The SADI program provides funding support to companies and industry associations for training and skilling activities where that training is linked to a Defence capability. Since 2005, the program has funded more than 24 000 training places, including more than 2 200 apprentices.[117] Also, over 100 industry participants have been provided with funding support in trade,

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[113] Source: http://www.defence.gov.au/dmo/about/index.cfm [accessed 23 September 2011].

[114] Source: http://www.defence.gov.au/dmo/id/publications/Inside_the_DMO_11.pdf [July 2011].

[115] Department of Defence, *Defence Annual Report 2005–06*, Volume 2, Table 1.1, p. 13.

[116] Source: http://www.defence.gov.au/dmo/id/sadi/index.cfm [accessed 12 October 2011].

[117] Minister for Defence Materiel, the Hon. Jason Clare MP, *Industry Feedback on Defence Skills Program*, 20 September 2011.

technical and some professional skill sets.[118] SADI workshops are being held to provide an opportunity for the Defence industry to offer ideas to improve the design, implementation and effectiveness of the program in addressing the skills gap.

3.41 To meet the needs of the Australian Defence Force (ADF), SADI will invest $138 million in the next decade with an allocation of over $14 million announced for 2011–12.[119]

3.42 The DMO advised that currently all grant applications and acquittals are being processed manually, and is currently looking into obtaining a grants management system to automate and streamline the process that will allow it to measure the effectiveness of the program against its aims.

3.43 Other government approved programs aimed at up-skilling participants within the Defence industry include the Industry Skilling Program Enhancement package (ISPE) and the Priority Industry Capability Innovation Program (PIC IP). ISPE, which was announced in 2008, is worth $60.8 million over five years.[120] This program incorporates a number of initiatives aimed at enhancing work and future career pathways in the sector by implementing programs at schools and offering Defence technical and engineering scholarships. PIC IP, which was implemented this year and worth $45 million over eight years, is aimed at providing Australian Defence companies direct support in the form of repayable, and matched grants.[121] The program particularly focuses on assisting small to medium sized enterprises to pursue innovative Defence industry projects.

3.44 As the Minister has underlined the need for the replacement or upgrade of up to 85 per cent of its military equipment over the next 15 years, he has asked Skills Australia to work with Defence and the Defence industry to develop a plan to ensure Australian industry has the skills to meet this challenge.[122]

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[118] Source: http://www.defence.gov.au/dmo/id/sadi/index.cfm [accessed 12 October 2011].

[119] Minister for Defence Materiel, the Hon. Jason Clare MP, *Defence Skills Plan to Meet the Challenges Ahead,* 5 September 2011.

[120] Source: http://www.defence.gov.au/dmo/id/industry_skilling/ [accessed 29 September 2011].

[121] Source: http://www.defence.gov.au/dmo/id/picip/#program [accessed 29 September 2011].

[122] Minister for Defence Materiel, the Hon. Jason Clare MP, *Defence Skills Plan to Meet the Challenges Ahead,* 5 September 2011.

3.45 In 2011–12, the ANAO will continue to focus on the effectiveness of the SADI and other programs to address the current and future skills gaps and shortages

Part 2. DMO Major Projects Report

CEO DMO Foreword

I am pleased to present the 2010-11 DMO Major Projects Report (DMO MPR). The first DMO MPR, tabled in Parliament in November 2008, reported on nine of the DMO's major projects. The second DMO MPR was tabled in November 2009 and incorporated an additional six projects, reporting on a total of 15 projects. The third report, tabled in November 2010 was again expanded to cover 22 of the DMO's major projects. In this report a further six projects have been included, bringing the number of projects covered to 28.

I am confident that the maturity of the reporting on the previously reported projects along with the addition of six new projects represents continuing advances in terms of transparency.

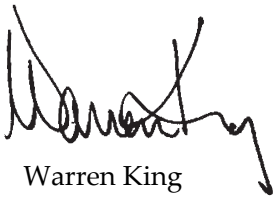
I view the DMO MPR as an important report to Parliament because it gives an open and insightful account of how well we are performing in our core business of equipping the Australian Defence Force (ADF). One of the valuable elements of the MPR is the organisational perspective that it provides on major DMO project work and performance. This broad view is important in setting the context for our performance on individual projects. Over time, I expect that one of the most valuable elements of this report will be the increasing quality of trend analysis it can provide on key project performance measures of cost, schedule and materiel capability.

The format of this year's report is largely similar to that of last year's report. Chapter One provides an increased level of strategic overview of the DMO's performance and discusses key elements and drivers of performance. Significantly, it discusses our approach to the management of risk across our business. Chapter Two provides a detailed analysis on the schedule, cost and materiel capability performance and status of the 28 major projects included in the report.

Part 3 of this report contains the individual Project Data Summary Sheets (PDSS) for each project. For this year's report, the PDSS format and structure has been refined to allow for a better flow and presentation of the data set, with a strong focus on each project's performance on cost, schedule, materiel capability and risks/issues.

The project data in this report has also been reviewed by Capability Managers and the major contractors for each project; their views have been considered in finalising this report.

Delivering the MPR in a tight reporting timeframe requires considerable collaboration between the DMO and ANAO MPR teams. The two teams have a strong professional working relationship, which has delivered ongoing improvements in the MPR process and ensured the completion of this important report in Parliament. As the MPR continues to evolve to accommodate increased reporting requirements, and because of the highly complex nature of DMO project management, it will be important that the report continues to focus on increasing the understanding of project management, including; the important elements of risk management, contract management, engineering, logistics and scheduling. I would like to thank the Auditor-General and his staff for their contribution to the overall report. I would also like to recognise the considerable effort and dedication of the DMO project office staff in the 28 projects, MPR Management team, and the numerous other DMO business areas involved in bringing together this DMO 2010-11 MPR.



Warren King

Acting Chief Executive Officer

14 December 2011

Executive Summary

In 2010-11, the Defence Materiel Organisation (DMO) managed over $10.6b in expenditure across the acquisition projects, sustainment programs and other management services – this represents a total spend of 102% against the revised 2010-11 budget of $10.4b[123] through improved delivery. This is not an overspend, but an acceleration of 2011-12 planned expenditure. As at 30 June 2011, the DMO managed 281 major and minor acquisition projects with an annual budget of $5.0b, the sustainment program (comprising 106 sustainment products) managed with a budget of $4.5b, and $0.9b for provision of management services.

The Smart Sustainment Stream of the Strategic Reform Program (SRP) achieved the planned savings target of $288m in 2010-11[124].

In 2010-11, the DMO's budget represented about 33% of the Defence budget and approximately 0.8% of Australia's Gross Domestic Product with approximately 57% (or $6.2b) spent on local Australian suppliers.

While this report focuses attention on 28 of the most significant DMO acquisition projects (an increase of six from the previous year's report), it is also important to note the DMO's contribution to supporting Australian Defence Force (ADF) personnel deployed on operations. To meet these needs the DMO is actively engaged in advancing certain projects ahead of previously planned schedules. Some recent examples are the rapid acquisition of a fifth C-17 Globemaster (the additional C-17 will expand Australia's capacity to deploy personnel and equipment rapidly to operations in the Middle East), Digital Terminal Control Systems, and the Counter Rocket Artillery and Mortar.

Defence industry plays an essential role in supporting ADF capability through supply and maintenance of military equipment and delivery of a wide range of support services. Growing a competitive local defence industry capacity is a Government policy objective, as outlined in *Defending Australia in the Asia Pacific Century: Force 2030 - Defence White Paper 2009*, and the *Defence Industry Policy Statement 2010*. The DMO supports this objective through a wide range

[123] Portfolio Additional Estimates Statements 2010-11, Defence Portfolio

[124] Defence Annual Report 2010-11

of ongoing programs that invest in skills development and improved productivity.

The large portfolio of projects that the DMO manages is the most complex and technically challenging in the country. Benchmarking undertaken by the Helmsman Institute in 2009 and 2010 - comparing DMO and industry project levels of complexity - indicates that DMO acquisition projects and sustainment products are more complex than the average for projects and products in other industries such as IT, construction, telecommunications, engineering and finance.

DMO Achievements

Within the last year, performance on the key measures of cost and materiel elements of capability have remained steady and key capabilities have been delivered that are now providing operational effect for the ADF. An overview of cost and schedule performance is shown in Tables 1 and 2. Examples of significant achievements in 2010-11 include:

- C-17 Globemaster Heavy Airlift capability: Four aircraft were delivered under Phase 3 of the AIR 8000 project ahead of schedule and under budget. These aircraft are providing crucial and previously unavailable operational capability to the war fighter engaged in operations as well as humanitarian assistance to communities affected by natural disasters in Australia and overseas.
- Bushmaster: As of 30 June 2011, 674 Bushmaster Vehicles have been delivered. Many of these vehicles are currently in operation in Afghanistan where they have been instrumental in saving Australian soldiers' lives. . The Government has recently approved the purchase of an additional 101 Bushmaster vehicles.
- Landing Helicopter Dock (LHD) Ships: Construction of the main hull sections for the second Landing Helicopter Dock is underway. The first hull, LHD01 (to be commissioned HMAS *Canberra*) was launched in Spain in February 2011.
- Airborne Early Warning and Control (AEW&C): Following successful resolution of a range of contractual issues, four AEW&C (Wedgetail) aircraft have been accepted in an 'initial' configuration capable of supporting training and peacetime national tasking. Additionally, the

Wedgetail aircraft participated in a number of military exercises during 2010-11.

- Armidale Class Patrol Boats: All 14 Armidale Class Patrol Boats have been accepted with engineering and maintenance arrangements established. The Armidale Class Patrol Boats continue to provide an important service to the nation at the forefront of the Government's efforts to protect Australia's northern approaches and offshore maritime interests.
- F/A-18 Super Hornets: All 24 F/A-18 Super Hornets have been delivered to their new home base at RAAF Amberley. These aircraft are proving to be a successful replacement for the retired F-111s by providing a more advanced air strike capability. Minister for Defence Materiel, Jason Clare said "*They are amongst the best fighter planes in the world and all 24 aircraft have been delivered on budget and ahead of schedule*".[125]
- Armed Reconnaissance Helicopter: Twenty Tiger aircraft have been accepted. Engineering and maintenance arrangements have also been established.
- Air to Air Refuelling Capability: Initial Acceptance of the first KC-30A aircraft was achieved on 1 June 2011 with acceptance of the second aircraft on 22 June 2011.
- Upgraded Adelaide Class Guided Missile Frigate: Four upgraded ships have been accepted with engineering and maintenance established. HMAS *Melbourne* was deployed to the Middle East and African east coast as part of a multi national task force to protect commercial shipping from piracy. HMAS *Melbourne* and its crew effectively carried out their mission and in the process responded to 14 piracy distress calls.[126]
- Next Generation Satellite Program: Three of the six satellites have been successfully launched and are being utilised by the ADF.
- Anzac Anti-Ship Missile Defence: HMAS *Perth* was the first Anzac class frigate to undergo upgrades to its missile defence system and carried

[125] Air Force News, 27 October 2011

[126] Defence Media Release, 18 February 2011

out successful trials off the coast of Hawaii in June 2011. Minister for Defence Materiel Jason Clare said "*the recent trials achieved outstanding results and shows that the new system can defend the ship from modern cruise missile attack*".[127] The upgrades are also a great success story for Australian industry as the system's cutting edge technology was developed in Australia by CEA Technologies.

Over 2010-11, the DMO has continued to institute a number of organisational business improvements which are directly aimed at enhancing its core business of equipping and sustaining the ADF. Some examples of these include:

- **Establishment of the Independent Project Performance Office:** On 1 July 2011 the Independent Project Performance Office (IPPO) commenced operating, which gave effect to a key procurement reform announcement made by Minister for Defence, Stephen Smith, and Minister for Defence Materiel, Jason Clare[128].
- The establishment of the IPPO also implements one of the key outstanding recommendations of the Mortimer Review into Defence Procurement and Sustainment which called for an office to be established within the DMO to review projects and assist project teams to solve problems where necessary[129].
- The IPPO is responsible for the conduct and management of:
  - Early Indicators and Warnings;
  - Gate Reviews; and
  - Projects of Concern.
- **Early Indicators & Warnings:** Introduction of an Early Indicators and Warnings (EI&W) [130] system is designed to identify potential problems with projects by revealing any deviation of defined project requirements (scope, schedule, budget/cost) from agreed parameters.

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127 Minister for Defence Materiel Jason Clare Press Release, 3 September 2011

128 Minister for Defence, Stephen Smith, and Minister for Defence Materiel, Jason Clare, Media Release – Independent Project Performance Office to oversee major Defence projects established, 29 June 2011

129 Defence Procurement and Sustainment Review, Recommendation 3.6.

130 Minister for Defence Media Release, Strategic Reform Program, 6 May 2011.

- **Gate Reviews:** The Gate Review function commenced in 2009 to provide a mechanism for robust review and assurance of major projects. This enables provision of high quality and reliable advice to Defence and Government as to the health and outlook of major projects. Following the review of some 50 high value and technically complex projects in 2010-11, the Minister has directed the DMO to expand its program of Gate Reviews to include all major projects at least annually[131].
- **Strengthening the Projects of Concern Process:** The Government has strengthened the Projects of Concern regime to provide increased senior management oversight of identified projects.
- **Roll-out of Initial Materiel Release (IMR) and Final Materiel Release (FMR):** The Materiel Acquisition Agreement (MAA) (the principal agreement between the DMO, Capability Managers and Capability Development Group) has been strengthened with the introduction of IMR and FMR. These represent the two key milestones for the DMO to deliver its materiel elements of the Fundamental Inputs to Capability (FIC) to the Capability Managers.
- Introduction of IMR and FMR milestones provides greater clarity of responsibilities between the DMO and Capability Managers. It marks the delivery and release to the Capability Managers of materiel supplies, which are just one of a number of inputs coordinated by the Capability Manager to realise a capability.
- Twenty seven of the 28 projects reported in this MPR had, by early July 2011, incorporated IMR and FMR into their project schedule and included the Capability Manager as a signatory to their MAA. The exception is Hornet Refurb as it is due for completion by December 2011. The DMO is also well advanced in transitioning all remaining Major Capital Acquisition Projects to the revised MAA format.
- **Strengthening the 'DMO Wide Risk Management Framework':** A number of risk management improvement initiatives have been introduced and continue to be rolled out across DMO, including:

[131] Minister for Defence Media Release, Strategic Reform Program, 6 May 2011.

maturing of the 'DMO Wide Risk Management Framework'; and identifying key business control frameworks to better manage risk.

DMO Challenges

The key challenge for the DMO and defence industry is to reduce schedule slippage. For the 28 projects in this report, the average schedule variance at Final Operational Capability (FOC) is a factor of 1.28 (or an average slippage of 28%). The improvement on the 30% average slippage (for 22 projects) recorded in the 2009-10 MPR relates directly to the inclusion of the six additional projects. To specifically address this issue the DMO and defence industry will continue to focus on improving all aspects of project performance, from initial schedule estimation and planning through to project delivery.

Importantly, this schedule variance calculation, against FOC, relates to the delivery of the whole project as scoped by Government. It is not correct to assume that deliveries of 'all elements' of these projects are 28% late. In a number of cases these projects have successfully delivered a wide range of much-needed equipment to the ADF, either to deploy on operations or to use for critical training activities.

DMO assesses that a key driver of the 28% slippage is an initial underestimation by DMO and/or by industry of the technical maturity or complexity of the more highly developmental and large scale system integration projects. Australia is not alone in experiencing this, as reports similar to this MPR in the UK[132] and USA[133] demonstrate. The DMO continues to actively work in partnership with industry to address the underlying causes through various initiatives, some of which are highlighted in this report.

[132] www.nao.org.uk

[133] www.gao.gov

Key Priorities in 2011-12

The key priorities for the DMO in 2011-12 remain consistent with 2010-11 and are:

- continuing support to ADF operations;
- achieving the Defence Strategic Reform Program targets for the Smart Sustainment and Mortimer streams;
- working with key customers (Navy, Army and Air Force) to reduce the cost of ownership of major Defence fleets and systems;
- improving performance on procurement and sustainment; and
- delivering approved Defence Capability Plan (DCP) projects.

Conclusion

The key aspects of this MPR are:

- the report has been expanded to cover an additional six projects, now totalling 28;
- all projects are delivering capability within the approved budget; and
- the analysis process has identified opportunities for the DMO to further improve schedule performance.

Future MPRs will continue to expand the longitudinal analysis on key project performance measures of cost, schedule and materiel capability.

Overview of the 28 Projects contained in the 2010-11 MPR

The following six projects are additional to those covered in the 2009-10 MPR:

- AIR 6000 Phase 2A/B – New Air Combat Capability (Joint Strike Fighter)
- SEA 1390 Phase 4B – SM-1 Missile Replacement (SM-2 Missile)
- AIR 9000 Phase 5C – Additional Chinook Helicopter (Additional Chinook)
- JP 2008 Phase 5A – Indian Ocean UHF SATCOM Capability (UHF SATCOM)
- LAND 17 Phase 1A – Artillery Replacement (155mm Howitzer)
- LAND 75 Phase 3.4 – Battlefield Command Support System (Battle Comm. Sys)

The following 22 projects were reported in the 2009-10 MPR and are reported again in the 2010-11 MPR.

- SEA 4000 Phase 3 – Air Warfare Destroyer (AWD Ships)
- AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft (Wedgetail)
- AIR 9000 Phase 2, 4, & 6 – Multi Role Helicopter (MRH90 Helicopters)
- AIR 5349 Phase 1 & 2 – Bridging Air Combat Capability (Super Hornet)
- LAND 121 Phase 3 – Field Vehicles and Trailers (Overlander Vehicles)
- JP 2048 Phase 4A/4B – Amphibious Deployment and Sustainment (LHD Ships)
- AIR 87 Phase 2 – Armed Reconnaissance Helicopter (AHR Tiger Helicopters)
- AIR 5376 Phase 2 – F/A-18 Hornet Upgrade (Hornet Upgrade)
- AIR 8000 Phase 3 – C-17 Heavy Airlifter (C-17 Heavy Airlift)
- AIR 5402 – Air to Air Refuelling (Air to Air Refuel)
- SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade (FFG Upgrade)
- AIR 5376 Phase 3.2 – F/A 18 Hornet Upgrade Structural Refurbishment (Hornet Refurb)

- LAND 116 Phase 3 – Bushmaster Protected Mobility Vehicle (Bushmaster Vehicles)
- JP 2008 Phase 4 – Next Generation SATCOM Capability (Next Gen Satellite)
- JP 2043 Phase 3A – High Frequency Modernisation (HF Modernisation)
- SEA 1444 Phase 1 – Armidale Class Patrol Boat (Armidales)
- SEA 1448 Phase 2B – Anzac Ship Anti–Ship Missile Defence (Anzac ASMD 2B)
- SEA 1439 Phase 4A – Collins Replacement Combat System (Collins RCS)
- SEA 1429 Phase 2 – Replacement Heavyweight Torpedo (Hw Torpedo)
- SEA 1439 Phase 3 – Collins Reliability and Sustainability (Collins R&S)
- SEA 1448 Phase 2A – Anzac Ship Anti–Ship Missile Defence (Anzac ASMD 2A)
- AIR 5418 Phase 1 – Follow-on Stand Off Weapon (Stand Off Weapon)

In addition to the new projects listed above, reporting on AIR 5349 Phase 1 – Bridging Air Combat Capability (Super Hornet) has been expanded to incorporate AIR 5349 Phase 2 – Super Hornet Weapons. While the Super Hornet project approval submission to Government proposed the acquisition as two separate project phases, Government approved a whole capability with a single defined FOC milestone of December 2012. Hence, rather than include Super Hornet Weapons as a seventh additional project in this report, it is consolidated into a single report as the AIR 5349 Phase 1 & Phase 2 Super Hornet project.

This report is to be the final year for inclusion of the following project:

- AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment

Tables 1 and 2 provide the 30 June 2011 status on key project performance metrics covering cost and schedule across the 28 projects in this year's MPR. Table 3 provides an overview of key project characteristics.

Table 1 - Project Budget Status

Project	Second Pass Budget $m[134]	Price Indexation $m[135]	Foreign Exchange $m[136]	Scope Changes $m[137]	Transfers $m[138]	Budgetary Adjustments $m[139]	Budgetary Cost Savings $m[140]	Net Variation %[141]	Current Budget $m
AWD Ships	7,207.4	1,173.2	(448.8)	-	-	-	-	0.0%	7,931.8
Wedgetail	3,269.5	994.5[142]	(437.9)	225.6	(18.9)	(173.2)	-	-5.3%	3,859.6
MRH90 Helicopters	957.2	679.8	(241.3)	2,597.0	(239.0)	-	-	0.0%	3,753.7
Super Hornet	3,728.2	391.2	(400.4)	-	(33.3)	-	(107.2)	0.0%	3,578.5
Overlander Vehicles	2,745.3	746.8	(217.9)	(14.8)	4.5	-	-	0.0%	3,263.9
LHD Ships	2,959.9	426.9	(273.5)	-	9.3	-	-	0.0%	3,122.6
Joint Strike Fighter	2,751.6	351.0	(435.8)	-	-	-	-	0.0%	2,666.8
ARH Tiger Helicopters	1,584.0	418.2	149.1	-	(84.3)	(6.7)	-	-0.4%	2,060.3
Hornet Upgrade	1,300.0	323.5	41.0	221.5	35.0	(3.4)	-	-0.3%	1,917.5
C-17 Heavy Airlift	1,864.4	124.0	(139.6)	-	-	-	-	0.0%	1,848.9
Air to Air Refuel	2,076.6	484.1	(443.1)	-	(135.5)	(153.6)	-	-7.4%	1,828.5
FFG Upgrade	1,392.5	215.6	74.2	-	(152.6)	(0.8)	-	-0.1%	1,528.9
Hornet Refurb	156.6	158.8	(36.6)	673.6	-	(1.1)	-	-0.7%	951.3
Bushmaster Vehicles	295.0	124.6	(5.2)	515.4	-	-	-	0.0%	929.8
Next Gen Satellite	884.9	132.4	(136.4)	-	-	-	-	0.0%	880.9
HF Modernisation	505.0	148.1	12.2	11.0	(4.7)	(0.8)	-	-0.2%	670.8
SM-2 Missile	552.6	127.9	(66.4)	-	-	(2.1)	-	-0.4%	612.0
Additional Chinook	638.0	46.5	(99.9)	-	-	-	-	0.0%	584.6
Armidales	436.8	74.5	(12.1)	67.1	(29.8)	0.7	-	0.2%	537.2
Anzac ASMD 2B	248.8	76.1	(11.6)	-	148.7	-	-	0.0%	462.0
Collins RCS	455.3	56.5	(59.7)	-	(0.9)	(0.8)	-	-0.2%	450.4
Hw Torpedo	238.1	99.4	(126.3)	213.3	1.0	(0.2)	-	-0.1%	425.4
Collins R&S	72.0	74.4	(6.2)	310.3	(38.3)	(0.8)	-	-1.1%	411.4
UHF SATCOM	461.0	(3.1)	(50.7)	-	-	-	-	0.0%	407.2
Anzac ASMD 2A	449.0	101.3	0.9)	-	(159.8)	(0.1)	-	0.0%	389.5
Stand Off Weapon	370.7	62.1	(39.5)	(50.0)	-	-	-	0.0%	343.3
155mm Howitzer	348.2	17.2	(39.3)	-	-	-	-	0.0%	326.1
Battle Comm. Sys.	333.9	14.7	(22.6)	-	-	-		0.0%	325.9
Total	38,282.5	7,640.2	(3,475.2)	4,770.0	(698.6)	(342.9)	(107.2)	-0.9%	46,068.7

[134] The portion of Second Pass (or equivalent) budget approved by Government, transferred to the DMO under a MAA with Defence for delivery of the materiel system.
[135] The total of price indexation variations between Second Pass budget and the current budget.
[136] The total of foreign exchange variations between Second Pass budget and the current budget.
[137] The total value of all Government approved project scope changes between Second Pass budget and the current budget.
[138] The total of all transfers to and from other Defence Groups (eg. Defence Support Group) and DMO projects.
[139] The total of all other budgetary adjustments (administrative in nature) outside of price indexation, foreign exchange, scope and transfer variations between Second Pass budget and the current budget.
[140] The total of cost savings attributed to any negotiated foreign military sales or commercial contracts. These funds have been handed back to the Defence Portfolio.
[141] Net variation accounts for budgetary movements outside of price indexation, foreign exchange, Government approved scope changes and transfer variations to the Second Pass budget as a percentage.
[142] Of the $994.5m, $388.1m of this relates to a real cost increase for contract price indexation beyond the supplementation provided by Government.

Table 2 - Project Schedule Status

Project	Original FMR[143]	Current FMR	Variation Factor[144]	Original FOC	2009-10 DMO MPR FOC	Current FOC	Variation Factor[145]
AWD Ships	Dec 17	Dec 18	1.1	Dec-18	Dec-18	Dec 19	1.1
Wedgetail	Nov 12	Nov 12	1.0	Dec-08	Dec-12	Dec 12	1.5
MRH90 Helicopters	Oct 14	Oct 14	1.0	Jul-14	Jul-14	Jul 14	1.0
Super Hornet	Aug 12	Aug 12	1.0	Dec-12	Dec-12	Dec 12	1.0
Overlander Vehicles	Dec 17	Dec 17	1.0	Dec-19	Dec-19	Dec 19	1.0
LHD Ships	Aug 15	Aug 15	1.0	Nov-16	Nov-16	Nov 16	1.0
Joint Strike Fighter	N/A	N/A	N/A	N/A	-	N/A	N/A
ARH Tiger Helicopters	Jul 12	Jul 12	1.0	Jun-09	Dec-12	Dec 12	1.3
Hornet Upgrade	Aug 11	Nov 11	1.0	Aug-11	Nov-11	Jun 12	1.1
C-17 Heavy Airlift	Dec 11	Dec 11	1.0	Dec-11	Jan-12	Dec 11	1.0
Air to Air Refuel	Feb 13	Feb 13	1.0	Mar-11	Dec-12	Dec 13	1.4
FFG Upgrade	Dec 11	Dec 11	1.0	Dec-05	Jul-11	Dec 11	1.9
Hornet Refurb	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bushmaster Vehicles	Feb 14	Feb 14	1.0	Apr-12	Apr-12	Apr 14	1.2
Next Gen Satellite	Sep 13	Sep 13	1.0	Dec-14	Dec-14	Dec 14	1.0
HF Modernisation	Feb 16	Feb 16	1.0	May-05	May-15	Jul 16	2.3
SM-2 Missile	Sep 12	Sep 12	1.0	Dec 12	-	Dec 12	1.0
Additional Chinook	Jan 17	Jan 17	1.0	Jan 17	-	Jan 17	1.0
Armidales	N/A	N/A	N/A	Mar-09	Mar-12	Feb 12	1.5
Anzac ASMD 2B	Jul 17	Jul 17	1.0	Mar-13	Apr-17	Dec 17	1.6
Collins RCS	Jan 16	Jan 16	1.0	2010	2016	2016	1.7
Hw Torpedo	Nov 13	Nov 13	1.0	Nov-13	Nov-13	Nov 13	1.0
Collins R&S	Oct 22	Oct 22	1.0	Jun-14	Sep-22	Sep 22	1.6
UHF SATCOM	Sep 12	Sep 12	1.0	N/A	-	N/A	N/A
Anzac ASMD 2A	Jul 17	Jul 17	1.0	Dec-11	Apr-17	Dec 17	1.7
Stand Off Weapon	Dec 12	Dec 12	1.0	Dec-10	Dec-12	Dec 12	1.4
155mm Howitzer	Sep 13	Sep 13	1.0	Dec 13	-	Dec 13	1.0
Battle Comm. Sys.	Apr 13	Apr 13	1.0	Apr 13	-	Apr 13	1.0
						Average Variation	1.28

[143] Where Final Materiel Release was not included in the original project approval documentation, Original Final Materiel Release is taken from the latest version of the project's Materiel Acquisition Agreement.

[144] A schedule variance factor of 1 = on time; >1 = late; and <1 = early, calculated against original FMR.

[145] A schedule variance factor of 1 = on time; >1 = late; and <1 = early, calculated against original FOC.

Table 3 Project Characteristics

Project	Service Customer	Type of Capability[146]	Type[147]	ACAT[148]	Kinnaird[149]	Maturity Stage[150]	Prime System Integrator[151]
AWD Ships	Navy	New	Australianised MOTS	I	Post	Critical Design Review	AWD Alliance
Wedgetail	Air Force	New	Developmental	I	Pre	System Integration & Test	Boeing Company
MRH90 Helicopters	Army/Navy	Replacement	Australianised MOTS	II	Pre	Acceptance Testing	Australian Aerospace
Super Hornet	Air Force	Replacement	MOTS	II	Post	Service Release	US Government
Overlander Vehicles	Army	Replacement	Australianised MOTS	I	Post	Second Pass	DMO
LHD Ships	Joint	New	Australianised MOTS	I	Post	Critical Design Review	BAE Systems Australia
Joint Strike Fighter	Air Force	Replacement	Developmental	I	Post	Enter Contract	US Government
ARH Tiger Helicopters	Army	New	Australianised MOTS	II	Pre	Acceptance Testing	Australian Aerospace
Hornet Upgrade	Air Force	Upgrade	Australianised MOTS	II	Pre	Acceptance Testing	DMO
C-17 Heavy Airlift	Air Force	New	MOTS	III	Post	Service Release	US Government
Air to Air Refuel	Air Force	New	Developmental	II	Pre	Acceptance Testing	Airbus Military
FFG Upgrade	Navy	Upgrade	Developmental	II	Pre	Final Contract Acceptance	Thales
Hornet Refurb	Air Force	Upgrade	MOTS	II	Pre	Service Release	DMO
Bushmaster Vehicles	Army/Air Force	Replacement	Australianised MOTS	III	Pre	Acceptance Testing	Thales
Next Gen Satellite	Joint	New	MOTS	II	Post	System Integration & Test	US Government
HF Modernisation	Joint	Upgrade	Developmental	II	Pre	Acceptance Testing	Boeing Defence Australia
SM-2 Missile	Navy	Replacement	Australianised MOTS	III	Pre	Acceptance Testing	DMO
Additional Chinook	Army	Replacement	MOTS	III	Post	Enter Contract	US Government
Armidales	Navy	Replacement	Australianised MOTS	III	Pre	Service Release	Defence Maritime Services
Anzac ASMD 2B	Navy	Upgrade	Developmental	I	Post	Acceptance Testing	Anzac Alliance
Collins RCS	Navy	Upgrade	Australianised MOTS	IV	Pre	Service Release	DMO
Hw Torpedo	Navy	Replacement	MOTS	III	Pre	Acceptance Testing	US Government
Collins R&S	Navy	Upgrade	Australianised MOTS	III	Pre	Critical Design Review	ASC
UHF SATCOM	Joint	Upgrade	MOTS	II	Post	System Integration & Test	Intelsat
Anzac ASMD 2A	Navy	Upgrade	Australianised MOTS	II	Pre	Acceptance Testing	Anzac Alliance
Stand Off Weapon	Air Force	New	Australianised MOTS	II	Post	Acceptance Testing	US Government
155mm Howitzer	Army	Replacement	MOTS	III	Post	System Integration & Test	US Government
Battle Comm. Sys.	Army	New	Australianised MOTS	II	Post	Critical Design Review	DMO

[146] '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.

[147] 'Developmental': Involving substantial design development and systems integration. 'MOTS/COTS': Off-the-shelf equipment of Military or Commercial origin. 'Australianised' MOTS/COTS: an off-the-shelf design with significant levels of unique adaptation for Australian requirements.

[148] The DMO's categorisation of projects that represent the complexity of the project on a sliding scale of 1 to 4, with ACAT 1 representing the most complex projects.

[149] Provides an indication of whether the projects were initially developed under pre-or post Kinnaird reforms.

[150] Provides an indication of maturity of a project based on the benchmark stage of a project.

[151] Identifies the entity that has prime systems integrator responsibility for delivering mission and support systems for the project.

1. DMO Strategic Performance in 2010-11

Introduction

1.1 The Defence Materiel Organisation (DMO) exists to equip and sustain the Australian Defence Force (ADF) to enable the ADF to defend Australia and its national interests.

1.2 The DMO is a Prescribed Agency within the Department of Defence (Defence) and, for the purposes of the *Financial Management and Accountability Act 1997*, has financial autonomy from Defence. As a Prescribed Agency, the DMO is responsible to the Minister for Defence for its performance and also reports to the Minister for Defence Materiel. However, the DMO remains inextricably linked to Defence with a comprehensive range of inter-agency agreements.

1.3 The DMO is responsible for equipping and sustaining capital equipment assets for the ADF. This service extends from the acquisition of capital equipment assets to sustainment of those assets throughout their in-service life and then disposal. The DMO's business outcomes are driven principally by the Defence policies, objectives and plans that are directed by Government and enacted through the operational tasks of the ADF.

1.4 In support of the Defence Mission, the DMO during 2010-11 had 281 acquisition projects (including both major and minor projects) and 106 sustainment products under management. Its business ranges from relatively simple supplies such as tents and non-combat equipment to highly complex and expensive weapons systems.

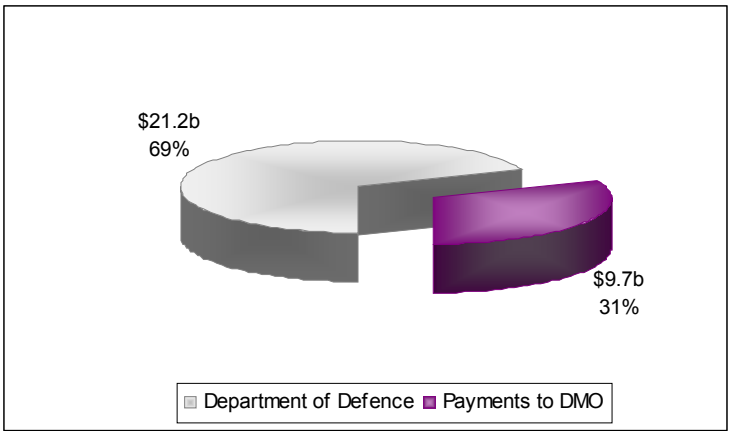
1.5 The DMO operates in a diverse and challenging business environment, working very closely with Australian and international defence industry, to deliver some of the largest and most complex projects (see figure 1.4) in Australia on time (schedule), on budget (cost) and to exacting standards of quality, quantity and safety (materiel element of capability). The DMO achieves this, along with its extensive sustainment role, by working with defence industry and through the collective efforts of its professional and skilled workforce located in more than 70 locations around Australia and overseas. The DMO's integrated workforce of more than 7,200 people comprises around 5,800 civilian and 1,400 military personnel as at the end of 2010-11.

DMO Overview

1.6 An overview of DMO's business is presented in the following figures and tables.

1.7 The total budget for the Department of Defence in 2010-11 was $30.9b. Of this, $9.7b[152] was budgeted for planned payments to the DMO under Purchaser Provider Arrangements to support the DMO's acquisition and sustainment activities. Figure 1.1 demonstrates the significant investment made in DMO to support capability for the ADF, and when assessing the DMO budget as a whole ($10.4b in 2010-11 including service fee[153]), equates to 0.8% of Australia's Gross Domestic Product (GDP) in 2010-11.

Figure 1.1 – Payments to DMO as a Proportion of the Department of Defence Budget 2010-11



[152] Portfolio Additional Estimates Statements 2010-11, Defence Portfolio

[153] The DMO has three funding sources: Government (Appropriation Revenue), Defence (Goods and Services) and Other Revenue. Prior to 2010-11 the DMO received a service fee from Defence to fund its workforce and operating costs, but under the Mortimer Review Reforms DMO is now directly appropriated from Government for this element of DMO's budget.

1.8 A Capability, defined 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'[154], is generated by a number of Fundamental Inputs to Capability (FIC) namely:

- organisation;
- personnel;
- collective training;
- materiel systems;
- supplies;
- facilities;
- support;
- command; and
- management.

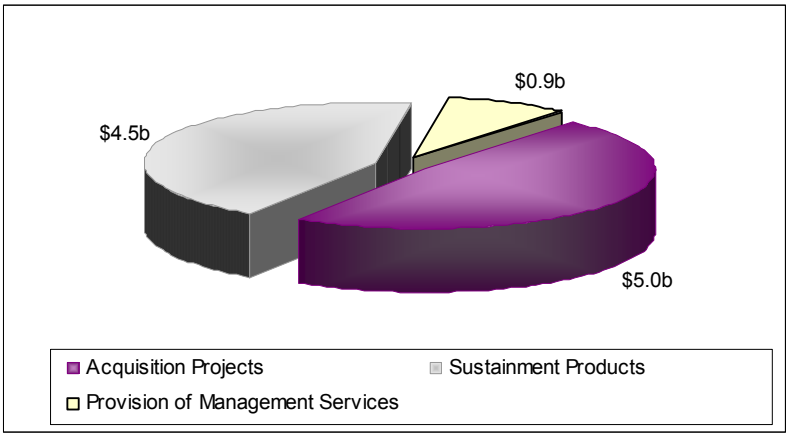
1.9 The DMO is primarily responsible for managing the procurement and ongoing sustainment of the materiel systems component of capability, comprising mission systems, designated elements of training and non-infrastructure equipment for facilities that support the operation of ADF equipment, such as simulators, trainers and unique test equipment. Defence has overarching responsibility to deliver all inputs to capability.

1.10 Capability systems have a life cycle that begins with the identification of a need, moving through to identifying the requirements, then to the acquisition of the capability, operating and sustaining it in-service, and then the final disposal phase once the equipment is no longer required.

1.11 As figure 1.2 demonstrates, the 2010-11 budget allocation between acquisition and sustainment is relatively evenly distributed. This demonstrates the strategic significance of sustainment activities and the ongoing effort required to maintain the necessary level of operational capability. The size of the sustainment budget also reflects the technically challenging nature of sustainment activities. The budget for provision of management services and policy advice is relatively small (representing approximately 9% of the DMO's total budget), to maintain the essential DMO corporate management and governance functions that support the acquisition project and sustainment product functions.

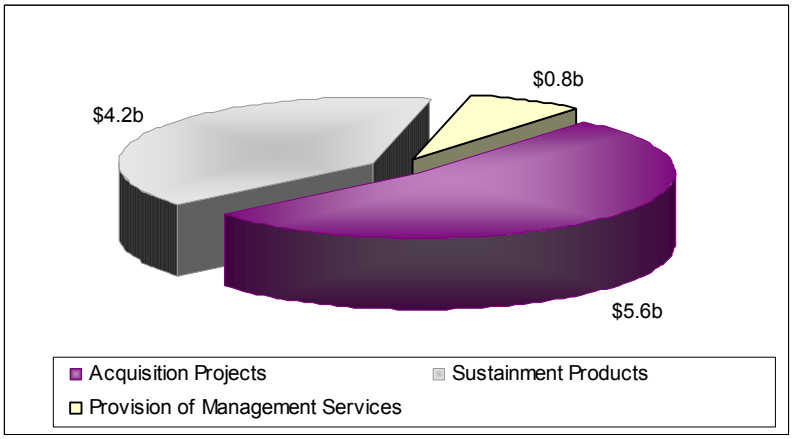
[154] Defence Capability Development Handbook, August 2011

Figure 1.2 – DMO Budget Allocation to Acquisition Projects, Sustainment Products and Management Services 2010-11



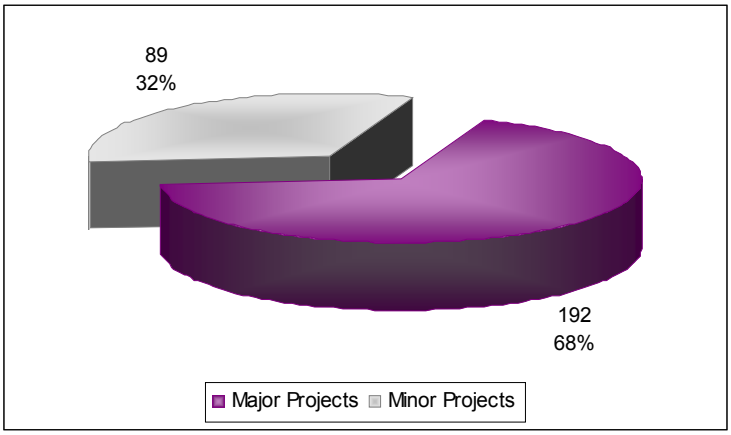
1.12 As Figure 1.3 demonstrates, the DMO expended 102% ($10.6b) of its budget allocation against the 2010-11 Portfolio Additional Estimates Statements ($10.4b), which reflects the strong capital performance by DMO projects and the acceleration of some program activity.

Figure 1.3 – DMO Expenditure Allocation to Acquisition Projects, Sustainment Products and Management Services 2010-11



1.13 Approximately two thirds of acquisition projects undertaken in the DMO are considered 'Major Projects' with the remainder classified as 'Minor Projects' (see figure 1.4 below). Major capital acquisition projects are funded through the Defence Capability Plan (DCP) and generally have a budget allocation of more than $20m. Projects of lesser value may also be funded through the DCP if they are particularly complex or of strategic significance.

Figure 1.4 – Number of Major and Minor Acquisition Projects 2010-11



1.14 A Minor Capital Acquisition Project is funded through a Defence Group budget allocation under the Minor Capital Acquisition Program (generally by a Service Group – Navy, Army, or Air Force). Minor projects, although generally costing less than $20m, are not necessarily of low significance from a capability perspective as they can either include essential equipment to sustain and protect our troops or have crucial interdependency with major capability.

1.15 The 28 major DMO projects covered by this MPR are shown in table 1.1.

Table 1.1 – List of 2010-11 MPR Projects by Total Approved Budget[155]

Project Name	Project Number	2010-11 In-Year Budget $m[156]	Total Approved Project Budget $m[157]
Air Warfare Destroyer	SEA 4000 Phase 3	$982.5	$7,931.8
Airborne Early Warning & Control Aircraft	AIR 5077 Phase 3	$217.1	$3,859.5
Multi Role Helicopter	AIR 9000 Phase 2, 4 & 6	$326.0	$3,753.7
Bridging Air Combat Capability	AIR 5349 Phase 1 & 2	$426.4	$3,578.5
Field Vehicles and Trailers	LAND 121 Phase 3	$77.1	$3,263.9
Amphibious Deployment and Sustainment	JP 2048 Phase 4A & 4B	$497.8	$3,122.6
New Air Combat Capability	AIR 6000 Phase 2	$78.3	$2,666.8
Armed Reconnaissance Helicopter	AIR 87 Phase 2	$117.3	$2,060.3
F/A-18 Hornet Upgrade	AIR 5376 Phase 2	$73.1	$1,917.5
C-17 Heavy Airlifter	AIR 8000 Phase 3	$6.7	$1,848.9
Air to Air Refuelling	AIR 5402	$326.0	$1,828.5
Guided Missile Frigate Upgrade	SEA 1390 Phase 2.1	$21.1	$1,528.9

[155] The convention used in this report is to list projects in order of their total approved budget to deliver the project, from highest to lowest. Where the analysis requires a different order, an explanation is provided.

[156] The estimated in year budget expenditure for four projects differ to the Annual Report where the budgets for these projects were calculated post 30 June 2011 as Guidance Adjustments made at the Approved Major Capital Investment Program (AMCIP) level to account for movements in the planned budgets, and as a result are not reflected in the Part 3 PDSS.

[157] The total approved project budget for ten projects differ to the Annual Report. The Annual Report has included additional adjustments post 30 June 2011 resulting from exchange rate gains and losses during the 2010-11 financial year. For example, and in accordance with the Government's 'no-win / no-loss' policy; if the project made a gain, this amount was adjusted downwards against the current approved project budget. Conversely, if the project made a loss, the project budget was adjusted upwards to compensate. This calculation did not take place until 25 July 2011, and adjustments are not reflected in the Part 3 PDSS.

F/A-18 Hornet Structural Refurbishment	AIR 5376 Phase 3.2	$16.9	$951.3
Bushmaster Protected Mobility Vehicle	LAND 116 Phase 3	$109.0	$929.8
Next Generation SATCOM Capability	JP 2008 Phase 4	$189.3	$880.9
High Frequency Modernisation	JP 2043 Phase 3A	$19.4	$670.8
SM-1 Missile Replacement	SEA 1390 Phase 4B	$27.9	$612.0
Additional Chinook Helicopter	AIR 9000 Phase 5C	$6.2	$584.6
Armidale Class Patrol Boat	SEA 1444 Phase 1	$7.2	$537.2
Anzac Ship Anti Ship Missile Defence	SEA 1448 Phase 2B	$73.8	$462.0
Collins Replacement Combat System	SEA 1439 Phase 4A	$4.8	$450.4
Replacement Heavyweight Torpedo	SEA 1429 Phase 2	$19.2	$425.4
Collins Reliability and Sustainability	SEA 1439 Phase 3	$16.9	$411.4
Indian Ocean UHF SATCOM Capability	JP 2008 Phase 5A	$110.9	$407.2
Anzac Ship Anti Ship Missile Defence	SEA 1448 Phase 2A	$41.4	$389.5
Follow-on Stand Off Weapon	AIR 5418 Phase 1	$48.4	$343.3
Artillery Replacement	LAND 17 Phase 1A	$64.4	$326.1
Battlefield Command Support System	LAND 75 Phase 3.4	$58.5	$325.9
	Total	**$3,963.7**	**$46,068.7**

DMO Strategic Risk Environment

1.16 The Defence White Paper 2009[158] highlights that Defence planning is, by its very nature, a technically difficult and long-term business, and is an area of public policy where decisions taken in one decade have the potential to affect

[158] Defending Australia in the Asia Pacific Century: Force 2030. Defence White Paper 2009.

Australia's sovereignty and freedom for decades to come. This is driven by the complex and rapidly evolving nature of military technology and the necessarily long lead times involved in developing, acquiring and fielding defence systems.

1.17 The Defence White Paper also notes, "We cannot have perfect knowledge of the future, and the range of uncertainties is wide. As new information becomes available and we reassess our strategic outlook, we need to be prepared to adjust the balance of our portfolio of capabilities and the way in which we hedge against different types of risk"[159]. In other words, a change in circumstances may dictate acquiring different capabilities.

Complexity of the Acquisition and Sustainment Business of DMO

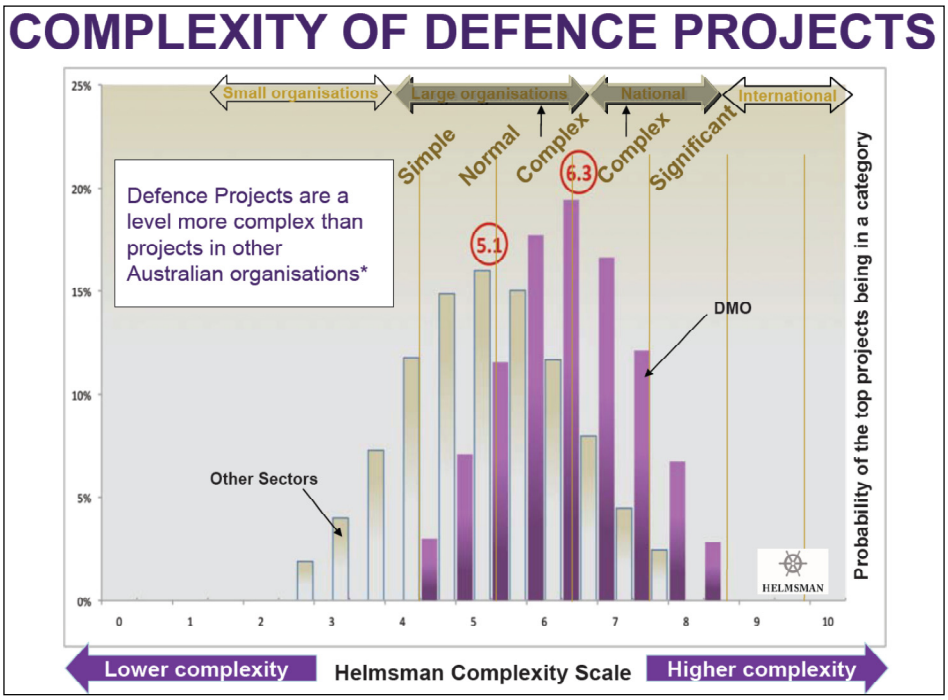
1.18 The DMO manages some of the most complex project acquisition and sustainment activities in Australia. The key findings of a review of project complexity conducted in 2009 by the Helmsman Institute include:

- Defence projects are a level more complex than projects in Australian organisations in other sectors (as shown in Figure 1.5):
  - Frequency of complex projects in Defence is higher than other organisations and industry sectors.
  - Defence project performance is better than most other industry sectors.
  - The high level of complexity and the number of projects managed requires unique project management capability in Defence.
- The current complexity is likely to continue and may increase;
- Some of the major drivers of complexity are in aspects of business that are not traditionally Defence's core skill areas; and
- Some complexity is self imposed through decisions made by Defence and Government policy[160].

[159] Defending Australia in the Asia Pacific Century: Force 2030. Defence White Paper 2009, Para 3.20, p.28.

[160] A Comparison of Project Complexity between Defence and other Sectors, The Helmsman Institute, 2009.

Figure 1.5 – Helmsman Analysis of DMO Project Complexity Versus Industry

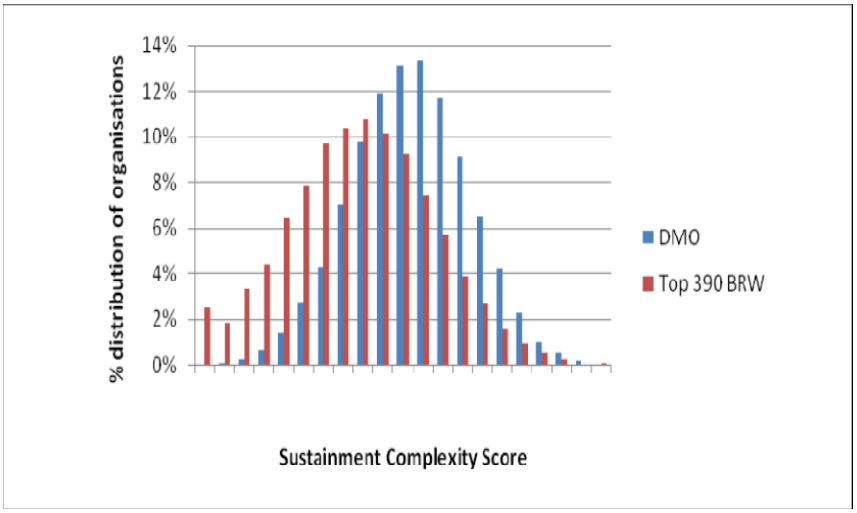


1.19 The Helmsman Institute also conducted a similar review to benchmark complexity of DMO sustainment activities. Key findings of this review include:

- Inherent complexity of capability systems, which are integrated with multiple (often high end technology) subsystems, is greater than systems supported by Australian organisations in other sectors as shown in Figure 1.6.
- The level to which a capability system employed by the ADF is isolated from the global supply network, results in a corresponding increase to indigenous engineering demand and management oversight.
- As a capability system ages and comes closer to its original planned withdrawal, obsolescence of parts becomes a factor in increasing costs. If a planned withdrawal date is postponed, sustainment requirements (engineering, maintenance and inventory level of spare parts) need to be reviewed, and re-baselined and extended; all of which adds to the cost of sustainment.
- The theatre of operations for deployed capability systems (locations, type of mission and number of capability systems, as experienced by

the fleet of Bushmaster protected mobility vehicles) creates a high degree of complexity in ensuring operational effect is sustained[161].

Figure 1.6 – Helmsman Analysis of DMO Sustainment Complexity Versus Industry



Acquisition Projects

1.20 Projects managed by the DMO can be categorised as:

- Military-Off-The-Shelf (MOTS) and Commercial-Off-The-Shelf (COTS) are acquisitions for equipment, hardware or software that already exist, are in-service with one or more international customers for an equivalent purpose and require minimal or no change. For example Project AIR 8000 Ph3 (C-17).
- Australianised MOTS are acquisitions where the product is modified to meet unique Australian requirements such as Bushmaster vehicles.
- Developmental are acquisitions where an Off-the-shelf product or solution does not currently exist. A solution needs to be delivered through: developing a new product; integrating existing Off-The-Shelf components to deliver a new product; or participating in another nation's development program.

1.21 It can be expected that cost, schedule and risk parameters increase as the requirement for Australianisation or development work increases. Notably, the category of a project can evolve; for example the Joint Strike Fighter is

[161] The Helmsman Sustainment Complexity Review, The Helmsman Institute, July 2010.

currently developmental in nature but should eventually become MOTS when it enters production line delivery.

1.22 The Defence White Paper 2009 identifies that Military-Off-The-Shelf and Commercial-Off-The-Shelf solutions will be the benchmark against which a rigorous cost-benefit analysis of military effects and schedule aspects of all proposals will be undertaken. This is consistent with the Defence Procurement and Sustainment Review (Mortimer Review). The key consideration is balancing the need to meet unique or specific capability requirements against the likely increase in project risk.

Off-The-Shelf Equipment

1.23 Defence policy mandates that if an Off-The-Shelf (OTS) option exists for Defence's capability requirements, it will be presented for Government consideration and will be the benchmark against which a rigorous cost-benefit analysis of any additional capability is sought, taking into account the cost and risk of doing so.

1.24 Likewise, any option that proposes 'Australianisation' or modification to an existing OTS capability solution must detail the rationale and associated costs and risks to undertaking such modifications.

1.25 Projects seeking First Pass Approval during 2010-11 were subject to this policy, which ultimately aims to provide greater visibility and fidelity over the risk identification and treatment process associated with capability solutions, including OTS.

1.26 OTS solutions are not risk free and any cost/benefit analysis of OTS solutions needs to fully consider the potential benefits and risks of OTS solutions, expanded under Table 1.2. The major benefits of OTS include: proven solution; more predictable cost and schedule; the use of global supply chains; greater potential for interoperability with allies; and, access to potentially lower cost and better informed upgrade cycles. These benefits should be balanced against possible risks and costs of OTS which include: potentially, not leading edge technology; a market driven product which may not fully meet the ADF's capability need; market-driven product/update cycles with which Defence must keep pace and fund; potentially limited access to technical data; certification and regulatory challenges; integration costs of disparate systems; and the strategic need for Australian industry capability and a secure supply chain which may not be possible for an overseas sourced OTS.

Table 1.2: Off-The-Shelf Benefit and Risk Summary

Benefits of Off-The-Shelf	Constraints, Risks and Cost Drivers of Off-The-Shelf
Proven Solution: By definition, OTS products are mature solutions that have completed the higher risk research, development, evaluation and certification activities and, in most instances, have been proven in service. Predictable Cost and Schedule: Because OTS products have completed development, the unit price and delivery schedule is known. Global Supply Chains: There is potential to leverage international supply chains to reduce costs and secure diversity of supply. Interoperability: Where the same OTS systems are already in service with allies, there is an inherent level of interoperability. Upgrades: OTS products are enhanced and upgraded based on the experiences of multiple users, and the benefits and costs on these improvements are shared across multiple customers.	Technological 'Edge': by definition, OTS products are mature solutions and may not offer leading edge capability. Market Driven Capability: OTS product functionality is market driven, and can fall short of Australia's full mission requirements. Intellectual Property & Technical Data: OTS products are developed for commercial benefit, and the competitive advantage resides in the intellectual property. Therefore, there is usually limited technical data available and opportunities for Australian-specific modifications and support may be limited. Integration Risk: Capability needs are rarely satisfied by a pure standalone OTS solution and require some level of integration (e.g. into platforms, with legacy systems, with other off-the-shelf systems, business processes and doctrine).

DMO Wide Risk Management Framework

1.27 In its 2009-10 MPR Review, the ANAO noted the work being undertaken by the DMO to *"…better understand and map the business and its controls in the context of enterprise risk management. This includes examining*

models, and approaches that can generate improvements in risk management behaviour"[162]. The ANAO also concluded its review assessment by noting that *"…considerable work remains to be undertaken before effective enterprise risk management is in place"*[163].

1.28 The DMO acknowledges this assessment and in 2010-11 sought to address the identified weaknesses in the DMO risk management system through a structured program of: stakeholder engagement; more sophisticated risk awareness; identification and analysis; and, development and testing of key risk management controls and frameworks.

1.29 The process of establishing the strategic direction for the 'DMO Wide Risk Management Framework' and improving enterprise risk management behaviours has involved the following initiatives:

- maturing and socialising the 'DMO Wide Risk Management Framework', which links Strategic, Corporate, Divisional and Project level risks;
- identification of key control frameworks that assist the management of the risks; and
- an assessment of the maturity of key control frameworks.

1.30 These initiatives will be further developed in 2011-12 to better integrate risk management discipline across all DMO activities.

Project Lessons Learned

1.31 The 2010-11 MPR builds on the Lessons Learned (at the organisational level) reported in last year's report. Set out below is a summary of progress against the key areas of Lessons Learned.

Requirements Management and First of Type Equipment

1.32 Guidance provided in the range of documents, including the Capability Definition Documentation (CDD) Guide, has been updated to address identified problems and to align with contemporary practice. In 2010-11, the improvement program concentrated on updating the extant CDD and developing a CDD 'Lite'. The CDD 'Lite', designed to provide guidance on Requirements Development for minor projects and less complex major projects where full application of the CDD Guide is not warranted, is in the final stages

[162] ANAO Report No. 17 2010-11: DMO 2009-10 Major Projects Report, Part1, pp. 34

[163] ANAO Report No. 17 2010-11: DMO 2009-10 Major Projects Report, Part1, pp. 34

of review before promulgation. The guide for development of function and performance specifications has been reviewed to clarify the use of 'essential' requirements in tender and contract documents.

1.33 The DMO is continuing to develop components of a Requirements Management System which will support sound requirements management across acquisition and sustainment activities. The 'Requirements Management Training Course' is the cornerstone of the Requirements Management System and is now a standard training course within DMO.

Resourcing

Workforce Planning

1.34 The DMO has a ten-year Workforce Plan for each project in the DCP. These plans provide current and projected workforce requirements (for both Australian Public Service and Australian Defence Force personnel) by project, skill set (job family), work level and geographical location for all existing and known future acquisition projects in the DCP and sustainment programs. The DMO undertakes a review of the Workforce Plan twice per year, and workforce allocations are adjusted for projects as required.

1.35 In parallel, the DMO is continuing with implementation of a strategic recruitment capability that incorporates university partnering and sponsorships. This includes improved DMO employment branding and more innovative recruitment strategies to meet future staffing requirements.

Professionalisation

1.36 The DMO also continues to expand the range of competency based development opportunities to ensure its workforce can apply the necessary knowledge and skills to the required standards. Evaluation of DMO courses has resulted in reinvigoration of a number of courses as well as the introduction of new courses for project management, engineering, logistics, procurement and contracting job families.

Contract Management

1.37 The Australian Standard Defence Contracting (ASDEFCON) framework of templates, guidance and training has been further developed to incorporate lessons learned and to reflect improved contract management processes. In particular, in relation to Strategic Reform Program outcomes these contracting reforms enhance DMO's ability to achieve Smart Sustainment objectives of maintaining agreed performance levels while reducing the total cost of ownership for capability systems. Major revisions include:

- Release for use of a major update to the ASDEFCON Support strategic-level template and user guidance to include Productivity and Performance Based Support Contracting provisions. During 2010-11, these new provisions were used in several pilot contracts and have been the subject of consultation with industry. An exposure draft of the template was released for use in June 2011. Complementary commercial guidance and the next set of template updates are due for completion by end of 2011.
- Release for use of an exposure draft of the Statement of Work for a new ASDEFCON (Shortform Support) template to streamline contracting process for support of less complex materiel systems. The commercial provisions and user guidance for the new template are due for completion by the end of 2011.

1.38 The DMO continues to work with industry to improve and reduce the compliance burden, and associated business costs of strategic procurement by streamlining data requirements in the ASDEFCON (Strategic Materiel) template. These improvements are ongoing and currently being assessed in key acquisition projects.

Schedule Management

Schedule Performance Monitoring

1.39 Following introduction of Initial Materiel Release (IMR) and Final Materiel Release (FMR) key milestones, the DMO is conducting a review and update of existing scheduling policy and processes to support DMO's implementation of these key milestones.

1.40 During 2010-11, the DMO continued the Project Schedule Analysts in Training (PSAiT) program, which is designed to further develop DMO's scheduling skill set (Job Family) in the competencies of project planning, scheduling and analysis. The nine-month development program aims to produce trainees with comparable skills, knowledge and exposure to a scheduler with two to three years experience. All trainees participate in a targeted learning and development program that includes a work placement, compulsory training courses, group workshops and on the job coaching. A 2012 PSAiT program is planned for a further 17 students.

1.41 The first phase of the Project Performance Management System (PPMS), which provides on-line access to four key project metrics was released in 2010-11. This system provides key cost and schedule information allowing managers to assess project status, budget feasibility and overall project

progress achievement against plan. The second phase, including an additional three metrics, will be released in 2012.

Acquisition and Sustainment Planning Framework

1.42 The Mortimer stream of the Strategic Reform Program includes improvements to DMO's acquisition strategy development process during the requirements phase of the capability systems life cycle. To support this improvement activity, an early exposure draft of the DMO's new Acquisition and Support Implementation Strategy (ASIS) development guidance was released for comment in June 2011. The complete set of ASIS guidance and supporting training is scheduled for release in March 2012.

1.43 Projects are also starting to include provision in their First Pass approval documentation to fund risk reduction activities (Offer Definition) with preferred tenderer(s) in strategic-level acquisitions. This risk reduction activity, early in the Offer Definition stage, requires DMO projects and their preferred tenderer(s) to undertake a thorough examination of assumptions and estimates to reduce project risks and to improve the viability of schedules prior to contract commitment by the Commonwealth. Milestone entry criteria and performance remedies in the ASDEFCON templates are also being adjusted to promote earlier visibility of schedule performance variances and to incentivise better schedule performance by the contractor.

Schedule Estimation

1.44 To improve the quality of schedule estimates, the DMO is investigating establishment of a schedule data repository. The objective of the repository is to provide DMO project managers access to historical project cost and schedule estimation data as a basis for comparison and better planning.

DMO Schedule Compliance Risk Assessment Method (SCRAM)

1.45 The Schedule Compliance Risk Assessment Method (SCRAM), developed by the DMO to foster and encourage schedule performance improvement, has been refined. To date, ten assessments have been undertaken, or are underway, including a review of the AIR 6000 Joint Strike Fighter project.

1.46 SCRAM is based on an ISO 15504 (Assessment Framework Standard) compliant Process Reference and Assessment Model and is a model of schedule management processes and best practices, structured using 'cause

and effect' architecture to facilitate identification of root causes of schedule slippage for individual projects[164].

1.47 Further development and refinement of the DMO SCRAM Model and the assessment process, including the introduction of SCRAM training courses, a guidebook and software assessment tool, is currently underway.

1.48 The objective is to improve the understanding of program executives, customer and contractor project managers, project schedulers, hardware and system/software engineers, SCRAM assessment team members and educators of the models application to improve schedule compliance.

Governance

Establishment of the Independent Project Performance Office:

1.49 On 1 July 2011 the Independent Project Performance Office (IPPO) commenced operating, which gave effect to a key procurement reform announcement made by Minister for Defence, Stephen Smith, and Minister for Defence Materiel, Jason Clare[165].

1.50 The establishment of the IPPO also implements one of the key outstanding recommendations of the Mortimer Review into Defence Procurement and Sustainment, which called for an office to be established within the DMO to review projects and assist project teams to solve problems where necessary[166].

1.51 The IPPO is responsible for the conduct and management of:

- Early Indicators and Warnings;
- Gate Reviews; and
- Projects of Concern

Early Indicators and Warnings Framework

1.52 Introduction of the Early Indicators and Warnings (EI&W) system was announced by the Minister for Defence on 6 May 2011, and is aimed at identifying problems with projects early in their lifecycle.

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[164] Further information on SCRAM and access to SCRAM products can be obtained from the website: http://scramsite.org

[165] Minister for Defence, Stephen Smith, and Minister for Defence Materiel, Jason Clare, Media Release – Independent Project Performance Office to oversee major Defence projects established, 29 June 2011

[166] Defence Procurement and Sustainment Review, 2008, Recommendation 3.6.

1.53 The EI&W system, currently in the early stages of its development, is intended to identify deviation against pre-defined thresholds of defined project characteristics (scope, schedule, budget/cost) from the Government Approved baselines at Project Initiation, First Pass and Second Pass. Projects triggering a defined threshold will immediately be notified to Government and may then be scheduled for an EI&W Gate Review.

Strengthening the Gate Reviews

1.54 The Gate Review Assurance Board framework provides an assurance mechanism for a consistent and robust review of major projects. This enables early identification of potential problems thereby ensuring provision of high quality and reliable advice to Defence and Government as to the health and outlook of major projects. Gate Reviews may also be used as a diagnostic tool in assessing potential Projects of Concern and projects that have triggered EI&W.

1.55 Gate Reviews are chaired by DMO senior managers with Board membership tailored to address the specific issues confronting a project (business case, project management, commercial, engineering, stakeholder etc). The Boards have also been strengthened with the inclusion of two external members. Board meetings provide a forum for robust, pluralistic discussion that injects a strategic perspective, filters optimism, analyses issues, recommends actions and assists the project to resolve those issues.

1.56 In preparation for the Board meeting, the DMO's Independent Project Performance Office conducts a robust evaluation of the project which ensures issues have been identified and brought to the attention of the Board for investigation.

1.57 If a project fails to convince the Board of its maturity or readiness to progress to the next stage of its lifecycle, the project is directed to address those risks and issues before proceeding and a further Board review may be required before progression to the next stage. Where necessary, recommendations may be made on consideration of the project as a Project of Concern.

Strengthening Projects of Concern Process

1.58 The vast majority of the DMO's major projects are delivering the materiel element of capability to the ADF as planned. However, a small number of DMO projects and sustainment products require additional senior management attention to address significant risks relating to schedule, cost, materiel capability and/or commercial factors.

1.59 In consultation with the Government, the DMO has developed a focused management regime for troubled projects and sustainment products identified as 'Projects of Concern' (POC). The POC remediation regime involves close engagement with industry, Defence and Government.

1.60 The POC regime is closely linked to both the EI&W framework and the Gate Review process. Projects triggering one or more EI&W thresholds are usually subject to a diagnostic Gate Review Assurance Board before recommendations are presented to Government on the project's status.

1.61 Significant outcomes for POC during 2010-11 included:

- Conduct of the inaugural POC summits between the Minister for Defence Materiel, Defence and CEOs from industry with contractual responsibility for projects on the POC list. These summits will continue to be held twice yearly.
- Successful remediation of the JP2043 Phase 3A – High Frequency Modernisation and AIR5333 Vigilare projects, and their subsequent removal from the POC list.
- Removal of the JP2048 Phase 1A - LPA Watercraft project from the POC list through the Government's decision to cancel the project.

1.62 The list of POC projects at 30 June 2011 is contained in Table 1.3.

Table 1.3 – List of Projects of Concern at 30 June 2011

Project Name	Project Number	Date Added
Airborne Early Warning & Control Aircraft	AIR 5077 Phase 3	January 2008
Field Vehicles and Trailers (Medium Heavy Capability segment only)	LAND 121 Phase 3	July 2008
Air to Air Refuelling	AIR 5402	October 2010
Anzac Ship Anti Ship Missile Defence	SEA 1448 Phase 2B	January 2008
Lightweight Torpedo Replacement	JP 2070	January 2008
Tactical Unmanned Aerial Vehicles	JP 129 Phase 2	September 2008
Electronic Support Measures Upgrade for AP-3C Orion aircraft	AIR 5276 Phase 8B	October 2010
Follow-on Stand Off Weapon	AIR 5418 Phase 1	November 2010
Collins Class Submarine Sustainment	CN10	November 2008

Better Targeted Management Reporting

1.63 The DMO provides regular performance reports to its key stakeholders including the Government, Central Agencies, and the Department of Defence.

In 2010-11, the DMO continued its program of reviewing both its internal and external project performance reports. The aim of the review is to have an integrated, targeted and simpler set of performance management reports that better meet user requirements to support timely and informed decision-making about DMO projects. The reports will also improve information flow and decision making.

1.64 In line with this initiative and as stated in paragraph 1.41, a new PPMS was implemented in 2010-11, with further enhancements to occur throughout 2011-12. The PPMS provides DMO Executives, Project Directors and Managers the ability to view summary and detailed data, as required, to assist them in the interpretation and understanding of individual project performance, and to enable management action based on that data. The reports are updated monthly and delivered direct to the user's desktop.

Other Business Improvements

Roll-out of Initial Materiel Release and Final Materiel Release Milestones

1.65 Provision of DMO support to materiel capability is managed through the DMO agreements framework. The principal agreement for all DMO acquisition projects is the Materiel Acquisition Agreement (MAA). The MAAs define the DMO's acquisition services to be delivered to Defence for all major and minor equipment projects, and specifies the project in terms of the scope and schedule to be delivered, and the approved budget.

1.66 To improve accountability and transparency for delivery of major projects, the Capability Manager is now a signatory along with the DMO and Capability Development Group to each MAA. This change gains the key stakeholder's formal acknowledgement of the baseline requirements against which the DMO's delivery of equipment will be measured and identifies responsibilities of the Capability Manager in management of the non-materiel elements of capability delivery.

1.67 Concurrently, DMO has transitioned from using Initial Operational Capability (IOC) and Final Operational Capability (FOC) to using IMR and FMR as measures of DMO performance.

1.68 The IOC and FOC are Defence milestones that represent the estimated milestone for when a capability system, comprising all FICs, will achieve the

approved capability state. Consequently, the shift to IMR and FMR provides greater clarity of responsibilities between the DMO and Capability Managers.

1.69 All but one of MPR projects had, by early July 2011, incorporated IMR and FMR into their project schedule and incorporated the Capability Manager as a signatory to their MAA (Hornet Refurb project was not required to transition to the new MAA due to it's closure prior to the end of 2011). The DMO is also well-advanced in completing the transition of all other ongoing Major Capital Acquisition projects to the revised MAA.

1.70 The terms used to describe cardinal schedule milestones in an MAA, for which DMO is responsible, are defined as follows:

- Second Pass Approval: The final milestone in the project requirements phase, at which point Government endorses a specific capability solution and approves funding for the project acquisition phase. The project cannot proceed to the acquisition phase until this approval is obtained from Government.
- Contract Signature: The date of signature for the project's largest contract. The Project's Performance Measurement Baseline is established at this milestone.
- Initial Materiel Release (IMR): The milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of IOC and/or IOR.
- Final Materiel Release (FMR): The milestone that marks the completion and release of DMO acquisition project supplies to support the achievement of FOC.
- MAA Closure: A milestone that marks the cessation of DMO activities in support of an approved capital acquisition project. Defence subsequently manages and affects the Project Acquisition Business Case Closure which marks the completion of all Department of Defence activity against the approved capital acquisition project. An acquisition phase MAA will remain in force until all undertakings have been fulfilled or both parties agree in writing to terminate the agreement.

1.71 Defence milestones, for which the Capability Managers are responsible, are defined as follows:

- Initial Operational Release (IOR): The milestone at which the Capability Manager is satisfied that the initial operational and materiel state of the capability system – including any deficiencies in the fundamental inputs to capability – are such that it is sufficiently safe, fit for service,

and environmentally compliant to proceed into a period of operational test and evaluation leading to an endorsed capability state.

- Initial Operational Capability (IOC): The point in time at which the first subset of a capability system that can be operationally employed is realised. IOC is a capability state endorsed by Government at project approval at Second Pass, and the Capability Manager is able to assess and report achievement.
- In-Service-Date (ISD): The point in time that symbolically marks the beginning of the transition of a capability system, in part or full, from the acquisition phase to the in-service phase. ISD coincides as closely as is practicable with IOR.
- Final Operational Capability (FOC): The point in time at which the final subset of a capability system that can be operationally employed is realised. FOC is a capability state endorsed by Government at Second Pass project approval, and the Capability Manager is able to assess and report achievement.

Defence Industry Initiatives

1.72 The Defence Industry Policy Statement 2010: *A Policy for a Smarter and More Agile Defence Industry Base* outlines the need for Australian industry to be ready to compete for defence work, and that they must be competitive to be successful in supplying and supporting the ADF.

1.73 The ADF's current and future operational capability depends to a large extent on supply and sustainment support from Australian companies. The Defence Industry Policy Statement provides a number of programs to improve productivity, innovation and competitiveness in Australian industry, and hence industry's ability to support the ADF. The Government is investing $445.7m in these programs over the period 2009-10 to 2018-19. The current status of the major industry initiatives is as follows:

- **Australian Industry Capability (AIC) Program**

  The Australian Industry Capability (AIC) Program aims to maximise opportunities for Australian industry to participate in domestic and international supply chains under Defence capital equipment acquisition and sustainment program contracts.

  The Program ensures all eligible projects listed in the Public Defence Capability Plan (DCP) consider Australian industry engagement in their acquisition strategies, and require the development of AIC plans through their tender and contract documentation.

Initiatives being progressively implemented to strengthen the AIC Program include: lowering the threshold at which companies are required to submit AIC plans from $50m to $20m; inclusion of performance reporting against AIC plans in DMO Company Scorecards; updating DMO tender and contract templates to allow exclusion of tenderers that have performed poorly against previous AIC plan obligations; and inclusion of AIC plan objectives in DMO Project Manager Charters.

- **Priority Industry Capabilities (PICs)**

The policy establishing Priority Industry Capabilities (PICs) was included in the 2009 White Paper, and was covered in more detail in the 2010 Defence Industry Policy Statement. Consistent with the 2009 White Paper, the PICs are reviewed as part of the Defence Planning Guidance process. They are also subject to ongoing reassessment and analysis to determine those elements of industry capability critically important to the ADF.

In 2011, Defence commenced a PIC review process to determine the health of the PICs in prime contractors, small to medium enterprises (SMEs) and inside Defence. The PIC review process will seek to:

– improve the definition of the PICs;

– assess their health;

– establish the implications for Government; and

– determine appropriate intervention strategies where necessary.

A healthy PIC is one that will deliver now and for the foreseeable future, a defined capability on time and to an acceptable technical standard at a reasonable price. A healthy PIC should ideally function without any special forms of Government support.

PIC health checks have been completed and the results released for the following PICs, with each being found to be reasonably healthy and requiring no new or special government intervention or support at this time:

– Ship Dry Docking and Common User Facilities: focussing on docking requirements for front-line naval combatants - of frigates, destroyers and submarines - together with larger ships of the supply and amphibious fleets; and

– Infantry Weapons: focussing on through-life support for the Australianised Steyr family of rifles including factory rebuilds.

The review of the Remote Weapons Stations element of this PIC is being conducted separately.

Health checks are underway for other PICs and results will be progressively released as they are finalised.

- **Communication with Industry**

  Communication with industry is vital from both a broad strategic perspective and at a project level. It is essential that industry is aware of Defence's longer term needs so that it can undertake necessary planning to acquire the level of resources needed to meet future requirements. A layered approach to communicating with defence industry exists, including:

  – Defence Industry Innovation Board (DIIB): Chaired by Mr David Mortimer, the Board met twice during the first half of 2011. The Board is the senior advisory body to the Government and the Department on defence industry assistance programs and initiatives, their coordination and resource allocation. The DIIB has commenced an analysis of the existing suite of defence industry programs to form a basis for its advice to Government.

  – Public Defence Capability Plan (DCP): The DCP listing Defence's proposed (but not yet approved) major equipment acquisitions over the next 10 years and beyond, is developed every two years for Government consideration and is shaped by strategic guidance provided through the White Paper process. The DCP typically contains 140 to 160 projects or phases of projects, including a number of classified or strategically sensitive projects. The Public DCP is drawn from the full, classified version and is updated electronically at regular intervals. The 2011 update to the Public DCP incorporates key changes including first and second pass approvals and cancellations, amendments to title or scope, changes to indicative Year of Decision or Initial Operating Capability bands, and changes across cost bands. The Public DCP provides information that assists companies to make future investment decisions, including new technologies and skills development in their workforces.

  – Defence and Industry (D+I) ePortal: There are currently 1,680 registered companies, including 94 companies from other countries (of the 94, 28 are New Zealand companies) on the DMO ePortal – a publicly searchable Industry Capability

Information System representing around 55,000 capabilities upon which Defence and prime contractors can draw. Ninety four of these companies have completed registration for the Global Supply Chain program with another 62 companies in the registration process. This greatly extends the number of small to medium enterprises which can receive original equipment manufacturer requests for information and quotes.

– Business Access Offices (BAO): The DMO has BAOs located in each mainland capital city. They provide a local interface between Defence and industry. The BAOs help build and maintain defence industry relationships by providing companies with advice, information and guidance on doing business with Defence and the assistance programs that are available to help companies become more competitive. They present a series of Defence Awareness Briefings and Defence Updates around Australia in cooperation with other Defence Groups, relevant Commonwealth and state agencies and industry associations. The BAOs also provide Defence with local knowledge, information and data on defence industry and regional matters, including information on current and emerging company capabilities.

- **Providing Skilling and Opportunities for Industry**

Various programs aim to increase industry skills and provide opportunities for industry to diversify and expand their market reach.

– Skilling Australia's Defence Industry (SADI) Program: This program operates as a grants program with Round One opening to applications in March each year. The opening of a second round is dependent on available funding. Grant funding under the SADI program for 2010-11 of approximately $12.5m was awarded to 68 companies across Australia supporting approximately 5,000 training opportunities.

A review of the SADI program is being conducted to ensure that SADI continues to meet its objectives of enhancing the skills base of defence industry effectively and efficiently.

– Defence Export Unit (DEU): Since 2007, the DEU has assisted Australian defence companies to win export contracts totalling over $750m. In 2010-11, over 100 companies participated in eight international trade events with more participating in

DEU-facilitated visits by foreign delegations and in the US Foreign Comparative Technology Program.

– Global Supply Chain (GSC) program: Under this program, overarching GSC Deeds have now been signed with seven multinational prime companies. Specific annexes are then negotiated under the Deeds to cover how each of the prime contractors will establish funded offices within their organisations to proactively seek opportunities to involve competitive Australian companies in their defence and commercial supply chains and those of their major suppliers. So far, the program has provided Australian companies with export orders worth over $372 million. Over 90 contracts have been won through the program by 29 Australian companies exporting into the global supply chains.

– Defence Industry Innovation Centre (DIIC): The DIIC, funded by the DMO, operates as part of the Department of Innovation, Industry, Science and Research's Enterprise Connect scheme. The DIIC has engaged with some 650 companies over the past two years to increase their productivity, ability to innovate, and competitiveness. A key activity over this period has been the Supplier Continuous Improvement Program (SCIP). SCIP consists of a three-year engagement at no financial cost to the participants, in which a number of diagnostic tools identify areas for improvement within the firm (targeting key customer relationships, overall business performance, and operational performance). The program commenced in May 2010 and 38 defence suppliers are signed up to SCIP, with 11 having completed the first cycle of the three year initiative. This initiative is particularly useful in upskilling Australian industry for participation in the GSC and DEU Programs.

– Letter of Recognised Supply Scheme: This scheme is administered by the BAOs. It is a targeted scheme to support industry bids for new work both domestically and internationally. Companies can apply for a letter to support bids for new work that details the product or service they supply to Defence, the dates of supply and their use within Defence.

Base Date Dollar Budget Management

1.74 The term 'base date' is derived from contracting practices. It is used in procurement contracts where the contract value is subject to price escalation clauses. The price escalation clauses specify how the amount payable under the contract will be varied in accordance with specified rates or indices that reflect movements in nominal[167] prices. A number of significant Defence capital equipment acquisition contracts are generally written on a variable price basis reflecting their long-term nature and risk allocation. Such contracts include a base date, being the date agreed as the basis of the fixed contract price (usually a date specified in the tender documents to ensure comparability of responses), and agreed conditions under which this price can be varied (usually conditions concerning contract price adjustment for foreign exchange variation and indices to calculate contract price adjustment for movement in the cost to the contractor of labour and materials). Not all contracts operating with DMO use the base date construct, some are 'firm' priced or others such as contracts entered into via a Foreign Military Sales (FMS) arrangement use a "Then Year Dollar" construct, similar in nature to out-turning. In these cases future inflation is factored into the contract at the initial contract acceptance date.

1.75 When the base date dollar reporting concept was proposed for the 2007-08 MPR program, the intention was to provide a measure of project cost performance that could be compared to initial Government approval. While the intent was understood, the outcomes have been variable based on the practical challenges of applying a contracting practice in a budgeting context. For this reason, the DMO's preferred method is first to report project costs at their actual values (historical cost), which is consistent with all commercial and public sector reporting conventions and requirements, and then to compare this to the initial project approval value adjusted for agreed and funded price movements and foreign exchange adjustments. This is the way that DMO manages its budget, including project budgets, and is consistent with budget management practices within Defence and across the Commonwealth. To distinguish it from 'base date dollar' reporting, the DMO project financial management is described in this report as 'out-turned budget management' and its key features are described in paragraphs 1.79 to 1.81.

1.76 In this, the fourth MPR, the Auditor-General has again qualified the DMO's report on the basis that certain 'base date' figures against contract

[167] nominal prices include the effects of inflation whereas 'real' prices exclude inflation

expenditure have not been disclosed in the Project Data Summary Sheet (PDSS). This qualification relates solely to the inability to disclose all 'base date' information and does not indicate or infer any deficiencies in the adequacy of the DMO's management of project expenditure, which is required on a historical cost basis, or any non-compliance with Australian accounting requirements.

1.77 The Defence Materiel Accounting Policy Manual provides a reference for the accounting policies applicable to financial transactions in the DMO. These accounting policies recognise the requirements of Australian Accounting Standards, Australian Government legislation, and the Finance Minister's Orders for Financial Reporting, issued by the Minister for Finance and Deregulation. The DMO's compliance with accounting policies is confirmed by the ANAO again providing an unmodified audit report against the DMO's financial statements in 2010-11.

1.78 As indicated in previous MPRs, at the project level, the DMO does not manage financial and performance reporting in base date dollars. Hence, DMO reports performance to our stakeholders in accumulated actual dollars. Project budgets are updated to reflect the agreed and endorsed future budgetary funding price provisions. This ensures that, over the life of a project, available funding is commensurate with the basis upon which the Defence funding was approved by Government. Attempts to artificially manipulate actual historical cost expenditure for the purpose of comparing to an original approval date is not consistent with DMO or Defence reporting conventions and produces financial information which can not be verified against the DMO's financial management framework and supporting systems.

Out-turned Budget Management

1.79 When considering and approving agency budgets as a whole or individual proposals such as projects, Government takes account of the estimated impact of inflation over a defined period or over the life of a project. This forecasting of future inflation impacts in a budgetary construct is known as out-turning. All DMO capital projects have their total project budget managed in an out-turned budget construct.

1.80 Presenting PDSS cost information in actual values and comparing that to current, approved, out-turned budget data has a number of significant advantages over base date comparisons. These advantages include:

- an immediate and transparent view of the cost to complete a project against the available funding envelope enables potential cost pressures to become immediately visible;

- out-turning is consistent with the way that the DMO is currently managing project budgets;
- historical project expenditure life to date values do not need to be manipulated or de-escalated (i.e. into base date dollars), and are reported in the same way as in other published documents (i.e. Defence Annual Report, Portfolio Budget Statements and Portfolio Additional Estimates Statements) and as reported in DMO's financial information systems;
- project expenditure is referenced and verified by the DMO's existing financial information management system (ROMAN) and is subject to financial statement audit;
- project budgets reflect the current project approval; and
- project budgets are easily verified by reference to the DMO's record of project budget approvals – Capital Equipment Program Planning (CEPPlan) system.

1.81 The DMO is working in consultation with the ANAO to provide a paper to the JCPAA that will provide recommendations regarding the financial performance reporting for the 2011-12 MPR program.

Strategic Reform Program

1.82 The Strategic Reform Program (SRP) is planning to deliver $20b in savings across the Defence portfolio over 10 years, with retention of agreed capability and no reduction in either safety or sustainability. The DMO's contribution to SRP is driven primarily from the Sustainment budget (through the Smart Sustainment reform program). The SRP agreed Smart Sustainment targets amount to $5.5b over 10 years.

In 2010-11, the DMO achieved its targets for all SRP streams to which it contributed and is leading the Smart Sustainment reform stream.

2. Summary of Major Project Performance in 2010-11

Introduction

2.1 This MPR is the fourth in the series and the analysis draws out trends for projects included in previous years' reports. The DMO will further develop this longitudinal analysis as this offers the greatest potential for insight to improve project performance and management initiatives.

2.2 This chapter presents a performance overview of the 2010-11 DMO MPR, including detailed analysis of the three key variables of cost, schedule and the materiel element of capability. The analysis commences initially at an aggregate level, discussing performance of all MPR projects collectively, moving to more specific project analysis, before finally identifying the major challenges from 2010-11.

2.3 Given the small sample size of the major projects (28 projects from 192 or 14.6% of the total major acquisition projects), care has to be taken in attempting to extrapolate data to the entirety of the acquisition portfolio. This is also because the projects in the MPR may not be representative of all DMO projects, especially the Developmental and Australianised Military-Off-the-Shelf projects, and often have unique aspects relating to their ongoing procurement and development. Nevertheless the significance of these 28 projects is shown by their expenditure in 2010-11 that amounts to approximately 71% of the total acquisition expenditure in that financial year.

Performance Overview

Major Projects' Outcomes for 2010-11

2.4 Key milestones and successes achieved by the MPR projects during 2010-11 are set out below.

- **Super Hornet**

  In May 2011, Exercise Bersama Shield 11 represented the first operational deployment of the F/A-18F Super Hornet. The six Super Hornets, from No 1 Squadron at RAAF Base Amberley in Queensland, took part in the two week multi-national exercise in and around the Malaysian peninsula and South China Sea. This brings the project closer to declaring FMR. To 30 June 2011, 20 of 24 F/A-18F Super Hornets have been delivered to the RAAF.[168]

- **LHD Ships**

  On 18 February 2011, the hull of the first of two new Landing Helicopter Deck (LHD) amphibious ships was launched at Ferrol in Spain. The LHD ships, to be known as the Canberra class, mark a significant strengthening of the ADF's amphibious capability with the first ship, eventually to become HMAS *Canberra*, expected to be accepted into service in 2014 with its sister ship, to become HMAS *Adelaide*, to follow the year after. These two ships will be the largest vessels employed by the Royal Australian Navy. [169]

- **C-17 Heavy Airlift**

  The C-17 Globemaster III heavy airlift aircraft has continued to provide the ADF with an invaluable heavy airlift capability throughout the last year. These aircraft were used extensively on operations and in response to the natural disasters in Queensland[170], New Zealand and Japan to deliver personnel, heavy equipment and supplies.[171] On 16 March 2011 the Government approved acquisition of an additional C-17 Globemaster III to bring the total fleet to five aircraft.

168 Defence Media Release, 9 May 2011
169 DMO Bulletin, April 2011
170 Defence Media Release, 5 February 2011
171 Defence Media Release, 22 March 2011

- **FFG Upgrade**

  The upgraded Adelaide class frigates continue to make a significant contribution to ADF capability. In February 2011, HMAS *Melbourne* returned from a six month operational deployment in the Middle East as part of Operation Slipper. During the six months, HMAS *Melbourne* responded to 14 distress calls from merchant vessels in relation to suspected piracy attacks.[172]

- **Bushmaster Vehicles**

  On 26 May 2011, the Australian Government approved acquisition of an additional 101 Bushmaster vehicles; 31 to replace vehicles damaged beyond repair with a further 70 vehicles to support current and future operations.[173] Bushmaster vehicles are currently on active service in Afghanistan with numerous instances where these vehicles have encountered strikes from Improvised Explosive Devices (IEDs) and have been instrumental in saving the lives of Australian soldiers.

- **ANZAC Anti-Ship Missile Defence**

  From October 2010 through to June 2011, the ANZAC class frigate, HMAS *Perth*, successfully carried out harbour and sea trials of the developmental Anti-Ship Missile Defence radar upgrade developed by Australian firm CEA Technologies. The ongoing trials on HMAS *Perth* will be used to refine and improve the phased array radar before installation of the system onto the remaining ANZAC class frigates[174].

172 Defence Media Release, 18 February 2011
173 Defence Media Release, 16 June 2011
174 Australian Associated Press, 31 May 2011

Major Projects Challenges for 2011-12

2.5 The Project Data Summary Sheets (PDSS) (refer Part 3) have reaffirmed several challenges facing major projects, as reported in previous MPRs. The main challenges include:

- **Employing and maintaining an appropriately skilled workforce**. This is particularly important for projects (for example Air Warfare Destroyer and FFG Upgrade projects) where the skills required are in high demand by other Australian industries. This strategic risk is being addressed through the DMO's Industry support and skilling initiatives.
- Acquiring new equipment presents **multiple integration challenges for projects**, and existing platforms, including: electronic systems, training and support systems (for example Air Warfare Destroyer, LHD Ships, Wedgetail, MRH90 Helicopters, Air to Air Refuelling, HF Modernisation, Additional Chinook, Stand Off Weapon, ANZAC ASMD 2B, and Battlefield Command Support).
- **Overestimating by contractors** of the technical maturity of proposed equipment solutions and **underestimating** the level of effort and complexity required to deliver new equipment including: integration, training packages, publications, spare parts and certification processes (for example; Wedgetail, MRH90 Helicopters, ARH Tiger Helicopters, Air to Air Refuelling and Bushmaster Vehicles).
- The **unavailability of in-service equipment**, due to operational requirements, may limit the ability of projects to install and test new or upgrade equipment in accordance with the original planned project schedule (for example MRH90 Helicopters, HF Modernisation, Collins RCS, Hw Torpedo and Collins R&S).
- Accelerating the **maturity of the maintenance operations and supply chains** for new equipment to support the transition to in-service use by ADF units (for example Super Hornet, ARH Tiger Helicopters, C-17 Heavy Airlift and ANZAC ASMD 2A).
- **Managing the expectations of our customers** on changes to Government approved scope based on contemporary expectations and requirements that may affect project cost and schedule. Some of these changes may result from recent operational experience (for example Air

Warfare Destroyer, Overlander Vehicles, Joint Strike Fighter, Collins Replacement Combat System and Stand Off Weapon).

- Complying with increasingly **demanding certification and regulatory requirements** including emerging requirements (for example MRH90 Helicopters, LHD Ships, Joint Strike Fighter, Air to Air Refuelling, Armidales, Hw Torpedo and Stand Off Weapon).
- Ensuring **access to Intellectual Property** to enable continued further enhancement and improvement of systems. This also has implications for the integration of new capabilities with existing systems (for example LHD Ships, Hornet Upgrade, FFG Upgrade and Stand Off Weapon).

Project Performance

2.6 Table 2.1 provides a summary of budget performance and Table 2.2 provides a summary of schedule performance for the 28 projects in the MPR. Table 2.3 provides a summary of the key characteristics of each project in terms of maturity and type. Analysis shows that while projects have been managed within approved budgets, schedule performance remains the key issue for delivery of projects.

Table 2.1 - Project Budget Status

Project	Second Pass Budget $m[175]	Price Indexation $m[176]	Foreign Exchange $m[177]	Scope Changes $m[178]	Transfers $m[179]	Budgetary Adjustments $m[180]	Budgetary Cost Savings $m[181]	Net Variation %[182]	Current Budget $m
AWD Ships	7,207.4	1,173.2	(448.8)	-	-	-	-	0.0%	7,931.8
Wedgetail	3,269.5	994.5[183]	(437.9)	225.6	(18.9)	(173.2)	-	-5.3%	3,859.6
MRH90 Helicopters	957.2	679.8	(241.3)	2,597.0	(239.0)	-	-	0.0%	3,753.7
Super Hornet	3,728.2	391.2	(400.4)	-	(33.3)	-	(107.2)	0.0%	3,578.5
Overlander Vehicles	2,745.3	746.8	(217.9)	(14.8)	4.5	-	-	0.0%	3,263.9
LHD Ships	2,959.9	426.9	(273.5)	-	9.3	-	-	0.0%	3,122.6
Joint Strike Fighter	2,751.6	351.0	(435.8)	-	-	-	-	0.0%	2,666.8
ARH Tiger Helicopters	1,584.0	418.2	149.1	-	(84.3)	(6.7)	-	-0.4%	2,060.3
Hornet Upgrade	1,300.0	323.5	41.0	221.5	35.0	(3.4)	-	-0.3%	1,917.5
C-17 Heavy Airlift	1,864.4	124.0	(139.6)	-	-	-	-	0.0%	1,848.9
Air to Air Refuel	2,076.6	484.1	(443.1)	-	(135.5)	(153.6)	-	-7.4%	1,828.5
FFG Upgrade	1,392.5	215.6	74.2	-	(152.6)	(0.8)	-	-0.1%	1,528.9
Hornet Refurb	156.6	158.8	(36.6)	673.6	-	(1.1)	-	-0.7%	951.3
Bushmaster Vehicles	295.0	124.6	(5.2)	515.4	-	-	-	0.0%	929.8
Next Gen Satellite	884.9	132.4	(136.4)	-	-	-	-	0.0%	880.9
HF Modernisation	505.0	148.1	12.2	11.0	(4.7)	(0.8)	-	-0.2%	670.8
SM-2 Missile	552.6	127.9	(66.4)	-	-	(2.1)	-	-0.4%	612.0
Additional Chinook	638.0	46.5	(99.9)	-	-	-	-	0.0%	584.6
Armidales	436.8	74.5	(12.1)	67.1	(29.8)	0.7	-	0.2%	537.2
Anzac ASMD 2B	248.8	76.1	(11.6)	-	148.7	-	-	0.0%	462.0
Collins RCS	455.3	56.5	(59.7)	-	(0.9)	(0.8)	-	-0.2%	450.4
Hw Torpedo	238.1	99.4	(126.3)	213.3	1.0	(0.2)	-	-0.1%	425.4
Collins R&S	72.0	74.4	(6.2)	310.3	(38.3)	(0.8)	-	-1.1%	411.4
UHF SATCOM	461.0	(3.1)	(50.7)	-	-	-	-	0.0%	407.2
Anzac ASMD 2A	449.0	101.3	0.9)	-	(159.8)	(0.1)	-	0.0%	389.5
Stand Off Weapon	370.7	62.1	(39.5)	(50.0)	-	-	-	0.0%	343.3
155mm Howitzer	348.2	17.2	(39.3)	-	-	-	-	0.0%	326.1
Battle Comm. Sys.	333.9	14.7	(22.6)	-	-	-		0.0%	325.9
Total	38,282.5	7,640.2	(3,475.2)	4,770.0	(698.6)	(342.9)	(107.2)	-0.9%	46,068.7

[175] The portion of Second Pass (or equivalent) budget approved by Government, transferred to the DMO under a MAA with Defence for delivery of the materiel system.

[176] The total of price indexation variations between Second Pass budget and the current budget.

[177] The total of foreign exchange variations between Second Pass budget and the current budget.

[178] The total value of all Government approved project scope changes between Second Pass budget and the current budget.

[179] The total of all transfers to and from other Defence Groups (eg. Defence Support Group) and DMO projects.

[180] The total of all other budgetary adjustments (administrative in nature) outside of price indexation, foreign exchange, scope and transfer variations between Second Pass budget and the current budget.

[181] The total of cost savings attributed to any negotiated foreign military sales or commercial contracts. These funds have been handed back to the Defence Portfolio.

[182] Net variation accounts for budgetary movements outside of price indexation, foreign exchange, Government approved scope changes and transfer variations to the Second Pass budget as a percentage.

[183] Of the $994.5m, $388.1m of this relates to a real cost increase for contract price indexation beyond the supplementation provided by Government.

Table 2.2 - Project Schedule Status

Project	Original FMR[184]	Current FMR	Variation Factor[185]	Original FOC	2009-10 DMO MPR FOC	Current FOC	Variation Factor[186]
AWD Ships	Dec 17	Dec 18	1.1	Dec 18	Dec 18	Dec 19	1.1
Wedgetail	Nov 12	Nov 12	1.0	Dec 08	Dec 12	Dec 12	1.5
MRH90 Helicopters	Oct 14	Oct 14	1.0	Jul 14	Jul 14	Jul 14	1.0
Super Hornet	Aug 12	Aug 12	1.0	Dec 12	Dec 12	Dec 12	1.0
Overlander Vehicles	Dec 17	Dec 17	1.0	Dec 19	Dec 19	Dec 19	1.0
LHD Ships	Aug 15	Aug 15	1.0	Nov 16	Nov 16	Nov 16	1.0
Joint Strike Fighter	N/A	N/A	N/A	N/A	-	N/A	N/A
ARH Tiger Helicopters	Jul 12	Jul 12	1.0	Jun 09	Dec 12	Dec 12	1.3
Hornet Upgrade	Aug 11	Nov 11	1.0	Aug 11	Nov 11	Jun 12	1.1
C-17 Heavy Airlift	Dec 11	Dec 11	1.0	Dec 11	Jan 11	Dec 11	1.0
Air to Air Refuel	Feb 13	Feb 13	1.0	Mar 11	Dec 12	Dec 13	1.4
FFG Upgrade	Dec 11	Dec 11	1.0	Dec 05	Jul 11	Dec 11	1.9
Hornet Refurb	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bushmaster Vehicles	Feb 14	Feb 14	1.0	Apr 12	Apr 12	Apr 14	1.2
Next Gen Satellite	Sep 13	Sep 13	1.0	Dec 14	Dec 14	Dec 14	1.0
HF Modernisation	Feb 16	Feb 16	1.0	May 05	May 15	Jul 16	2.3
SM-2 Missile	Sep 12	Sep 12	1.0	Dec 12	-	Dec 12	1.0
Additional Chinook	Jan 17	Jan 17	1.0	Jan 17	-	Jan 17	1.0
Armidales	N/A	N/A	N/A	Mar 09	Mar 12	Feb 12	1.5
ANZAC ASMD 2B	Jul 17	Jul 17	1.0	Mar 13	Apr 17	Dec 17	1.6
Collins RCS	Jan 16	Jan 16	1.0	2010	2016	2016	1.7
Hw Torpedo	Nov 13	Nov 13	1.0	Nov 13	Nov 13	Nov 13	1.0
Collins R&S	Oct 22	Oct 22	1.0	Jun 14	Sep 22	Sep 22	1.6
UHF SATCOM	Sep 12	Sep 12	1.0	N/A	-	N/A	N/A
ANZAC ASMD 2A	Jul 17	Jul 17	1.0	Dec 11	Apr 17	Dec 17	1.7
Stand Off Weapon	Dec 12	Dec 12	1.0	Dec 10	Dec 12	Dec 12	1.4
155mm Howitzer	Sep 13	Sep 13	1.0	Dec 13	-	Dec 13	1.0
Battle Comm. Sys.	Apr 13	Apr 13	1.0	Apr 13	-	Apr 13	1.0
						Average Variation	1.28

[184] Where FMR was not included in the original project approval documentation, Original FMR is taken from the latest version of the project's Materiel Acquisition Agreement.

[185] A schedule variance factor of 1 = on time; >1 = late; and <1 = early.

[186] A schedule variance factor of 1 = on time; >1 = late; and <1 = early (calculated against original FOC).

Table 2.3 Project Characteristics

Project	Service Customer	Type of Capability[187]	Type[188]	ACAT[189]	Kinnaird[190]	Maturity Stage[191]	Prime System Integrator[192]
AWD Ships	Navy	New	Australianised MOTS	I	Post	Critical Design Review	AWD Alliance
Wedgetail	Air Force	New	Developmental	I	Pre	System Integration & Test	Boeing Company
MRH90 Helicopters	Army/Navy	Replacement	Australianised MOTS	II	Pre	Acceptance Testing	Australian Aerospace
Super Hornet	Air Force	Replacement	MOTS	II	Post	Service Release	US Government
Overlander Vehicles	Army	Replacement	Australianised MOTS	I	Post	Second Pass	DMO
LHD Ships	Joint	New	Australianised MOTS	I	Post	Critical Design Review	BAE Systems Australia
Joint Strike Fighter	Air Force	Replacement	Developmental	I	Post	Enter Contract	US Government
ARH Tiger Helicopters	Army	New	Australianised MOTS	II	Pre	Acceptance Testing	Australian Aerospace
Hornet Upgrade	Air Force	Upgrade	Australianised MOTS	II	Pre	Acceptance Testing	DMO
C-17 Heavy Airlift	Air Force	New	MOTS	III	Post	Service Release	US Government
Air to Air Refuel	Air Force	New	Developmental	II	Pre	Acceptance Testing	Airbus Military
FFG Upgrade	Navy	Upgrade	Developmental	II	Pre	Final Contract Acceptance	Thales
Hornet Refurb	Air Force	Upgrade	MOTS	II	Pre	Service Release	DMO
Bushmaster Vehicles	Army/Air Force	Replacement	Australianised MOTS	III	Pre	Acceptance Testing	Thales
Next Gen Satellite	Joint	New	MOTS	II	Post	System Integration & Test	US Government
HF Modernisation	Joint	Upgrade	Developmental	II	Pre	Acceptance Testing	Boeing Defence Australia
SM-2 Missile	Navy	Replacement	Australianised MOTS	III	Pre	Acceptance Testing	DMO
Additional Chinook	Army	Replacement	MOTS	III	Post	Enter Contract	US Government
Armidales	Navy	Replacement	Australianised MOTS	III	Pre	Service Release	Defence Maritime Services
ANZAC ASMD 2B	Navy	Upgrade	Developmental	I	Post	Acceptance Testing	ANZAC Alliance
Collins RCS	Navy	Upgrade	Australianised MOTS	IV	Pre	Service Release	DMO
Hw Torpedo	Navy	Replacement	MOTS	III	Pre	Acceptance Testing	US Government
Collins R&S	Navy	Upgrade	Australianised MOTS	III	Pre	Critical Design Review	ASC
UHF SATCOM	Joint	Upgrade	MOTS	II	Post	System Integration & Test	Intelsat
ANZAC ASMD 2A	Navy	Upgrade	Australianised MOTS	II	Pre	Acceptance Testing	ANZAC Alliance
Stand Off Weapon	Air Force	New	Australianised MOTS	II	Post	Acceptance Testing	US Government
155mm Howitzer	Army	Replacement	MOTS	III	Post	System Integration & Test	US Government
Battle Comm. Sys.	Army	New	Australianised MOTS	II	Post	Critical Design Review	DMO

[187] '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.

[188] 'Developmental' – Involving substantial design development and systems integration; 'MOTS/COTS' – Off-the-shelf equipment of Military or Commercial origin; and 'Australianised' MOTS/ COTS, an off-the-shelf design with significant levels of unique adaptation for Australian requirements.

[189] The DMO'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.

[190] Provides an indication of whether the projects were initially developed under pre-or post Kinnaird reforms.

[191] Provides an indication of maturity of a project based on the benchmark stage of a project.

[192] Identifies the entity that has prime systems integrator responsibility for delivering mission and support systems for the project.

Budget performance

2.7 Project budgets against which cost performance is measured are subject to variations arising from price indexation (inflationary) effects, exchange rate variations, Government approval of changes in scope, transfers to Defence Groups and DMO cost performance.

2.8 Table 2.4 provides analysis of the budget variances between 2009-10 and 2010-11, measured against original project approval, for the 28 projects in this report by budget variation attribution. In 2010-11 the most significant impact to project budgets was from the application of price adjustments to move budgets to an out-turned value reflecting future price funding available to the global Defence budget. This accounted for an increase of $1.5b in 2010-11 for total project approvals of the unspent element of project budgets. The comparative strength of the Australian dollar against other currencies resulted in a net reduction against the project approval value of $1.2b. There were a total of three scope changes affecting this years report. This entailed the removal of the Moving Target requirement against Stand Off Weapon, additional Bushmaster vehicles; and, the reduction in the number of centre barrel replacement for the F/A 18 Hornet refurbishment programme (Para 2.13 provides further detail).

Table 2.4 - Major Variations to Budget Components

Variance Attribute	Total budget variation (by attribute) to 30 June 2010 $m	Net budget variation within 2010-11 $m	Total budget variation (by attribute) to 30 June 2011 $m
Price Indexation	6,286.2	1,470.7	7,756.9
Foreign Exchange	-1,979.9	-1,150.4	-3,130.3
Scope Changes	4,820.0	-50.0	4,770.0
Transfers	-60.7	0.0	-60.7
Budgetary Adjustments	-342.9	0.0	-342.9
Budget Cost Saving	0.0	-107.2	-107.2

2.9 These attributions are defined as follows:

- **Price Indexation**

  The Price adjustment applied to project budgets reflects those indices agreed in the 2009-10 Defence budget update agreed by government. This provides a funding stream for projects to financially manage inflation. It is applied to the unspent component of the project budget. Price adjustments are in line with the deflator used by Defence to adjust the capital budget (for 2010-11 the deflator was the Specialist Military Equipment Weighted Average). Actual labour and materiel indices within each contract may differ to this deflator.

  There was no change in the Specialist Military Equipment Weighted Average deflator during 2010-11.

2.10 Table 2.5 contains the breakdown by project of the price indexation as applied to 2009-10 (pre out-turned component) and the price indexation 2010-11 (post out-turned component) and the associated variance.

Table 2.5 – Price Indexation Breakdown by Project

Project	Total Price Indexation as at June 2009-10 $m	Price Indexation (out-turn adjustment) June 2010-11 $m[193]	Total Price Indexation as at June 2010-11 $m
AWD Ships	854.8	318.4	1,173.2
Wedgetail	1,068.4	42.7	1,111.1
MRH90 Helicopters	556.2	123.6	679.8
Super Hornet	372.0	19.2	391.2
LHD Ships	350.0	78.4	428.4
Overlander Vehicles	313.3	433.6	746.8
Joint Strike Fighter	70.3	280.7	351.0
ARH Tiger Helicopter	414.9	3.3	418.2
Hornet Upgrade	314.3	9.2	323.5
C-17 Heavy Airlift	103.3	20.7	124.0
Air to Air Refuel	473.9	10.2	484.1
FFG Upgrade	228.1	2.2	230.3
Hornet Refurb	145.0	13.8	158.8
Bushmaster Vehicles	118.9	5.7	124.6
Next Gen Satellite	107.3	25.1	132.4
HF Modernisation	139.6	8.5	148.1
SM-2 Missile	118.7	9.2	127.9
Additional Chinook	16.3	30.6	46.9
Armidales	72.9	1.6	74.5
ANZAC ASMD 2B	71.0	5.1	76.1
Collins RCS	55.5	1.0	56.5
Hw Torpedo	91.5	7.9	99.4
Collins R&S	66.7	7.7	74.4
UHF SATCOM	16.5	-19.5[194]	-3.0
ANZAC ASMD 2A	88.7	12.6	101.3
Stand Off Weapon	59.2	3.3	62.5
155mm Howitzer	8.7	8.5	17.2
Battle Comm. Sys.	8.3	7.3	15.6

[193] Large variances of over $100m are attributable to the amount of project funding remaining at the time of out-turning against a large remaining budget.

[194] The negative adjustment is a correction against the out-turned component of the budget.

- **Foreign Exchange**

  Foreign exchange adjustment relates to increases and decreases to the total project budget to account for the movement in official exchange rates as advised by Central Agencies. This is consistent with Government policy as applied on a 'no win no loss' basis.

- **Scope Changes**

  Scope changes generally take the form of changes in quantities of equipment, changes in requirements that result in specification changes, or changes to services to be provided which are accompanied by a corresponding budget adjustment. These total budget adjustments are made in response to Government approved scope changes.

- **Transfers**

  Transfers occur when a portion of the project scope and budget is transferred to another project or sustainment product or to a Defence Group to deliver an element of project scope.

- **Budgetary Adjustments**

  Budgetary adjustments describe all other variations to the total project budget. These include administrative decisions that result in variations such as efficiency dividends to be harvested from project budgets or other DMO and defence industry initiatives, as well as other adjustments not factored into the original budget plan.

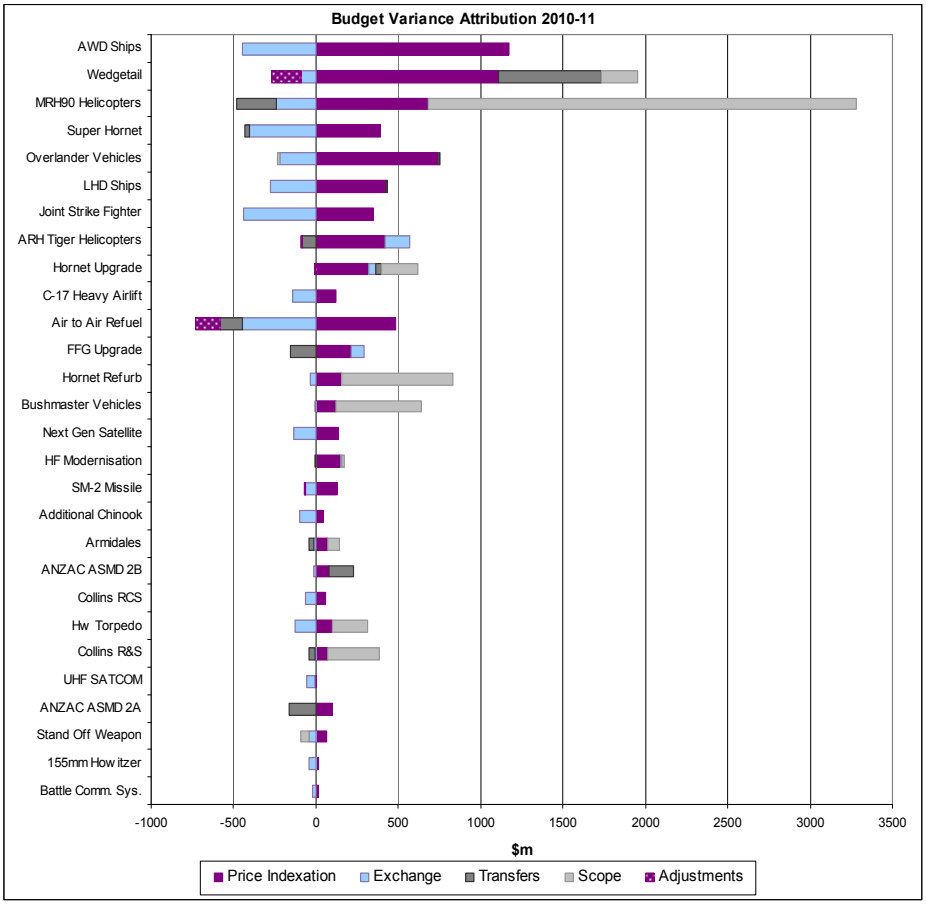
- **Budget Cost Savings**

  Cost savings attributed to any negotiated Foreign Military Sales or commercial contracts. These funds have been handed back to the Defence Portfolio.

2.11 Price indexation and exchange variations are environmental factors over which the DMO has no control. In particular, foreign exchange is driven by the relative strength of the Australian economy against overseas economies.

2.12 For example, in 2010-11 the US dollar averaged 1.005 against the Australian dollar compared to 0.8805 in 2009-10. The Australian dollar also strengthened against the Euro moving from an average of 0.6450 Euro in 2009-10 to 0.7253 Euro in 2010-11. These variations account for most of the exchange rate variations in table 2.4.

Figure 2.1 - Budget Components Above Original Second Pass Approval Value by Project as at 30 June 2011 (in $m)



2.13 Figure 2.1 presents a summary of the project budget variations from date of Government approval and subsequent transfer to DMO variance attribute (i.e. price indexation; foreign exchange; and real variations). Significant real variations fall within three main groupings:

- **Scope changes:** Projects with the largest budget 'real variation' from Government approved scope changes are:
  - Wedgetail (June 2004) – Increased from four to six aircraft;
  - MRH90 Helicopters (June 2006) – The significant budget increase is predominantly related to the scope increase from 12 to 46 helicopters for troop lift and maritime support capability to replace both the Black Hawk (Army) and Sea King (Navy)

platforms. Additional facilities were also required in support of the MRH90 platform;

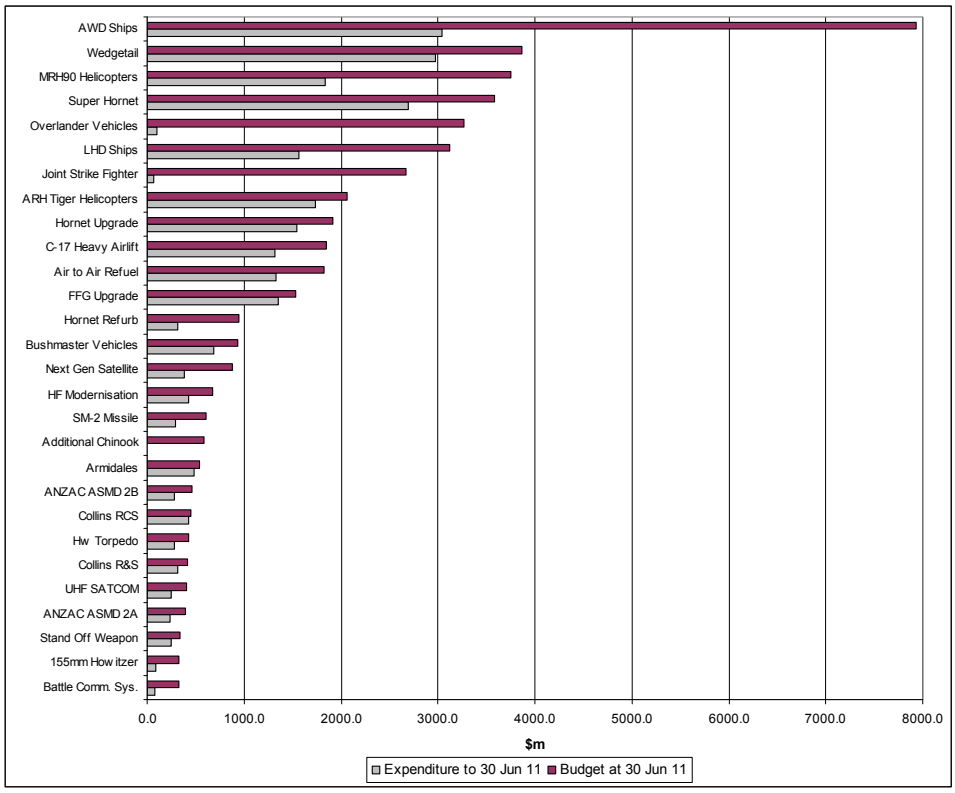
- Hornet Upgrade (June 2001 - May 2007) – scope increased to include an upgrade to the aircrafts' electronic warfare self protection suite; (December 2004) scope decrease to remove Radio Frequency Jammer, (October 2003) scope increase to include Hornet Air Crew Training System, (June 2001) White Paper considerations;
- Hornet Refurbishment (October 2010) – In December 2010, Government approved the reduction in the number of centre barrel replacements. Government approval also included direction to close the major capital projects AIR 5376 Phases 3.1 and 3.2;
- Bushmaster Vehicles (May 2011) – vehicle numbers have increased from an initial 370 to 807 vehicles and trailers to equip the Enhanced Land Force, and acquire vehicles for the Overlander project. The vehicles have also been modified based on operational experience to provide additional protection to personnel;
- Armidale Class (June 2005) – Patrol Boat numbers increased from 12 to 14;
- Heavyweight Torpedo (March 2003) increased in scope to allow for acquisition of torpedoes from the US through an Armament Co-operative Project;
- Collins R&S (July 2001) – scope increased to reflect the full scope associated with the implementation of a reliable and sustainable platform; and
- Stand Off Weapon (May 2011) – Removal of the moving target capability from project scope.

- **Transfers:** This year no transfers were made, unlike prior years where significant transfers of the DMO budget were made from the MRH90 Helicopters and Air to Air Refuel projects to the Defence Support Group to fund the acquisition of facilities. This reflects the practice of Defence Groups being allocated funds for the provision of services (for example facilities) at project approval, rather than those funds being allocated initially to the DMO, as well as payment by invoice rather than internal transfers. Previously there had also been a transfer from ANZAC ASMD Ph2A to ANZAC ASMD Ph2B to replace the initial Very Short Range Air Defence (VSRAD) with a phased array radar system.
- **Adjustments:** No Budgetary adjustments occurred against projects in this year's report. However previous years saw Air to Air Refuelling and Wedgetail budget adjustment reductions of over $150m each primarily due to changes in the currency mix and indexation parameters to those applied at original budget approval.

2.14 Figure 2.2 provides a comparison of expenditure as at 30 June 2011 compared to the total approved budget at that date. No project has exceeded its total approved budget. While this provides an indicator of project progress, the percentage of budget spent is dependent on the nature of the project and the level of early investment that may be required for project start-up and non-recurring engineering effort.

2.15 The relationship between project expenditure and project progress is not necessarily linear as this can be heavily influenced by the type of project, for example a developmental project would normally expend larger amounts of budget during the earlier phases whereas expenditure for a MOTS project is more likely to be linear in nature.

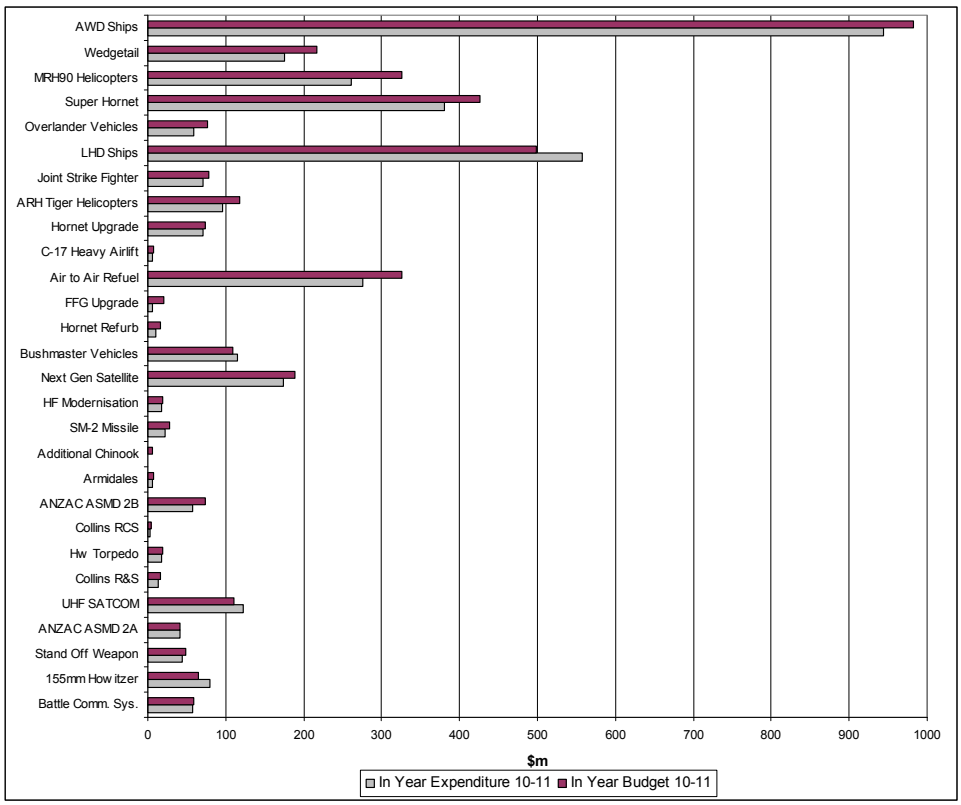
Figure 2.2 Comparison of Project Budget and Expenditure to Date (in $m)



2.16 The profile of expenditure against total approved budget is determined by several factors including the level of development and the type of acquisition. For example, a MOTS project acquired on a Foreign Military Sales (FMS) basis will generally have a linear expenditure pattern as FMS cases usually involve up-front quarterly payments. In comparison, a developmental project usually requires a degree of initial 'seed capital' on commencement with expenditure declining during the development phase and increasing as the project shifts into the build/integration phase.

2.17 Another key factor is the evolution of the project and its performance to date. Some projects may, for example, be well advanced but show a low level of expenditure against their total budget. This may result from poor contractual performance culminating in withholding of payments against specific milestones. This is, in effect, a deferral of payments that will be re-instated upon contractor achievement of milestones. Alternatively, unanticipated changes in project circumstances may also affect the level of project expenditure (e.g. Hornet Refurbishment had originally planned to replace 49 centre barrels but subsequent engineering and scientific work analysing airframe fatigue found that only 10 centre barrels required replacement. This will realise a significant reduction in expenditure against the project's approved budget).

Figure 2.3 – Comparison of In-Year Budget Plan and Expenditure Actuals 2010-11 (in $m)



2.18 Figure 2.3 identifies actual expenditure achievement exceeding the budget year plan in 2010-11 for the following:

- LHD ships actual expenditure exceeded plan by $59.7m mainly resulting from the early completion and payment of milestones Build Sequence 1 and 2 for LHD 2.
- Bushmaster Vehicles year to date variance of $6.6m was mainly due to early delivery of composite armour design, early completion of the Tamworth facility and early delivery of vehicles.
- 155mm Howitzer $14.9m variance was primarily due to accelerated Foreign Military Sales payments for the Lightweight Towed Howitzers, early delivery of radios, rescheduling of vehicle integration activities to 2011-12 and foreign exchange adjustments.

Schedule Performance

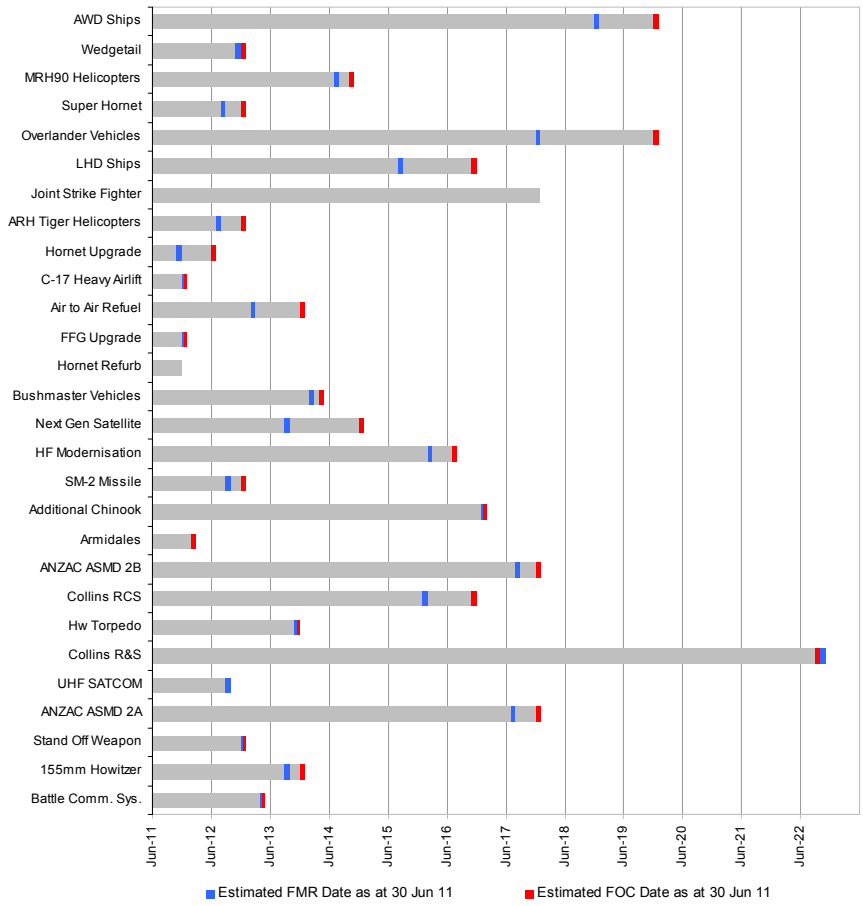
2.19 As mentioned in Chapter 1, Defence has introduced IMR and FMR as more appropriate milestones for measuring DMO acquisition performance in contributing to the Capability Managers' FOC. The projects covered by the 2010-11 MPR have updated their MAA to include IMR and FMR milestones. The period between FMR and FOC dates indicates the time required by Capability Managers to bring together all the Fundamental Inputs to Capability elements, after the DMOs delivery of its materiel elements of capability, to achieve FOC.

2.20 As the use of IMR and FMR matures, especially for new projects that enter the MPR with defined IMR and FMR milestones, schedule data will be presented on those milestones as well as the FOC milestones (and the relationship between FMR and FOC will become clearer). While FMR is generally expected to occur ahead of FOC, during the transition to the new milestones some anomalies were noted. For example Joint Strike Fighter, Hornet Refurb and Armidales do not have defined FMR dates and the Collins R&S project anticipates the Capability Manager declaring FOC ahead of DMO realising FMR at the completion of a docking cycle one month later. While this last example may seem an aberration, it is likely that this may happen for other new platforms or multi-platform upgrade projects where finalisation of some aspects of materiel acquisitions (e.g. spares) may extend beyond FOC.

2.21 Figure 2.4 provides an indication of the estimated time required for Capability Managers to bring together all of the Fundamental Inputs to Capability following the final delivery of all key DMO deliverables.

2.22 The factors driving the lead times between FMR and FOC will be analysed over coming years. These factors are likely to include influences such as technical complexity, platform availability, acquisition methods and priorities.

Figure 2.4 – Current FMR and FOC Estimates



Notes:

1. Joint Strike Fighter has no defined FMR or FOC date. The chart shows schedule to first materiel release.
2. The Hornet Refurbishment project has not defined FMR or FOC. The chart reflects the plan to close the acquisition in late 2011.
3. The Armidale project does not have a defined FMR date as it is deemed to have already been achieved.
4. UHF SATCOM has no defined FOC date.

2.23 Schedule analysis presented in previous reports was based on achievement or expected achievement of FOC. Figure 2.5 represents the schedule performance for each of the major projects covered in this year's MPR. The chart shows the original project approval date, the originally approved FOC estimate and the forecast FOC as at 30 June 2011.

2.24 Implementation of the Kinnaird reforms in 2004 has delivered a marked improvement in schedule performance for Defence capability acquisition projects. As shown in the PDSS, average schedule variance for pre-Kinnaird MPR projects is 50 per cent, while the average variance for post-Kinnaird projects is 9 per cent. This is influenced by the ages and stages of the projects, with schedules being related to scope and complexity of each project.

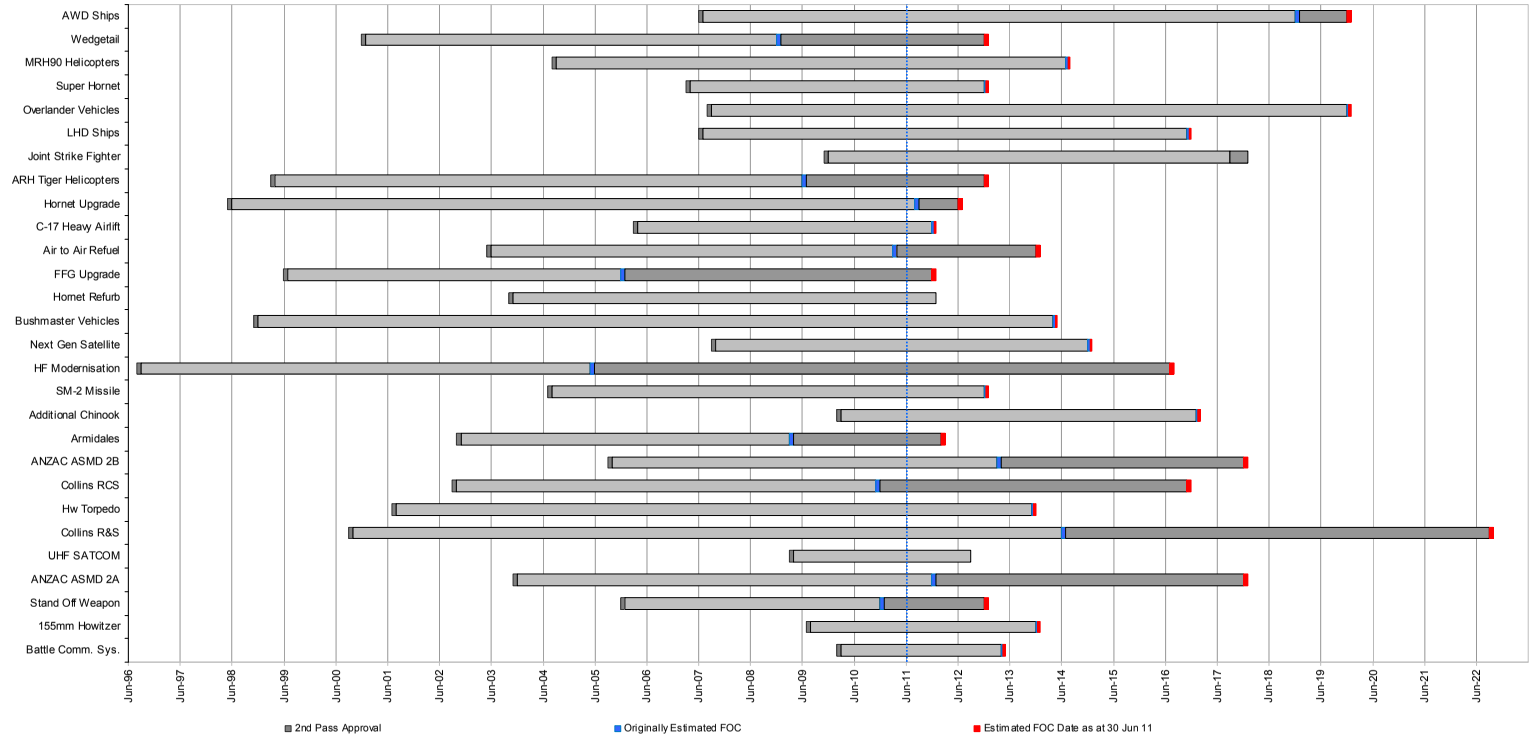
2.25 The Hornet Refurbishment project was approved by the JCPAA for removal from the 2011-12 MPR program. Three other pre-Kinnaird projects should also soon be considered for removal from the MPR program. Hornet Upgrade, FFG Upgrade and Armidales are currently scheduled to achieve FOC in 2011-12 and may be recommended for removal soon after.

2.26 One post-Kinnaird project, C-17 Heavy Airlift, which in prior MPRs anticipated achievement of FOC nearly one year early, is now scheduled to achieve FOC in 2011-12, as originally forecast.

2.27 The 2009-10 MPR also anticipated the Bushmaster Vehicles project would achieve FOC for Production Period 3 (PP3) in 2011-12; however, Government has approved an additional acquisition of 101 vehicles (70 of which will be purchased under the LAND 116 Phase 3 project) and a new estimated FOC date of April 2014. Therefore, even though the Government approved and forecast dates appear to have slipped, there is no schedule variation for this project overall. The re-base-lining of the FOC date has been approved by Government. This is consistent with DMO treatment of this project in previous MPRs, although it does mask a schedule loss of 11 months for PP3.

2.28 There are seven MPR acquisition projects currently scheduled to achieve FOC during 2012-13, which will result in the capabilities transitioning into the sustainment phase of the capability life cycle at that time. Those projects are: Wedgetail; Super Hornet; ARH Tiger Helicopters; SM-2 Missile; UHF SATCOM; Stand-off Weapon and Battle Comm Sys.

Figure 2.5 – Schedule from Approval to Current FOC Estimate



Notes:

1. Joint Strike Fighter, Hornet Refurbishment and UHF SATCOM projects have no defined FOC date.
2. The FFG upgrade project did not have an FOC date at approval so the estimated Operational Release date for the last upgraded vessel is used as an equivalent.
3. Government approval of PP4 included approval of a new FOC date, which masks what would have been a variance for the project up to PP3.

Schedule Variance

2.29 Figure 2.6 charts the schedule variance as a percentage of the originally estimated project duration from Government approval to FOC. The projects are grouped in the categories of MOTS, Australianised MOTS (AMOTS) and Developmental. The chart shows that, generally, MOTS projects are more likely to deliver on time while AMOTS and Developmental acquisitions are more prone to underestimating technical complexity, platform unavailability and systems integration.

2.30 Anomalies in this chart are:

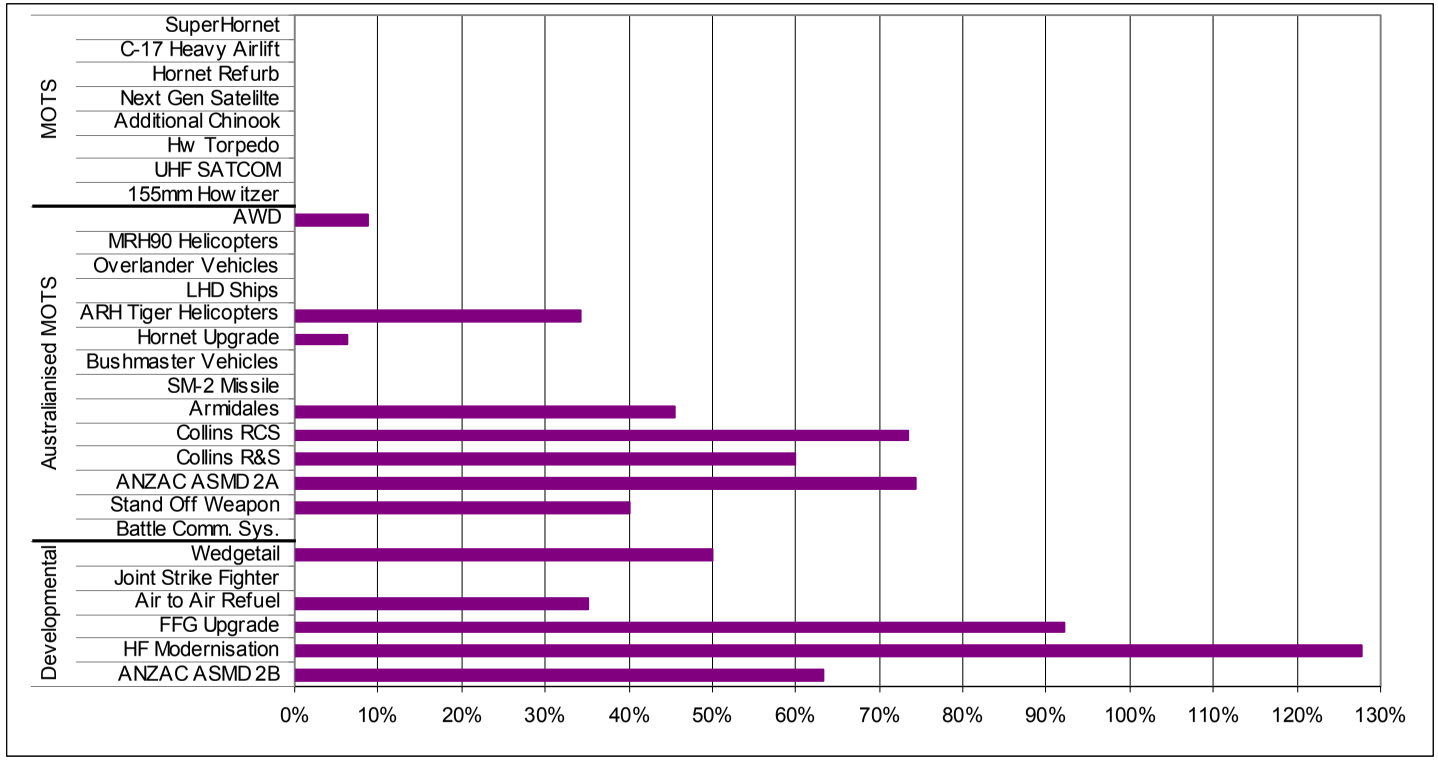
- Joint Strike Fighter is heavily reliant on the US development program, and anticipates a materiel release in 2017-18. FOC was not formally defined at project approval;
- Hornet Refurbishment, which has no formally defined FOC; and
- UHF SATCOM, which was also approved with no formally defined FOC.

2.31 Although six projects have been added to the MPR program, the projects with schedule variation of 50% or more have not changed from the seven projects reported in the 2009-10 MPR:

- Wedgetail, FFG Upgrade and HF Modernisation and project delays are fundamentally due to an initial underestimation of project complexity. More specifically, the FFG Upgrade issues concerned the complexity of large platform integration; HF Modernisation underestimated the level of effort required to deliver the final system, although the core capability was accepted in 2004; and Wedgetail has faced difficulties integrating the phased array radar and other mission critical elements into an operational system.
- The two Collins projects – Replacement Combat System (RCS) and Reliability and Sustainment (R&S) – have been affected by limited platform availability due to operational requirements and unscheduled maintenance requirements having a negative impact on the Full Cycle Docking program.

- Deferral of FOC for the ANZAC Anti-Ship Missile Defence program (Phases 2A and 2B) has resulted from a Government approved project delivery strategy and scope change to substitute the Very Short Range Air Defence System option with a 'phased array radar' capability; this is a significant capability advantage over the originally approved scope, and allowed leading edge Australian technology to be proven in one ship before committing to the upgrade of the remaining seven ships.

Figure 2.6: Schedule Variance for FOC Since Government Approval, by Project Type



Note: Joint Strike Fighter is currently developmental in nature but should ultimately become MOTS when it enters production line delivery.

In-year Schedule Variance

2.32 Of the seven projects with 50 per cent or more schedule variance since original approval, four have reassessed their schedules again since the 2009-10 MPR. Figure 2.7 shows in-year schedule variance, as a percentage of the 2009-10 MPR project duration estimate.

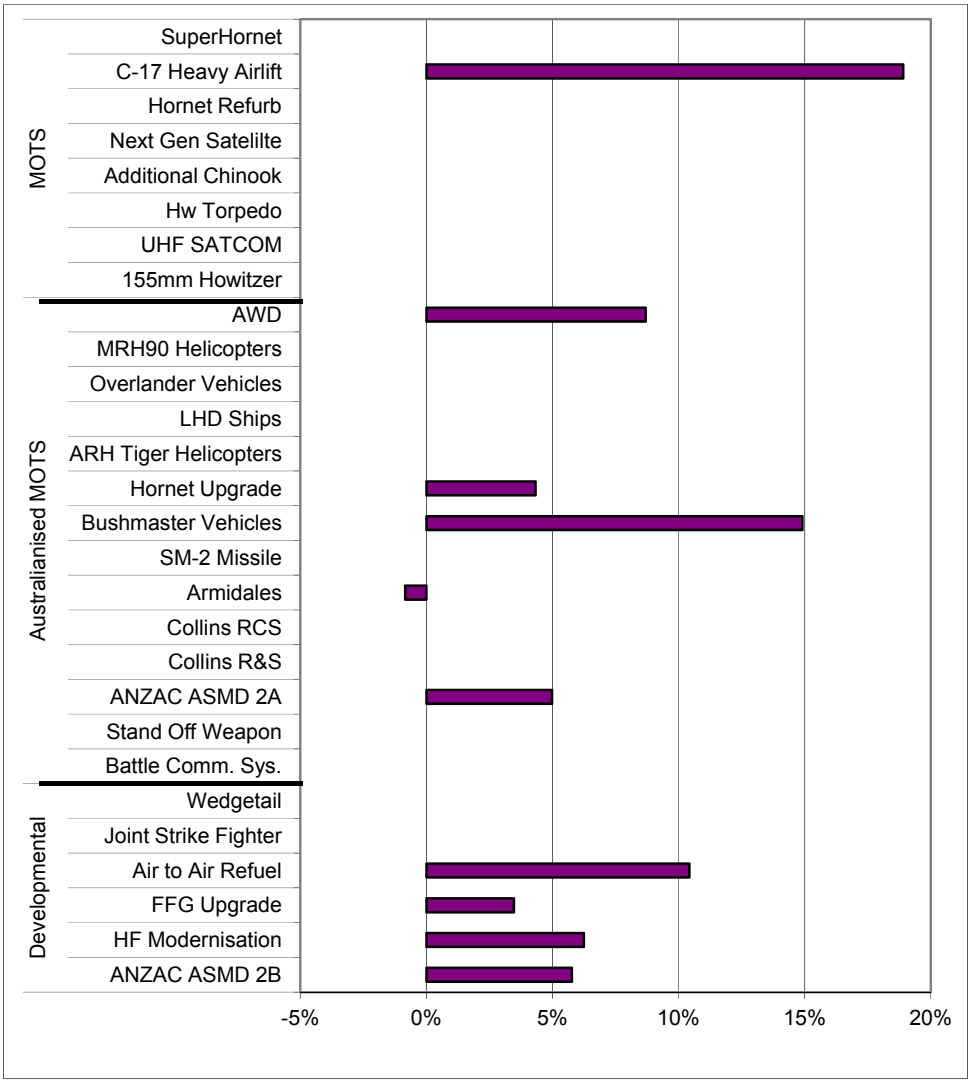
2.33 The largest in-year schedule variance is attributed to the C-17, Bushmaster Vehicles and Air to Air Refuelling projects which have had in-year schedule variances exceeding 10 per cent.

2.34 While there is an apparent significant in-year variance for C-17 this is within the originally approved project schedule. The explanation for this apparent incongruity lies in previous schedule estimates anticipating achievement of FOC nearly one year early. This has now been reversed as the Royal Australian Air Force (RAAF) has determined that FOC will be achieved when permanent C-17 Globemaster facilities have been established at major RAAF bases and the training systems (minus the Cargo Compartment Trainer) have been set up in Australia which is anticipated for December 2011.

2.35 Similarly, the Bushranger project is now tracking against the FOC of April 2014, for Period Production 4 (PP4) vehicles, as approved by Government in May 2011. In the 2009-10 MPR the forecast FOC date related to PP3; during 2010-11 the FOC for PP3 has slipped in year from April 2012 to April 2013.

2.36 The Armidale Class Patrol Boat project shows a small schedule recovery, which indicates a more positive outlook for the remainder of the project and a small reduction in schedule variance since approval.

Figure 2.7: In-year FOC Schedule Variance, by project type



Note: Joint Strike Fighter is currently developmental in nature but should ultimately become MOTS when it enters production line delivery.

Schedule Variance Factor

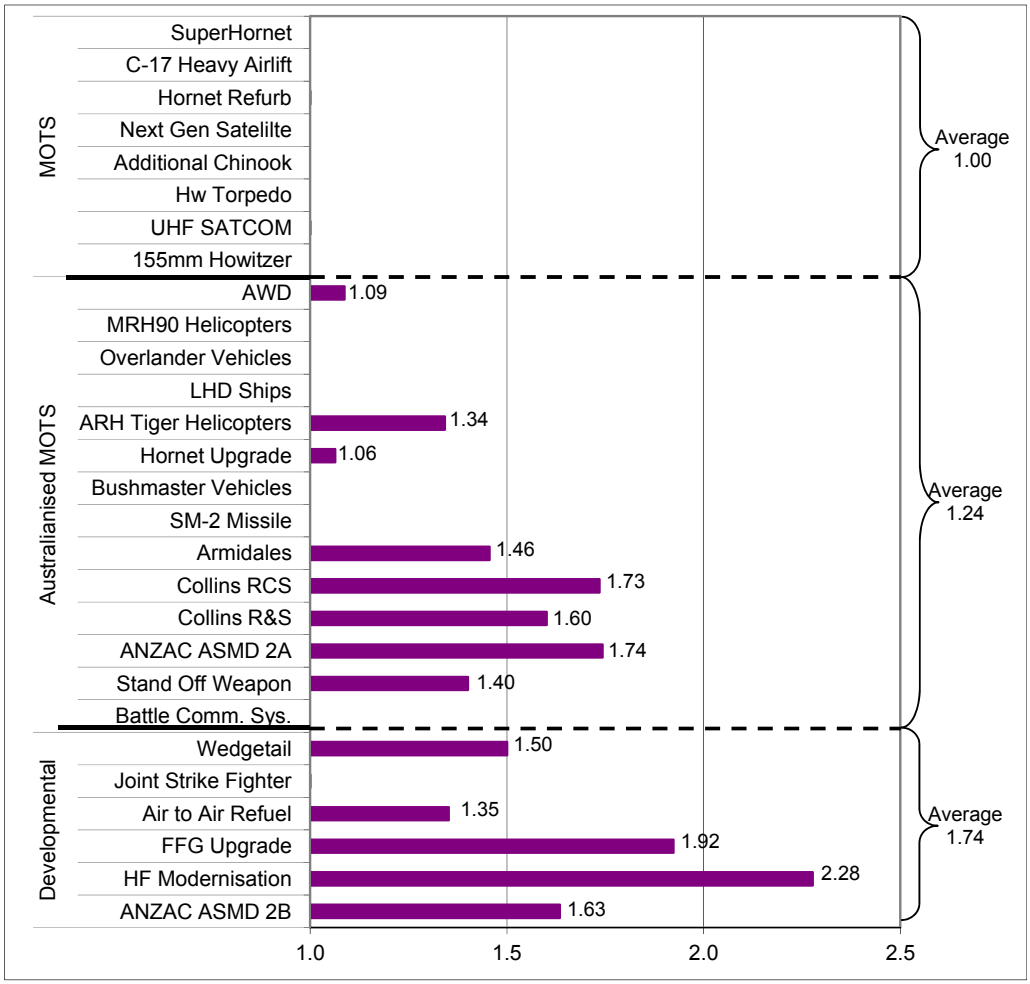
2.37 Figure 2.8 charts the schedule variance as a ratio of the duration of the project as forecast at 30 June 2011 to the originally estimated duration of the project. A 'schedule variance factor' of less than one means the project delivered or is forecast to deliver ahead of the originally estimated schedule. A factor of one means the project has delivered or is forecast to achieve the originally estimated schedule. A factor greater than one means the project has delivered or is forecast to deliver later than originally estimated. Three projects – Joint Strike Fighter, Hornet Refurb and UHF SATCOM – do not have defined FOC dates and were therefore not included in the calculations for analysis of FOC schedule variance.

2.38 Thirteen of the remaining 25 projects in the 2010-11 MPR show a schedule variance factor greater than one, whilst twelve are tracking on schedule. Overall in 2010-11, the average schedule variance across all projects is 1.28, which incorporates an average factor of 1.34 for the 22 repeat projects (in comparison to 1.30 for 2009-10) and 1.0 for five (of six) new projects.

2.39 Detailed information regarding the cause and extent of slippage for each project is contained within the individual PDSS in Part 3; Table 2.4 later in this chapter provides a synopsis of causes for schedule delays.

2.40 The previously mentioned linkage between the three main types of acquisition (MOTS, Australianised MOTS and Developmental) and schedule variance is reinforced in Figure 2.8, where developmental projects show an average variance of 1.74 compared to Australianised MOTS of 1.24 while MOTS are on time, i.e. the higher the degree of systems development/modification and integration, the higher the schedule risk associated with the project. While the analysis indicates schedule slippage, it should be noted that often major capability elements of these projects are already in use by the ADF. For example major capability elements of the HF Modernisation project have been in use since 2004 and similarly the Armidale patrol boats have been in use since 2005.

Figure 2.8: Schedule Variance Factors, by project type



Notes:

1. Joint Strike Fighter is currently developmental in nature but should become MOTS when it enters production line delivery.
2. Joint Strike Fighter, Hornet Refurb and UHF SATCOM were not included in calculation of averages for reasons stated at 2.42.

Schedule Variance Attribution

2.41 Slippage for developmental and Australianised MOTS projects is attributable to the higher levels of technical complexity and system integration risk. As this report has shown, the higher the technical challenge, the higher the inherent risk to the schedule. Developmental projects are new and often at the leading edge of available technology. As such, it is not uncommon for

projects to encounter unforeseen technical difficulties requiring significant modification that results in delay. Similarly, Australianisation can also encounter unforeseen technical difficulties and have an unanticipated impact on existing features of the baseline MOTS product. Rectifications of such issues often require extensive, time consuming remediation work.

2.42 Further analysis for the 2010-11 MPR has revealed additional drivers of schedule delays as shown in Table 2.6. Of the 10 projects that underestimated technical complexity, five could also identify some overestimation of industry capability and performance, and another two were also affected by approved changes to scope (ANZAC ASMD 2A and 2B attained Government approval to acquire the more capable 'Phased Array Radar' based solution over the original 'Very Short Range Air Defence System' solution, though without a corresponding increase to schedule). Industry capability and performance delayed the AWD project and limited platform availability was the primary driver for delays of Collins class submarine projects. Measures to stabilise the Full Cycle Docking program should assist with future scheduling.

Table 2.6 – Attribution of Schedule Variance Factors

Driver of Schedule Variance	Project
Platform availability	Collins RCS
	Collins R&S
Industry Capability	AWD
Technical complexity – underestimation by industry and/or Defence of the complexity of developmental and/or large scale integration projects.	HF Modernisation
	FFG Upgrade
	Wedgetail
	Armidales
	Stand Off Weapon
	Air to Air Refuel
	ARH Tiger Helicopters
	Hornet Upgrade
Technical complexity and Scope Change	ANZAC ASMD 2A
	ANZAC ASMD 2B

Materiel Capability Performance

2.43 Chapter 1 detailed the roll-out of the IMR and FMR milestones under the strengthened MAA framework. A key component of this roll-out involves formal acknowledgement by the relevant Capability Manager of the DMO's responsibilities for delivery of the materiel elements of capability and their associated dates relative to the Government agreed FOC.

2.44 The revised MAA also removed the previously reported Measures of Effectiveness (MOEs) and now details the materiel deliveries under Materiel Capability Performance Measures that are required to satisfy IMR and FMR. IMR and FMR mark the DMO milestones for delivery and release to the Capability Managers of materiel supplies to support the Capability Managers achievement of IOC and FOC respectively. As such, there can be no direct comparison of the MOEs reported in previous MPRs to the new Materiel Capability Performance measures.

2.45 As with MOEs, Materiel Capability 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 Materiel Capability Performance measures for each project, as defined in the MAA, are identified from the project approval documentation that details the capital equipment assets to be delivered, including the Operational Concept Document and the Function and Performance Specification.

2.46 For security classification reasons the MPR does not identify the individual Materiel Capability Performance measures for each of the projects; however, each PDSS has a percentage breakdown on how the project is tracking against its particular suite of Materiel Capability Performance measures.

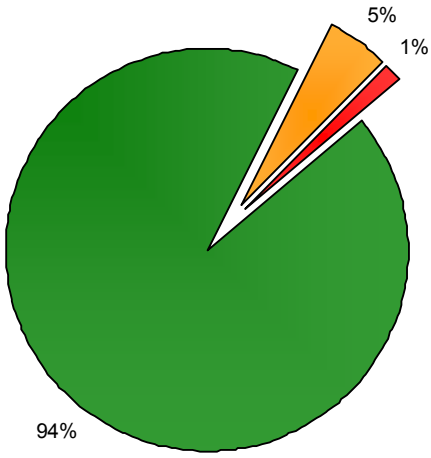
2.47 The traffic lights, based on a subjective assessment, indicate:

- **Green:** Materiel Capability Performance measures for which there is a high level of confidence that they will be met;
- **Amber:** Materiel Capability Performance measures that are under threat but still considered as manageable and able to be met; and
- **Red:** Materiel Capability Performance measures that at this stage are unlikely to be met.

2.48 Re-introduction of Materiel Capability Performance reporting for the 2010-11 MPR precludes a direct comparison or trend analysis with previous MPRs. As the construct and application of the Materiel Capability Performance measures continue to be refined by DMO, Capability Managers and Capability Development Group, the number of Materiel Capability Performance measures reported as at 30 June each year may alter depending upon the number of Materiel Capability Performance measures agreed in MAAs.

2.49 For the 2010-11 DMO MPR, there are 207 individual Materiel Capability Performance measures across 27 projects (Hornet Refurb does not have Materiel Capability Performance measures as it is due to be completed by December 2011) with 194 green, ten amber and three red. Materiel Capability Performance measures indicate the status of the materiel element of capability against scheduled milestones as at 30 June 2011 and is not indicative of each project's ability to deliver the intended scope at the end of the project.

Figure 2.9 – Materiel Capability Performance measures for the 2010-11 Report



2.50 From the analysis of Materiel Capability Performance Measures, as at 30 June 2011 and as noted in Figure 2.9, the following explanation is provided:

- **Green** – A high percentage (94%) of green Materiel Capability Performance measures reported;

- **Amber** – The amber Materiel Capability Performance measures (5%) are reported across six projects. Details include:
  - Wedgetail – performance shortfalls and technical difficulties are adversely affecting the transition into operational service and sustainment;
  - MRH90 Helicopters – timely resolution of engineering and reliability issues may affect achievement of planned IMR and FMR;
  - Super Hornet (Phase 2 Weapons)– prioritisation of scheduled activities may affect planned FMR;
  - ARH Tiger Helicopters – delays in the delivery of some spares, and support and test equipment; and
  - Air to Air Refuel – aircraft have been accepted in an initial configuration providing a level of air to air refuelling capability. Further testing and acceptance of the Aerial Refuelling Boom System is required along with the successful remediation of all non-conformances.
- **Red** – The red Materiel Capability Performance measures (1%) relate to:
  - Wedgetail project – performance deficiencies in critical elements of the mission system currently pose a risk to the achievement of FMR with most deficiencies expected to be remediated before final delivery, but some radar deficiencies will remain at final delivery.
  - MRH 90 Helicopters – it is highly likely that the first maritime and land operational capabilities will not be achieved by the scheduled date due to the non delivery of conforming supplies.
  - 155mm Howitzer – Course Correcting Fuse (CCF) capability is subject to a further program of testing to resolve reliability issues prior to the US Government agreeing to a production milestone. A decision on how best to progress the acquisition of the CCF capability under this phase of Land 17 is expected in December 2011.

Contingency Management

2.51 In keeping with standard commercial practice, cost estimates for major Defence capital investment programs include a contingency provision that allows Project Managers the facility to retire risk and treat risk events that have materialised into an issue, without the administrative burden of returning to Government for re-approval in each instance. Contingency funding provides a financial safeguard for Project Managers against the inherent uncertainties, risks or unexpected events that may arise during the course of the project. It is especially important in defence projects that typically have greater inherent risk, longer timeframes and are more complex than other commercial projects.

2.52 Quantitative analysis is undertaken for each option presented to Government to identify the potential risks (cost, schedule, technical, commercial, etc) to the project and associated treatments for these risks. The contingency funding is then assigned to the treatment strategies and against any residual risks after treatment. Contingency funding for risk mitigation strategies and treatments is formally reviewed by the DMO during both the Budget and Additional Estimates cycles.

2.53 The quantity of the contingency funding is determined by the level of risk identified for each project before final approval by Government. Hence, the DMO places a strong emphasis on the quality of the risk analysis to ensure an accurate estimation of the contingency funding required and that the level of funding sought is consistent with the project's risk profile. In addition, an assessment of the adequacy of the contingency funding is included in the Gate Review process and is scrutinised by Central Agencies as part of the project approval process.

2.54 To 30 June 2011, of the total contingency allocated across the 28 projects, approximately $1b (or 2.5% of the total approved project budget of $46.1b) has been expended to retire project risks. The areas where risk has been retired using project contingency budgets include:

- Systems development;
- Systems integration;
- Logistics and Support;
- Schedule constraints; and
- Project resourcing.

Earned-Value Management

2.55 Earned Value Management (EVM) is a project performance management methodology that integrates scope, schedule and budget to establish a baseline against which performance is measured. Earned Value Management may also be used as a means by which progress payments may be quantified.

2.56 Payment by Earned Value implements progress payments using an objective measure, Earned Value, to quantify progress and represents only one of the payment options that may be considered by Project Managers to develop contract payment schedules.

2.57 Earned Value Payments, like progress payments, primarily address the cash flow required by the contractor to deliver the outcomes of the contract. Earned Value Payments provide for contractors to be paid progressively for work performed with the security that progress payments will be based on objective measures of performance defined as part of the Earned Value Management System (EVMS). Fourteen of the 28 MPR projects are either currently using or have used EVM as a payment, contract management method or tool.

2.58 DMO's preferred payment approach for major capital acquisition projects is through milestone payments, as this is a more appropriate way of ensuring the delivery of goods and services as specified in the contract.

2.59 Where projects evolve from a developmental stage through to a production phase, the payment methodology may also transition from time and materiel, focusing more on developmental input, to milestone payments which focus on more tangible deliverables. For projects requiring a relatively high degree of developmental work or investment it may be appropriate to make mobilisation payments (which take the form of pre-payments) to provide the contractor with funding to procure items required to fulfil obligations under the contract.

Part 3. Auditor-General's Review, CEO DMO Statement and Project Data Summary Sheets

Independent Review Report by the Auditor-General on the Defence Materiel Organisation's Project Data Summary Sheets

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

Scope

In accordance with Section 20 of the *Auditor-General Act 1997*, the review of the accompanying 28 Project Data Summary Sheets (PDSSs) as at 30 June 2011, including the CEO Statement, is undertaken by agreement with the CEO Defence Materiel Organisation (DMO). My review is designed to provide assurance that the information contained in each PDSS has been prepared in accordance with the 2010–11 PDSS Guidelines, as endorsed by the Joint Committee of Public Accounts and Audit. The 28 projects are listed in Attachment A; 11 of these projects are required to incorporate information on expenditure on both current and base date dollars as set out in the Guidelines.

My review encompassed the information in each PDSS, including the cost, schedule performance, and capability delivered against contracted requirements, but did not include an assessment of the following information, which is outside the scope of the review agreed with the CEO DMO:

(a) Section 1.3 (Major Challenges), Section 5.1 (Major Project Risks), and Section 5.2 (Major Project Issues);

(b) Section 4.1 (Measures of Materiel Capability Performance); and

(c) 'Forecasts' of future dates regarding a project's expected achievement of delivery schedules and capability where included in Sections 1 and 3 of each PDSS.

The above information has not been included in the scope of the review because by their nature, the identification of Major Challenges, Project Risks and Issues and the achievement of future outcomes (Measures of Materiel Capability Performance) and forecast future dates relate to events and depend on circumstances that have not yet occurred, may not occur, or have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information.

The Responsibility of the Chief Executive for the Project Data Summary Sheets

The Chief Executive of the DMO is responsible for the preparation and presentation of the unclassified PDSSs for the 28 projects outlined in the scope, in accordance with the Guidelines. This responsibility includes ensuring the completeness and accuracy of each project's cost and schedule performance, and capability delivered against contracted requirements, in each PDSS.

The Auditor's Responsibility

My responsibility is to express an independent conclusion based on my review.

My review has been 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. My review is designed to enable me to obtain sufficient appropriate evidence to form a conclusion on whether anything has come to my attention to indicate that the information and data in the PDSSs that is within the scope of my review has not been prepared, in all material respects, in accordance with the Guidelines.

Independence

In conducting the review, I have followed the independence requirements of the Australian National Audit Office, which incorporate the requirements of the Australian accounting profession.

Review criteria and methodology

The criteria that have been used to conduct my review are based on the Guidelines and include whether the DMO has procedures in place designed to ensure that project information and data was recorded in a complete and accurate manner for each project.

I have conducted the review of the PDSSs, as explained in the above **Scope** section, for the 28 projects by making such enquiries and performing such procedures as I, in my professional judgement, considered reasonable in the circumstances including:

- an examination of each PDSS;
- a review of relevant procedures and Guidelines used by the DMO to prepare the PDSSs;
- a review of documents and information relevant to the PDSSs;
- an assessment of the DMO's systems and controls in place to ensure the PDSS information is accurate and complete;

- interviews with persons responsible for the preparation of the PDSSs and those responsible for the management of the 28 projects;
- taking account of industry contractor comments provided to the DMO on draft PDSS information;
- an examination of confirmations from the Australian Defence Force (ADF) Capability Managers concerning the overall accuracy and completeness of the PDSSs, including each project's status of initial and final materiel release and initial and final operational capability; and
- an examination of the statements and management representations by the CEO DMO and senior DMO managers.

A review of this nature provides less assurance than an audit.

Basis for Qualified Conclusion

The Statement by the CEO DMO indicates that certain base date expenditure figures have not been disclosed in Section 2.2 (Project Expenditure History), and consequently the DMO has not reported Project Expenditure History in base date dollars, as required by the Guidelines, for the following projects:

- Airborne Early Warning and Control Aircraft - AIR 5077 Phase 3
- Bushmaster Protected Mobility Vehicle - LAND 116 Phase 3
- Next Generation SATCOM Capability - JP 2008 Phase 4

These departures from the Guidelines constitute a basis for a qualified conclusion of my review.

Qualified Conclusion

Based on my review described in this report, except for the departures from the Guidelines described above, nothing has come to my attention that causes me to believe that the information in the PDSSs within the scope of my review has not been prepared, in all material respects, in accordance with the Guidelines.

Ian McPhee
Auditor-General

Canberra ACT
14 December 2011

List of Projects

- Air Warfare Destroyer Build - SEA 4000 Phase 3
- Airborne Early Warning and Control Aircraft - AIR 5077 Phase 3
- Multi-Role Helicopter - AIR 9000 Phase 2, 4 & 6
- Bridging Air Combat Capability - AIR 5349 Phase 1 & 2
- Field Vehicles and Trailers - LAND 121 Phase 3
- Amphibious Ships (LHD) - JP 2048 Phase 4A/4B
- New Air Combat Capability - AIR 6000 Phase 2A/2B
- Armed Reconnaissance Helicopter - AIR 87 Phase 2
- F/A-18 Hornet Upgrade - AIR 5376 Phase 2
- C-17 Globemaster III Heavy Airlifter - AIR 8000 Phase 3
- Air to Air Refuelling Capability - AIR 5402
- Guided Missile Frigate Upgrade Implementation - SEA 1390 Phase 2.1
- F/A-18 Hornet Upgrade Structural Refurbishment - AIR 5376 Phase 3.2
- Bushmaster Protected Mobility Vehicle - LAND 116 Phase 3
- Next Generation SATCOM Capability - JP 2008 Phase 4
- High Frequency Modernisation - JP 2043 Phase 3A
- SM-1 Missile Replacement - SEA 1390 Phase 4B
- Additional Medium Lift Helicopters - AIR 9000 Phase 5C
- Armidale Class Patrol Boat - SEA 1444 Phase 1
- ANZAC Anti-Ship Missile Defence - SEA 1448 Phase 2B
- Collins Replacement Combat System - SEA 1439 Phase 4A
- Replacement Heavyweight Torpedo - SEA 1429 Phase 2
- Collins Class Submarine Reliability and Sustainability - SEA1439 Phase 3
- Indian Ocean Region UHF SATCOM - JP 2008 Phase 5A
- ANZAC Anti-Ship Missile Defence - SEA 1448 Phase 2A
- Follow On Stand Off Weapon - AIR 5418 Phase 1
- Artillery Replacement - LAND 17 Phase 1A
- Battlefield Command Support - LAND 75 Phase 3.4

Statement by the CEO DMO

The attached Project Data Summary Sheets (PDSSs) for the 28 major projects included in this report have been prepared in accordance with Guidelines developed by the DMO in consultation with the Australian National Audit Office (ANAO) and endorsed by the JCPAA.

ANAO Qualification – Base Date Dollars

Since 2008, the DMO has expended considerable resources and effort to produce – where practicable – Base Date Dollar calculations solely for the purpose of completing the PDSS financial management information in the MPR. Despite the difficulty in calculating this information, the DMO has been able to provide this information for 14 of the 28 MPR projects that are reported in this MPR. Importantly, the qualification in this report does not indicate or infer any issues with the overall system of financial management in the DMO. The DMO effectively manages its finances in accordance with legislation and associated policy requirements. As further confirmation of the quality of DMO's financial management, the Auditor-General has again provided an unmodified audit opinion on the DMO's financial statements in 2010-11.

As indicated in previous MPRs, the standard project management and performance reporting requirements for DMO projects do not require management and/or reporting in base date dollars. Hence, projects report performance to our stakeholders in current-day dollars. The conversion of financial data, particularly contract expenditure, into base date dollars for a number of MPR projects has proven a time consuming exercise offering limited value for project management outcomes.

The DMO Accounting Policy Manual provides a reference source for the accounting policies that are applicable to financial transactions undertaken within the DMO. The accounting policies contained within this Manual recognise the requirements of the Australian Accounting Standards Board, Australian Government legislation, and the Finance Minister's Orders for Financial Reporting, issued by the Minister for Finance and Deregulation.

The DMO intends to produce a paper for the JCPAA's consideration in early 2012 that establishes a foundation for a revised financial reporting methodology for future MPR's.

Project Status as at 30 June 2011

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 2011. 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 1.3 Major Challenges, Section 4 Materiel Capability Performance, Section 5.1 Major Project Risks, Section 5.2 Major Project Issues; and
- Future dates that are 'forecasts' regarding a project's expected achievement of delivery schedules and capability where included in Sections 1 and 3 of each PDSS.

Significant Events Occurring Post 30 June 2011

In stating this opinion, I acknowledge the following material events have occurred Post 30 June 2011:

SEA 4000 Phase 3 Air Warfare Destroyer

- The first three keel blocks have been delivered to Adelaide to start construction on HMAS *Hobart*. The project has also taken delivery of the three main gun mounts.

AIR 5349 Phase 1 and 2 Bridging Air Combat Capability

- The final delivery of four Super Hornets occurred 21 October 2011, bringing the total accepted aircraft to 24. All 24 aircraft were delivered on budget and ahead of schedule.

AIR 5402 Air to Air Refuelling Capability

- The Multi Role Tanker Transport aircraft has completed its first flight in RAAF service.

LAND 116 Phase 3 Bushmaster Protected Mobility Vehicle

- All Bushmaster vehicles in service in Afghanistan have been upgraded with new seating and flooring to provide better protection against Improvised Explosive Device attacks. Four Bushmaster ambulances have also been delivered to Air Force Health Services Wing at RAAF Base Amberley.

AIR 9000 Phases 2, 4 and 6 Multi Role Helicopter

- The Initial Operational Capability forecast has slipped to December 2011 for Navy and October 2012 for Army.
- On 28 November 2011 Mr Stephen Smith MP, Minister for Defence, announced that AIR 9000 Ph2, 4 and 6 Multi Role Helicopter project has been added to the Project of Concern list.

AIR 87 Phases 2 Armed Reconnaissance Helicopter

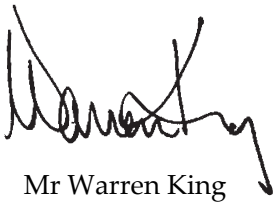
- The Capability Manager (Army) has revised Final Operational Capability from December 2012 to January 2016. The main reason for the delay is maritime operations cannot be validated until after delivery of the Landing Helicopter Dock platform being acquired under JP 2048 Phase 4A/4B.

SEA 1448 Phase 2A and 2B ANZAC Anti-Ship Missile Defence

- The Capability Manager (Navy) has changed the Initial Operational Capability date from July 2011 to the final Quarter of 2013 when the full (Stage 2) Anti-Ship Missile Defence capability has been delivered.
- On 28 November 2011 Mr Stephen Smith MP, Minister for Defence, announced that SEA 1448 Phase 2B ANZAC Anti-Ship Missile Defence project has been removed from the Project of Concern list.

LAND 75 Phase 3.4 Battle Command System

- Initial Operational Capability was not declared on the expected schedule date of August 2011 and is now expected to be achieved early 2012.



Mr Warren King

Acting Chief Executive Officer

14 December 2011

Project Data Summary Sheets

Project Data Summary Sheet[195]

Project Name	**AIR WARFARE DESTROYER**
Project Number	**SEA 4000 Phase 3**
Capability Type	New
Service	Royal Australian Navy
Government 1st Pass Approval	May 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	**$7,931.8m**
2010-11 Budget	**$982.5m**
Project Stage	Critical 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 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

Cost Performance

The project remains within its current approved budget.

Program expenditure in Financial Year 2010-11 was less than budgeted. The contributing factors were; reduced FMS expenditure; gains in foreign exchange rates; partially offset by increased expenditure against budget for industry participants.

Schedule Performance

In response to delays in hull block fabrication, the AWD Alliance acted to limit a potential two year slippage in the completion of HMAS Hobart by up to 12 months. Two key actions were an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the Australian shipyards and Navantia in May 2011. The AWD Alliance also took action in 2010 to place more shipbuilding experts from Navantia, Bath Iron Works and Lloyds Register into the three shipyards.

Since July 2010, the following major events and activities have occurred:

- **Support System Detailed Design Review was successfully completed in August 2010.**
- **First delivery of FMS Aegis equipment arrived in the ASC Shipyard in September 2010.**
- **Independent Alliance Project Risk Review as conducted in October 2010 by experts from the US Navy, UK Ministry of Defence, ARMADA, Raytheon US and Navantia.**

[195] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

- **AWD System Centre at Techport Australia was opened by the Minister Defence Materiel and the Premier of South Australia on 20 December 2010.**
- **Factory testing, acceptance and delivery of the Combat System is progressing consistent with program milestones.**

Significant components of the combat system (for example, the Mk45 gun, typhoon gun, digital EM log, Nixie and several other systems) have arrived in Adelaide and over 98% of the Aegis program adaption software is now coded.

Materiel Capability Performance

All significant government specified capability **is currently planned to be achieved and in some warfare areas, the capability will be exceeded. However,** Electronic Warfare Radar – Electronic Attack sub-system procurement has been deferred as current technology does not meet the contract **and Royal Australian Navy (RAN)** requirements. **The budget** has been preserved to support second generation technology being fielded in the AWD. **It is expected that the capability will be available in the 2017-18 timeframe**. Decisions made by the **program** in conjunction with the Capability Manager will ensure that AWD is delivered with the expected capability and affordable cost of ownership; and within the acquisition budget and schedule.

1.3 Project Context

Project	Explanation
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 comprising: • Three Aegis Weapon System sets, 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 Air Warfare Destroyer 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 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.

Uniqueness	The Sea 4000 Air Warfare Destroyer Program is currently one of Australia's largest and most technically complex Defence projects. The AWDs will be the RAN's first Aegis equipped ships and will be the most modern version of Aegis installed in a non US Navy ship. The AWDs are being delivered through an Alliance based contract arrangement involving ASC AWD Shipbuilder, Raytheon Australia and the Commonwealth, represented by the DMO. The Alliance based contract arrangement is described in greater detail in the "Contractual Framework" Section.
Contractual Framework	The Alliance **based contract arrangement** was signed in October 2007. Key features of the AWD Alliance a**nd 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 ABTIA contract signed by all three participants. This establishes a virtual organisation under the governance of the AWD Alliance Board.** • All participants have a shared commercial interest in the outcome of the Program through pain share/gain share arrangements. The Industry Participants fee is at risk if performance is poor, however, they can benefit from delivery ahead of schedule and / or under budget. • The Commonwealth retains "step in" rights to protect the national interest and the unilateral right to determine strategic issues relating to the Program. • Liquidated Damages **may** apply in the event **any** ship is delivered later than specified dates. • Risk is managed through the allocation of management reserve. • All financial accounting is on an "open book" basis. 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 Challenges	The major challenges the project faces are: • **Achieving peak hull production capacity, recruiting and training people to meet this peak workforce demand and stabilising workflow in order to achieve maximum shipbuilding productivity.** • Achieving timely delivery of items being manufactured by sub contractors for the Alliance participants, from multiple locations within Australia and around the world. • Delivering an appropriately structured support system to enable the ships to be **effectively and efficiently** sustained through life. • **Pressures on the stability of the design baseline documentation from the PSD Navantia. Changes can have significant cost and schedule implications if introduced late in Production.**
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Jun 07	Original Approved	**7,207.4**		**7,207.4**		
Jun 11	Price Indexation			**1,173.2**		**1**
Jun 11	Exchange Variation			**(448.8)**		
Jun 11	**Total Budget**	**7,207.4**		**7,931.8**		
2.2 Project Expenditure History						
Prior to Jul 10		**839.8**	986.6		AWD Alliance	
		240.9	264.0		Navantia	
		709.8	737.5		US Government	**2**
		15.2	**16.2**		**NATO Consortium**	
		80.4	**89.2**		Other	**3**
		1,886.1		**2,093.5**		
FY to Jun 11		**609.8**	**643.1**		AWD Alliance	
		72.5	**77.2**		Navantia	
		155.9	**174.2**		US Government	**2**
		33.8	**37.7**		**NATO Consortium**	
		11.5	**12.3**		Other	**3**
		883.5		**944.5**		
Jun 11	**Total Expenditure**	**2,769.6**		**3,038.0**		
Jun 11	**Remaining Budget**	**4,437.8**		**4,893.8**		

Notes	
1	**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.**
2	**For Base Date calculations for FMS cases, a consistent de-escalation factor has been applied to all projects which is derived from Defence's cost estimation methodology.**
3	Other expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts. **For base date calculations against "Other" expenditure, calculations have been made using a proportional adjustment. This proportional adjustment involves the average between base date calculation of the disclosed major contract(s) and their constant price and applying to the "Other" expenditure.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(64.2)	FMS	**Program expenditure in the financial year has resulted in an overall under expenditure due to a combination of factors. These include: Reduced FMS expenditure due to lower than forecast disbursements by the US Navy and gains in Foreign Currency exchange rates. Expenditure in other activities of Shipbuilder and Combat systems has enabled the project to have an improved Year End position than previously forecast.**
			Overseas Industry	
		34.9	Local Industry	
			Brought Forward	
			Cost Savings	
		(8.7)	FOREX Variation	
			Commonwealth Delays	
982.5	944.5	(38.0)	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
AWD Alliance	Oct 07	4,323.1	**4,379.6**	Variable with Pain/Gain Share	Alliance	
Navantia	Oct 07	373.6	**373.0**	Fixed with indices escalation	Alliance based	
NATO Consortium	**Dec 09**	**78.5**	**78.5**	**FMS (NATO)**	**FMS (NATO)**	
US Government	Oct 05	842.7	1,234.5	FMS	FMS	1

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 two 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. FMS prices are out turned US dollar amounts which have been converted to AUD using exchange rate at original base date. The Price at Signature excludes $171m spent in previous phases of the project. The Price at 30 June 2011 excludes a current Alliance liability of $168.5m.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
AWD Alliance	3	3	Air Warfare Destroyer	
Navantia	N/A	N/A	Platform System Design and Services	
NATO Consortium	**Classified**	**Classified**	**ESSM Missiles**	**1**
US Government	3	3	Aegis **Combat** System	

Major equipment received and quantities to 30 Jun 11

All major design reviews completed. **Block** production underway at all three shipyards.

Notes

1	**Quantities being acquired are 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		Apr 08	1	
Preliminary Design	AWD Program	Dec 08		Feb 09	0	1
Critical Design	AWD Program	Dec 09		Feb 10	0	2
Support System Detailed Design Review	**AWD Program**	**Jun 10**		**Aug 10**	**0**	**3**

Notes	
1	The PDR was conducted as scheduled in December 2008 and resulting actions completed as scheduled by February 2009.
2	The CDR was conducted as scheduled in December 2009 and resulting actions completed as scheduled by February 2010.
3	**The SSDDR was conducted as scheduled in June 2010 and resulting actions completed August 2010**

3.2 Contractor Test and Evaluation Progress

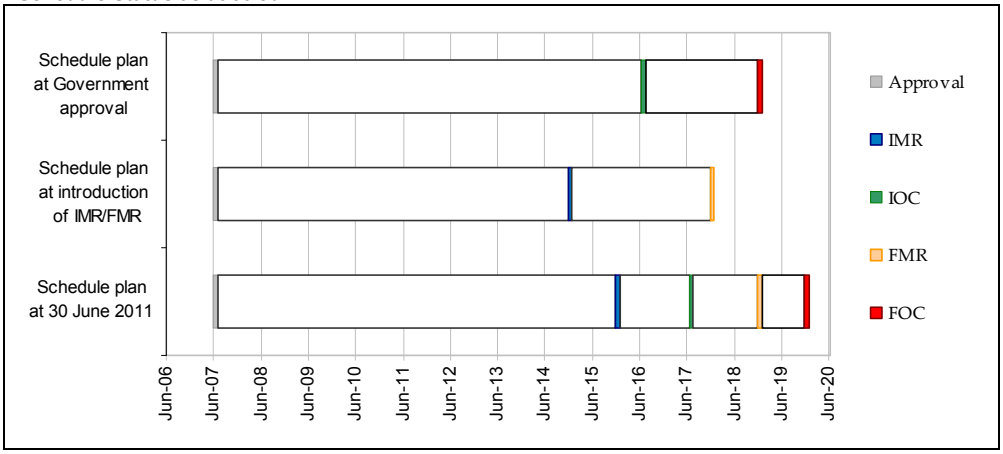
Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Ship 1 Complete Hull Integration	Dec 12	Dec 12	Dec **13**	**12**	1, **3**
	Ship 1 Start Combat System Light Off	Dec 13	Dec 13	Dec **14**	**12**	2, **3**
	Ship 2 Complete Hull Integration	Mar 14	Mar 14	Mar **15**	**12**	**3**
	Ship 2 Start Combat System Light Off	Mar 15	Mar 15	Mar **16**	**12**	**3**
	Ship 3 Complete Hull Integration	Jun 15	Jun 15	Jun **16**	**12**	**3**
	Ship 3 Start Combat System Light Off	Jun 16	Jun 16	Jun **17**	**12**	**3**
Acceptance	Ship 1 – Commencement of Category 5 Trials	Aug 14	Aug 14	Aug **15**	**12**	**3**
	Ship 1 – Provisional Acceptance (**Initial Materiel Release**)	Dec 14	Dec 14	Dec **15**	**12**	**3**
	Ship 2 – Commencement of Category 5 Trials	Nov 15	Nov 15	Nov **16**	**12**	**3**
	Ship 2 – Provisional Acceptance (**Materiel Release 2**)	Mar 16	Mar 16	Mar 17	**12**	**3**
	Ship 3 – Commencement of Category 5 Trials	Feb 17	Feb 17	Feb **18**	**12**	**3**
	Ship 3 – Provisional Acceptance (**Materiel Release 3**)	Jun 17	Jun 17	Jun **18**	**12**	**3**

Notes	
1	Complete Hull Integration is achieved when the last erection joint is structurally inspected and accepted.
2	Start Combat System Light Off verifies the readiness of the first set of installed combat system equipment **for** CAT 4 testing.
3	**Difficulties with initial block production and shipyard capacity issues have affected the schedule for the first ship which will be delayed by 12 months. This has a flow on effect for Ships 2 and 3.**

3.3 Progress Towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**Dec 14**	**Dec 15**	**12**	**Delays with initial block production. This has a flow on effect to later milestones.**
Initial Operational Capability (IOC)	Jun 16	Jun 17	**12**	
Final Materiel Release (FMR)	**Dec 17**	**Dec 18**	**12**	
Final Operational Capability (FOC)	Dec 18	Dec 19	**12**	

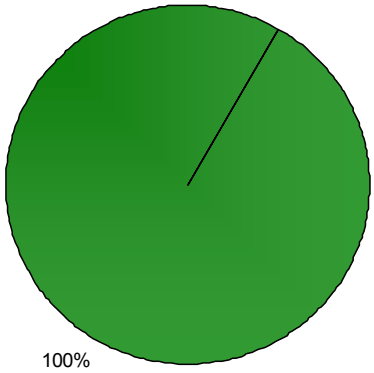
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The Project is currently meeting **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

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Change **Management: Any** change introduced to the existing platform design will have cost and schedule impact. The extent of which is dependent upon the timing of the change. Pressure for change could occur for a variety of reasons including: • Requirements change. • Legislative and compliance requirements. • Equipment obsolescence.	Recognise that the program will have to manage change to cope with obsolescence. Effectively engage with all stakeholders to ensure that they understand the potential implications of change to cost and schedule. Provide robust mechanisms to control the authorisation of change. Ensure that where change is required that it is approved and implemented in an appropriate phase of the program. Delays in approval will usually result in significant cost and schedule impact.
Integration of the Australianised Aegis 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. **Sonar – Is being actively managed by the Alliance including formal reviews with close out actions and embedded staff.**
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.
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. **Sonar – The Alliance is actively working with the Sonar OEM to manage risk associated with software development and integration.**
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 contingency budget remains sufficient to cover any shortfalls.
Support System: current data available to the Alliance and/or the Commonwealth may not be mature enough to achieve an optimised support system. Facilities may not be ready when required for transition into in-service 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. **Defence Support Group has now engaged a Managing Contractor and the Facilities submission to the Public Works Committee is**

	scheduled to be achieved in 2011.
Shipbuilding Productivity: achieving the required level of shipbuilding productivity may be compromised by skilled labour shortages, delays in deliveries of data and materials to the shipyards, and limitations on the production engineering capacity of the shipyards.	**Actions to mitigate include increased shipbuilder recruitment activities, deployment of Navantia skilled labour to all 3 build locations, roll out of Lean process improvement across the ASC facility, process improvements to minimise delays caused by problems at the work front, increased focus on improving construction design products, and prioritisation of the delivery of urgent construction products from Navantia. Benchmarking of the shipbuilder's production effort is also underway to provide further tools and techniques to improve productivity into the future.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
Schedule: 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 Minister for Defence announced the reallocation of construction work for the AWD Project. The AWD Alliance advised this action will reduce the delay of the completion of Ship 1 by up to 12 months, and all three AWD's by up to 12 months.	**The AWD Alliance took two key actions to address schedule slippage. There was an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the Australian shipyards and Navantia in May 2011. The AWD Alliance also took action in 2010 to place more shipbuilding experts from Navantia, Bath Iron Works and Lloyds Register into the three shipyards.**
PMO Budget: The out-turned budget (FY10/11) might be insufficient to cover AWD Program costs due to change in financial management policy to allocate budgets in Out-turn Budget rather than Constant Dollar Budgets. Risk exposure will occur from a reduction in buying power as and when funds are reprogrammed (from year to year) due to schedule/payment slippages and movements resulting from estimate spend spread variations.	**Manage budget allocations against activities. Monitor and manage the annual spend forecast within agreed tolerances.** **The full extent of this is unknown and will become clearer in coming years.**

5.2 Major Project Issues

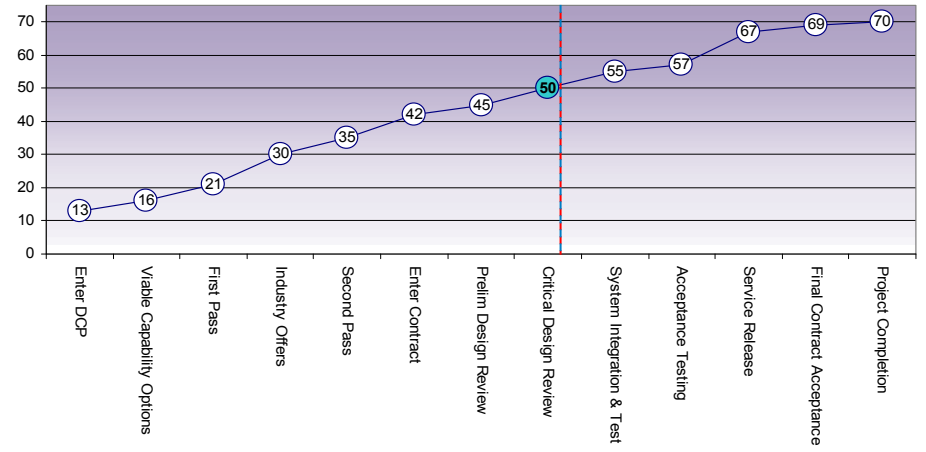
Description	Remedial Action
The Program does not have an agreed Project Certification Plan and Certification Basis. The lack of an agreed Project Certification Plan and Certification Basis may have a significant impact on cost and schedule.	**This issue has been retired.**
The release of design information from the US Navy may not be sufficient to satisfy regulatory requirements.	**This issue has been retired.**
Design changes are required to meet emerging requirements.	**This issue has been retired.**
The division of technical assistance required from the US Navy for the FMS case between the Alliance and the Program office needs definition.	**This issue has been retired.**
Shipbuilding Delay: The AWD Alliance will not meet contracted delivery dates for the three ships.	**In response to delays in hull block fabrication, the AWD Alliance acted to limit a potential two year slippage in the delivery of HMAS Hobart by up to 12 months. Two key actions were an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the**

	Australian shipyards and Navantia in May 2011. The AWD Alliance also took action in 2010 to place more shipbuilding experts from Navantia, Bath Iron Works and Lloyds Register into the three shipyards.

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
Critical Design Review	Project Status	7	7	8	8	7	7	7	51
	Explanation	• **Requirement: reflects the successful completion of the Support System Detailed Design Review in August 2010.**							



2009-10 DMO MPR Status - - - -	2010-11 DMO 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 for fitness of 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.	**Scheduling**

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
Deputy CEO DMO	Mr Warren King
Program Manager	Mr Andrew Cawley
Deputy Program Manager	**Mr Peter Croser**
Deputy Program Manager	Commodore Steve Tiffen, **RAN**

Project Data Summary Sheet[196]

Project Name	**AIRBORNE EARLY WARNING AND CONTROL AIRCRAFT**
Project Number	**AIR 5077 Phase 3**
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	Dec 97
Government 2nd Pass Approval	Dec 00
Total Approved Budget (Current)	**$3,859.5m**
2010-11 Budget	**$217.1m**
Project Stage	System Integration and Test
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

This project will provide the Australian Defence Force (ADF) with an airborne early warning and control (AEW&C) capability, with the provision of six aircraft and associated supplies and support. As an integral part of a layered ADF Air Defence System, the airborne early warning and control capability will enhance surveillance, air defence, fleet support and force coordination operations in defence of Australian sovereignty and national interests.

1.2 Current Status

This has been a Project of Concern since 2009-10.

Cost Performance

The project remains within current approved budget. As a result of the commercial settlement**s reached in November 2009 and April 2011**, the Commonwealth received compensation from Boeing for **costs incurred as a result of** project delays and radar performance shortfalls. **Payments are being made** in accordance with the revised payment schedule.

Schedule Performance

As at 30 June 2010, the Commonwealth had accepted three aircraft in an initial configuration, available to the Air Force for training and initial operations. A fourth aircraft was accepted in the initial configuration in December 2010. Boeing failed to deliver the first aircraft in a final operational configuration in December 2010, as agreed in the settlement reached in November 2009.

Boeing **planned** to deliver **additional increments of aircraft capability in June 2011, however this was delayed one month. The** first aircraft in a 'final' configuration, capable of supporting all operational tasking short of high-end war fighting **is scheduled for delivery** in **March 2012**, in which case the total delay to this milestone against the original contract baseline would be **64** months. However, Defence assesses that there is **3** months risk to this date.

[196] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability Performance

A United States Operational Utility Demonstration was conducted in Hawaii in July 2010 as part of Exercise RIMPAC. This demonstration was important in order to assess the operational readiness of the AEW&C capability. The demonstration concluded that the Wedgetail AEW&C has outstanding potential, but that the integrated system and some subsystems are still maturing.

The Wedgetail test aircraft participated in the Canadian exercise, Trident Fury, during May 2011. The flights showed varying success, with some radar fixes flown showing excellent results. However, there were still issues with system stability, consistency and repeatability which undermined overall mission system utility. Some individual sub systems proved to have developed considerably since the RIMPAC Exercise, but integrated mission system was still immature.

Electronic Support Measures (ESM) remains the most significant concern and schedule risk. Reliability, maintainability and supportability are the key ESM issues that have been highlighted during recent testing. The resolution of these ESM issues will be a primary driver of Final Acceptance.

The Commonwealth and Boeing are working together to resolve the significant capability risks that need to be retired in the mission systems, communications and integration areas. Three System (Software) Builds will be released to the Commonwealth in accordance with a revised schedule to Final Acceptance agreed in the April 2011 commercial settlement.

1.3 Project Context

Project	Explanation
Background	Government gave the equivalent of first pass approval for Phase 3 of this project in December 1997. Following a competitive Initial Design and tendering activity, the Government gave the equivalent of second pass approval in December 2000 and a contract was signed with The Boeing Company (Boeing) the next day for supply of four aircraft and associated supplies and support. In April 2004, Government gave approval to amending the contract for supply of an additional two aircraft. The airborne early warning and control 'Wedgetail' is based on Boeing's next generation 737 aircraft, modified to accommodate various sophisticated mission systems. The primary sensor on the aircraft is a phased-array radar – with no moving parts - that can scan through 360 degrees. In March 2007, Boeing presented the results of the schedule replan to the Commonwealth following the company's announcement, in February 2007, of a two-year slip in the program. This slippage results from problems associated with sub-system integration; supplier hardware availability; mission computing, radar and electronic support measures maturity and stability; and aircraft modification. In May 2008, Boeing advised a further delay to the program resulting from ongoing problems with radar and electronic support measures development and system integration. In December 2008, Boeing and the Commonwealth agreed, under a Deed, to enter into a modified test and operational evaluation program aimed at determining the extent to which the aircraft system meets the specification and how well it will perform operationally. The DMO Program Office, Boeing and Northrop Grumman, supported by DSTO and US Government agencies, also cooperated in the conduct of an independent assessment of radar performance by Massachusetts Institute of Technology (MIT) Lincoln Laboratories to determine the extent of the performance shortfall based on flight test data. An operational utility demonstration was successfully conducted in Australia in April 2009 and provided insight into the operational potential of the AEW&C capability. Based on the outcomes of these activities, the Commonwealth entered into formal negotiations with Boeing in August 2009 seeking a commercial settlement addressing, among other things, the key issues of: project delays; incremental delivery; and compensation for projected performance shortfalls. The parties reached agreement on the way ahead for the program in November 2009. **In April 2010, the Commonwealth accepted two aircraft in an initial operating capacity in order to commence training and initial operations. A third aircraft was accepted in this initial operating capacity in June 2010 and a fourth in December 2010.** **Boeing failed to deliver the first aircraft in a final operational configuration in December 2010, as agreed in the settlement reached in November 2009, due to ongoing issues with Communications and ESM Subsystems technical maturity**

	and integrated system stability. The Commonwealth entered into contract negotiations with Boeing in November 2010 to refine the path to final acceptance and reached agreement in April 2011.
Uniqueness	Project Wedgetail is a highly developmental project. The phased array radar, the heart of the surveillance capability, has never previously been integrated into an operational system. Northrop Grumman Corporation, the suppliers to Boeing of the phased array radar, has worked to an extremely tight schedule of putting into production and integrating this unique radar, which was still undergoing initial design at the time of contract signature. Similar schedule acceleration issues have also been encountered on other mission critical systems. The ADF will be the first to operate an aircraft of this configuration and capability and significant effort has been devoted by the RAAF in developing operational doctrine and tactics for its deployment.
Major Challenges	Integration of the radar and other mission critical systems such as electronic support measures, communication systems and data links has proved to be more complex than originally anticipated. Initial planning for the project was optimistic, resulting in an aggressive schedule that had been compressed to such a high level that there was no margin for re-work or risks being realised. Radar performance was subject to detailed independent analysis and operational assessment in preparation for the contract settlement negotiations held in late 2009, resulting in a determination that performance will not achieve specification at final delivery and further development will be required. Subsequently, a radar remediation program **was** established. **This program includes** a radar collaborative research and development program. A contract for the collaborative program was signed on 21 June **2010. The program is progressing well** and is expected to be completed by the end of 2011. **Radar performance improvements appear feasible and have the potential to recover the radar performance to close to specification, with additional growth potential. Four technical options have been sufficiently proven for implementation, and agreed through the April 2011 commercial settlement for incorporation by the end of 2011.** Further technical challenges in the development of the ESM, Electronic Warfare Self Protection (EWSP) and ground support systems **are still being encountered** and resolution of these will drive the schedule to final acceptance. Overall technical and schedule risk remains high.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5376 F/A-18 Hornet Upgrade	Upgrade of the F/A-18 Hornet communications, navigation and mission computing systems.	Air to air data communications in support of the air defence mission.
AIR 5402 Air to Air Refuelling Capability	Provision of five Multi-Role Tanker Transport aircraft and associated supplies and support.	Air-to-air refuelling support for extended range/duration airborne early warning and control missions.
AIR 5333 2CRU and 3CRU Replacement (Vigilare)	Replace the fixed, ground-based Aerospace Surveillance and Battlespace Management command and control capability.	Coordination between airborne early warning and control and ground-based control units.
AIR 5405 Mobile Regional Operations Centre	Replace the deployable, ground-based Aerospace Surveillance and Battlespace Management command and control capability. Not yet approved.	Coordination between airborne early warning and control and deployed ground-based control unit.
JP 2008 MILSATCOM	Provision of a military satellite communications system.	Air-to-surface and air-to-air communications support.
JP 2030 Phases 5B and 7B Air Command Support System	Provision of enhancements to the Air Command Support System.	Command and control interface for the airborne early warning and control Mission Support System.
JP 2072 Battlespace Communications	Provision of an enhanced battlespace communications system for the land environment. Not yet approved.	Terrestrial communications support to the deployable airborne early warning and control Mission Support System.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Dec 97	Original Approved	2,170.4		2,170.4		1
Jul 98	Real Variation – Transfer	(170.4)	(170.4)			2
Nov 99	Real Variation – Transfer	807.9	807.9			3
Apr 01	Real Variation – Budgetary Adjustments	(166.0)	(166.0)			4
Mar 02	Real Variation – Transfer	(3.9)	(3.9)			5
Jun 04	Real Variation – Scope	225.6	225.6			6
Aug 04	Real Variation – Budgetary Adjustments	(2.4)	(2.4)			7
Aug 04	Real Variation – Transfer	(14.0)	(14.0)			8
Jun 05	Real Variation – Transfer	(1.0)	(1.0)			8
Aug 05	Real Variation – Budgetary Adjustments	(4.8)	(4.8)			9
		671.0		671.0		
Jun 11	Price Indexation			**1,111.1**		**10**
Jun 11	Exchange Variation			**(92.9)**		
Jun 11	**Total Budget**	2,841.4		**3,859.5**		
2.2 Project Expenditure History						
Prior to Jul 10			2,529.2		Boeing	
			93.3		US Government	
			173.6		Other	11
				2,796.1		
FY to Jun 11			**125.1**		Boeing	
			4.0		US Government	
			47.1		Other	**12**
				176.2		
Jun 11	**Total Expenditure**			**2,972.3**		
Jun 11	**Remaining Budget**			**887.2**		

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	Transfer to Project Olympus.
3	Merger of Project Olympus, which had been established separately to acquire classified elements of the AEW&C capability.
4	Variation for overfunding of indexation and foreign exchange at time of approval.
5	Transfer to supplement Overseas Allowances.
6	Increased scope, approved by Government in April 2004, for the acquisition of the 5th and 6th aircraft.
7	Administrative Savings harvest.
8	Transfer to Facilities.
9	Skilling of Defence Industry harvest.
10	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $1068.4m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $42.7m having been applied to the remaining life of the project.** $388.1m of this amount is relates to a real cost increase for contract

	price indexation variations beyond the supplementation provided by Government.
11	**Out of the $173.6m expenditure up to June 2010 the majority of expenditure is associated with Independent Verification and Validation Services of $61.1m, In Service Support Contract costs of $37.7m, Facilities related expenses of $27.3m, travel costs of $16.3m and other project management support costs (legal, project administration, minor asset costs etc) of $31.2m.**
12	**Out of the $47.1m expenditure up to 30 June 2011, the majority is associated with Tindal Facilities expenditure invoice to Defence Support Group of $32.6m. Independent Verification and Validation Services of $5.0m and AEWC Radar Collaborative Study (ARCS) of $3.6m and other project administration costs of approx $6.0m.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(2.0)	FMS	**Under-achievement against the plan of approximately $41m is driven mainly by slippage of two System Acquisition Contract (SAC) Milestones (approximately $30.0m), replanning of spend associated with further spares buys for In Service Support requirements (approximately $16.0m) and final invoice received from DSG for Tindal Facilities coming in $7.0m below the forecast figures. All are offset in part by bringing forward of approximately $16.0m associated with second spares delivery.**
		(29.1)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(9.8)	Commonwealth Delays	
217.1	**176.2**	**(40.9)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Boeing	Dec 00	2,257.7	**2,606.8**	Variable	DEFPUR 101	
US Government	Jul 01	97.9	**137.9**	FMS	FMS	

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Boeing	4	6	Boeing 737-700 IGW AEW&C Aircraft	
US Government	N/A	N/A	AEW&C Hardware and USAF Support	

Major equipment received and quantities to 30 Jun 11
Initial Acceptance of **four** aircraft capable of supporting training and peacetime national tasking. Engineering and maintenance arrangements established.

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	Airborne Mission System	Jul 02		Jun 02	(1)	1
	Operational Mission Simulator	Jan 03		Apr 03	3	
	Mission Support System	Mar 03		Apr 03	1	
	Operational Flight Trainer	Aug 03		Jul 03	(1)	
	Airborne Early Warning and Control Support Facility	Nov 03		Oct 03	(1)	
Critical Design	Airborne Mission System	Feb 03		Dec 02	(2)	
	Operational Mission Simulator	Nov 03		Nov 03	0	
	Mission Support System	Dec 03		Nov 03	(1)	
	Operational Flight Trainer	May 04		Apr 04	(1)	
	Airborne Early Warning and Control Support Facility	Oct 04		Sep 04	(1)	

Notes	
1	Variances to Design Review were due to various minor causes.

3.2 Contractor Test and Evaluation Progress

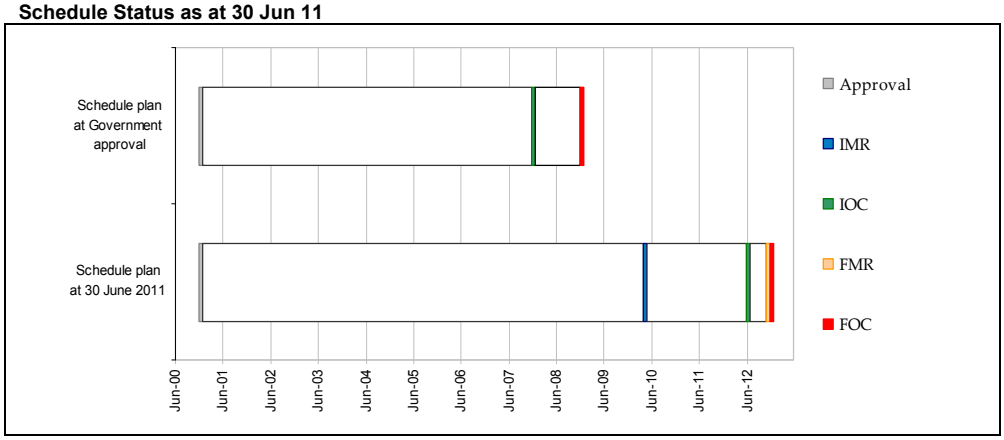
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned (Note 1)	Achieved /Forecast (Note 1)	Variance (Months)	Notes
System Integration	Airborne Mission System	Mar 06	**Sep 11**	**May 12**	**74**	**2**
	Operational Mission Simulator	Mar 06	Dec 10	**Nov 10**	**57**	
	Operational Flight Trainer	Dec 05	Dec 05	Dec 05	0	
	Mission Support System	Jul 06	Oct 08	**Aug 11**	**61**	3
	AEW&C Support Facility	Dec 06	Dec 10	**Nov 11**	**61**	**4**
Acceptance	Airborne Mission System	Nov 06	**Sep 11**	**May 12**	**66**	**5**
	Operational Mission Simulator	May 06	**Sep 11**	**Dec 11**	**64**	**4, 5**
	Operational Flight Trainer	Mar 06	Nov 08	Feb 09	35	**6**
	Mission Support System	Aug 06	**Jul 11**	**Aug 11**	**60**	**4, 5**
	AEW&C Support Facility	Mar 07	Mar 11	**Nov 11**	**56**	**4, 5**

Notes	
1	The Current Planned dates reflect the revised schedule agreed as part of the **April 2011 commercial settlement**, whereas the Forecast dates and associated Variances reflect Defence's assessment of when completion is likely to be achieved. **The above dates reflect the completion of testing relating to the Contract Specification and do not include testing associated with the additional compensatory work agreed under the commercial settlement.**
2	**Airborne Mission System (AMS) integration continues to challenge progress of the AMS development and test program. Most significant challenges relate to finalisation and integration of the mission computing, datalinks, and electronic support measures subsystems, including integrated maturity, loading and latency, and stability. Supplier hardware availability continues to present challenges to the type and production program.**
3	System Integration Test and Evaluation, previously reported as completed in May 2009, has been resumed as a result of deficiencies subsequently revealed during integrated mission testing.
4	**Ground Support Segments (GSS) continue to be impacted by AMS schedule delays.**
5	Problems associated with sub-system integration; mission computing, **loading and latency**, radar and electronic support measures maturity and stability; and supplier hardware availability.
6	Disagreement between Boeing and Commonwealth over specification requirements.

3.3 Progress Towards Materiel Release and Operational Capability Milestones

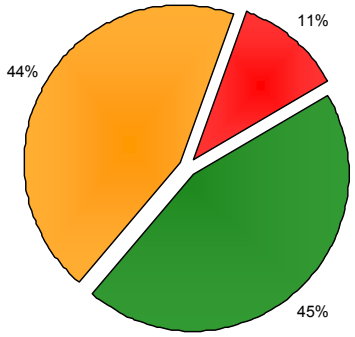
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Apr 10**	**N/A**	**Delays to system delivery due to problems associated with sub-system integration, supplier hardware availability, radar and electronic support measures maturity, and aircraft modification.**
Materiel Release 2	**N/A**	**Sep 10**	**N/A**	
Initial Operational Capability (IOC)	Dec 07	**Jun 12**	**54**	
Materiel Release 3	**Jul 11**	**Jul 12**	**12**	
Final Materiel Release (FMR)	**Nov 12**	**Nov 12**	**0**	
Final Operational Capability (FOC)	Dec 08	Dec 12	48	

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: **Performance requirements for IMR have been met.** Amber: **Performance shortfalls and technical difficulties are impacting on the transition operational service and sustainment. There is also a present risk in the availability of supplies.** Red: **Performance deficiencies in critical elements of the mission system currently pose risk to achievement of MR2, MR3 and FMR. Most deficiencies are expected to be remediated by Boeing before final delivery, but some radar deficiencies will remain at final delivery.**

Note: This pie chart is generated from information contained in *Section 4: Supplies* in the Material Acquisition Agreement for AIR 5077 Phase 3, as opposed to *Section 6: Materiel Release Milestones and Completion Criteria* for other projects.

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 major risks to the project fall within the following categories: • Schedule; and • Attainment of contracted technical performance. Schedule and technical performance risks arise from lack of technical maturity of key on-board sensor systems, incomplete software development, system integration and acceptance testing.	Engage and influence the prime contractor and major sub-contractors to maintain appropriate focus and commitment to deliver against the revised schedule baseline. **Revise agreed baselines following a further commercial settlement in April 2011.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

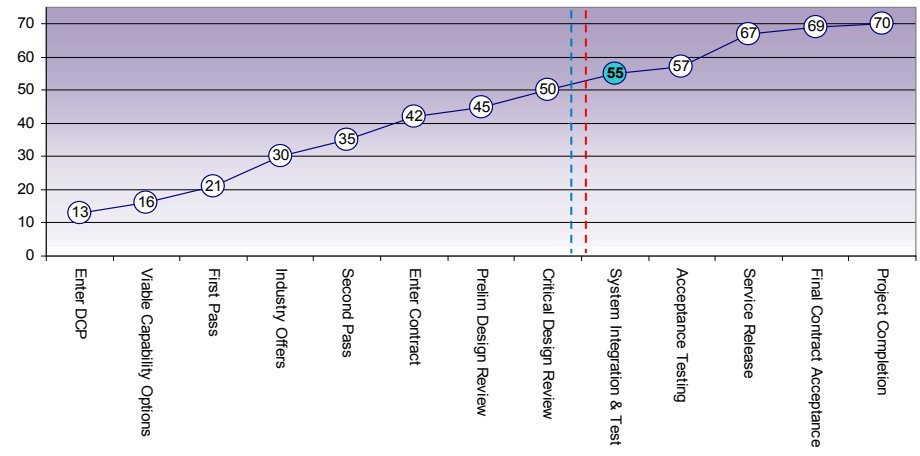
Description	Remedial Action
Current major project issues fall within the following categories: • Technical performance short falls; • Schedule delays; and • Contract management. Technical performance shortfalls arise due to some sub-systems not meeting contracted performance requirements. Notwithstanding striking a revised schedule baseline	Engage and influence the prime contractor and major sub-contractors under an incremental delivery approach to maintain appropriate focus and commitment to deliver contracted performance in accordance with the revised schedule. Maintain engagement with the prime contractor to achieve alignment of in-service support with the incremental delivery of aircraft and associated support equipment.

in the **commercial settlement agreed in November 2009,** schedule delays continue to be encountered. **A new schedule baseline was struck in the commercial settlement agreed in April 2011.** Contract management issues relate to: • Schedule delays arising out of problems associated with subsystem maturity and stability and integrated system performance. • Ramping up of In Service Support Contract.	

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	8	7	8	8	8	8	8	55
System Integration and Test	Project Status	7	7	**8**	8	8	6	9	**53**
		• **Schedule: Delays associated with sub-system integration; mission computing, loading and latency, radar and electronic support measures maturity and stability; and supplier hardware availability** • Commercial: The Commonwealth assesses that there is **some** continuing risk to Boeing's delivery plans. • Operations and Support: Operations and support systems have begun transitioning to the operational environment with Initial Acceptance of the first **four** aircraft.							



2009-10 DMO MPR Status - - - - -

2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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.	First of Type Equipment
Underestimating the length of time required and effort involved in undertaking these phases when applied to a complex, highly developmental system.	Schedule Management
Better appreciating the challenges involved in contractor management in a complex developmental project.	Contract Management
Recognising the need for pro-active risk management and the use of high-end risk management tools.	First of Type Equipment
The need for industry to pay greater attention to adequately resourcing complex and highly developmental projects.	Resourcing
Early recognition of the need for proactive stakeholder engagement throughout the project.	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.	Resourcing Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Mr Warren King
Division Head	AVM Chris Deeble
Branch Head	Mr Bill Spencer
Project Director	AVM Chris Deeble
Project Manager	AVM Chris Deeble

Project Data Summary Sheet[197]

Project Name	**MULTI ROLE HELICOPTER**
Project Number	**AIR 9000 Phase 2, 4 and 6**
Capability Type	Replacement
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)	**$3,753.7m**
2010-11 Budget	**$326m**
Project Stage	Acceptance Testing
Complexity	ACAT II

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 is the acquisition of an additional Squadron of troop lift aircraft for **the Australian** Army, Phase 4 will replace Army's Black Hawk helicopters in the Air Mobile and Special Operations roles, and Phase 6 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

Cost Performance

The project is currently progressing within the approved budget and the capability is anticipated to be delivered within the approved budget. Some payment milestones have been replanned to reflect the progressive delivery of capability.

Schedule Performance

Thirteen aircraft have been accepted with six aircraft based with the Army's 5th Aviation Regiment in Townsville, three aircraft based with Navy's 808 Squadron in Nowra and four aircraft with the Army Aviation Training Centre in Oakey. These first **thirteen** aircraft will require an in-service retrofit (at Contractor expense) to bring them up to the full Phase 2/4/6 capability baseline. The first fully compliant Phase 2/4/6 aircraft are due for delivery in the second half of **2011.**

The project stopped accepting aircraft in November 2010 as the aircraft did not meet all contractual requirements, this will impact the achievement of capability milestones from 2010–11 to later financial years. The final aircraft is scheduled to be delivered in mid 2014, however this timeframe may be affected by the current non conformance delays. Initial Operational Capability (IOC) for Navy and Army are also likely to be deferred.

[197] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability 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 **project** to define and implement a series of capability block enhancements to bring the MRH90 to contracted standards. This includes a retrofit program, at no additional cost to the Commonwealth, to progressively bring all aircraft up to the contracted standard.

1.3 Project Context

Project	Explanation
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 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 as the replacement of the **RAN's** fleet of six Sea King helicopters, providing maritime support capability for Navy. In total, the Air 9000 MRH Program will acquire 46 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 Australian Aerospace **(AA)** 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. The Air 9000 MRH Program Office signed an initial CCP for the Acquisition, Sustainment and Program Agreement Contracts in June 2006. A further CCP for development of associated systems including: Electronic Warfare Self Protection Support System, MRH Software Support Centre, MRH Instrumentation System and a Ground Mission Management System, as well as two part task trainers and a number of aircraft options were signed in October 2006. The three Air 9000 Phase 2/4/6 contracts viz. Program Agreement Contract, Acquisition Contract and Sustainment Contract incorporate both of 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. **In February 2011 the Defence Minister announced that the project would undergo an independent high-level diagnostic review, known as a Gate Review. On 28 April 2011 the Minister for Defence Materiel announced that the review had been completed and the project would not be added to the Project of Concern list at that time. The Project would need to continue to work with the contractor, Australian Aerospace, to implement a remediation plan (Deed of Agreement and CCPs) to improve the availability of the helicopters by addressing engineering and reliability issues. The project would be the subject of a further diagnostic review later in the year (anticipated September 2011) to examine the effectiveness of the action taken and whether further action was necessary.**

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 **RAN.** 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 on French Military Airworthiness Authority, 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 provides confidence in the MRH90 platform for the ADF to leverage off common certification evidence.
Major Challenges	The reliability **and Rate of Effort of MRH90 is well below the contracted requirement** and has impacted the training of MRH90 aircrew. Key contractual and capability milestones have been impacted by the reduced Flying Rate of Effort. Aircraft system immaturity has affected the certification schedule of the MRH90. Several aircraft components, including the cabin floor panels and windscreens **do not** meet the contracted capability. Aircrew Information Set. The current version of the NH90 common Aircrew Information Set has been assessed as unsuitable for Australian operations.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Apr 04	Original Approved	3.3		3.3		1
Aug 04	Government Second Pass Approval	953.9	953.9			
Jun 06	Real Variation – Scope	2,565.5	2,565.5			2
Oct 06	Real Variation – Transfer	(219.0)	(219.0)			3
Oct 08	Real Variation – Transfer	(20.0)	(20.0)			4
Oct 08	Real Variation – Scope	31.5	31.5			5
		3,311.9		**3,311.9**		
Jun 11	Price Indexation			**679.8**		**6**
Jun 11	Exchange Variation			**(241.3)**		
Jun 11	**Total Budget**	**3,315.2**		**3,753.7**		
2.2 Project Expenditure History						
Prior to Jul 10		**1,257.1**	1,415.3		Australian Aerospace	
		64.3	64.8		CAE Australia	
		96.6	96.6		Other	**7**
		1,418.0		**1,576.7**		
FY to Jun 11		**219.8**	**214.7**		Australian Aerospace	
		33.8	**36.3**		CAE Australia	
		10.5	**10.5**		Other	**7**
		264.1		**261.5**		
Jun 11	**Total Expenditure**	**1,682.1**		**1,838.2**		
Jun 11	**Remaining Budget**	**1,633.1**		**1,915.5**		

Notes	
1	This project's original DMO 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 that will be managed by **Defence Support Group (DSG).**
4	Transfer to DSG for Facilities Infrastructure.
5	RCI funding for Full Flight and Mission Simulator Facilities **(FFMS).**
6	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $556.2m. 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.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Variance is primarily due to the reprogramming of several Prime Contract related milestones into the next FY ($13.3m), EVM replanning due to the program temporarily ceasing aircraft acceptance ($22.4m), partial suspension of subcontract work on the FFMS contract ($14.8m), reduced spares, Support & Test Equipment ($9.3m) and reduced price variation due to disagreement in calculation methodology ($4.7m).**
			Overseas Industry	
		(64.5)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
326.0	**261.5**	**(64.5)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Australian Aerospace	Jun 05	846.3	**2,499.1**	VARIABLE	ASDEFCON (Strategic)	1,2
CAE Australia	Dec 07	**180.5**	**181.5**	VARIABLE	ASDEFCON (Complex)	**3**

Notes	
1	**This contract also includes an Electronic Warfare Self Protection Support System, MRH Software Support System, MRH Instrumented System and 22 Ground Mission Management Systems (GMMS) (4 Fixed GMMS, 7 Deployable GMMS, 1 Reduced, 9 Light and 2 interim GMMS). Contract Base date is Jan 04.**
2	The MRH Instrumented System includes an airborne instrumentation pallet, some ground based instrumentation and three aircraft (from the total fleet of 46) that have provisions to have the instrumentation pallet installed.
3	**Previous reporting of the base date value for the Australian Aerospace contract utilised RBA rates, the base date has been amended using CoA Base Date rates as detailed in the AIR 9000 Request For Proposal documents.**

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Australian Aerospace	12	46	MRH90 Aircraft	
CAE Australia	2	2	Full Flight and Mission Simulator	

Major equipment received and quantities to 30 Jun 11
13 MRH aircraft have been accepted to date. Engineering and maintenance arrangements 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	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	
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	May 08	Nov 08	Mar 09	9	
System Design	Full Flight and Mission Simulators	Oct 08	Mar 09	Jun 09	8	2
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	
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	Feb 09	Sep 09	Oct 09	8	
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	
	MRH Instrumented System	N/A	Jun 08	Jun 08	0	
	Full Flight and Mission Simulators	Aug 09	Feb 10	Apr 10	6	

Notes	
1	Delays in the Systems Engineering process have resulted from the developmental nature of the aircraft system, with the MRH90 variant being unique in some ways.
2	FFMS 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 OEM.

3.2 Contractor Test and Evaluation Progress

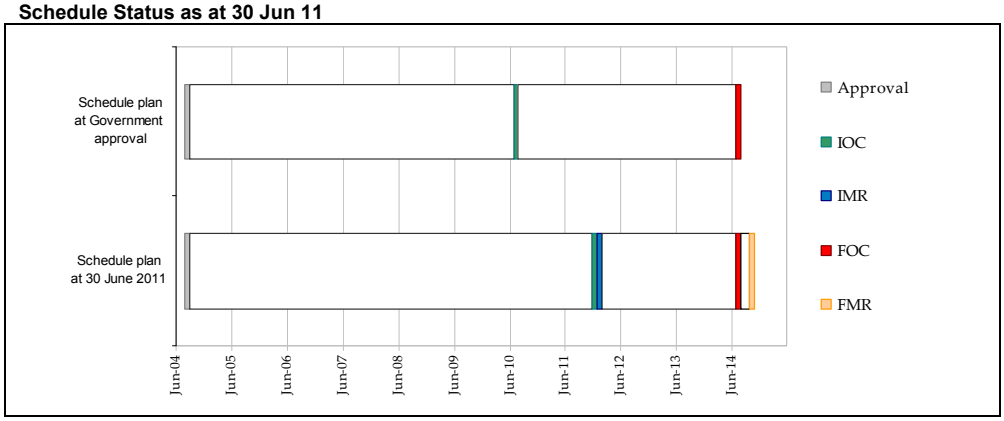
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRH aircraft - Phase 2	Jul 06	Nov 06	Dec 06	5	
	MRH aircraft - Phase 4/6	N/A	N/A		N/A	
	MRH Software Support Centre	N/A	Oct 08	Nov 08	1	
	Electronic Warfare 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	
	MRH Instrumented System	Nov 08	May 09	Dec 09	13	1
	Full Flight and Mission Simulators	Jun 11	**Sept 11**	**Sep 11**	**4**	2
Acceptance	Type Acceptance Review Special Flight Permit 1	Oct 07		Dec 07	2	3
	Type Acceptance Review Special Flight Permit 2	Jun 08		Jun 08	0	
	Extension Special Flight Permit 2	Feb 09		Feb 09	0	
	Australian Military Type Certificate	Dec 08	Dec 10	Dec 11	36	4
	Full Flight and Mission Simulators	Mar 13	**Mar 13**	**Mar 13**	**0**	**5**
	Ground based Mission planning and Management System Lot 1	Feb 09	Sep 09	Dec 09	10	
	Ground Mission planning and Management System Lot 2	Feb 09	Dec 09	Apr 10	14	
	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	Jul 11	16	
Aircraft Acceptance	MRH aircraft #01 (First aircraft)	Dec 07		Dec 07	0	
	MRH aircraft #05 (First Australian built aircraft)	Dec 08		Dec 08	0	
	MRH aircraft #**13** (Most recent)	**Mar 10**	**Sep 10**	**Sep 10**	**6**	
	MRH aircraft #**14** (Next aircraft)	**Jul 10**	**Jul 11**	**Jul 11**	**12**	**6**
	MRH aircraft #46 (Final aircraft)	Jul 14	Jul 14	Jul 14	0	

Notes	
1	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.
2	Delays experienced through the FFMS design phase have flowed into development and production activities. **Some schedule recovery has occurred as the Contractor has adopted parallel development of FFMS#1 and FFMS#2.**
3	The first Airworthiness Board (for a Special Flight Permit) was conducted in November 2007 and granted in December 2007.
4	Achievement of the Australian Military Type Certificate has proved problematic due to insufficient levels of Rate of Effort. Rate of Effort is 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. Further, the numbers of trained aircrew have been limited by the low Rate of Effort and are a criterion for Australian Military Type Certificate. Operating under the Special Flight Permit rather than an Australian Military Type Certificate has not caused any project delay to date.
5	**FFMS schedule compression has occurred due to the adoption of a parallel integration and testing program for both simulators. The testing program is ambitious and the likelihood for success can be better gauged once testing commences in the second half of 2011.**
6	**Acceptance of aircraft ceased on 22 November 2010 due to Contractual non conformity. Resumption of aircraft acceptance will commence when the Contractor demonstrates the capability in accordance with the contract.**

3.3 Progress Towards Materiel Release and Operational Capability Milestones

Item		Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Army / Navy	**Jan 12**	**Jan 12**	**0**	
Initial Operational Capability (IOC)	Navy	Jul 10	**Dec 11**	**17**	A delay to IOC – Navy is due to the low achieved Rate of Effort and its effect on aircrew training.
	Army	Apr 11	Oct 12	18	A delay to IOC – Army is due to the low achieved Rate of Effort and its effect on aircrew training.
Final Materiel Release (FMR)	Army / Navy	**Oct 14**	**Oct 14**	**0**	
Final Operational Capability (FOC)	Navy	Dec 12	Dec 12	0	N/A
	Army	Jul 14	Jul 14	0	N/A

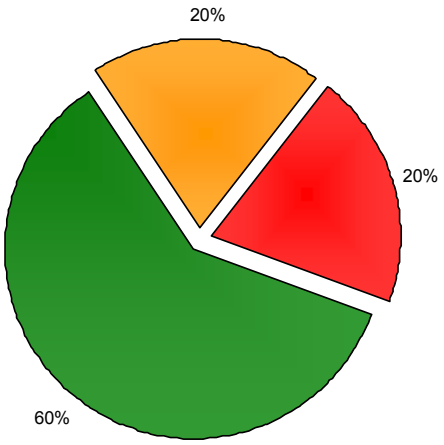
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The project is currently meeting the capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.

Amber:

The achievement of FMR is directly linked to IMR and may subsequently be delayed dependant on the outcomes of Deed negotiations with Australian Aerospace to address engineering and reliability issues.

Red:

Due to Australian Aerospace's inability to deliver conforming supplies, it is highly likely that first maritime and land operational capabilities will not be achieved by the scheduled date. The outcomes of ongoing Deed negotiations will determine to what degree and time frame the PMS will be 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 Acceptance of aircraft will be affected by Voids and Porosities in the tail sections of aircraft leading to an impact on schedule, cost, performance, quality and safety.	**Airframe non-destructive testing to identify and quantify affected aircraft/areas.** **Industry developed and conducted repair schemes, to return affected airframes to the required certification basis.** **Development of a CCP to clarify Industry's obligation to cover any in-service and maintenance repair costs as a result of voids and porosity issues.**
There is a chance that Transition Stage Aircrew Training objectives will be affected by the failure of the Commonwealth to generate the required Rate Of Effort prior to Australian Military Type Certificate.	High priority has been placed on training activities. Maximise use of highly experienced Black Hawk and Sea King pilots to reduce training requirements. Increase the pool of instructors as soon as possible. Make best use of available training opportunities with European operators of NH90.
There is a chance that IMR will be affected by aircraft system immaturity and system reliability that may impact schedule and the MRH Type Certification. Systems affected in the early stages of aircraft introduction include oil cooler fans, engine failure and some windscreen failures.	**Careful management of the MRH Certification process to ensure maturity growth matches the required capabilities for introduction into service. Close liaison with Industry and other NH90 customers to develop solutions to design problems. Careful prioritisation of the use of Flying Rate of Effort once the current flying suspension, due to the engine incident, is lifted.**
There is a chance that the planned withdrawal of Black Hawk and Sea King will be affected by the delays to the MRH90 program leading to an impact on Cost, Schedule, Performance.	**DMO is working with Navy and Army to minimise the effect of MRH program delays on the existing withdrawal plans for both the Sea King and Black Hawk fleets and to find cost effective solutions.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	**N/A**

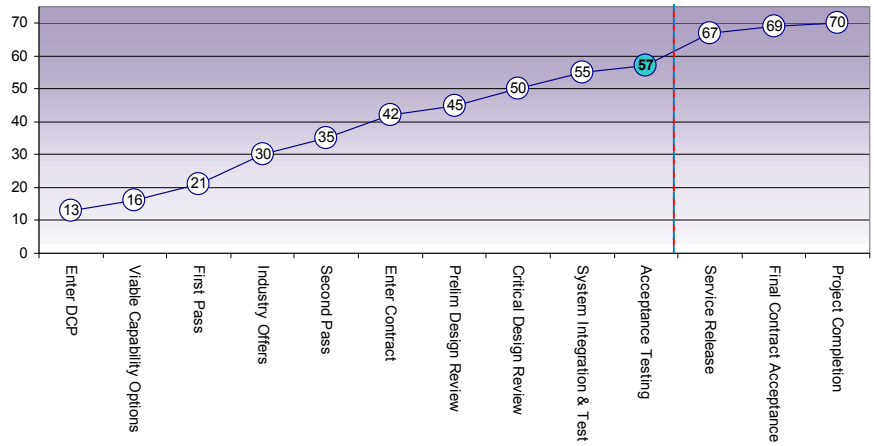
5.2 Major Project Issues

Description	Remedial Action
The schedule to achieve **an** Australian Military Type Certificate and Service Release in **2011** will be adversely affected due to the inability to generate the required aircraft rate of effort.	Resolve technical and spares issues that restrict aircraft availability. Streamline Commonwealth and Industry support processes to maximise available flight opportunities.
The schedule to achieve **an** Australian Military Type Certificate and Service Release in 2010 will be adversely affected by failing to achieve a sufficiently mature MRH System.	Measure progress against capability Key Performance Indicators. Maximise opportunities to use certification processes of other NH90 nations. Maintain focus on achieving capability milestones and targets.
The technical and flight operational airworthiness will be affected by the immaturity of the MRH90 flight manual for Service Release leading to an impact on schedule, performance and supportability.	**The project and Australian Aerospace are developing an Australianised Aircrew Information Set.**

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	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	10	**9**	**10**	**10**	**8**	**5**	9	61
	Explanation	• **Schedule:** Achievement of MRH90 ISD and the first **13** MRH aircraft and support systems have been accepted into service. • **Cost: Elements of contingency have been realised to support the delivery of the capability.** • **Requirement:** The MRH System design and acceptance testing phases being essentially complete. Additionally, the project office, with Navy and Army, is conducting validation trials to demonstrate that the system meets in-service requirements. • **Technical Understanding: The project office have been involved in intense discussions with industry to understand the technical issues.** • **Technical Difficulty: Capability is still being tested fully due to the immaturity of elements of the capability.** • **Commercial: A discrepancy remains between Australian Aerospace's willingness to support the commercial arrangements that will underpin re-acceptance of aircraft.** • **Operations and Support:** The MRH System has commenced progressive transition from the acquisition environment to the in-service support and operational organisations.							



2009-10 DMO MPR Status - - - - 2010-11 DMO 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 delivery of the first of type for projects. 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 Deck ships).	Contract Management
The MRH Project was viewed as a Military off-the-Shelf (MOTS) acquisition. Lessons associated with 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

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	**RADM Mark Campbell**
Branch Head	**BRIG Andrew Mathewson**
Project Director	**COL Ron Dempster**
Project Manager	**LTCOL Jeremy King**

Project Data Summary Sheet[198]

Project Name	**BRIDGING AIR COMBAT CAPABILITY**
Project Number	**AIR 5349 Ph 1 and 2**
Capability Type	Replacement
Service	Royal Australian Air Force
Government 1st Pass Approval	Mar 07
Government 2nd Pass Approval	Mar 07
Total Approved Budget (Current)	**$3,578.5m**
2010-11 Budget	**$426.4m**
Project Stage	Phase 1 **Service Release**
	Phase 2 **Integration and Test**
Complexity	ACAT II

Section 1 – Project Summary

1.1. Project Description

The Bridging Air Combat Capability (Super Hornet) project will acquire 24 Boeing F/A-18F Super Hornets, associated weapons, support, and training systems to establish a bridging air combat capability.

Phase 1 of the project will acquire the aircraft platform, and associated support and training systems.

Phase 2 of the project will acquire the associated missile suite including; AIM-9X Within Visual Range Air-to-Air Missiles (AIM-9X), AGM-154C & C-1 Joint Stand-Off Weapons (JSOW C and C-1), AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM) and new Infra-Red Flares in support of the Super Hornet aircraft.

1.2 Current Status

Phase 1	**Cost Performance** The project remains within its current approved budget.
	Schedule Performance The project remains on schedule in order to meet Final Operational Capability (FOC) by December 2012. **Air 5349 Phase 1 achieved a number of significant milestones in this reporting period including the declaration of Initial Operating Capability (IOC) with 20 mission capable aircraft delivered. The aircraft deliveries remain ahead of schedule and are being operated by Numbers 1 and 6 Squadron based at Royal Australian Air Force (RAAF) Amberley. The necessary engineering, maintenance, supply and training arrangements to support aircraft operations and aircrew training within Australia have also been established.**
	Materiel Capability Performance **The Super Hornets have been granted Australian Military Type Certification and all 20 aircraft have been entered on the State Register and released from the Defence Material Organisation (DMO) to the RAAF for service. The aircraft have a comprehensive electronic warfare suite (the towed decoy jammer, ALE-55, is planned for delivery prior to December 2012), advanced infra-red/laser pods,**

[198] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

	external fuel tanks, aerial refuelling stores and an Active Electronically Scanned Array (AESA) radar. The Super Hornets are able to employ the AIM-9X and AMRAAM C5 air-to-air missiles, and JSOW-C weapons being procured under Phase 2 of the project along with a range of weapons already in the Air Force's weapons inventory. **Two tactical flight simulators and two cockpit procedural trainers have been delivered and service released during 2010 to provide aircrew training.**
Phase 2	**Cost Performance** **The project remains within its current approved budget.**
	Schedule Performance **The project successfully achieved IOC in December 2010 and is on schedule to achieve Final Material Release (FMR) by August 2012 and FOC by December 2012. The AIM-9X and JSOW C will transition to the DMO in-service management organisation in the second half of 2011.**
	Materiel Capability Performance **The AIM-9X and JSOW C have been delivered, certified, and are in service. A number of AIM-120 B and C-5 AMRAAM have been upgraded to be compatible with Super Hornet, with the remainder of the inventory scheduled for upgrade in the third Quarter of 2011. The United States Navy is undertaking developmental test and evaluation of the JSOW C-1 weapon which is progressing on schedule as is the acquisition process of the AMRAAM C-7.**

1.3 Project Context

Project	Explanation
Background	In November 2006, Government directed Defence to develop options to de-risk the transition from the current Australian Defence Force (ADF) air combat capability to the new air combat capability being acquired under Project Air 6000. To achieve this, Defence established Project Air 5349 to acquire a bridging air combat capability for the ADF. In March 2007, **Government** approved the acquisition and sustainment of 24 F/A-18F Super Hornet aircraft and associated weapons, support, and training systems. Under Phase 1 of the project, 24 F/A-18F Super Hornet aircraft and associated training and support systems will be acquired primarily through Foreign Military Sales (FMS) Cases with the United States (US) Government. The 24 F/A-18F Super Hornet aircraft being acquired include alternate mission equipment; electronic warfare equipment (with an Australian-unique data library); targeting pods; communication and navigation suites. The training systems being acquired include tactical flight simulators (known as Tactical Operation Flight Trainers), cockpit procedural trainers (known as Low Cost Trainers), and maintenance training simulators (known as Integrated Visual Environment Maintenance Trainers). The support systems being acquired include an automated maintenance environment, support and test equipment to operate and maintain the aircraft, initial aircrew and maintenance training; and the provision for three years worth of repairable items and breakdown spares, including fly-away-kits. **Phase 2 of the project will acquire quantities of AIM-9X Sidewinder missiles and new variant's of AIM-120 AMRAAM missiles to provide both a Within and Beyond Visual Range missile capability; and the AGM-154 JSOW capability. In order to maintain JSOW commonality with US Navy, a limited quantity of JSOW C weapons were procured for IOC, with the remainder being the updated version JSOW C-1.** **Phase 2 is also scoped to acquire a trial quantity of Infra-Red (IR) flares in order to achieve IOC. Further quantities of AIM-9X Captive Air Training Missiles to meet ongoing training requirements have been acquired. Phase 2 was also directed to undertake additional certification and integration activity of the current ADF AIM-120 AMRAAM inventory on to the F/A-18F to achieve IOC.**

	Phase 2 will provide JSOW C and post Software Upgrade (SWUP) 08 AMRAAM to support the Super Hornet FOC currently scheduled for December 2012. Further delivery of new missile variants for JSOW and AMRAAM will occur after this milestone. These are highlighted in the Project Event and Supplies Delivery Schedule. These two events will ensure the effectiveness of the weapons system for the life of the capability is maintained.
Uniqueness	The F/A-18F Super Hornets are a Military-Off-The-Self (MOTS) aircraft acquisition. The aircraft are common with US Navy F/A-18F Super Hornets with the only significant configuration difference being the inclusion of a civilian-compatible Instrument Landing System. The F/A-18F Super Hornets was a directed Government solution resulting from the combined first and second pass project approval process. The timeframe between the Government approval of the project and the IOC date is significantly shorter than for other major aerospace acquisitions. The majority of acquisition activity for the aircraft and support equipment is being undertaken through a US FMS case. **Acquisition of the weapons suite is being undertaken using several US FMS cases. The weapons being procured under Phase 2 are continually monitored to ensure the ADF receives the most up to date, US Navy common weapon, as defined by Government. All the weapons being procured under Phase 2 are new to the ADF.**
Major Challenges	Whilst the aircraft are MOTS with a current production line running, the acquisition of the training and support systems needed requirements definition and design development activities so that they could be integrated into existing Australian operational and sustainment infrastructure. Project currently managing the delivery of facilities and Support and Test Equipment to an aggressive timeline to sustain initial flying operations in Australia. **Procurement of leading edge weapons via FMS is reliant on development schedules, which induce schedule risk that DMO has limited ability to mitigate.** **Whilst weapons are MOTS, there is a requirement for necessary data to be provided to enable the RAAF certification. The pace of this acquisition provided challenges for US Navy to supply associated data in the necessary timeframes.**
Other Current Projects/Sub-Projects	**N/A**

1.4 Linked Projects

Description of Project		Description of Dependency
Air 5402 Air to Air Refuelling Capability	Provision of five Multi-Role Tanker Transport aircraft and associated supplies and support.	Air-to-air refuelling support for extended range/duration missions.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Mar 07	Original Approved Phase 1 & Phase 2	**3,728.2**		**3,728.2**		
Phase 1						
Mar 07	Original Approved Phase 1	3,545.8		3,545.8		
Jul 08	Phase 1 Real Variation – Transfers	(33.3)	(33.3)			1
May 11	Real Variation -					
May 11	Budget Transfer to Phase 2	**(99.0)**	**(99.0)**			**2**
May 11	Real Variation - Real Cost Decrease	**(107.2)**	**(107.2)**			**3**
Jun 11	Phase 1 Price Indexation			**367.3**		**4**
	Phase 1 Exchange Variation			**(372.6)**		
	Total Budget	**3,306.3**		**3,301.0**		
Phase 2						
Mar 07	Original Approved Phase 2	**182.4**		**182.4**		
Jun 11	Budget transfer from Phase 1	**99.0**	**99.0**			**2**
Jun 11	Phase 2 Price Indexation			**23.9**		**4**
Jun 11	Phase 2 Exchange Variation			**(27.8)**		
Jun 11	**Total Budget**	**281.4**		**277.5**		
Jun 11	**Total Budget Phase 1 & Phase 2**	**3,587.7**		**3,578.5**		
2.2 Project Expenditure History Phase 1 and Phase 2						
Prior to Jul 10		**2,162.2**	**2,138.4**		US Government Phase 1 (Aircraft)	**7**
		87.6	**86.6**		US Government Phase 2 (Weapons)	**7**
		88.2	**87.2**		**Other Phase 1**	**5**
		0.8	**0.8**		**Other Phase 2**	**6**
		2,338.8		**2,313.0**		
FY to Jun 11		**407.5**	**346.2**		US Government Phase 1 (Aircraft)	**7**
		17.6	**15.4**		US Government Phase 2 (Weapons)	**7**
		21.7	**18.3**		**Other Phase 1**	**5**
		0.6	**0.6**		**Other Phase 2**	**6**
		447.4		**380.5**		
Jun 11	**Total Expenditure**	**2,786.2**		**2,693.5**		
Jun 11	**Remaining Budget**	**801.5**		**885.0**		

Notes	
1	Guidance transfer to DSG Facilities element.
2	**Real Cost Decrease Phase 1 - budget transfer to AIR 5349 Phase 2 ($99.0m) for Super Hornet Weapons.**
3	**Real Cost Decrease return to Portfolio ($107.2m).**
4	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach for Phase 1 was $351.4m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $15.9m having been applied to the remaining life of the project. The cumulative impact of this approach for Phase 2 was $20.6m. 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.**
5	Other expenditure comprises: operating expenditure, contractors, contingency, other capital expenditure not attributable to the aforementioned contract and minor contract expenditure. **For base date calculations against "Other" expenditure, calculations have been made using a proportional adjustment. This proportional adjustment involves the average between base date calculation of the disclosed major contract(s) and their constant price and applying to the "Other" expenditure.**
6	**'Other' cost is a combination of overseas and domestic travel, Professional Service Providers, Freight and General Administration. For base date calculations against "Other" expenditure, the calculations have been made by de-escalating the compound effect of the indexation and foreign exchange factors to the original contract date.**
7	**For Base Date calculations for FMS cases, a consistent de-escalation factor has been applied to all projects which is derived from Defence's cost estimation methodology.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(20.0)	FMS	**Phase 1 variation was ($45m) below the budget plan. The most significant drivers of the underspend are ($10.9m) in Exchange Gain (March to June 2011) and ($20m) underspend associated with FMS case against US Navy activities and offsets to the sustainment budget; Other variations have occurred associated with other Project activity including ferry costs not incurred ($2.5m); ($9.2m) due to optimistic forecasts and ($2.4m) due to delays in inter-agency invoicing.** **Phase 2 had a variation of ($0.94m). This is due to the ($0.32m) PSTL procurement delay and the overall FOREX gains for Financial Year 2010-11 of ($0.62m).**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		(11.5)	FOREX Variation	
		(14.4)	Commonwealth Delays	
426.4	**380.5**	**(45.9)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
(Phase 1) US Government	May 07	2,850.3	2,850.5	FMS	FMS	
(Phase 2) US Government	**Aug 06 Oct 07 Mar 08 Jun 08 Mar 09 May 09**	**124.1**	**127.3**	**FMS**	**FMS**	**1**

Notes

1	**Various Signature Dates reflect different FMS acquisition cases however their prices have been combined due to classification.**

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
US Government	24	**24**	F/A-18F Super Hornet Aircraft	
US Government	**Classified**	**Classified**	• **AIM-9X CATM, operational and telemetry missiles, technical assistance and data;** • **JSOW C operational and telemetry missiles, technical assistance and data;** • **JSOW C-1 operational and telemetry missiles, technical assistance and data;** • **Trial quantity of Infra-Red Flares and technical data;** • **Extant AMRAAM missiles software modification and test, technical assistance and data.**	**1**

Major equipment received and quantities to 30 Jun 11

Phase 1	**Twenty aircraft have been delivered. Engineering, maintenance, and training arrangements established.**
Phase 2	**AIM-9X CATM, AIM-9X and JSOW C operational and telemetry missiles, infra-red flares.**

Notes

1	***Quantities are classified***

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant		Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Software Design	Phase 1	Aircraft Software	Feb 08		Feb 08	0	
	Phase 2	**Weapons**	**N/A**	**N/A**	**N/A**	**N/A**	**1**
System Requirements	Phase 1	Aircraft	N/A		N/A	N/A	2
		Automated Maintenance Environment	Oct 08		Oct 08	0	
		Electronic Warfare Data Library	Jul 08		Jul 08	0	
		Tactical Operation Flight Trainers	Oct 08		Oct 08	0	
		Low Cost Trainers	Oct 08		Oct 08	0	
		Integrated Visual Environment Maintenance Trainers	Oct 08		Oct 08	0	
	Phase 2	**Weapons**	**N/A**	**N/A**	**N/A**	**N/A**	**1**
Preliminary Design	Phase 1	Aircraft	N/A		N/A	N/A	2
		Automated Maintenance Environment	Nov 08		Nov 08	0	
		Electronic Warfare Data Library	Oct 08		Dec 08	2	3
		Tactical Operation Flight Trainers	Apr 09		Mar 09	(1)	4
		Low Cost Trainers	Apr 09		Mar 09	(1)	4
		Integrated Visual Environment Maintenance Trainers	Jan 09 – Oct 09		Jan 09 – Oct 09	0	5
	Phase 2	**Weapons**	**N/A**	**N/A**	**N/A**	**N/A**	**1**
Critical Design	Phase 1	Aircraft	Jul 08		Sep 08	2	6
		Automated Maintenance Environment	Feb 09		Mar 09	1	7
		Electronic Warfare Data Library	Dec 08		Jul 09	7	
		Tactical Operation Flight Trainers	Apr 09		Mar 09	(1)	
		Low Cost Trainers	Apr 09		Mar 09	(1)	
		Integrated Visual Environment Maintenance Trainers	Jan 09 – Oct 09		Jan 09 – Oct 09	0	
	Phase 2	**Weapons**	**N/A**	**N/A**	**N/A**	**N/A**	**1**

Notes	
1	**All missiles acquisitions within the Scope of Phase 2 are MOTS - design reviews were completed by the US Government prior to Commonwealth acquisition.**
2	No Aircraft Systems Requirement Review or Preliminary Design Review for the project as the aircraft is a MOTS design.
3	The Electronic Warfare data library preliminary design review was delayed due to the US Navy adopting a new design process, and the issue of classified data being unable to be released.
4	Preliminary and Critical Design Reviews were combined to meet delivery targets.
5	The Integrated Visual Environment Maintenance Trainers follow a spiral development path with several combined Preliminary/Critical Design Reviews beginning in January 2009 and continuing through until October 2009.
6	The Aircraft Critical Design Review was delayed due to the Instrument landing System integration requiring re-design.
7	The Critical Design Review for the Automated Maintenance Environment slipped by one week.

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	Phase 1	Instrument Landing System Antennae Qualification	Jul 08		May 09	10	1
		Instrument Landing System - Aircraft Integration Test	Jan 09 – Mar 09		May 09 – June 09	3	2
		Aircraft Software Integration	Mar 09 – Jul 09		Mar 09 – Dec 09	5	3
		Electronic Warfare Data Library	Mar 09		May 10	14	4
		Automated Maintenance Environment	Aug 09		Aug 09	0	
	Phase 2	**JSOW-C, JSOW C-1, AIM-9X and AMRAAM**	**N/A**	**N/A**	**N/A**	**N/A**	**5**
Acceptance	Phase 1	Lot 32 Aircraft Production Test (Boeing) – 12 Aircraft	Jul 09 – May 10		Jul 09 – May 10	0	
		Lot 33 Aircraft Production Test (Boeing) – 12 Aircraft	Aug 10 – Jul 11		Aug 10 – Jul 11	0	
		Aircraft Post-Production Test and Evaluation (US Navy)	Jul 09 – Oct 09		Jul 09 – Dec 10	14	6
		Electronic Warfare Data Library	May 09		Jun 10	13	7
		Automated Maintenance Environment	Aug 09		Aug 09	0	
		Tactical Operation Flight Trainers #1 (On-Site Test)	Mar 10		May 10	2	8
		Low Cost Trainers	Feb 10		May 10	3	9
		Visual Environment Maintenance Trainers	Sept 09		Oct 09	1	10
		Computer Based Training Classrooms	Nov 09		Dec 09	1	
	Phase 2	**AIM-9X**	**Mar 10**		**Mar 10**	**0**	
		JSOW C	**N/A**		**Feb 10**	**0**	**11**

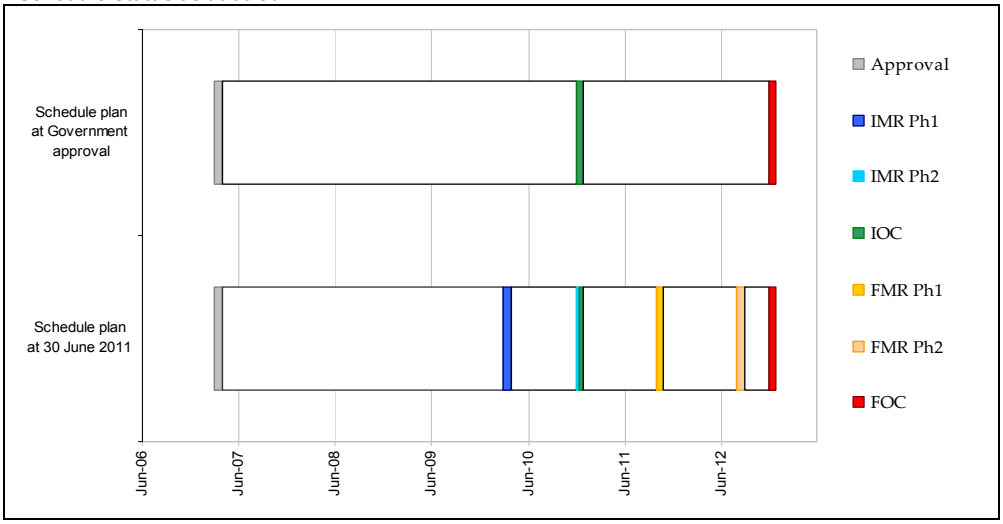
		JSOW C-1	**Mar 10**	**Jun 13**	**Jun13**	**39**	**12 &13**
		AMRAAM C-7	**Dec 11**	**Jun 14**	**Jun 14**	**30**	**14**

Notes	
1	Instrument Landing System antennae qualification and integration tests delayed due to a test failures of the antennas and the need to redesign.
2	Airframe Integration Test – Slip due to failure of Instrument Landing System antennae.
3	Software Integration – classified.
4	The Electronic Warfare data library testing was delayed due to the US Navy adopting a new design process, and the continuing issue of classified data being unable to be released.
5	**Integration of weapons onto aircraft is within the scope for AIR 5349 Phase 1.**
6	Post-production test and evaluation affected by the delays in the instrumented landing system qualification and aircraft software integration. The fourteen month delay related to the first aircraft which remained in the US under US Navy custody for Contractor rectification testing with the avionics issue and US Navy weapon risk mitigation activity.
7	Thirteen month delay due to System Integration failures and delays with USN development.
8	Two month variance due to delays in the US Government data release approval process and approval required for US export of equipment.
9	Three month delay due to late delivery of Low Cost Trainer facility at Amberley.
10	One month variance due to delays in the US Government data release approval process and approval required for US export of equipment.
11	**Due to JSOW C-1 slippage, JSOW. C was acquired to meet December 2010 IOC requirement.**
12	**Deliveries of post FOC weapons are a result of the spiral acquisition process. This is inherent in a modern weapons project whereby new weapons will be procured following discontinued production runs of the JSOW-C and AMRAAM C-5 weapons variant.**
13	**Reflects up to 39 months delay in US program of JSOW C-1, noting original planned date was based on US Navy advice prior to full disclosure of US Navy development schedule. JSOW C missiles were purchased to provide required IOC/FOC capability of JSOW C-1. Since acquisition of JSOW C meets the IOC/FOC requirement of JSOW C-1 (March 2010), actual delay should be considered as post FOC, December 2012 (6 months).**
14	**Reflects variance of 30 months due to earliest availability of AMRAAM C-7 from US Government.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

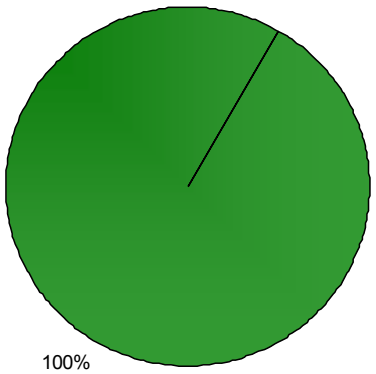
Item		Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Phase 1	**N/A**	**Mar 10**		
	Phase 2	**N/A**	**Dec 10**		
Initial Operational Capability (IOC)	Phase 1	Dec 10	Dec 10	0	
	Phase 2	**Dec 10**	**Dec 10**	**0**	
Final Materiel Release (FMR)	Phase 1	**Oct 11**	**Oct 11**	0	
	Phase 2	**Aug 12**	**Aug 12**	**0**	
Final Operational Capability (FOC)	Phase 1	Dec 12	Dec 12	0	
	Phase 2	**Dec 12**	**Dec 12**	**0**	

Schedule Status as at 30 Jun 11

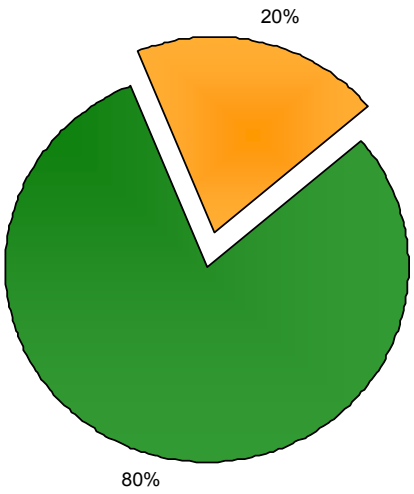


Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance Phase 1 (Aircraft)

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: The Super Hornet is meeting its capability objectives. Identified anomalies, limitations and improvements of the US Navy common aircraft software, radar, electronic warfare, mission planning, and training devices are being fed back into the US Navy spiral development program as part of Super Hornet sustainment, and RAAF/DMO are accessing opportunities to influence US Navy decision makers on the priority for addressing these areas under a RAAF/US Navy common paradigm.
	Amber: N/A
	Red: N/A

4.1 Measures of Materiel Capability Performance Phase 2 (Weapons)

Pie Chart: Percentage Breakdown of Materiel Capability 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: **The Project Office has been advised by RAAF that some deliverables are a low Service priority, thereby acknowledging that original agreed milestones cannot be achieved. Formal changes to the project's milestone agreement have not yet been completed.** Red: N/A

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)		
	Description	Remedial Action
Phase 1	There is a possibility that the new training facility for the Aircrew Training Devices will be later than needed delaying installation, acceptance and certification of the Aircrew Training Devices.	**This risk has been retired with** installation, acceptance and certification **for the two tactical operational flight trainers in July and December 2010 respectively and for the two low cost trainers in July 2010.**
	There is a possibility that IOC will not be achieved in December 2010 due to delayed weapons integration for two weapons types (CLASSIFIED), avionics systems deficiencies (CLASSIFIED), and existing facilities OH&S deficiencies.	**This risk has been retired with IOC declared in December 2010.**
Phase 2	**There is a chance that delivery of JSOW C-1 is delayed.**	**JSOW C has been delivered and tested which provides a JSOW capability until delivery of JSOW C-1 is completed. JSOW C-1 production schedule is being closely monitored to identify any potential delays.**
	There is a chance that US Navy/Raytheon have insufficient Telemetry Instrumentation Kits (TIK) to support Raise Train Sustain firings of JSOW C/C-1.	**Options are:** **a) Reduce requirement for in-service firings;** **b) Investigate use of alternative test variant and/or alternative range safety approach.**
	There is a chance that there are software integration issues with JSOW-C1 on Super Hornet.	**The project office seeks regular updates on US Navy program in order to identify and address this risk before it materialises.**

Emergent Risks (risk not previously identified but has emerged during 2010-11)		
Description		Remedial Action
Phase 1	**There is a strategic risk that the FOC date of December 2012 may not be achieved.** **There is currently one specific risk that puts this date at risk:** **The delayed delivery of the Integrated Defensive Electronic Counter Measures system software CY10, which will affect the ability to operate the ALE-55 Fibre-Optic Towed Decoy. If realised this risk will see software deliveries after the planned FOC date and result in a delay to reaching the intended capability upgrade milestones. This issue will not affect the current operational use of the aircraft.**	**This risk is now considered a low risk with ongoing US Navy management.** **The Australian Super Hornet (ASH) has been procured on the basis of achieving a common aircraft configuration to the US Navy Super Hornet. The considerable linkage of the ASH to the US Navy requires that software deliveries are in-line with the US Navy schedule.** **The project is attempting to reduce the time-lag between the US Navy to RAAF deliveries and pushing to ensure that software delays are minimised wherever practicable.** **Any delays will impact capability upgrades, but will not impact flight operations.**
Phase 2	**N/A**	**N/A**

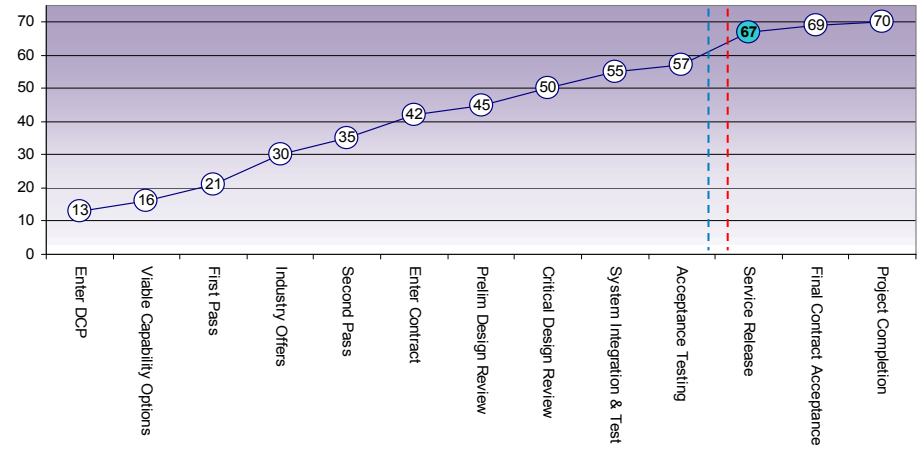
5.2 Major Project Issues

Description		Remedial Action
N/A		

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark Phase 1 (Aircraft)

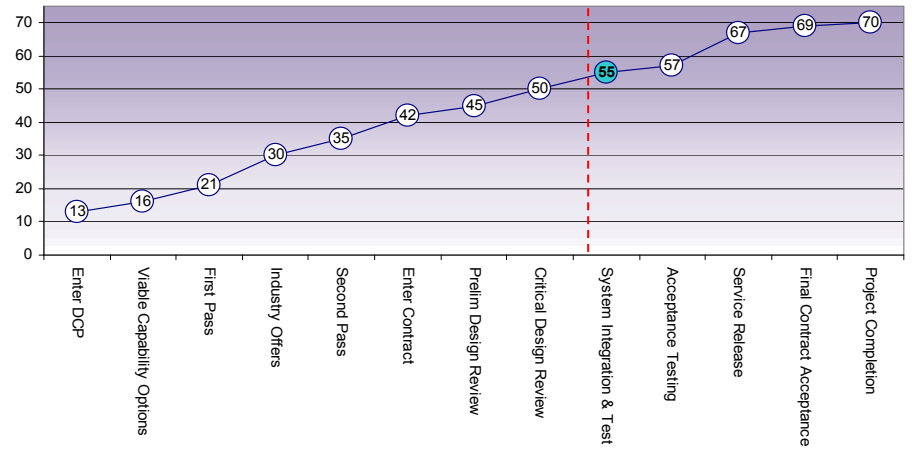
Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	**10**	**9**	**10**	**10**	**10**	**9**	**9**	**67**
Service Release	Project Status	10	8	**10**	**10**	**10**	8	9	**65**
	Explanation	• **Cost: Although some project costs still remain to be finalised, the project is very confident it will remain within the approved budget.** • **Commercial: While most aircraft have been delivered and entered service, industry performance remains at the delivery stage, as there are aircraft under assembly that are yet to complete acceptance activities.**							



2009-10 DMO MPR Status - - - - - 20010-11 DMO MPR Status - - - - -

6.1 Project Maturity Score and Benchmark Phase 2 (Weapons)

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	7	8	8	8	8	8	55
Integration and Test	Project Status	7	8	8	8	8	8	7	54
	Explanation	• **Schedule: Project has delivered AIM-9X and JSOW C and is in contract to get JSOW C-1 in 2013 and negotiating the contract for AIM-120C-7 AMRAAM. Current schedule for the project is on track, in accordance to current MAA.** • **Cost: The project is well on track to meet the budgeted forecast for the project.** • **Operations and Support: The Project is currently in the process of acquiring JSOW C-1 and AMRAAM C-7. Both missile procurements are on schedule.** **DMO's current method for calculating Project Maturity does not fully accommodate projects acquiring multiple designs.**							



20010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson		Categories of Systemic Lessons
Phase 1	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 US Navy and Boeing activities.	Resourcing
	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.	Requirements Management
Phase 2	**Weapons acquired under the scope of the Project proved to be cost effective for the Commonwealth as the weapons were US Navy common and this also assisted in providing common integration and technical input from the US Navy.**	**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.	**First of Type Equipment; and Off-The-Shelf Equipment**

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11 Phase 1 and Phase 2

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne (Phase 1) **Mr Anthony Klenthis (Phase 2)**
Branch Head	AIRCDRE Axel Augustin (Phase 1) **Mr Martin Weir (Phase 2)**
Project Director	GPCAPT Graham Edwards (Phase 1) **Mr Peter Kiss (Phase 2)**
Project Manager	Mr Simon Barnes (Phase 1) **Ms Catherine Martin (Phase 2)**

Project Data Summary Sheet[199]

Project Name	**OVERLANDER**
Project Number	**Land 121 Phase 3**
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Jun 04
Government 2nd Pass Approval	Aug 07
Total Approved Budget (Current)	**$3,263.9m**
2010-11 Budget	**$77.1m**
Project Stage	Second Pass
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

This project will replace the current fleet of Australian Defence Force (ADF) field vehicles, **modules** and trailers. These vehicles will enhance the ground mobility of the ADF through the provision of Field Vehicles, Modules and Trailers (FVM&T).

The project seeks to acquire the following:

Light/Lightweight Capability (LLC):

- 1,200 unprotected vehicles, 315 modules, 973 trailers; and
- six prototype trailers (currently in contract).

Medium/Heavy Capability (MHC): (current formal Basis of Provisioning (BOP))

- 1,506 protected vehicles,
- 1,189 unprotected vehicles;
- 4,661 modules (1,785 modules and 2,876 flatracks) and 1,915 trailers.

1.2 Current Status

Land 121 Phase 3 (Medium Heavy Capability only) was a Project of Concern in 2010-11.

Cost Performance

The Project remains within its current approved budget.

LLC: As at 30 **April** 2011 the project achieved expenditure in accordance with the forecast plan.

MHC: A performance measurement baseline for MHC will be established once a contract has been struck.

[199] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Poject Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Schedule Performance

LLC: The project is on schedule to deliver against its MAA milestone date of December 2011 for First Delivery to Units. Eleven prototype vehicles were delivered in early February 2010 **and all 30 Batch 0 production vehicles were delivered in February and March 2011 to enable training. The remaining batches of G-Wagons for LLC remain on schedule.**

MHC: Introduction into Service Date (ISD) for the MHC vehicles and trailers will be subject to contract negotiations. **An estimated date for contract signature will be determined following a down selection decision being made. A down selection decision is expected to be announced in late 2011.**

Materiel Capability Performance

LLC: there are currently no issues that will affect Materiel Capability Performance. The need to retrofit **cabling for** C4I **systems** onto selected vehicles is being actively addressed **with a likely requirement** to **retrofit batches** 0 to 3.

MHC: Affordability will impact the overall capability, with costs being managed by maximising off-the-shelf solutions. The MHC tender assessment has revealed that the originally sought Basis of Provisioning is not affordable.

1.3 Project Context

Project	Explanation
Background	The Overlander Project is a multi-phased Project that will provide the ADF with the FVM&T and associated support it requires beyond the life of type of the current assets in order to meet ADF mobility requirements. Phase 3 will acquire and support a new range of Military-Off-The-Shelf (MOTS) vehicles, along with associated trailers and integrated modules to replace the ADF's current FVM&T capability. In Australia and in operational theatres FVM&T fleets are used on a day-to-day basis to perform a range of roles 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. Support contracts will be established with each original equipment manufacturer (OEM) to ensure support to the FVM&T throughout their service life **(support contracts have an initial term and options for extension)**. Support services covered by the support contracts include: Configuration Management, Engineering Support, Maintenance Support, Supply Support, and Quality Management. Overlander represents one of Army's largest capital programs. Although the Australian Regular Army is the principal operator and beneficiary of the capability, the Army Reserve and Royal Australian Air Force (RAAF) will also benefit from the new **FVM&T.** The ADF's existing FVM&T fleet consists of some 7,300 vehicles and 3,700 trailers acquired progressively from 1959. In 2008, 98% of the current assets had exceeded their life of type and are increasingly costly to maintain, repair and operate. Furthermore, heavy operational usage since 1999 has increased the challenge of sustaining an aging fleet. The new FVM&T fleet will see rationalisation of vehicle types and numbers. A contract was signed with Mercedes Benz Australia Pacific **(MBAuP)** in October 2008 for the provision of 1,200 Light/Lightweight (LLC) vehicles and 315 Modules. In April 2010 a contract was signed with Haulmark Trailers for the provision of 973 LLC trailers **(LLT)** (plus six prototypes trailers) as part of the total Phase 3 requirement of **up to** 2,888 trailers. In October 2007, BAE Systems was announced as the preferred tenderer to provide the Medium Heavy Capability (MHC) requirement. **BAE Systems had recently acquired the original tenderer, Stewart & Stevenson, and its offer provided Stewart & Stevenson's Family of Medium Tactical Vehicles (FMTV). The risks identified with the FMTV vehicles during vehicle testing were greater than anticipated. In order to de-risk the project prior to contract signature Defence decided to remove BAE Systems' status as preferred tenderer and invite the other tenderers back into the process.** The MHC tender resubmission process comprised of two stages. The first stage saw the release of the amended Conditions of Tender in December 2008, and vehicle Comparative Evaluation Testing (CET) to inform the down selection of tenderers to proceed to Stage 2. In February 2010 Rheinmetall MAN Military Vehicles Australia, Mercedes-Benz Australia/Pacific and Thales Australia were announced as the down selected tenderers to proceed to Stage

	2 of the resubmission process. Stage 2 of the resubmission process commenced with release of the amended RFT to the three down selected tenderers in May 2010. The tender closed on 17 August 2010 and **evaluation was completed on 30 November 2010. The source selection recommendation is currently being considered and a decision is expected to be announced in late 2011.** Final MHC vehicle and trailer numbers are dynamic and will depend on the final negotiated contract prices.	
Uniqueness	Overlander is to roll-out 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 Challenges	LLC: Challenges include the integration of the new generation Command, Control, Communication, Computer and Intelligence (C4I) systems into production vehicles and modules. MHC: Challenges during the **vehicle** acquisition process include protection requirement changes resulting from operational lessons; and affordability of **the full** capability within a capped budget. **The project will also be challenged by the need to acquire and integrate a range of developmental modules.**	
Other Current Projects/Sub-Projects	Land 121 Phase 2A	Land 121 Phase 2A addresses capability shortfalls within the current field vehicle and trailer fleet. Phase 2A is an "umbrella project" for six separate sub-projects. This Project is due to be closed in **December** 2011 with the final product **delivered in** December 2010.
	Land 121 Phase 4	Land 121 Phase 4, currently post First Pass Approval, proposes to provide the ADF with a light Protected Mobility Vehicle capability (PMV-L), which will serve as the platform for command, control, communications, computers, intelligence, surveillance, reconnaissance and electronic warfare capabilities. It is envisaged that the PMV-L system will consist of **up to** four vehicle types. The vehicles will also be acquired with matched trailers and two module types, which will be fitted to the utility variant.
	Land 121 Phase 5	Land 121 Phase 5, currently at the Pre-First Pass Approval Stage, has been added to Land 121 in order to provide the ADF with vehicles for tactical training within the "raise, train and sustain" functions. As part of the development of Defence White Paper 2009 Land 121 Phase 5 was split into Phase 5A (LLC segment) and Phase 5B (MHC segment).

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JNT00126PH2	The primary mission of JP 126 is to ensure "the synchronised delivery of equipment, materiel and personnel within joint theatres of operations, at the required time and in the required quantities and condition in order to support the joint commander's missions".	Funding provided for purchase of 141 integral Load Handling Systems, 399 Flatracks and 60 Container Roll-Out Platforms.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Aug 07	Original Approved	2,745.3		2,745.3		
Jan 09	Real Variation – Scope	(14.8)	(14.8)			1
Jan 09	Real Variation – Transfer	4.5	4.5			2
		(10.3)		(10.3)		
Jun 11	Price Indexation			746.8		**3**
Jun 11	Exchange Variation			**(217.9)**		
Jun 11	**Total Budget**	2,735.0		**3,263.9**		
2.2 Project Expenditure History						
Prior to Jul 10			**21.8**		Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	
			0.5		Mercedes-Benz Australia/Pacific Pty Ltd (Support)	
			4.4		Haulmark (Aust) Pty Ltd	**4**
			19.6		Other	**5**
				46.3		
FY to Jun 11			**37.7**		Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	
			0.7		Mercedes-Benz Australia/Pacific Pty Ltd (Support)	
			3.9		Haulmark (Aust) Pty Ltd	
			16.2		Other	**6**
				58.5		
Jun 11	**Total Expenditure**			**104.8**		
Jun 11	**Remaining Budget**			**3,159.1**		

Notes	
1	Return for ELF Facilities funding incorrectly transferred to DMO.
2	From Land 121 Ph3A on closure.
3	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $313.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $433.6m having been applied to the remaining life of the project.**
4	Seed contract raised April 2008 to minimise schedule risk and to allow the contractor to demonstrate its capability to enter into a major contract for the supply and sustainment of Defence equipment. Seed contract covered initial design activities, drafts of contract data items, establishment of key staff and overhead costs and is separate to the LLC prime contract signed April 2010.
5	Other expenditure comprises: contractors and consultants $4.2m, other operating expenditure $9.7m including project office expenses, other capital expenditure $5.4m for project office costs and not attributable to the aforementioned contract, project management expenses and external service providers.
6	**Other expenditure comprises: Embedded Service Fee $5.4m, MHC Tender Resubmission payments $2.7m, Contractors $1.7m and project office costs $6.4m.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Variation is due the net of: LLC: delays in a range of deliverables and activities now rescheduled to FY 11/12, including Integrated Logistic Support spares and support equipment, contract plans, user handbooks, and engineering drawings and plans. LLT: Early delivery and acceptance of wheel rims. MHC: Rescheduling of contract negotiation activities due to delay in the down selection decision and lower than planned costs for External Service Providers.**
			Overseas Industry	
		(9.4)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(9.2)	Commonwealth Delays	
77.1	**58.5**	**(18.6)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Mercedes Benz Australia Pacific Pty Ltd	Oct 08	321.8	**348.4**	Variable	ASDEFCON	
Mercedes Benz Australia Pacific Pty Ltd	Oct 08	45.1	**45.1**	Variable	ASDEFCON	1
Haulmark Trailers (Australia) Pty Ltd	Apr 10	42.0	**41.5**	Variable	ASDEFCON	
Haulmark Trailers (Australia) Pty Ltd	Apr 10	22.2	**22.2**	Variable	ASDEFCON	2

Notes	
1	Project to provide interim support and first 3 years of in service support – Project Commitment $17.5m.
2	Project to provide first 3 years of in service support – Project Commitment estimate $6.192m.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Mercedes Benz Australia Pacific Pty Ltd	1,515	1,515	LLC: 1200 Vehicles and 315 Modules	
Mercedes Benz Australia Pacific Pty Ltd	N/A	N/A	LLC: Support Contract for vehicles and modules	
Haulmark Trailers (Australia) Pty Ltd	979	979	LLT: 6 Prototypes and 973 Production Trailers	
Haulmark Trailers (Australia) Pty Ltd	N/A	N/A	LLT: Support Contract for Trailers	

Major equipment received and quantities to 30 Jun 11

Over half of the Critical Design Reviews completed for LLC, with 11 prototypes delivered.

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	LLC: Trucks (Lightweight Carryall Station Wagen, Lightweight Carryall Soft Top, Lightweight Carryall Hard Top, Light Dual Cab, Light Cab Chassis, Light Surveillance and Reconnaissance)	Apr 09		Jun 09	2	
	LLC: Modules (Command Post, Mobile Dual Cab; Command Post, Cab Chassis; Cargo, Dual Cab; Cargo, Cab Chassis; Ambulance, Cab Chassis; PCRS, Cab Chassis; Canine, Dual Cab)	Mar 09		Mar 09	0	
	LLC: Light & Lightweight Trailers	Oct 10		Oct 10	0	
Critical Design	LLC: Trucks (Lightweight Carryall Station Wagen, Lightweight Carryall Soft Top, Light Dual Cab, Light Cab Chassis and Carryall Hard Top)	Aug 09		Sep 09	1	1
	LLC: Truck, Light, Surveillance and Reconnaissance vehicle only	Jun 10		Jun 10	0	
	LLC: Modules (Command Post, Mobile Dual Cab; Command Post, Cab Chassis)	Sep 09		**Dec** 10	**15**	1
	LLC: Modules (Cargo Cab Chassis, Canine Dual Cab)	Sep 09		Dec 09	3	1
	LLC: Module (Light Ambulance, Cab Chassis)	July 10		**Oct 11**	**15**	1
	LLC: Module (Light PCRS Cab Chassis)	July 10		**Jul 11**	**12**	1
	LLC: Tray (Light Surveillance and Reconnaissance)	**Jun 10**		**Aug 11**	**14**	**1**
	LLC: Light & Lightweight Trailers	Mar 11		Mar 11	0	

Notes	
1	LLC Critical Design Review with a variance between the originally planned and achieved date is due to a change in specification by the Commonwealth.
2	There is no baseline established for MHC at this stage. The schedule will be negotiated from tenderers responses to the amended Stage 2 RFT. The RFT seeks a traditional engineering process, moving through the gates of Preliminary, Detailed and Critical Design Reviews. The duration and number of these reviews will be determined by the level of MOTS by the offered solutions. A schedule baseline will be established once contract negotiations have been conducted.

3.2 Contractor Test and Evaluation Progress

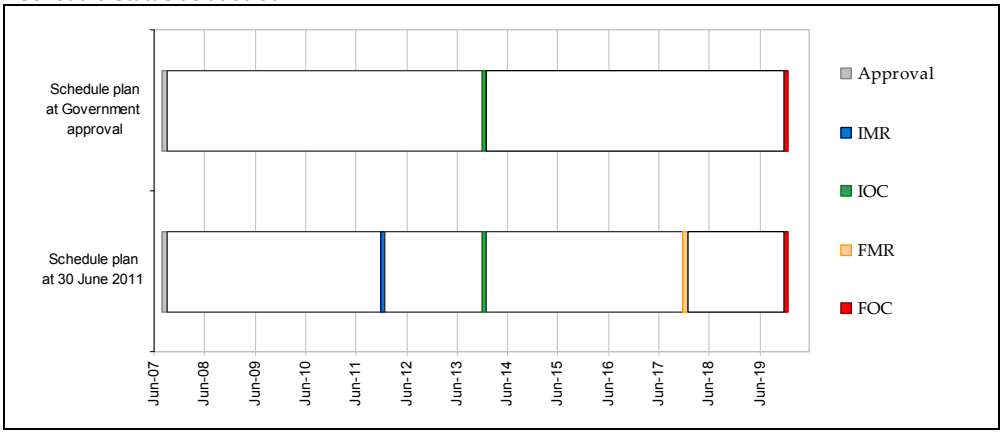
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	LLC: Trucks (Lightweight Carryall Station Wagen, Lightweight Carryall Soft Top, Light Dual Cab, Light Cab Chassis)	Oct 09		Dec 09	2	1
	LLC: Truck, Light, Surveillance and Reconnaissance vehicle only	Aug 10		**Dec 11**	16	1
	LLC: Truck, Lightweight, Carryall hard Top	Oct 09		**Oct 10**	12	1
	LLC: Modules (Cargo Cab Chassis, Canine Dual Cab)	Jan 10		May 10	4	1
	LLC: Module (Light Ambulance, Cab Chassis)	Oct 10	**Jan 12**	**Jan 12**	**15**	1
	LLC: Modules (Command Post, Mobile Dual Cab; Command Post, Cab Chassis)	Jan 10	**May 11**	**May 11**	**16**	1
	LLC: Module (Light PCRS Cab Chassis)	**Oct 10**	**Nov 11**	**Nov 11**	**13**	1
	LLC: Tray (Light Surveillance and Reconnaissance)	**Aug 10**	**Dec 11**	**Dec 11**	**16**	1
	LLC: Light & Lightweight Trailers	Jul 11		Jul 11	0	
Functional Configuration Audit	LLC: Trucks (Lightweight Carryall Station Wagon, Lightweight Carryall Soft Top, Light Dual Cab, Light Cab Chassis)	Aug 10		**Aug 10**	**0**	
	LLC: Truck, Light, Surveillance and Reconnaissance vehicle only	Feb 11		**Nov 10**	**3**	1
	LLC: Truck, Lightweight, Carryall hard Top	**Aug 10**		**Oct 10**	**2**	1
	LLC: Modules (Cargo Cab Chassis, Canine Dual Cab)	Jun 10		**Nov 10**	**5**	1
	LLC: Module (Light Ambulance, Cab Chassis)	Apr 11	**Apr 12**	**Apr 12**	**12**	1
	LLC: Modules (Command Post, Mobile Dual Cab; Command Post, Cab Chassis)	Aug 10	**Oct 11**	**Oct 11**	**14**	1
	LLC: Module (Light PCRS Cab Chassis)	**Apr 11**	**Mar 12**	**Mar 12**	**11**	1
	LLC: Tray (Light Surveillance and Reconnaissance)	**Feb 11**	**Mar 12**	**Mar 12**	**13**	1
Acceptance Verification and Validation	LLC: Light & Lightweight Trailers	Jul-Oct 11		Jul-Oct 11	0	

Notes	
1	LLC Reviews with a variance between the originally planned and achieved/forecast dates is due to changes in specification by the Commonwealth.

3.3 Progress Towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**Dec 11**	**Dec 11**	**0**	
Initial Operational Capability (IOC)	Dec 13	Dec 13	0	
Final Materiel Release (FMR)	**Dec 17**	**Dec 17**	**0**	
Final Operational Capability (FOC)	Dec 19	Dec 19	0	

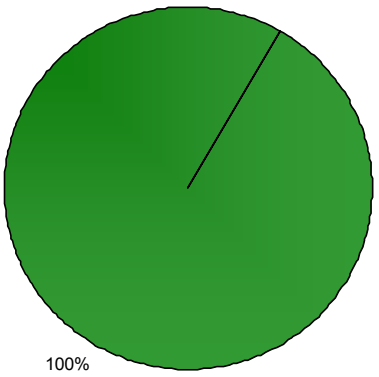
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability 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: The Measures of Materiel Capability Performance in this pie chart only represent the Light/Lightweight Capability and Trailer Capability of LAND 121 Phase 3. At 30 June 2011 the Medium/Heavy Capability is not in contract and is not included in the current Materiel Acquisition Agreement.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
A number of factors have the potential to impact on the MHC cost, schedule and capability requirements. **These factors include:** • **A cost** capped budget arrangement. • **Integration of the command, control, communication, computer and intelligence (C4I) suite to vehicles and modules.** • MHC tender **down-selection** outcomes. • **A potential** introduction into service (IIS) cost increase. • Compliance with regulatory requirements • Availability of required platforms and personnel for training. • **The potential for specification changes to arise from the design development process.**	Remediation will be achieved primarily through negotiation with the preferred tenderers, where: • The basis of provisioning and individual vehicle capability will be refined to fit within the project cost cap. • IIS issues will be fully explored and quantified. • The degree of compliance and cost of compliance with regulatory requirements will be established. The MHC project team is working with the CDG and Army to identify and quantify the training personnel that will be made available, with the final requirements to be determined by the basis of provisioning acquired. **A combined project management stakeholder group is in operation to specifically address cross-project C4I issues.**
A number of factors have the potential to impact on the LLC trailer cost, schedule and capability requirements. This includes: • Introduction into service (IIS) costs may increase. • Trailer may not meet air drop capability requirements. • **Interactive Electronic Technical Publications (IETP) won't be delivered as policy and guidance is yet to be developed by Defence.**	**The project is continually monitoring risks to ensure that the likelihood is reduced and impact minimised as follows:** • **IIS costs: project continues to monitor.** • **Project to mitigate through the conduct of drop tests.** • **Project has established a provision to purchase required licences for up to 3 years.**
A number of factors have the potential to impact on the LLC cost, schedule and capability requirements. This includes: • Introduction into service (IIS) costs may increase. • Supply of parts for new designs during and immediately after IIS. • Maturity of platforms design and outcomes from testing and evaluation. • Compliance with regulatory requirements. • Delivery of equipment according with specifications. • Introduction into service. • Availability of required platforms and personnel for training. • Integration of new capabilities.	The LLC project team continue to work with the relevant stakeholders to initiate methods to minimise the effect and costs of these risks. These methods include: • Minimising logistic transactions. • Constant interface with Army and Joint Logistic Units. • Constant interface with the Prime Contractor. • Involvement of subject matter experts. • Continual review of risks and issues.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

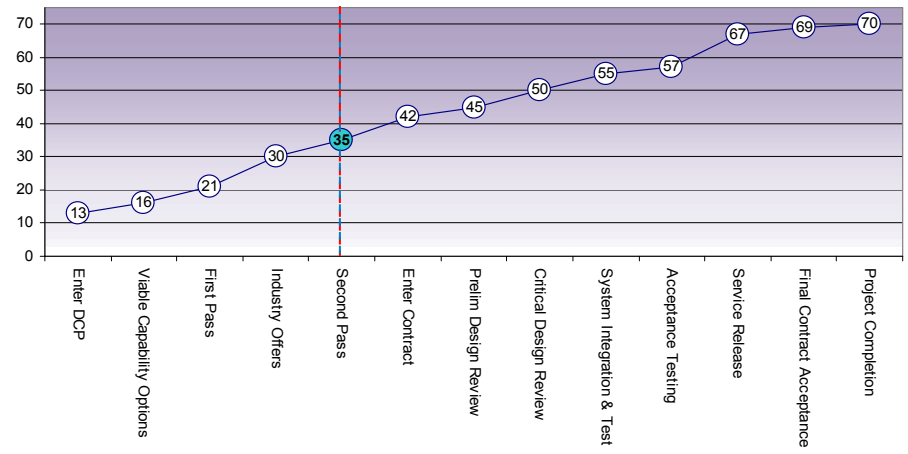
5.2 Major Project Issues

Description	Remedial Action
MHC: Initial Operational Capability (IOC) has been affected by the MHC resubmission activity, leading to an impact on schedule.	The remedial action is to hasten evaluation **and** negotiation activities, **to** reduce the impact on schedule. The remedial action is cognisant of the associated risk of having multiple tenderers to undertake negotiations which will further extend the introduction into service schedule.
MHC: Army's Basis of Provisioning is unaffordable.	**The remedial action is to seek Military off the Shelf platforms and limit modification to critical ADF requirements and those necessary for legislative compliance.**

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	5	5	5	5	5	5	5	35
Second Pass	Project Status	4	4	5	7	6	5	4	35
	Explanation	**Schedule, Cost, Operation and Support:** the difference is a result of Land 121 being a multi segmented project with each segment currently at different stages of the project. • LLC: vehicles and trailers are in contract. • MHC: vehicles and trailers are not yet in negotiation or contract. MHC planned contract signature date **is subject to the down-selection outcome which is anticipated to be announced in late 2011. MHC is still subject to a revised Second Pass.** **Technical Understanding and Technical Difficulty:** The reason for the difference is that there is a better understanding of the technical requirements across all segments of the project even though they are at different stages.							



2009-10 DMO MPR Status - - - - | 2010-11 DMO 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 (CCP), due to requirement variations, it is critical that Defence stakeholders provide clarity in terms of the OCD and FPS.	Requirements Management
The time required to negotiate contracts for the Overlander 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 ALTC staff in the development of the Training requirement. 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. 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 - eg wheels, required payload, etc) should not be underestimated even for apparently simple equipments. The early formation of interface working groups is important.	**Contract Management**
No matter how attractive it is to rush equipment into service or no matter how strong the desire/pressure is to shorten the project schedule, proper and fulsome verification and validation of manufacturer's claims must be undertaken prior to giving approval for production. This is particularly relevant now as equipment/vehicles become more complex with more electronic components being installed such as on-board computers, electronic control units, on-board diagnostic equipment, etc.	**Contract Management**

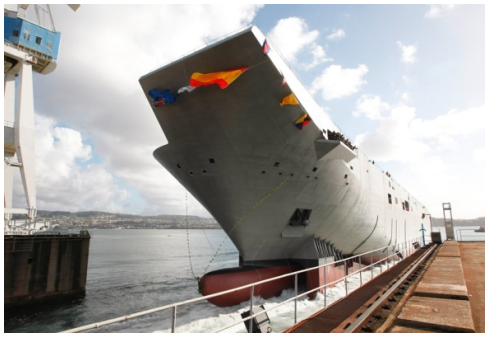
Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	MAJGEN Grant Cavenagh
Branch Head	**BRIG Gregory Downing**
Project Director (MHC)	Mr Drew McMeekin
Project Director (LLC)	**Mr Ken Butler**

Project Data Summary Sheet[200]

Project Name	**AMPHIBIOUS SHIPS (LHD) PROJECT**
Project Number	**JP 2048 Phase 4A/4B**
Capability Type	New Capability
Service	Joint Services
Government 1st Pass Approval	Aug 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	**$3,122.6m**
2010-11 Budget	**$497.8m**
Project Stage	Critical Design Review
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The JP2048 Phase 4A/B project will provide 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

The project remains within its current approved budget.

Schedule Performance

The project remains on track for delivering the two LHDs by planned dates of 2014 and 2015. Minor changes to the Preliminary and Detailed Design reviews dates are not expected to impact on the final delivery dates.

Major project milestones achieved since the last MPR Audit include:

- **Training Needs Analysis Report;**
- **Personnel Resource Requirements List;**
- **Communications Systems Equipment Factory Acceptance Test and Delivery;**
- **Combat Systems Equipment Factory Acceptance Test and Delivery;**
- **Commencement of LHD01 Superstructure erection;**
- **Launch of LHD01 Hull; and**
- **Commencement of LHD02 Hull erection on the slipway.**

Progress of these milestones demonstrates schedule performance and supports the achievement of project outcomes within the planned timeframes.

[200] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability 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 2400 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.

The project is on track for delivering these capabilities.

1.3 Project Context

Project	Explanation
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 BPE) 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.

Uniqueness	While the LHDs are based on an existing Spanish BPE 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 is being employed. The LHD hulls will be built, including the majority of the fit-out, by Navantia at the Ferrol and Fene Shipyards in Spain. They will be transported to Australia as individual lifts on a 'float on/float off' heavy lift ship. Construction of the superstructure and its consolidation with the hull will be conducted by BAE Systems Australia Defence at their Williamstown (Victoria) Shipyard in Australia. The superstructure contains the high level Combat and Communications Systems equipment that will need to be maintained and upgraded in Australia. BAE Systems Australia Defence will also undertake the final out-fit, set-to-work, and trials.
Major Challenges	The project has completed Preliminary Design and Detailed Design Reviews. To date the project has not experienced any major issues that will affect the delivery dates of the LHDs. However, it has experienced a number of minor issues concerning the design and integration. During the initial stages of the Contract, the project noticed a slow ramp-up of contractor resources. This has since been addressed through additional recruitment. **Workforce capacity remains an essential enabler for timely project completion.** Control of commercially sensitive Intellectual Property remains an on-going management issue for all parties. While the LHD ships are based on the existing Spanish BPE design, the Australian combat and communication capability requires design and integration work to be undertaken. The task of integration of the Australian elements, such as the combat system and internal/external communications systems, has proved to be more complex than initially thought. Additional time has been required to address integration issues and caused some Preliminary and Detailed Design Reviews to be deferred slightly. One of the additional challenges for this project remains the potential for regulatory changes and/or requirements creep on the capability requirements. The project has a fixed budget for the approved requirements, and any changes to regulations that require a change to the vessel or requested capability changes are likely to impact on the project's performance, cost, and schedule outcomes.
Other Current Projects/Sub-Projects	**JP 2048 Phase 3:** Watercraft system acquisition to be used in conjunction with the Phase 4A/4B LHD Mission System. These watercraft will be the ship to shore connector for the LHDs. **JP 2048 Phase 4C:** Phase 4C acquisition of a strategic sealift capability. **JP 2048 Phase 5:** Landing Craft Heavy Replacement capable of small scale independent operations and augmenting larger amphibious and sealift ships.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
Sea 1442	**Maritime Communications Modernisation.**	The project was established to modernise and integrate the communications infrastructure in the Royal RAN Fleet, and establish the framework for the future modernisation of additional elements of the fleet such as the LHD. **The LHDs will have network capability compatible with the Maritime Tactical Wide Area Network of SEA 1442.**
JP 2089 Phase 2	**Tactical Information Exchange Domain (Data Links).**	**The project is intended to deliver tactical data links to legacy platforms and capabilities of the ADF and the infrastructure required to support tactical data exchange at the force level.** **The LHDs will be delivered with Link 16, Link 11 and Variable Message Format systems for tactical data exchange that will be compatible with other ADF systems.**
JP 2008 - ADF MILSATCOM	**Military Satellite Communications**	**Joint Project 2008 Military Satellite Communications (MILSATCOM) is a multi-phased project that has been established to provide the ADF with a range of strategic and tactical satellite communications (SATCOM) capabilities.** **Each LHD will include one Maritime Advanced SATCOM Terrestrial Infrastructure System satellite terminal and capability to install a second terminal at a later date if necessary.**
JP 5408	**GPS Enhancement Project**	**JP 5408 GPS Enhancement Project is intended to enhance GPS user equipment on ADF legacy platforms, including the LHD Ships, by providing protection and/or redundancy capabilities. It is to provide a GPS Enhancement System that is of sufficient quality and robustness to meet mission critical navigation and timing tasks for ADF systems.**

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Nov 03	Original Approved	3.1		3.1		1
Sep 04	Real Variation – Scope	4.8	4.8			2, 3
Nov 05	Real Variation – Scope	29.6	29.6			4
Jun 07	Government Second Pass Approval	2,920.8	2,920.8			
Oct 08	Real Variation – Transfer	**9.3**	**9.3**			5
		2,967.6		**2,967.6**		
Jun 11	Price Indexation			**428.4**		**6**
Jun 10	Exchange Variation			**(273.4)**		
Jun 10	**Total Budget**	2,967.6		**3,122.6**		
2.2 Project Expenditure History						
Prior to Jun10		868.2	952.1		BAE Systems	
		54.0	59.2		Other	**7**
		922.18		1,011.3		
FY to Jun 11		**472.6**	**541.1**		BAE Systems	
		14.4	**16.4**		Other	**8**
		487.0		**557.5**		
Jun 11	**Total Expenditure**	**1,409.2**		**1,568.9**		
Jun 11	**Remaining Budget**	**1,558.4**		**1,553.7**		

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	**In the 2009–10 MPR, an amount of 0.1m was reported as a Real Variation due to a Budgetary Adjustment for an Administration savings harvest. It should have been rounded to 0.0m and is therefore no longer being reported.**
3	To fund a risk reduction activity for the Project to obtain design data and develop designs to meet Australian essential requirements.
4	First Pass approval.
5	Transfer of funding for technical studies from DSTO.
6	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $350m. 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.**
7	**For base date calculations against "Other" expenditure, calculations have been made using a proportional adjustment. This proportional adjustment involves the average between base date calculation of the disclosed major contract(s) and their constant price and applying to the "Other" expenditure.**
8	Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract. **For base date calculations against "Other" expenditure, calculations have been made using a proportional adjustment. This proportional adjustment involves the average between base date calculation of the disclosed major contract(s) and their constant price and applying to the "Other" expenditure.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The year to date variance is attributed to the early completion and payment of milestones 82 and 85 Build Sequence 1 and 2 for LHD 2 which has been brought forward from 2011-12. The project has also experienced a FOREX gain of $5.8m.**
		65.5	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		(5.8)	FOREX Variation	
			Commonwealth Delays	
497.8	**557.5**	**59.7**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
BAE Systems	Oct 07	2,268.1	**2,288.1**	Variable	ASDEFCON	1

Notes

1 Contract Price at Revision **39**

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
BAE Systems	2	2	LHD ships and integrated support systems	

Major equipment received and quantities to 30 Jun 11

Detailed Design Review achieved. Construction of main hull sections underway.

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 has been allocated to the design review activities. **LHD1 was launched from the slipway in Spain in February 2011 and the Grand Block#01 erected for LHD2 the following day. Superstructure production commenced in Melbourne in November 2010.**

3.2 Contractor Test and Evaluation Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	Mar 15	0	
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Jan 14	**Feb** 14	**1**	**1**
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	Aug 15	0	
	LHD Final Acceptance	Sep 15	Sep 15	Sep 15	0	

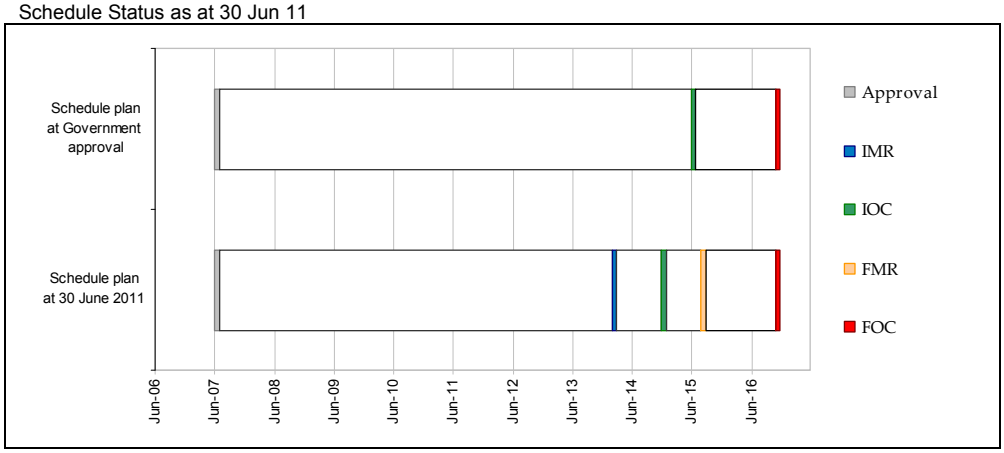
Notes

1 **Due to latest revised dates for heavy lift ship as advised by Navantia**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

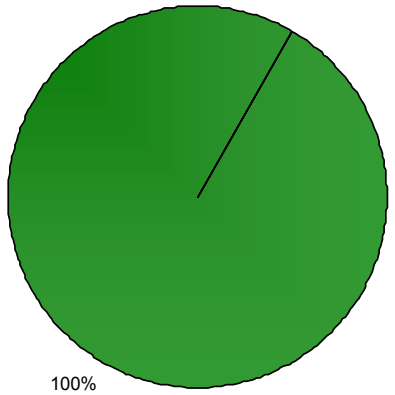
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)				
LHD 1 IMR	**Jan 14**	**Feb 14**	**1**	**Revised forecast date based on an approved contract change.**
LHD 2 IMR (MR2)	**Aug 15**	**Aug 15**	**0**	**N/A**
Initial Operational Capability (IOC)				
LHD 1 IOC	Jun 15	**Dec 14**	**(6)**	**As per approved MAA.**
LHD 2 IOC	Nov 16	Nov 16	0	N/A
Final Materiel Release (FMR)	**Aug 15**	**Aug 15**	**0**	**N/A**
Final Operational Capability (FOC)	Nov 16	**Nov** 16	**0**	**As per approved MAA.**

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: Project currently meeting capability requirements as expressed in the **Material 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

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Regulatory changes: there is a chance that the delivery of the LHDs will be affected by regulatory changes leading to performance, cost, schedule and supportability impacts. **This risk has been reassessed by the project and is now rated as a moderate risk.**	• Monitor closely and address changes at the Project Management Stakeholder Group. • Seek Contingency funding for changes. • Seek waivers as necessary.
Requirements creep: there is a chance that the delivery of the LHDs will be affected by requirements creep leading to performance, cost, schedule and supportability impacts. **This risk has been reassessed by the project and is now rated as a moderate risk.**	• Monitor closely. • Rigorous change management control. • Demand appropriate schedule and cost relief for changes affecting design. • Defer changes to the Capability Enhancement Period post delivery of the ships.
Functionality of the Combat System: there is a chance that the delivery of the LHDs may be affected by the ability of the combat system to meet performance requirements.	• Undertake a functional analysis of the system to identify potential deficiencies. • Conduct a rigorous evaluation of the technical solutions at Design Reviews. • Monitor Performance closely and address any changes to equipment or performance through the Project Management Steering Group. • Update Mission System Specification (MSS) with acceptable performance characteristics.
Damage to Electric Propulsion Pods: there is a chance that the delivery of the two LHDs may be affected by damage to the electric propulsion pods during installation and sea trials. **This risk has been reassessed by the project and is now rated as a moderate risk.**	• Assess the likelihood of damage to the pods during construction, set-to-work and initial operation; and assess the impact it may have on the schedule due to the availability of spares. • Develop a business case for the procurement of necessary spares, for consideration by the Project Management Steering Group.
Insufficient Funds for Integrated Logistics Support Training and Spares Procurement: there is a chance that the delivery of two LHDs may be affected by the cost of training and spares to support the LHD exceeding the allocated budget.	• Refine the Support System Specification to ensure that it adequately specifies the support levels to be achieved. • Carefully scrutinise the Logistic Support Analysis that generates the training and spares recommendations to ensure that it cost effectively meets the specification. • Monitor the development of spares and training Contract Change Proposals closely. • Define requirements carefully as both necessary and sufficient, needs vs wants. • Maximise the use of existing Original Equipment Manufacturer (OEM) and ADF training. • Manage Stakeholder expectations.

Functionality of the Communication System: there is a chance that the delivery of the LHDs may be affected by the ability of the communication systems to meet performance requirements.	• **Undertake a functional analysis of the system to identify potential deficiencies.** • **Conduct a rigorous evaluation of the technical solutions at Design Reviews.** • **Monitor Performance closely and address any changes to equipment or performance through the Project Management Steering Group.**
Unsuitable air space management system design: there is a chance that the delivery of the two LHDs will be affected by the air space management system not meeting the contracted requirements and not being able to be certified leading to performance impacts.	• **Install additional radar to complement the Identification, Friend or Foe (IFF) system at short range.** • **Establish effectiveness of system through workshops with operator community.** • **Pursue early determination of Director General Technical Airworthiness' (DGTAs) certification decision.**
Damage, loss or delay to ship during delivery to Australia: there is a chance that the delivery of the two LHDs will be affected by damage, loss or delay to the ship during delivery to Australia leading to schedule impacts. This risk has been reassessed by the project and is now rated as a moderate risk.	• **Insure the vessels to prevent financial loss.** • **Review Contract for Heavy Lift Ship company to ensure that adequate precautions take place to prevent damage, provide adequate security, include alternate routes and establish safe havens.** • **Ensure BAE arrange for tugs to tow ships to Australia should Heavy Lift Ship company not be available.**
Acceptance Process: there is a chance that the delivery of the two LHDs to the Navy may be affected by the lack of clarity around the acceptance process for ships. This risk has been reassessed by the project and is now rated as a moderate risk.	• **Develop a common acceptance plan with Navy that achieves a concurrent Contract Acceptance and Navy Acceptance.** • **Manage Stakeholder expectations.**

Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

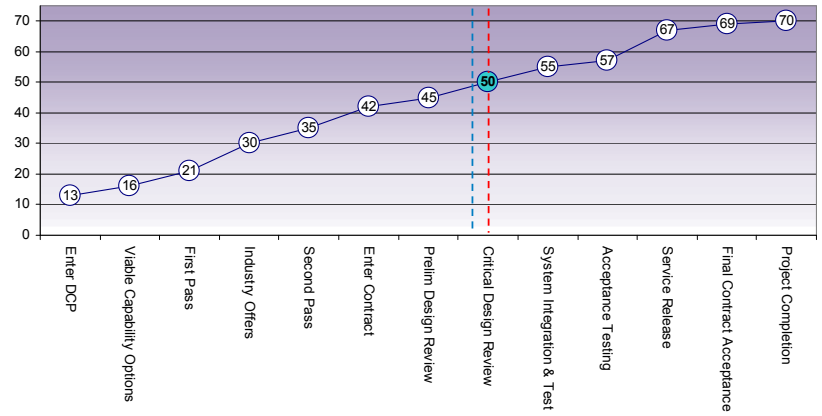
5.2 Major Project Issues

Description	Remedial Action
Intellectual Property management between BAE and Navantia.	An Intellectual Property Deed was signed by Tenix, BAE Systems, Navantia, and the Commonwealth detailing how Intellectual Property will be managed for the LHD Project. The management of Intellectual Property will be monitored through Intellectual Property audits.
Integration complexity.	Due to the complexity of the integration of the combat, communications and platform systems, more time has been allocated to the design activities. Additional time has also been allocated for the design review activities with the establishment of technical forums to carefully review and assess design issues prior to the conduct of the formal 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
Critical Design Review	Project Status	8	7	7	**7**	7	8	6	**50**
	Explanation	• **Schedule:** critical path activities are well advanced and detailed planning for remaining activities is sound. Variance trends provide confidence that schedule will be within the tolerance of the Materiel Acquisition Agreement. • **Technical Understanding:** Needs are understood. Arrangements to operate and support the capability are being arranged. • **Commercial:** Contractor is performing and delivering as contracted. • **Operations and Support:** Procurement of training and spares yet to be contracted.							



2009-10 DMO MPR Status - - - - 2010-11 DMO 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 2010-11

Position	Name
General Manager	Mr Warren King
Program Manager	Mr Phillip Brown
Project Manager	CAPT (RAN) Craig Bourke

Project Data Summary Sheet[201]

Project Name	**NEW AIR COMBAT CAPABILITY**
Project Number	**AIR 6000 Phase 2A/2B**
Capability Type	Replacement
Service	Royal Australian Air Force
Government 1st Pass Approval	Nov 06
Government 2nd Pass Approval	Nov 09 (Stage1)
Total Approved Budget (Current)	$2,666.8m
2010-11 Budget	$78.3m
Project Stage	Enter Contract
Complexity	ACAT 1

Section 1 – Project Summary

1.1 Project Description

The Air 6000 New Air Combat Capability (NACC) Project aims to introduce a new air combat capability that will meet Australia's air combat needs out to 2030 and beyond. On current plans, AIR 6000 Phase 2A/B program will acquire no fewer than 72 Conventional Take Off and Landing (CTOL) Joint Strike Fighter (JSF) aircraft to establish three operational squadrons, a training squadron and necessary supporting/enabling elements to replace the F/A-18A/B Hornet capability.

AIR6000 Phase 2A/B Stage 1 of the project will acquire an initial tranche of 14 CTOL F-35 JSF aircraft and associated support and enabling elements. Ten aircraft will remain in the United States (US) for a number of years for pilot and maintainer training and operational test activities. The remaining four aircraft are planned to arrive in Australia in 2017 to allow commencement of operational test and evaluation activities with other ADF systems.

Lockheed Martin is contracted to the US Government for the development and production of the F-35 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, including the United Kingdom (UK), Canada, Italy, Denmark, Norway, Netherlands and Turkey.

1.2 Current Status

Cost Performance

The Project remains within approved budget guidance for Stage 1 (first 14 aircraft and support).

Schedule Performance

A Technical Baseline Review (TBR) of the US JSF Program was completed in November 2010, which has led to the JSF Program undergoing a Schedule Risk Assessment (SRA) and a Integrated Baseline Review (IBR). The outcomes of the SRA/IBR, including any changes to program scope and any associated cost and schedule impacts are expected to be known by late 2011.

In October 2010, the Commonwealth formally submitted a Partner Procurement Request (PPR) to the US Government for Australia's first two aircraft and associated support systems. The Commonwealth expects the US Government to enter into a contract with Lockheed Martin, on its behalf as part of the sixth Low Rate

[201] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Initial Production (LRIP) contract in third quarter of 2012. Ongoing reviews and restructuring of the US JSF Program have resulted in significant delays (6 months plus) to the annual JSF contracting cycle. Current guidance from the US Government is that this delay will not impact delivery plans to have two Australian aircraft in the US ready to support training in 2014.

Materiel Capability Performance

As a consequence of the TBR conducted on the US JSF Program, the US has extended the development and operational test schedules. A key element of materiel capability performance and a major schedule driver is software development. The current planned Block 3 version of software is considered sufficient for Australia's Initial Operational Capability (IOC) performance requirements. Potential changes to software scope, development and/or releasability constraints could threaten this consideration. Correspondingly, the NACC project office is closely monitoring software development and examining contingency plans whereby initial training and test aircraft may be operated with an earlier software version.

1.3 Project Context

Project	Explanation
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-35 JSF as the preferred option and joined the System Development and Demonstration (SDD) phase of the JSF Program as the eighth (and last) Partner. At this time the project discontinued the competitive evaluation under AIR 6000 and was retitled the New Air Combat Capability (NACC) Project. The subsequent decision by Government to acquire the F-35 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/B. • 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. • AIR6000 PH2A/B Stage 1 Approval in November 2009 to acquire 14 CTOL 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. In the 2009 Defence White Paper, Government confirmed that it plans to equip the Royal Australian Air Force (RAAF) with around 100 F-35 JSF aircraft. AIR6000 Phase 2A/B Stage 2 will acquire at least 58 CTOL JSF aircraft and enabling elements to achieve a proposed IOC in 2018 and Final Operational Capability (FOC) in 2021. Government consideration of AIR6000 Phase 2/AB Stage 2 approval is currently scheduled for 2012. The remaining tranche of 28 aircraft is identified against AIR6000 Phase 2C and is planned for Government consideration in the 2014-15 timeframe. The staged approach provides time for refinement of costs and more detailed definition of support requirements prior to the Government's decision on buying additional 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 3000 aircraft to the eight MoU Partners (with the US to acquire approx 75% of the total) with the potential for significant additional aircraft procurements by Foreign Military Sale (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 radically 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 will contract with Lockheed Martin and engine manufacturers on Australia's behalf in accordance with US contracting laws, regulations and procedures.

	• The Joint Program Office (JPO) acquisition strategy is for 11 annual LRIP contracts, transitioning from a Fixed Price Incentive Fee to a Firm-Fixed Price at the appropriate time. • Each contract will require a separate 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. • Aircraft to be delivered under Phase 2A/B Stage 1 will be acquired under four separate annual contracts commencing with LRIP 6. • The Australian 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, its JSF industry partners and their sub contractors to achieve long term industry outcomes for Australia.
Major Challenges	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 challenges facing the NACC project are: • Putting in place appropriate risk mitigation strategies to deal with cost and schedule impacts to the NACC Project that may result from changes to the US Program following the completion of the US Department of Defense's (DoD) review activity. • Finalise the strategy and plan for the conduct of JSF Operational Test and Evaluation. • Complete the necessary workforce planning required to transition the JSF into service. • Preparing for Government Second Pass consideration of Stage 2 whilst concurrently managing the acquisition activities for Stage 1. • Resolve arrangements for pooling of JSF partner resources (including aircraft, support equipment and personnel) at the US Integrated Training Centre. • Improved understanding of JPO requirements development processes and the US Defense Federal Acquisition Regulation Supplement (DFARS) contracting framework in order to optimise execution of Australia's contracts. • Scope and plan the system integration activities necessary to introduce the JSF into service. • Appropriately manage JSF misinformation in the media. • Support the ongoing consultation and engagement of the public on noise issues associated with RAAF Base Williamtown. • Improve understanding of the full scope of security implications of procuring and operating the JSF aircraft. • Implementing an industry support program to assist Australian industry to win JSF related contracting opportunities.
Other Current Projects/Sub-Projects	**AIR JSFSDD Participation in the JSF 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 Organisation (DSTO) conducting a Pacific Rim Command, Control, Communication, Computing, Intelligence, Surveillance, and Reconnaissance (C4ISR) study. All AIR JSFSDD financial milestones have been completed. The US SDD Phase is due to be closed in 2016 following the release of Block 3 software. **AIR 6000PH1B – Detailed Analysis and Acquisition Planning (AUS$100M):** AIR 6000 Phase 1B focused on the analysis and risk mitigation activities necessary to support Government's procurement decision on the JSF and to support Australian defence industry participation in the JSF Program. The primary financial activity was provision of Australia's shared cost contribution to the US JSF Program in accordance with our obligations as a Program partner in the PSFD Phase. Apart from ongoing funding to support some outstanding contracts, Phase 1B is complete and the NACC Project is now

	in the acquisition phase.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5402 Air to Air Refuelling Capability	Provision of five new generation Airbus A330 Multi-Role Tanker Transport (MRTT) aircraft.	Air to Air refuelling support for extended range/duration missions.
AIR 5077 Airborne Early Warning and Control Aircraft	Provision of six Airborne Early Warning and Control aircraft.	Increased radar detection and communication capabilities to enable large force coordination between JSF and other aircraft.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Nov 09	Original Approved	2,751.6		2,751.6		
Jun 11	Price Indexation			351.0		1
Jun 11	Exchange Variation			(435.8)		
Jun 11	**Total Budget**	2,751.6		2,666.8		
2.2 Project Expenditure History						
Prior to Jul 10			0.0		US Government (PSFD MoU)	2
		0.2	0.2		Other	3
		0.2		0.2		
FY to Jun 11		84.3	68.7		US Government (PSFD MoU)	2
		2.1	2.3		Other	3
		86.4		71.0		
Jun 11	**Total Expenditure**	86.6		71.2		
Jun 11	**Remaining Budget**	2,665.0		2,595.6		

Notes	
1	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.
2	For Base Date calculations for FMS cases, a consistent de-escalation factor has been applied to all projects which is derived from Defence's cost estimation methodology.
3	Other expenditure for this period is primarily associated with travel, minor office expenses and contractors. For base date calculations against "Other" expenditure, the calculations have been made by de-escalating the compound effect of the indexation and foreign exchange factors to the original contract date.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	($7.3m) underspend approximately ($5.1m) is due to FOREX gains. The balance primarily relates to delays in the commencement of the NACC Industry Grants program and deferment of the contract proposal fees for LRIP6.
			Overseas Industry	
		(2.2)	Local Industry	
			Brought Forward	
			Cost Savings	
		(5.1)	FOREX Variation	
			Commonwealth Delays	
$78.3	**$71.0**	**(7.3)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
US Government (PSFD MoU)	Dec 06	137	235.0	Various	MoU	1

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 though baseline price basis is 2002. Covers period from 2010 to 2014 as approved by Government in November 2009.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
US Government (PSFD MoU)	N/A	N/A	Australia's contribution to shared costs from 2010 to 2014 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

Major equipment received and quantities to 30 Jun 11
No major equipment deliverables planned until 2014.

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		July 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 approximately three 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 04, was re-scheduled to February 2006 after the redesign effort was complete and included the 'roll up' of many lower-tiered reviews.

3.2 Contractor Test and Evaluation Progress

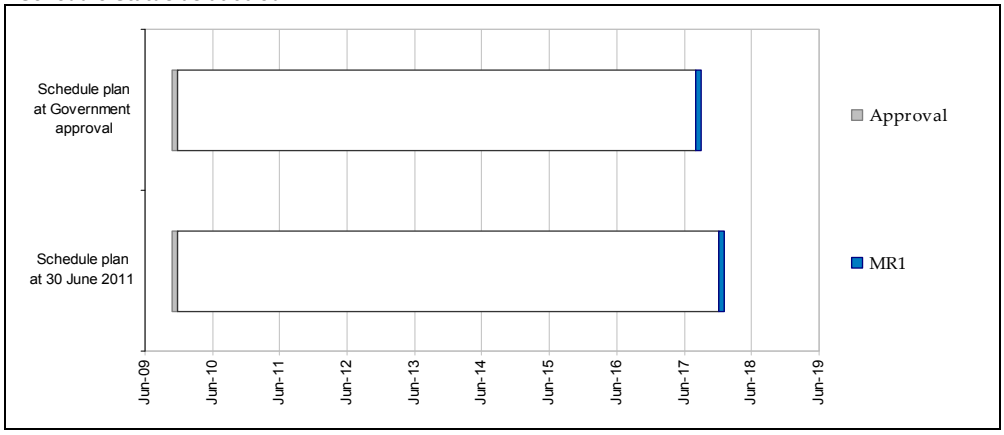
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Acceptance	Accept and deliver two (LRIP 6) aircraft to US ITC	Mar 14		Sep 14	5	1
	Accept and deliver four (LRIP 8) aircraft to US ITC	Dec 16		Dec 16		
	Accept and deliver four (LRIP 9) aircraft to Australia	Sep17		Sep17		
	Accept and deliver four (LRIP 9) aircraft to US ITC	Dec17		Dec17		

Notes	
1	The delivery profile of Australia's first two aircraft will be finalised and agreed as part of the LRIP6 contracting cycle in FY2011/12.

3.3 Progress Towards Materiel Release and Operational Capability Milestones

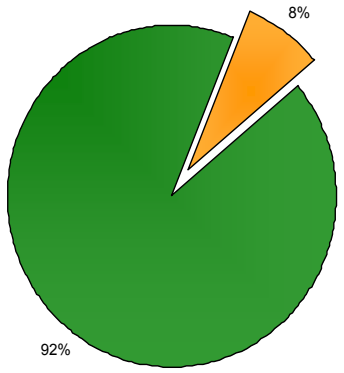
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Materiel Release #1 (MR1)	Sep 17	Jan 18	3	MR1 is an interim materiel release established for Phase 2A/B Stage 1.
Initial Materiel Release (IMR)	N/A	N/A	N/A	Achievement of IMR and subsequent Materiel Release and Capability Milestones (IOC/FOC) is dependent on Phase 2A/B Stage 2 approval in 2012.
Initial Operational Capability (IOC)	N/A	N/A	N/A	Achievement of IMR and subsequent Materiel Release and Capability Milestones (IOC/FOC) is dependent on Phase 2A/B Stage 2 approval in 2012.
Final Materiel Release (FMR)	N/A	N/A	N/A	Achievement of IMR and subsequent Materiel Release and Capability Milestones (IOC/FOC) is dependent on Phase 2A/B Stage 2 approval in 2012.
Final Operational Capability (FOC)	N/A	N/A	N/A	Achievement of IMR and subsequent Materiel Release and Capability Milestones (IOC/FOC) is dependent on Phase 2A/B Stage 2 approval in 2012.

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: The project is currently on track to deliver the materiel elements as detailed in the approved AIR6000 PH2/AB Materiel Acquisition Agreement.
	Amber: The establishment and implementation of the NACC Australian Industry Support Program is experiencing delays in line with those being experienced by the US Program. Until the US JSF Integrated Baseline Review is finalised and the Australian support program implemented it is uncertain whether the aspirational targets for Australian Industry participation in the JSF Global Program can be reached.
	Red: N/A

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Workforce – There is a chance the NACC project will not have access to sufficient pilots and maintainers for initial JSF training and transition into service of the new capability because of the requirement to simultaneously support and operate multiple platforms.	Pro-active careful coordination between all the organisations with a responsibility for the workforce to ensure that people are recruited, released, and trained or re-skilled at the right time to meet critical project milestones.
Technical Risks – The JSF is a highly complex project and will carry high technical risk through the design, production and implementation phases. Software development is seen as the major risk and schedule driver.	The analysis being undertaken by the TBR and IBR of the JSF Program will provide greater understanding and certainty of software development risk. The revised program plan (expected late 2011) will incorporate this understanding through appropriate application of treatment strategies and resources. Independent DSTO analysis of technical risks will be undertaken and incorporated into project planning. Should software development risks be realised, consideration will be given to using an earlier software release to meet IOC schedule requirements.
US Programmatics – There is a chance that current and potential future US Defense and Congressional reviews result in a delayed US schedule that does not meet the ADF's required 2018 IOC date.	Australia has secured provisions that, pending formal approval, will enable participation in US Operational Test and Evaluation (OT&E) activities. Participation in OT&E will yield information to support an Australian IOC declaration that would otherwise not be available until completion of the USAF IOT&E. Australia will work with the US on other arrangements necessary to accommodate the new development dates as they become available.

Aircraft Production Costs – With annual contracting, aircraft costs are exposed to uncertainties relating to variations in procurement quantities and Lockheed's ability to meet projected production learning curve efficiencies.	The US has moved from a 'cost plus' to a 'fixed price' incentive contracting approach two years earlier than originally planned. New fixed price contracts together with cost data from established contracts are progressively reducing cost uncertainty. In addition, the NACC project continues to review US Government and contractor estimates and conduct independent sensitivity analysis to assess NACC funding and contingency provisions – these are currently assessed as adequate.
System Integration. A significant task for the NACC project will be integration of the JSF Air System into the Defence environment, including; • Integration of the Autonomic Logistics Information System (ALIS) ground support system with existing ADF hardware and software systems, and • platform to platform integration of the combat system necessary for optimum interoperability. The inherent complexity of software intensive integration and multiple stakeholders make this a high schedule risk activity.	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.
US Government Release Approvals. Previous acquisition programs with the US, have experienced delays due to excessive processing time to acquire the necessary US Government release approvals. These approval processes are complex, inconsistent and in some cases are classified and not releasable to Australia. Given the highly sensitive and classified nature of the JSF capability, and Australia's position as an early acquirer of JSF, there is a probability of delays in the delivery of data and materiel to Australia in the early phases of the acquisition program.	Prior to Stage 2 approval the NACC Project Office will complete a comprehensive information needs analysis necessary to effectively operate and maintain the JSF aircraft. The needs analysis will be compared against the proposed suite of information and data to be provided through the MOU procurement process. Information and data release deficiencies, uncertainties and/or issues will be addressed though the engagement of senior US Government officials and the establishment of agreed, predictable and documented processes.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

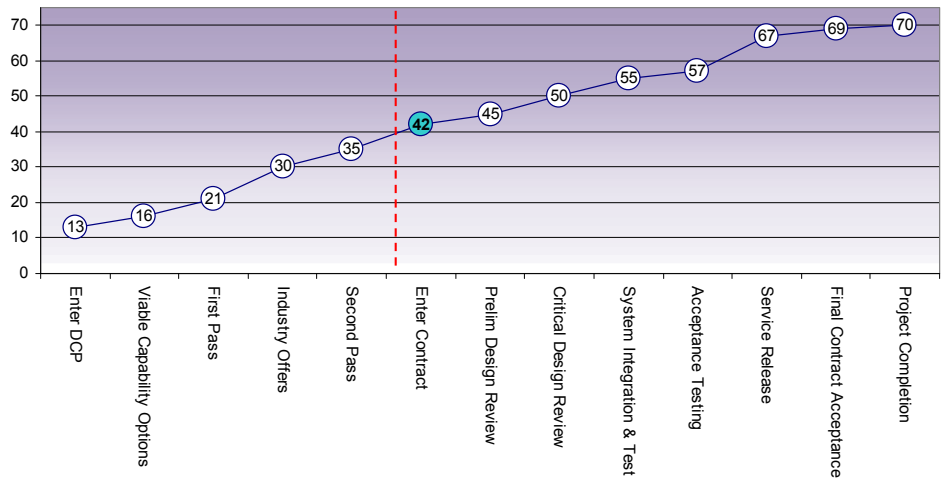
5.2 Major Project Issues

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.	An environmental impact statement is currently being developed to further quantify the noise issue. Public consultation and assessment of potential treatment options will be undertaken to support Government's planned consideration of Stage 2 approval in late 2012.

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	6	5	6	6	7	5	5	40
	Explanation	• **Cost:** The cost maturity will remain immature whilst the US maintains annual contracting cycles. However, price trend data and contractual incentives do give some degree of cost confidence. • **Technical Difficulty:** The baseline assumption is that development commences with contract signature. In the case of JSF the aircraft passed its Critical Design Review over five years ago and there are currently two production aircraft from the first Low Rate Initial Production lot (LRIP 1) and 10 pre-production test aircraft flying in the program. JSF is moving beyond development and into testing phase. • **Commercial:** JPO has increased their management oversight of Lockheed Martin (LM) including via a revised SDD contract structure which rewards measurable progress. Despite LM and JPO having successfully negotiated a fixed price incentive contract for LRIP 4, Australia's first two aircraft (LRIP 6) have not yet been negotiated or contracted. • **Operations and Support:** Global sustainment arrangements are still relatively immature, however they are now becoming a focus for the US Project Office and Lockheed Martin. The NACC Project is refining its own sustainment costs based on JPO analysis and through a series of scenario-based 'wargames'.						



2010 -11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
It is critical that Defence projects establish a robust requirements management regime to ensure capability is delivered to Government approved scope. To achieve this, the project has established a process which aims to ensure: • project delivery of scope in accordance with Government second pass approval; • a clear understanding between key stakeholders (ADF, US Government and Industry) of the materiel and services to be delivered; • effective risk mitigation to reduce the potential of non-delivery of minor elements of materiel, which remain important to the overall success of the NACC program.	Requirements Management

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Warren King
Division Head	AVM John Harvey (Jul10-Aug10) AVM Kym Osley (Dec 10 – current)
Branch Head	AIRCDRE Roy McPhail
Project Director	N/A
Project Manager	Mr Bill Greenwood

Project Data Summary Sheet[202]

Project Name	**ARMED RECONNAISSANCE HELICOPTER**
Project Number	**AIR 87 Phase 2**
Capability Type	New
Service	Australian Army
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Mar 99
Total Approved Budget (Current)	**$2,060.3m**
2010-11 Budget	**$117.3m**
Project Stage	Acceptance Testing
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 contracted for delivery of 22 aircraft including an instrumented aircraft, a Full Flight and Mission Simulator, two Cockpit Procedures Trainer(s), Groundcrew Training Device(s), Electronic Warfare Mission Support System, Ground Mission Equipment, with supporting stores, facilities, and ammunition.

1.2 Current Status

Cost Performance

The Project is expected to deliver the required capability materiel within the approved budget.

Schedule Performance

The Commonwealth and Australian Aerospace reached agreement in September 2010 to allow a delay in the delivery of the 22nd final configuration aircraft to July 2011 in return for additional capability, which will further enhance the capabilities of the Tiger for combat operations and restructured contractual commercial arrangements as compensation. The Commonwealth granted a 10 working day postponement for the remaining aircraft deliveries as a result of the major flooding that occurred in South East Queensland and unseasonal snow falls in Europe that occurred in January 2011. Delivery of the last aircraft in a final configuration was planned for July 2011 with Final Supplies Acceptance planned for July 2012.

In February 2011, Australian Aerospace advised the Project Authority that it would not be able to deliver all 22 **Armed Reconnaissance Helicopters (ARH) by July 2011** as currently contracted and that a potential **further five** month delay was likely. The Project Authority is agreeing **to** a number of initiatives with Australian Aerospace to minimise the operational impact to Army's introduction into service plans under Plan Peregrine.

The major contract milestone of Pre-Initial Operational Release No.2 was not achieved by the contracted date of 31 December 2010. Aircraft delivery requirements for this milestone were met on 28 January 2011. The Project Authority granted achievement of the milestone on 26 May 2011 following Australian Aerospace adequately demonstrating that its Maintenance Support Networks were operating effectively to support the 15 in-service aircraft.

[202] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

The major contract milestone of Pre-Operationally Capable Helicopter was also not achieved by the contracted date of 26 May 2011. Australian Aerospace is currently forecasting achievement of the milestone by 23 September 2011 following the acceptance of the 19th final configuration aircraft.

Materiel Capability Performance

As at 30 June 2011, 20 ARH have been Accepted by the Commonwealth; **four** are undergoing retrofit to the Initial Operational Test and Evaluation Readiness configuration; **five** are being used for training, one of which is also being used to support the remaining Type Acceptance test activities; and **11** are being used for collective training and Operational Evaluation in the operational squadron in Darwin. **All three simulators have now been Accepted and are being used for aircrew training in Oakey and Darwin. Nine aircraft have had the enhanced anti-collision light modification incorporated and four aircraft have had the additional ballistic protection modification incorporated.**

The rebaselined schedule includes all planned engineering activities required to deliver a fully compliant ARH System. Full compliance or Service Release of all Engineering Change Proposals is currently assessed as **March 2012.**

Operational Evaluation of the delivered ARH capability is being progressed by Army. Operational Evaluation for the next Operational Capability 2 milestone, a deployable squadron, **planned for July 2011 has been delayed. The delays are due to ongoing technical serviceability issues with the TopOwl Helmet Mounted Sight and Display which has affected Army's ability to develop a night aided flight capability. Additionally, Australian Aerospace's immature maintenance and supply support networks is impacting the ability to achieve the required aircraft flying rate of effort. The TopOwl Helmet Mounted Sight and Display serviceability issue has been resolved with industry with night aided course of instruction verification and validation recommencing at Oakey in June 2011.**

As at **30 June 2011** the ARH fleet had flown in excess of **8372** hours **with 2413.3 hours flown in 2010/11.**

1.3 Project Context

Project	Explanation
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 February 2002 **the Commonwealth entered into separate contracts with Australian Aerospace for the Acquisition and Through Life Support 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 Trainer(s) 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 has experienced delays in achieving the Initial Operational Capability (IOC) critical contractual milestone, which was due in June 2007, resulting in the Commonwealth exercising its contractual right to stop all payments on the Acquisition Contract while maintaining payments on the Through Life Support Contract. Several factors contributed to the delay in achieving that milestone which in turn resulted in insufficient numbers of aircraft, training devices and logistics support in service to enable the required training outcomes. 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 Through Life Support 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 Through Life Support 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 includes 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 Australian Aerospace on the ARH Acquisition Contract were recommenced in April 2008, with full payment due on signing of the contract change proposals.

	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 Contract Change Proposal was approved in May 2009, and the Contract Amendment was issued in June 2009.
Uniqueness	The Australian Tiger ARH design is based on the Eurocopter French and German Armies 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, • 70 mm 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 has caused slippage 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 original contracted IOC critical milestone.
Major Challenges	The major challenge**s** for the project remain ensuring the Prime Contractor (Australian Aerospace) delivers the remaining capabilities in accordance with the Acquisition Contract **milestone** schedule, and ensuring that adequate rates of effort are able to be maintained by Army. The most significant issue for the program continues to be the underperformance of maintenance and supply support networks. **This is** impacting the availability of serviceable Spares (Repairable Items and Breakdown Spares) and Support and Test Equipment at the required configuration to support the in-service fleet achieving required flying rates of effort and Australian Aerospace's ability to deliver aircraft on time from its production / retrofit program.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Mar 99	Original Approved	1,584.0		1,584.0		
Oct 02	Real Variation – Transfer	(18.2)	(18.2)			1
Dec 03	Real Variation – Transfer	(59.1)	(59.1)			2
Aug 04	Real Variation – Budgetary Adjustments	(2.2)	(2.2)			3
Sep 04	Real Variation – Transfer	(3.0)	(3.0)			4
Jun 05	Real Variation – Transfer	(4.0)	(4.0)			5
Aug 05	Real Variation – Budgetary Adjustments	(4.5)	(4.5)			6
		(91.0)		(91.0)		
Jun 11	Price Indexation			**418.2**		**7**
Jun 11	Exchange Variation			**149.1**		
Jun 11	**Total Budget**	1,493		**2,060.3**		
2.2 Project Expenditure History						
Prior to Jul 10		1,102.5	1,506.5		Australian Aerospace	**8**
		95.1	130.1		Other	**9**
		1,197.6		1,636.6		
FY to Jun 11		**37.6**	**83.7**		Australian Aerospace	
		5.6	**12.4**		Other	**9**
		43.2		**96.1**		
Jun 11	**Total Expenditure**	**1,240.8**		**1,732.7**		
Jun 11	**Remaining Budget**	**252.2**		**327.6**		

Notes	
1	Transfer to **Defence Support Group** (DSG) Oakey Redevelopment Project to develop ARH specific infrastructure.
2	Transfer to DSG 1 Aviation Relocation Project (Darwin) to develop ARH specific infrastructure.
3	Administrative Savings harvest.
4	Transfer to **Defence Science and Technology Organisation** to fund studies in support of ARH.
5	Transfer to 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	Includes first five years support costs of the TLS Contract (two years Pre-Implementation and the first three Contract Years), Preliminary Engineering Proposals & Indefinite Quantity tasks performed in Acquisition.
9	Other expenditure comprises: operating expenditure, contractors, consultants, **Foreign Military Sales,** research and development costs and other capital expenditure not attributable to the aforementioned contract and minor contract expenditure. **For base date calculations against "Other" expenditure, calculations have been made using a proportional adjustment. This proportional adjustment involves the average between base date calculation of the disclosed major contract(s) and their constant price and applying to the "Other" expenditure.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The variance is largely attributable to the forecast expenditure for Repairable Items and Support & Test Equipment - approx $18m under the forecast. The remainder of the variance was due to delays in the aircraft engineering modification programs for items such as Helmet Mounted Sight and Display and Command Jettison Modules.**
			Overseas Industry	
		(14.8)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(6.4)	Commonwealth Delays	
117.3	**96.1**	**(21.2)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Australian Aerospace	Dec 01	1,139.9	1,461.7	Variable	SMART 2000	

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Australian Aerospace	22	22	Tiger Armed Reconnaissance Helicopter	

Major equipment received and quantities to 30 Jun 11
Twenty aircraft have been accepted by the Commonwealth. Engineering and maintenance arrangements 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		Feb 03	11	
	Aircrew Training Devices	Jun 02		Feb 03	8	
System Design	ARH System	Jun 02		Feb 03	8	1
	ARH System - Delta System Design Review	Mar 03		Apr 03	1	
	Aircrew Training Devices	Apr 03		Jul 03	3	
Preliminary Design	ARH Tiger	Oct 02		May 03	7	2
	Aircrew Training Devices	Mar 03		Oct 04	19	
Critical Design	ARH Tiger	Mar 03		Jul 04	16	3
	Aircrew Training Devices	Sep 03		Jun 05	21	4

Notes	
1	Reliance on the certification of the French Tiger variant was critical to the Australian design review and acceptance program. The DMO'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	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).**
3	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 is required to confirm contract compliance and operational acceptance of incorporated design changes to enable removal of Australian Military Type Certificate and Service Release limitations.
4	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 is being managed to produce a high fidelity simulator.

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		Oct 07	39	
	Cockpit Procedures Trainer Oakey Contractor In-plant and On-Site	Jul 04		Jun 08	47	
	Cockpit Procedures Trainer Darwin Contractor In-plant and Army In-plant	Jul 04		Dec 08	53	
Acceptance	ARH					
	Type Acceptance Review Special Flight Permit	Oct 04		Jun 05	8	
	Australian Military Type Certificate	Jun 05		Oct 05	4	
	Aircrew Training Devices - Final Acceptance Test and Evaluation					
	Full Flight and Mission Simulator (Transition Training capability)	Feb 05		Nov 07	33	
	Full Flight and Mission Simulator (Full Training capability)	Feb 05		Nov 09	57	
	Cockpit Procedures Trainer Oakey	Feb 05		Nov 09	57	
	Cockpit Procedures Trainer Darwin	Feb 05		Feb 10	60	
	Acceptance					
	ARH #11	Jul 06		Apr 08	21	
	ARH #22	Apr 08	Dec 10	**Sep 11**	**43**	1

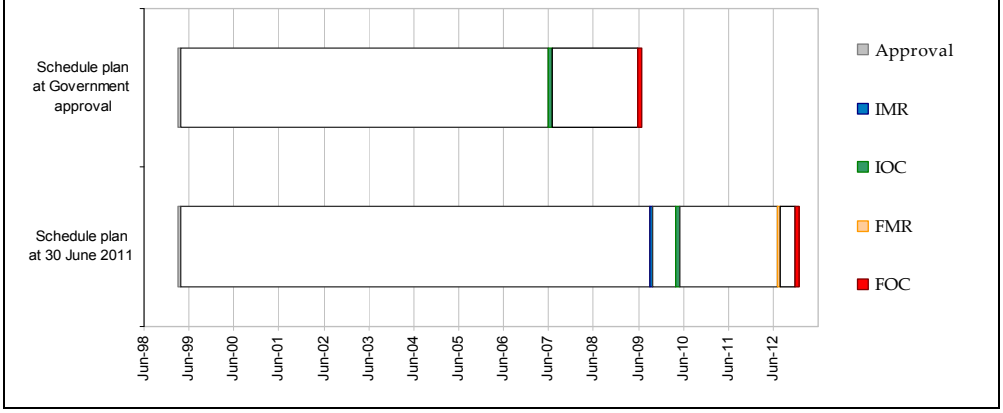
Notes

	The acceptance of the 22nd **production** ARH is contracted for **July 2011.** Achievement of this milestone is now at risk following Australian Aerospace's advice that it would not be able to deliver all 22 ARH by **this date.** The **June** 2011 **Integrated Master Schedule shows a** Forecast Date (Early Finish Date) for the final production aircraft (ARH #22) **of September 2011**.
1	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. Australian Aerospace is currently forecasting an Early Finish Date of **December** 2011 for the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration milestone (ARH00**2** from retrofit).

3.3 Progress Towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Sep 09**	**N/A**	
Initial Operational Capability (IOC)	Jun 07	**Apr 10**	**34**	**Operational Capability 1 (OC1) (IOC) was granted by Chief of Army on 8 April 2010.**
Final Materiel Release (FMR)	**Jul 12**	**Jul 12**	**0**	**No FMR originally identified. Current FMR is the date agreed in Amendment No. 2 to the Project Air 87 Phase 2 Materiel Acquisition Agreement.**
Final Operational Capability (FOC)	Jun 09	Dec 12	42	The revised FOC date of December 2012 was agreed during the development and subsequent approval of Amendment No. 1 to the Air 87 Phase 2 **Materiel Acquisition Agreement** in August 2009 **and has not changed in Amendment No. 2.**

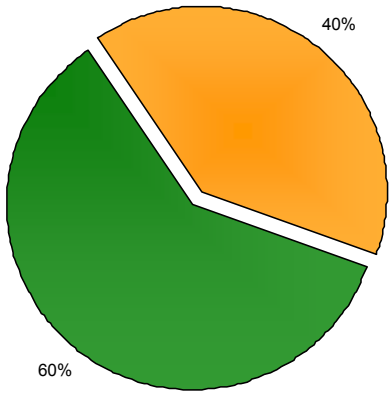
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The project delivered the capability elements required by the revised Initial Materiel Release (IMR) date of 30 September 2009. The project is also on track to deliver all 22 Armed Reconnaissance Helicopters in the final configuration and have the required numbers of aircrew, groundcrew and technicians trained before the Final Materiel Release (FMR) date.

Amber:

Delivery of some long lead time Repairable Items (RIs) and Support and Test Equipment (S&TE) are currently forecast to occur after the FMR date. Commonwealth and contractor actively managing delivery of remaining RIs and S&TE items.

As the requirements for the Other DMO Fundamental Inputs to Capability elements are developed and contracted, the delivery of the required capabilities may not be able to be achieved by the FMR date.

Red:

N/A

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 Aircrew Training and Operational Test and Evaluation will be affected by an inability to achieve required Rate of Effort leading to an impact on schedule and supportability.	**Extreme risk included following reassessment of risk contained in Air 87 Risk Log.** **Work with the Prime Contractor to improve supply chain management and performance.**
There is a chance that Aircrew Training will be affected by limitations of the Aircrew Training Device (ATD) Night Vision System technical solution implementation leading to an impact on cost, supportability, safety and performance.	**Extreme risk included following reassessment of risk contained in Air 87 Risk Log.** **Undertake comprehensive assessment of Night Vision Device (NVD) implementation on the ATDs following on aircraft experience, and tune the ATD NVD performance to improve fidelity with the ARH System.**
There is a chance that the achievement of the remaining major and critical milestones will be affected by the contractor's inability to deliver aircraft from its production and retrofit programs in accordance with its plan leading to an impact on schedule and supportability.	Project Office to maintain dedicated Project Planners to develop and maintain a Project Office Master Schedule linked to key activities in the Prime Contractor's Integrated Master Schedule. Regular Project Management Office meetings are held with the Prime Contractor to transparently monitor and maintain schedule progression. Contractual provisions (Stop Payment) to be enforced.
There is a chance that the achievement of the remaining major and critical milestones will be affected by the contractor's inability to meet the logistic element exit criteria as a result of its underperforming subcontractor maintenance and supply support networks leading to an impact on schedule and supportability.	Resolve remaining Spares and Support and Test Equipment provisioning lists and placement of orders. Actively manage delivery of remaining Spares and Support and Test Equipment. Collaboratively modify maintenance and supply chain configurations in the event that suppliers fail to deliver in accordance with contracted performance levels.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

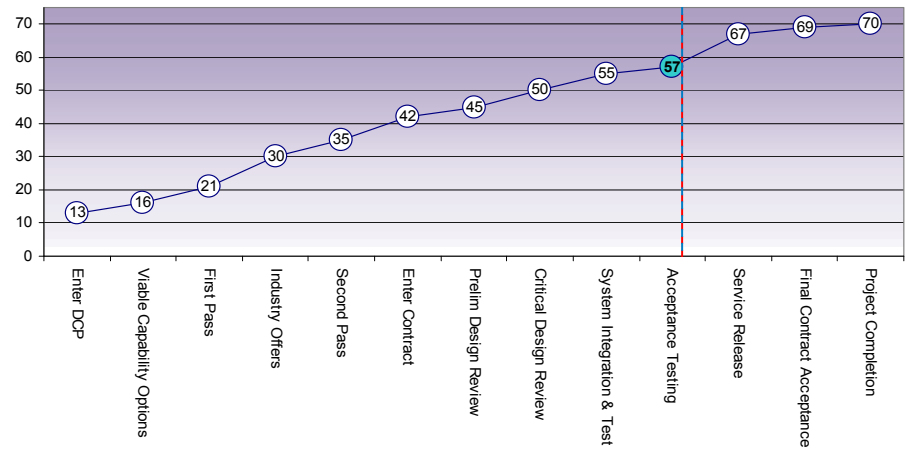
Description	Remedial Action
The Tiger was a far more developmental aircraft than envisaged at contract signature. The finalisation of the Acquisition Contract has been affected by not having a single ARH System configuration leading to an impact on schedule and supportability.	Functional capability elements in the rebaselined Acquisition Contract have better defined exit criteria for Milestones. **Issue closed following approval of Contract Change Proposal 107 in May 2009.**
Timely establishment of supply and maintenance support networks. Issue updated to read: The ARH Rate of Effort has been affected by not having adequate maintenance and supply support networks established and working effectively leading to an impact on schedule, cost and supportability.	Establishment of maintenance support subcontracts in the exit criteria for key milestones has not yet assisted in mitigating this issue. Third party review of ARH maintenance and supply chain management, processes and structure. **Potential requirement for the procurement of additional spares.**
Assuring continuing staff supplementation to the Armed Reconnaissance Helicopter Project Office to ensure project outcomes are delivered.	Additional resources are being applied from other project and support areas within the Branch and Division as required.
The achievement of the remaining major and	**Negotiations have commenced between the**

critical milestones will be affected by the contractor's inability to deliver aircraft from its production and retrofit programs in accordance with its plan leading to an impact on schedule and supportability.	**parties to resolve this issue.**
The achievement of the Pre-Operationally Capable Helicopter major contract milestone has been affected by the contractor's inability to deliver aircraft from its production and retrofit programs in accordance with its plan leading to an impact on schedule and supportability.	**Work with the contractor to expedite delivery of the remaining three aircraft required for achievement of the milestone.** **Enforce the provisions of the Acquisition Contract including claiming accrued Liquidated Damages once milestone has been achieved.**

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	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	9	8	9	8	9	6	9	58
	Explanation	• **Schedule:** In Service Date achieved in December 2004 with remainder of schedule well understood. • **Requirement:** Integration and testing has verified achievement of the majority **of** the endorsed requirements. Operational Test and Evaluation has validated delivery of a deployable troop capability through the granting of Operational Capability 1 by the Chief of Army. • **Commercial:** Contractor performance is unsatisfactory and improvement is required in order to ensure critical milestone achievement. • **Operations and Support:** ARH System elements have commenced transition to In-Service Managers.							



2009-10 DMO MPR Status - - - -	2010-11 DMO MPR Status - - - -

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 slippage 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.	**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

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	**RADM Mark Campbell**
Branch Head	**BRIG Andrew Mathewson**
Project Director	Mr Bruce Whiting
Project Manager	Mr Bruce Whiting

Project Data Summary Sheet[203]

Project Name	**F/A-18 HORNET UPGRADE**
Project Number	**AIR 5376 Phase 2**
Capability Type	Upgrade
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	May 98
Total Approved Budget (Current)	**$1,917.5m**
2010-11 Budget	**$73.1m**
Project Stage	**Acceptance Testing**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The Air 5376 Phase 2 Project is to upgrade the F/A-18 fleet to incorporate enhancements which will allow the aircraft to more effectively perform its air defence strategic concept tasks. This capability is being implemented in three distinct stages, the first enabling the aircraft to more effectively perform its air defence role, the second enhancing pilot situational awareness, and the final stage providing additional aircraft self protection.

In addition to the physical upgrade of the F/A-18 Fleet, each stage includes an upgrade to the aircraft software to enable the upgraded hardware and commensurate upgrades to ground support and training systems.

1.2 Current Status

Phase 2.1	**Cost Performance**
	The Project was completed within budget.
	Schedule Performance
	The Project was completed ahead of schedule.
	Capability Performance
	Capability has been accepted into service.
Phase 2.2	**Cost Performance**
	The Project has achieved Technical and Contractual Completion within budget.
	Schedule Performance
	All Hornet aircraft have been accepted within schedule.
	Capability Performance
	Capability has been accepted into service.
Phase 2.3	**Cost Performance**
	The Project remains within budget.

[203] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

	Schedule Performance
	Initial Materiel Release (IMR) providing an interim Electronic Warfare capability was delivered on schedule. Major elements of Materiel Release 2 are now in place to support Initial Operational Capability (IOC). Additionally, significant progress has been made with the elements of Final Materiel Release (FMR) to support Final Operational Capability (FOC).
	Capability Performance
	The radar warning receiver and data recorder elements have demonstrated their fitness for purpose and have been released for service. Acceptance and operational test and evaluation for the BOL-518 Counter Measures Dispenser System and the EL/L-8222 Electronic Counter Measures (ECM) pods indicates that these systems are also fit for purpose.
HACTS	**Cost Performance**
	The project **remains** within budget.
	Schedule Performance
	HACTS **has** delivered **Initial Operational Capability.**
	Capability Performance
	*Ongoing upgrades are required to **Hornet Aircrew Training System (HACTS)** to introduce emerging Hornet capabilities being introduced by other Hornet and Weapon upgrades.*

1.3 Project Context

Project	Explanation
Background	**Since the decision to select the F/A-18 as the Royal Australian Air Force's (RAAF) multi-role fighter in 1981** the need to address equipment obsolescence and improve the F/A-18 capabilities, in line with operational requirements, **has** resulted in the development of the F/A-18 Hornet Upgrade Program Air 5376 (known as the HUG program). Project Air 5376 Phase 2 is comprised of three sub phases; Phase 2.1 Radar upgrade, Phase 2.2 Avionics upgrade, and Phase 2.3 Electronic Warfare upgrade. Due to the significance of the upgrades an additional sub phase was created for the commensurate upgrade of the HACTS. Air 5376 Phase 2.1 upgraded the F/A-18 fleet to incorporate enhancements that enabled the aircraft to more effectively perform their air defence role. This included provision of a new fire-control radar, and an Electronic Protection Collaborative Development Program with the **United States** (US) Navy to develop Electronic Protection techniques for the radar. Air 5376 Phase 2.2, **provides aircrew with enhanced situational awareness**, by upgrading the avionics suite with installation of the following equipment: • LINK 16 Secure data link. The particular LINK 16 equipment to be fitted to the F/A-18 is known as the Multifunction Information Distribution System; • An upgraded Counter Measures Dispenser Set; • Multi-Purpose Display Group Upgrade (colour displays); • Upgraded digital moving map system known as the Tactical Air Moving Map Capability; • Joint Mission Planning System; and • Joint Helmet Mounted Cueing System. Air 5376 Phase 2.3 **provides** additional aircraft self protection by: • Replacement of the Radar Warning Receiver with an updated Raytheon Radar Warning Receiver for the **whole fleet;** • Supplementation of the Counter Measures Dispenser System capability with a SAAB Counter Measures Dispenser System thereby increasing expendable capacity; • Supplementation of the jammer capability with the Elta jammer pod; and • Enhancement of the aircraft Data Recording capability. The Air 5376 Phase 2 HACTS upgrade involves replacement of the obsolete Hornet Operational Flight Trainers with: • Three Tactical Operational Flight Trainers (2 at Williamtown, 1 at Tindal) configured to simulate Air 5376 Phase 2.2 configuration aircraft;

	• Instructor Operator Stations; • Instructor/Student Debrief Stations; • **Tactical Readiness Trainers with Advanced Helmet Mounted Display.**
Uniqueness	The Project Office performs the role of prime integrator for all Air 5376 Phase 2 sub phases. Boeing (St Louis) is contracted for the aircraft integration aspects. The US Navy, through **Foreign Military Sales** (FMS), is responsible for developing core aircraft software upgrades. New equipment is sourced directly from suppliers, either via FMS or direct commercial contracts. Contracts and FMS cases are placed incrementally as requirements mature. Therefore, the Commonwealth retains a significant portion of risk through out the life of the project. Air 5376 Phase 2.2 included a collaborative program with the Canadian Forces for the development of the upgraded colour displays, achieving significant efficiencies for both countries. Air 5376 Phase 2.3 is installing some equipment which is not common with the US Navy and has not been integrated onto an F/A-18 A/B aircraft previously.
Major Challenges	There **have been** major challenges associated with Air 5376 Phase 2.3 due to the project office role as prime systems integrator, particularly considering the commercial and security complexities of integrating disparate systems sourced from a diverse range of commercial and national entities. The key risks relate to the development and integration of aircraft and system software, as the systems **had** not previously been integrated and installed in other F/A-18 Hornet fleets. **With the testing regime complete the residual challenge is the ability of the Australian Weapons System Support Flight (WSSF) to develop the Australian Unique Software load. Continued consultation with WSSF is enabling the project to work through any issues as they arise.** The HACTS devices are heavily software-based, and the source code used to create the simulations is subject to export control from the US. At this stage only a small portion of software has been cleared for release to Australia. This limits the ability of the Australian contractor, Raytheon Australia, to provide software changes to meet changing simulation requirements. This has been highlighted during incorporation of Australian unique software loads as a result of Hornet Upgrade activities.
Other Current Projects/Sub-Projects	N/A. All sub phases are addressed in this report.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5416 PH1	**AIR 5416 Electronic Warfare Self Protection (EWSP) - was a multi-phase project that was established to redress the EWSP limitations of selected ADF aircraft and therefore improve the survivability of these aircraft in combat.**	**AIR 5376 was dependent on AIR 5416 PH1 for the Full Scale Engineering Development of an indigenous Radar Warning Receiver and the Initial Design Activity and adaptability studies that focused on the design of a common EWSP suite that could be tailored for installation in the F/A-18 A/B aircraft.**
JP 2030	**JP 2030 Joint Command Support Environment -** seeks to acquire a common aircraft Mission Planning System capability for F-111, AP-3C, Lead In Fighter and F/A-18 aircraft. Air 5376 will consider the interface requirements necessary for data transfer between Mission Planning System and the F/A-18.	Air 5376 was dependent on JP 2030 for their Mission Planning System framework and standard hardware requirements when considering the interface requirements necessary for data transfer between Mission Planning System and the F/A-18.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
May 98	Original Approved	1,300.0		1,300.0		
Feb 99	Real Variation – Transfer	23.9	23.9			1
Aug 00	Real Variation – Transfer	11.3	11.3			2
Jul 01	Real Variation – Scope	(132.1)	(132.1)			3
Oct 02	Real Variation – Transfer	(0.2)	(0.2)			4
Oct 03	Real Variation – Scope	9.3	9.3			5
Aug 04	Real Variation – Budgetary Adjustment	(0.7)	(0.7)			6
Aug 04	Real Variation – Scope	(1.2)	(1.2)			7
Dec 04	Real Variation – Scope	(67.0)	(67.0)			8
Aug 05	Real Variation – Budgetary Adjustment	(2.7)	(2.7)			9
May 07	Real Variation – Scope	412.5	412.5			10
		253.1		253.1		
Jun 11	Price Indexation			**323.5**		**11**
Jun 11	Exchange Variation			**40.9**		
Jun 11	**Total Budget**	1,553.1		**1,917.5**		
2.2 Project Expenditure History						
Prior to Jul 10			**282.4**		The Boeing Company	**15**
			281.5		US Government (AT-P-LZY)	
			116.4		US Government (AT-P-LDG)	
			55.2		ELTA Systems Ltd	
			67.6		Raytheon	**14**
			668.2		Other	**12**
				1,471.3		
FY to Jun 11			**11.3**		The Boeing Company	
			0.0		US Government (AT-P-LZY)	
			7.8		US Government (AT-P-LDG)	
			6.5		ELTA Systems Ltd	
			3.4		Raytheon	
			41.1		Other	**13**
				70.1		
Jun 11	**Total Expenditure**			**1,541.4**		
Jun 11	**Remaining Budget**			**376.1**		

Notes	
1	Transfer from other phases of AIR 5376.
2	Transfer from AIR 5376 Phase 1 Hornet Air Crew Training System.
3	White Paper considerations.
4	Transfer to Facilities.

5	Scope increase for Hornet Air Crew Training System.
6	Administrative Savings Harvest.
7	Transfer to Facilities.
8	Decrease for Radio Frequency Jammer.
9	Skilling Australia's Defence Industry harvest.
10	Scope increase to include Hornet Electronic Warfare Self Protection Suite upgrade being conducted under Phase 2.3.
11	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $314.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $9.2m having been applied to the remaining life of the project.**
12	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top 5 contracts and minor contract expenditure. As the prime systems integrator, the Commonwealth is undertaking a strategy of incremental contracting of work packages as they are defined, this has included engaging in over **12** FMS cases with the US Government to support various stages of the project. Other expenditure includes an amount of **$93.5m** on aircraft software upgrade FMS cases and an additional **$130.7m** on other major FMS cases for items such as the Multifunctional Information Distribution System, Joint Helmet Mounted Cueing System, Risk Reduction, and Hornet Upgrade support activities. **In addition $29.9m on Counter Measures Dispenser Sets and pylon modification kits from SAAB AB and $30.2m** has been spent on fleet modifications by Boeing Defence and BAE Systems Australia.
13	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top 5 contracts and minor contract expenditure. In particular **$5.4m on FMS Case AT-P-GOD for the procurement of Risk Reduction and Test and Evaluation services, $5.6m on FMS Case AT-P-GQP for 23X Software configuration set expenditure, $6.6m on Operating Expenditure, $1.0m on Hornet Data Recorder from Elbit, $1.2m for Defence Interagency agreements, $2.0m on Counter Measures Dispenser Sets and pylon modification kits from SAAB AB, $2.3m in Management Support, $13.0m in aircraft and pylon modification expenditure and $4.0m in miscellaneous expenditure.**
14	**Variance from previous reporting year due to incorrect reporting in US dollars.**
15	**Variances from previous reporting year due to duplication of spend against two separate purchase orders for this contract.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The end of year achievement was $70m, the major variation (from the $73m planned) was due to the delay of the EL/L-8222 Jammer Factory Acceptance Testing. This $5m payment will now occur in 2011-12. To offset this delayed payment, activities were brought forward from 2011-12, thus the underspend was reduced to ($3m).**
		(3.0)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
73.1	**70.1**	**(3.0)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
The Boeing Company	Dec 01	50.4	**323.2**	Firm/Fixed	DEFPUR101	1
US Government (AT-P-LZY)	Oct 99	350.3	**333.8**	FMS	FMS	
US Government (AT-P-LDG)	Dec 06	206.8	**154.7**	FMS	FMS	
ELTA Systems Ltd	May 08	89.8	**107.8**	Fixed	ASDEFCON	
Raytheon	May 04	53.6	**70.9**	Fixed	ASDEFCON	1

Notes

1	Base Date dollars have not been provided for some contracts in this project. As the Prime Systems Integrator the Commonwealth has, as a risk management strategy, undertaken a process of incremental contracting, by way of both new contracts and changes to existing contracts, for work packages as they are defined. This strategy results in varying base dates for work packages contracted by each contract change. This strategy applies to The Boeing Company and Raytheon contracts, as a result expressing real price increases/decreases at a total prime contract level in base date dollars is not feasible. The Elta Systems Ltd contract and FMS however have been calculated at base date dollars.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
The Boeing Company	Various	Various	Aircraft & Pylon modification kits	
US Government (ATPLZY)	71	71	APG73 Radars	
US Government (ATPLDG)	66	73	Radar Warning Receivers	
ELTA Systems Ltd	32	32	ECM Jammer Pods	
Raytheon	3/0	3/3	Tactical Readiness Trainers and Tactical Operational Flight Trainers	

Major equipment received and quantities to 30 Jun 11

Phase 2 Hornet Aircrew Training System – **IOC delivered.** Phase 2.1 Air Defence Upgrade – completed. Phase 2.2 Avionics Upgrade – completed. Phase 2.3 Electronic Warfare Upgrade – interim capability delivered.

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	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Feb 02	Feb 02	Feb 02	0	
	Phase 2.3	Jan 07	Jan 07	Jan 07	0	
	HACTS	Sep 04	Sep 04	Sep 04	0	
Preliminary Design	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Sep 02	Sep 02	Sep 02	0	
	Phase 2.3 (SDR)	Jan 07	Jan 07	Jan 07	0	
	HACTS	Jan 05	Jan 05	Jan 05	0	
Critical Design	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Mar 03	Mar 03	Mar 03	0	
	Phase 2.3	Jun 07	Jun 07	Jun 07	0	
	HACTS	Mar 05	Mar 05	Mar 05	0	

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	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2 (First Article Contract / Project acceptance)	Feb 05	Jan 05	Jan 05	(1)	1
	Phase 2.3 (System Integration Lab Test)	May 07	May 07	May 07	0	
	HACTS (Factory Acceptance Test)	May 06	May 06	May 06	0	
Acceptance	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2 (Aircraft Modification DMO Acceptance – A&B model)	Nov 05	Nov 05	Nov 05	0	
	Phase 2.3 (Aircraft Verification and Validation)	Sep 08	Sep 08	Aug 08	(1)	1
	HACTS (Site Acceptance Test)	Jun 06	Jun 06	Jun 06	0	

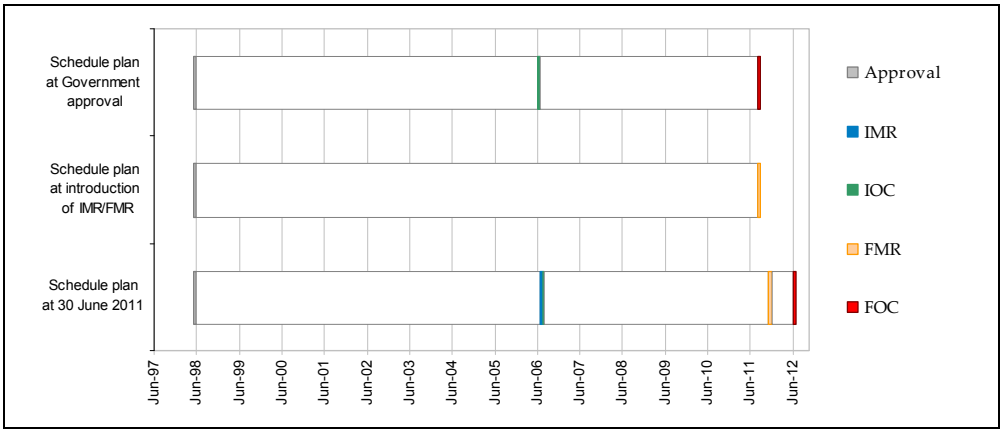
Notes	
1	Modification of Validation and Verification aircraft completed earlier than anticipated.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)				
Phase 2.1 IMR	**N/A**	**N/A**	**N/A**	
Phase 2.2 IMR	**N/A**	**Apr 07**	**0**	
Phase 2.3 IMR	**N/A**	**Dec 08**	**0**	
HACTS IMR	**N/A**	**Jul 06**	**0**	
Materiel Release (MR) 2				
Phase 2.3 MR2	**Aug 11**	**Aug 11**	**0**	
Initial Operational Capability (IOC)				
Phase 2.1 IOC	N/A	N/A	N/A	
Phase 2.2 IOC	Apr 07	Apr 07	0	
Phase 2.3 IOC	Nov 09	**Aug 11**	**21**	**IOC requires the completion of Operational Testing and Evaluation (OT&E) and an Airworthiness Board for Supplemental Type Certification and Service Board Release by the RAAF.**
HACTS IOC	Jun 06	Jul 06	1	**Delays in the development and issue of Site Acceptance Report.**

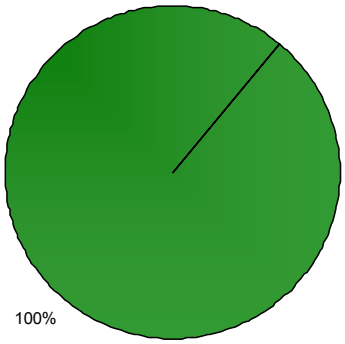
Final Materiel Release (FMR)				
Phase 2.1 FMR	**N/A**	**N/A**	**N/A**	
Phase 2.2 FMR	**N/A**	Dec 07	0	
Phase 2.3 FMR	**Jun 11**	Nov 11	**5**	The delivery schedule for the required number of modified aircraft currently fails to meet the **FMR** milestone. **Planned date has been amended to reflect updated Material Acquisition Agreement approved in June 2011.**
HACTS FMR	**Aug 11**	**Aug 11**	**0**	
Final Operational Capability (FOC)				
Phase 2.1 FOC	N/A	N/A	N/A	
Phase 2.2 FOC	Dec 07	Dec 07	0	
Phase 2.3 FOC	Aug 11	**Jun 12**	**10**	**FOC requires the completion of OT&E and an Airworthiness Board for Supplemental Type Certification and Service Board Release by the RAAF.**
HACTS FOC	**Mar 07**	**Dec 11**	**55**	**There is no identified HACTS FOC milestone; however project closure was scheduled for December 2009. The delivery of upgrades to the HACTS system to HUG 2.2 aircraft configuration have been completed. A further upgrade to reflect the HUG 2.3 aircraft configuration and address some HACTS training limitations will be progressed.**

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: Upgraded radar and avionics suite is performing to capability requirement. Amber: N/A Red: N/A

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)		
Description		Remedial Action
Phase 2.3	The delivery of F/A-18 Mission Computer (MC) Australian Unique software load number 8 (Austblock 8) is dependent on delivery of MC data from the US Navy, which is in turn dependent on the flight test program. There is a risk that delays in data delivery from the US Navy, flight testing or Austblock 8 development will delay FOC.	**Flight Testing for the first phase of the Electronic Warfare has been conducted and completed. No serious deficiencies were found that will delay the service release of Austblock 8. No additional builds will be required therefore, the bulk of the risk relates to the ability of the Australian Weapons System Support Flight (WSSF) to develop Austblock 8 and the associated testing, publications and training development requirements. Continued consultation with WSSF through Integrated Product Team meetings to work through issues is being conducted to minimise any delay.**

	There is a chance that the F/A-18 A/B Operational Flight Program test program will be affected by the late delivery of the first F/A-18 ECM jammer pod leading to an impact on schedule and performance.	**Risk retired. Flight testing commenced on schedule with a modified F-111 variant. However, late delivery of the F/A-18 variant did delay some elements of the integration testing but flight testing with the ECM Phase A pods has now been completed and this risk was closed in September 2010.**
	The EL/L-8222 ECM pod requires routine servicing (as regularly as six months) and without in-service support arrangements in place, this servicing cannot be completed. There is a risk that because of the late contracting activities, there will be no EL/L-8222 In-service Support (ISS) in place by the FOC Milestone.	**The development of a Contract Change Proposal to the Acquisition contract to procure Long Lead support equipment and spares has been completed and put in place. In addition, with stakeholder agreement the EL/L-8222 ISS contract will only cover Deeper Level Maintenance, with RAAF conducting Intermediate level maintenance, which has significantly reduced this risk.**
HACTS	There is a chance that Australian unique aircraft software loads will not be compatible with HACTS leading to an impact on performance project cost and schedule.	**This risk has been downgraded and is no longer considered a Major Project Risk. The Project Management Stakeholder Group (PMSG) has endorsed a solution to incorporate Austblock 8 into HACTS to meet the HUGPH2.3 FOC milestone. This risk is now regarded as a risk to the whole of capability not just Air 5376 Phase 2. As determined by the PMSG further analysis of all associated HACTS upgrade risks is to be conducted to determine way forward for this capability.**
	There is a chance that HACTS capability will not be optimised and/or rectified leading to an impact on performance.	**DMO is developing a procurement strategy that assesses the best value-for money approach to upgrading the HACTS to match recent and future aircraft upgrades and address performance limitations.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)		
Description		Remedial Action
There is a risk that there will be a qualification issue (i.e. Electromagnetic Effect non-compliance) with the Phase B EL/L-8222 ECM Pods as initially delivered. This qualification may also delay production of Phase B ECM Pods and further delay FMR and/or FOC.		**The Project Office will re-emphasis to Elta the importance of qualification-related Functional Performance Specification compliance during the Project Management Reviews and Weekly meetings to ensure Elta do not assume non compliances and waivers will be granted.**

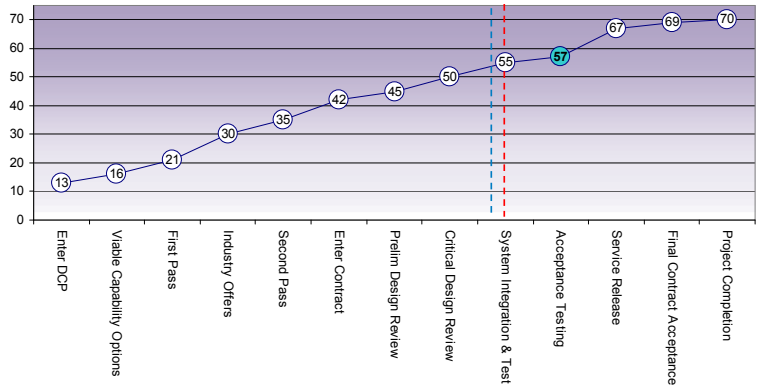
5.2 Major Project Issues

Description		Remedial Action
Phase 2.3	The development and service release of Australian Unique Software Load 7 (Austblock 7) has caused a delay to the achievement of the IOC milestone.	**This issue has been retired as Austblock 7 achieved Service Release in April 2011.**
	The contracted production rate of aircraft modifications will not meet the FOC milestone.	**Formal requests to the Contractor have been made to try to recover the schedule however the Contractor is unable to provide a proposal due to an inability to obtain personnel resources to improve performance. The delay to production is accepted and no further mitigation is planned.**
	The HACTS will not be upgraded to support the Phase 2.3 configuration to meet the FOC milestone.	**This issue has been downgraded and is no longer considered a Major Project Issue. A HACTS upgrade solution based on incorporating aircraft software load Austblock 8 is being pursued as an initial stage that supports the Phase 2.3 FMR milestone.**
	Final delivery of Weapon Station 6 adaptors for the Electronics Counter Measures Jammer Pod will not meet the FOC milestone.	Schedule recovery is not possible for the current **FMR** milestone date.
	There is a potential issue with the design of the Pylon Modification Kit (modification to fit Supplementary Countermeasures Dispensing System) where the Original Equipment Manufacturer SAAB has identified **additional design certification requirements.**	**This issue has now been downgraded and not considered a Major Project Issue. Mitigation action is to accept the design and implement a safety by inspection regime to ensure continued airworthiness of the design.**
HACTS	The HACTS is unable to host the latest version of the Australian unique aircraft software load.	**This issue has been resolved in the interim by loading a later aircraft software version. There is a risk that this may recur for future aircraft software versions. This issue has been downgraded and is no longer considered a Major Project Issue.**

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 for the confederated Phase 2 program.	Benchmark	**8**	**8**	8	8	**9**	8	8	57
Acceptance Testing	Project Status	6	9	8	7	8	8	9	55
	Explanation	• **Schedule: The project will complete acceptance testing once the EL/L jammer has completed the factory acceptance testing in August 2011.** • **Costs:** Major Acquisition contracts are almost finalised in line with iterative contracting strategy. In Service Support contracts are still in development. HACTS funding estimates for finalisation activities are undergoing refinement. • **Technical Understanding:** Support aspects are understood, however only partial capability in service. The US Navy is continuing to assist in the resolution of discrepancies discovered during Acceptance testing for HACTS. • **Technical Difficulty: Several phases of the project undertook Prime Systems Integration functions that has increased the technical difficulty and risks associated with the project. The status of technical difficulty will increase once all sub-systems are in the delivery phase.** • **Operations and Support: The project is conducting a staged process of transitioning all sub-systems.**							



2009-10 DMO MPR Status - - - - - 2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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). Integrated Product Teams met formally on a regular basis and significant issues were raised to an overarching management Integrated Product Team. As well as ensuring progress towards a common goal, the Integrated Product Teams enabled the implementation of many other Project initiatives that relied on quick and honest communication between all parties.	Governance Resourcing
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 tool. Pro-active management of risks was encouraged and many mitigation strategies, particularly in respect to display development, were implemented to avoid schedule delays.	Governance Schedule 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.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Axel Augustin
Project Director	**GPCAPT Graham Edwards**
Project Manager	**WGCDR Scott Parry**

Project Data Summary Sheet[204]

Project Name	**C-17 GLOBEMASTER III HEAVY AIRLIFTER**
Project Number	**AIR 8000 Phase 3**
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	Mar 06
Government 2nd Pass Approval	Mar 06
Total Approved Budget (Current)	**$1,848.9m**
2010-11 Budget	**$6.7m**
Project Stage	Service Release
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is to provide the Australian Defence Force (ADF) with a global heavy airlift capability based upon four Boeing C-17 Globemaster III heavy lift aircraft. The project also includes the acquisition of associated logistics support provisions, role equipment, training devices and facilities required to completely attain the Heavy Airlift capability.

1.2 Current Status

Cost Performance

All four C-17 Globemaster aircraft have been delivered within budget.

Schedule Performance

All four C-17 Globemaster aircraft have been delivered ahead of schedule. Associated support equipment is being delivered to schedule.

Final Materiel Release (FMR) is planned for December 2011.

Final Operational Capability (FOC) will be achieved when permanent C-17 Globemaster facilities have been established at major Royal Australian Air Force (RAAF) bases, and the training systems **(minus the Cargo Compartment Trainer)** have been set up in Australia, this is anticipated for December 2011.

Materiel Capability Performance

Significant project activity remains to deliver outstanding long lead-time logistics support provisions, role equipment, a Cargo Compartment Training (CCT) system, Ground Support Equipment and facilities required to completely attain the Heavy Air Lift capability.

[204] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

1.3 Project Context

Project	Explanation
Background	The project received combined first and second pass Government approval in March 2006 to acquire up to four C-17 aircraft, complete with logistics support through the C-17 Globemaster Sustainment Partnership. Critical project approval considerations incorporated an acquisition method utilising a sole source to the Boeing Company, through the United States (US) Foreign Military Sales (FMS) process, to access pre-existing contracting arrangements. The aircraft are capable of providing a global Heavy Airlift Capability for the Australian Defence Force (ADF) covering the movement of military personnel and outsized cargo that cannot be transported by the Hercules aircraft. Previously, this capability had been provided through commercial arrangements.
Uniqueness	The aircraft acquired were Military Off-The-Shelf with no Australian unique modifications.
Major Challenges	The highest risk for the project is to deliver mature logistics support and training devices to meet Materiel Acquisition Agreement (MAA) delivery schedule. To date, no risks have been realised in this project.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Mar 06	Original Approved	1,864.4		1,864.4		
	Real Variation	0.0		0.0		
Jun 11	Price Indexation			**124.0**		**1**
Jun 11	Exchange Variation			**(139.6)**		
Jun 11	**Total Budget**	1,864.4		**1,848.9**		
2.2 Project Expenditure History						
Prior to Jul 10		**1,328.1**	1,266.5		US Government	**2**
		46.5	46.5		Other	**3**
		1,374.6		1,313.0		
FY to Jun 11		**0.0**	**0.0**		US Government	**2**
		5.4	**5.4**		Other	**3**
		5.4		**5.4**		
Jun 11	**Total Expenditure**	**1,380.0**		**1,318.4**		
Jun 11	**Remaining Budget**	**484.4**		**530.5**		

Notes	
1	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $103.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $20.7m having been applied to the remaining life of the project.**
2	**For Base Date calculations for FMS cases, a consistent de-escalation factor has been applied to all projects which is derived from Defence's cost estimation methodology.**
3	Other expenditure comprises: operating expenditure, contractors and other capital expenditure not attributable to the aforementioned top 5 contracts and minor contract expenditure.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The variance of ($1.2m) is due to the negation of Project Administrative activities ($0.7m) and reprogramming of C-17 Support Equipment ($0.7m) procurements, inclusive of a FOREX gain of $0.2m, associated with the Flight Line Security System (ExTASS) contract and its associated payments.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		0.2	FOREX Variation	
		(1.4)	Commonwealth Delays	
6.7	**5.4**	**(1.2)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
US Government	May 06	1,568.3	1,487.6	FMS	FMS	1

Notes	
1	Original contract value based on accelerated schedule with some scope items not included in initial version of FMS Case. **Seven** case amendments have been made to date to capture these residual scope items.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
US Government	4	4	C-17 Globemaster III Aircraft	

Major equipment received and quantities to 30 Jun 11
Four aircraft accepted. **Maintenance and Aircrew Training Systems** and other engineering and maintenance arrangements 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	C-17 Globemaster III Aircraft					1
	Australian Visual Database		Apr 08	Apr 08	0	
	Virtual Cargo Load Model		Aug 07	Aug 07	0	
	Cargo Compartment Trainer		**Mar 11**	**Mar 11**	0	**2**
Preliminary Design	C-17 Globemaster III Aircraft					1
	Weapon System Trainer Simulated Avionics Package		Apr 07	Apr 07	0	
	Australian Visual Database		Nov 08	Dec 08	1	
	Virtual Cargo Load Model		Aug 07	Aug 07	0	
	Cargo Compartment Trainer		**Mar 11**	**Mar 11**	**0**	**2**
Critical Design	C-17 Globemaster III Aircraft					1
	Weapon System Trainer Simulated Avionics Package		Aug 07	Aug 07	0	
	Australian Visual Database		Nov 08	Apr 09	5	
	Virtual Cargo Load Model		Nov 07	Nov 07	0	
	Cargo Compartment Trainer		**Apr 11**	**Apr 11**	0	**2**

Notes	
1	C-17 Globemaster III Aircraft design reviews not required as it is Military Off-The-Shelf i.e. Mature Design with no ADF unique changes.
2	**The inclusion of the C-17 Cargo Compartment Trainer in the FY 2010-11 summary is a result of the United States Air Force achieving contract signature with Boeing USA late February 2011.**

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	C-17 Globemaster III Aircraft		N/A	N/A	N/A	
	Simulated Avionics		Jul 08	Jan 10	18	1
Acceptance	C-17 Globemaster III Aircraft A41-206		Nov 06	Nov 06	0	
	C-17 Globemaster III Aircraft A41-207		May 07	May 07	0	
	C-17 Globemaster III Aircraft A41-208		Feb 08	Dec 07	(3)	2
	C-17 Globemaster III Aircraft A41-209		Mar 08	Jan 08	(2)	2
	Australian Visual Database On Site Review		Oct 09	Oct 09	0	
	Weapon System Trainer		Dec 09	Nov 09	(1)	
	Virtual Cargo Load Model		Jul 08	Oct 08	3	
	Cargo Compartment Trainer and Facility commissioned		**Dec 14**	**Dec 14**	**0**	**3**

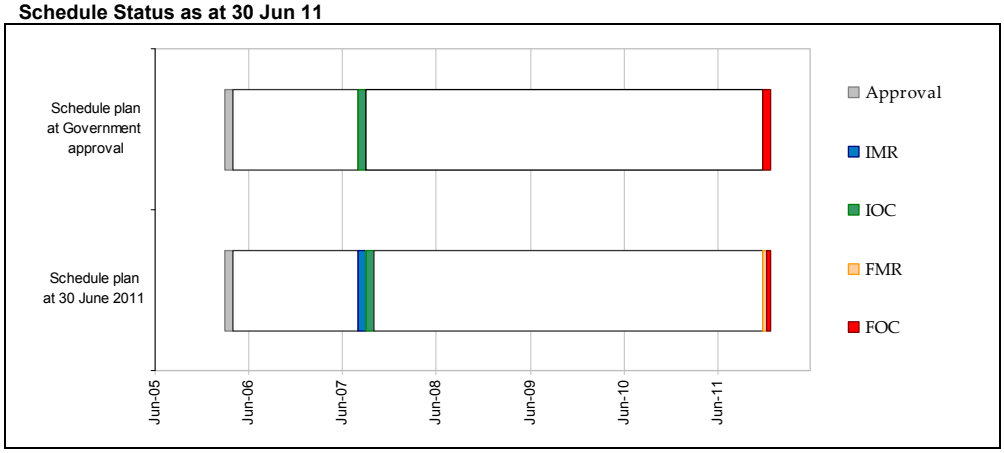
Notes	
1	The Australian C-17 simulator was to be the first fitted with simulated avionics. Simulated avionics would subsequently form the baseline configuration for all future C-17 simulators. The US Government encountered contractor development problems and the Australian C-17 simulator was fitted with aircraft component avionics. Simulated avionics is subsequently not part of the Australian C-17 simulator baseline. The Australian C-17 simulator was commissioned in November 2009 and conducted first training in January 2010 with Aircraft component avionics.

2	C-17 Globemaster III Aircraft Developmental Test & Evaluation (DT&E) not required as it is Military Off-The-Shelf i.e. Mature Design with no ADF unique changes. Aircraft A41-208 and A41-209 were completed early by the manufacturer (Boeing).
3	**The inclusion of the C-17 Cargo Compartment Trainer in the FY 2010-11 summary is a result of the United States Air Force achieving contract signature with Boeing USA late February 2011. CCT and facility is not required to achieve FOC.**

3.3 Progress Towards Materiel Release and Operational Capability Milestones

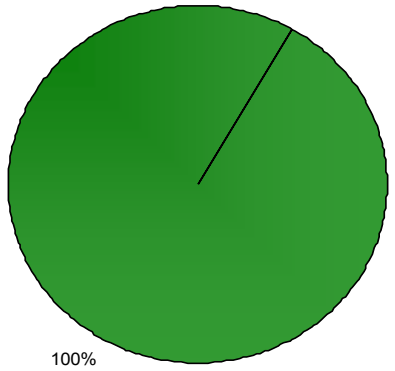
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Aug 07**	**N/A**	
Initial Operational Capability (IOC)	Aug 07	Sep 07	1	**Variance is minimal at approximately 10 days Nil operational impact.**
Final Materiel Release (FMR) ▪ **Heavy Airlift Capability**	**Dec 11**	**Dec 11**	**0**	
Final Operational Capability (FOC) ▪ Heavy Airlift Capability	Dec 11	**Dec 11**	0	**All DMO inputs to FOC achieved by January 2011. Air force is yet to declare FOC and have until December 2011 in accordance with the Materiel Acquisition Agreement (MAA).**

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: The project is meeting capability requirements as prescribed in the Capability Definition Documents (CDDs). Amber: N/A Red: N/A

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Due to the complex nature of the CCT and building integration, and the additional requirements for new build CCTs, there is a risk that the CCT facility **(provided by Defence Support Group [DSG])** will not be completed and available for required C-17 loadmaster training to meet MAA obligations.	This risk is being managed by obtaining and reviewing detailed planning and scheduling information, maintaining close liaison and regular meetings with **Defence Support Group, who is responsible for delivering the Australian Cargo Compartment Trainer Facility.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
There is a chance that the management and progress of the project will be affected by a lack of sufficient resources leading to an impact on performance, schedule, and supportability.	**This risk is being managed by forecasting, closely managing and retaining resources required to perform the activities of the project.**

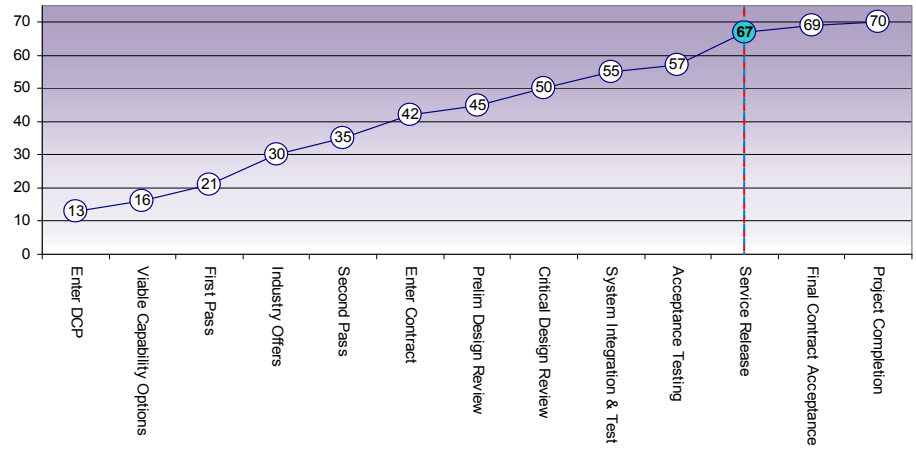
5.2 Major Project Issues

Description	Remedial Action
N/A	N/A

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
Service Release	Project Status	10	9	10	10	10	9	9	67
	Explanation	**The project maturity score has not changed from the 2009-10 MPR. The project has delivered all four C-17 Globemaster aircraft with the permanent support facilities and training systems (with the exception of the Cargo Compartment Trainer) expected to be delivered by December 2011.**							



2009-10 DMO MPR Status - - - -	2010-11 DMO MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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.	Military Off-The-Shelf Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Rob Lawson
Project Director	**WGCDR Warren Bishop**
Project Manager	WGCDR Warren Bishop

Project Data Summary Sheet[205]

Project Name	**AIR TO AIR REFUELLING CAPABILITY**
Project Number	**Air 5402**
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	May 03
Total Approved Budget (Current)	**$1,828.5m**
2010-11 Budget	**$326.0m**
Project Stage	**Acceptance Testing**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project will provide 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 & 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

On 15 October 2010, the Minister for Defence Materiel announced this project is a Project of Concern.

Cost Performance

The project remains within the approved Budget.

Schedule Performance

The re-baselined dates for contractual acceptance of the first two aircraft (October and November 2010 respectively) have not been met due to delays in completion of testing and approval of technical documentation for the first-of-type aircraft and finalisation and delivery of support systems such as the publications, training, spares and test equipment necessary for the RAAF to fly and maintain the aircraft.

Following a determined effort by DMO and Airbus Military, the first aircraft (MRTT#3) was contractually accepted on 01 June 2011 and the second aircraft (MRTT#2) on 22 June 2011; approximately 29 months behind the original contract date and 7 months behind the re-baselined contract date.

The first two aircraft have been delivered and accepted in an initial configuration, with acceptance conditional on remediation of a number of non-conformances.

Concurrent with acceptance of the first aircraft, DMO and Airbus Military agreed the principles of a

[205] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175

commercial settlement which, amongst other things, includes a plan for remediation of all non-conformances and a program of improvements to the Aerial Refuelling Boom System.

The prototype aircraft, MRTT#1, was inducted into a refurbishment program in February 2011 to remove the extensive suite of flight test instrumentation, repair damage due to a serious January 2011 incident that resulted in the loss of the boom from the aircraft, install retrofit modifications, and complete the interior fitout in preparation for delivery in November 2011.

Conversion of MRTT#4 at the Qantas Brisbane Conversion Centre has progressed to the re-baselined schedule with delivery and acceptance planned for early October 2011. The fifth and final commercial A330 was delivered to the Australian Conversion Centre in May 2011 with preparation work being undertaken prior to roll-in to the conversion hangar during July 2011.

Materiel Capability Performance

To meet Defence strategic goals, the DMO has worked closely with Airbus Military 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). All issues identified to date have suitable processes and procedures in place to reduce the operational impact. The non-conformances will be carefully managed to meet minimum requirements of Initial Materiel Release (IMR) and Initial Operational Capability (IOC).

Non-conformances to the contracted capability include, radio modes access (under high workload), minor fuel system design issues, and Mission Planning System (MPS).

Although the aircraft has been certified for boom refuelling of small and large aircraft, an agreement has also been reached on improvements to the Aerial Refuelling Boom System to provide an effective operational capability. While delivery of an operational boom refuelling system has been significantly delayed, the capability impact is not considered significant provided FOC can be achieved prior to the JSF aircraft entering RAAF service.

The United States (US) has also provided approval for the Electronic Warfare Self Protection system to be installed and tested (safety of flight and airworthiness only) in Australia, which will be completed by FOC.

1.3 Project Context

Project	Explanation
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 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 Through Life Support 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. The A330 MRTT is based on the Airbus A330-200 medium/long-range twin aisle commercial aircraft. The first (prototype) aircraft is modified and tested by Airbus Military in Madrid, Spain. The remaining four aircraft are modified by Qantas, under subcontract to Airbus Military, 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. A 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: • Phase 1 involves the structural modification of the aircraft, including installation of

	boom and pods for civil certification. • Phase 2 involves 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 Military developed **Aerial** Refuelling Boom System. Whilst Airbus Military 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 Military 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 Through Life Support Contractors for ongoing support of the new tanker capability.
Major Challenges	Airbus Military's ability to meet the contracted schedule milestones continues to be the greatest challenge due to an underestimation of the overall scope and complexity of work and system improvements introduced during the development. Delays experienced with the aircraft development and test have impacted the associated design, development and verification of the Support System; particularly, in the areas of training and publications. In addition, Airbus Military **has been** challenged by: the completion of the military certification test program to the satisfaction of the Spanish Military airworthiness authority; and testing to demonstrate compliance against the **Defence** specification, in particular, the first of type military, refuelling and support systems for subsequent customer acceptance. Other challenges expected during the next reporting period include: the successful removal from the first A330 MRTT of the very complex and highly intrusive flight test instrumentation package, used only during development and testing, and its subsequent **retrofit and** refurbishment to operational fleet status; completion of conversion of the **fourth** aircraft **and commencement of conversion of the fifth, and final, aircraft** at the Australian Conversion Centre for customer acceptance; **rectification of fuel system and avionics non-compliances through software and hardware modifications; and design, development and test of improvements necessary to achieve a full operational capability of the boom refuelling system.**
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
May 03	Original Approved	2,076.6		2,076.6		
Jun 04	Real Variation – Budgetary Adjustment	(149.4)	(149.4)			1
Aug 04	Real Variation – Budgetary Adjustment	(1.2)	(1.2)			2
Aug 05	Real Variation – Budgetary Adjustment	(3.0)	(3.0)			3
Nov 05	Real Variation – Transfer	(135.5)	(135.5)			4
		(289.1)		(289.1)		
Jun 11	Price Indexation			**484.1**		**5**
Jun 11	Exchange Variation			**(443.1)**		
Jun 11	**Total Budget**	1,787.5		**1,828.5**		
2.2 Project Expenditure History						
Prior to Jul 10		**979.2**	**1,012.1**		Airbus Military	
		40.1	**40.1**		Other	**6**
		1,019.3		**1,052.2**		
FY to Jun 11		**206.1**	**257.1**		Airbus Military	
		18.4	**18.4**		Other	**7**
		224.5		**275.5**		
Jun 11	**Total Expenditure**	**1,243.8**		**1,327.7**		
Jun 11	**Remaining Budget**	**543.7**		**500.8**		

Notes	
1	Defence Capability direction re currency mix at approval and Government decisions.
2	Administrative Savings harvest.
3	Skilling Australia's Defence Industry harvest.
4	Transfer to DSG 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 includes $8.6m paid for Tanker Hire costs associated with the delay to the program.
7	**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 includes $1m for travel and $1.5m for training and related travel.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(4.0)	FMS	**Not all Spares and Support and Test equipment was delivered as planned resulting in an underspend of $20.1m. There was a reduction in the need for United States Air Force (USAF) support resulting in an underspend of $4m against the FMS case. The RAAF reduced it's requirement for tanker hire and ALS support resulting in a saving of $9.5m and there was a reduction in the costs claimed against Liquidated Damages due to continued delays with the program.**
		(20.1)	Overseas Industry	
			Local Industry	
			Brought Forward	
		(9.5)	Cost Savings	
		(10.4)	FOREX Variation	
		(6.5)	Commonwealth Delays	
326.0	**275.5**	**(50.5)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Airbus Military **(formerly EADS CASA)**	Dec 04	1,413.4	**1,599.4**	**Variable**	ASDEFCON	

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Airbus Military **(formerly EADS CASA)**	5	5	Provision of a new generation air to air refuelling capability comprising five A330 MRTT aircraft and associated supplies and support.	

Major equipment received and quantities to 30 Jun 11

Acceptance of first aircraft (A39-003) achieved on 01 June 2011. Acceptance of second aircraft (A39-002) achieved on 22 June 2011. Acceptance of initial deliveries of spares and support and test equipment achieved concurrently with first aircraft on 01 June 2011. Fifth, and final, commercial A330 aircraft delivered to Australian Conversion Centre in Brisbane on 26 May 2011.

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**	**Sep 11**	**0**	**4**
Final Design	MRTT Aircraft	**Sep 06**	Sep 06	Jul 07	10	1
	Aerial Refuelling Boom System	**Dec 11**	**Dec 11**	**Dec 11**	**0**	**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 have been added for development of improvements to the Aerial Refuelling Boom System.**

3.2 Contractor Test and Evaluation Progress

Review	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	May 12	**May 13**	**39**	2
	Aerial Refuelling Boom System	**Dec 12**	**Dec 12**	**Dec 12**	**0**	**3**
	Contract Final Acceptance	**Feb 11**	**Jul 12**	**May 13**	**27**	**4**

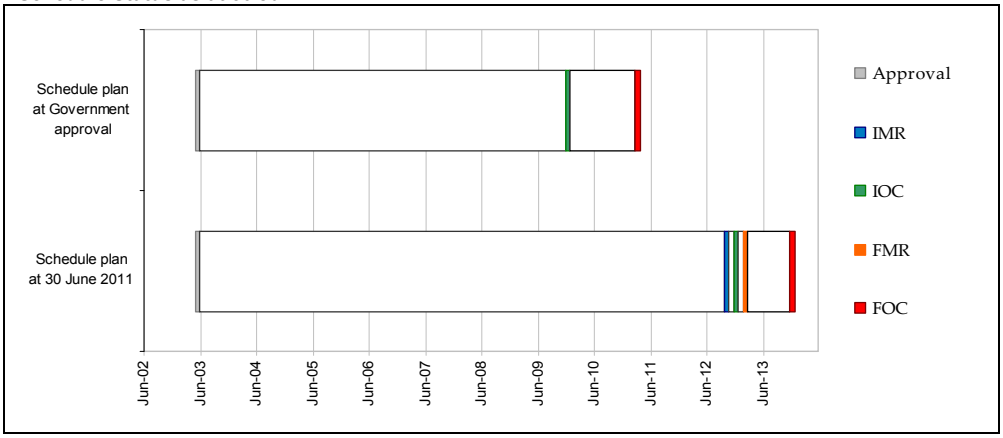
Notes	
1	Originally planned as a single-phase activity, the **system integration** test program **for the first-of-type A330 MRTT** was split into two phases to accommodate changes to the Remote Aerial Refuelling Operator console. The first phase, for civil certification of the modified aircraft, was 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 & 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 has a knock-on impact to completion of testing of the Simulation Devices as the data required for its final accreditation is dependent on a targeted flight test phase conducted at the end of the formal test program. **The Simulation Devices will be introduced in phased manner to recover schedule due to delays in the aircraft test program and enable initial acceptance to be completed by end-2011 and training to commence on the devices in early-2012. Final accreditation has been 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	**New milestone for acceptance of improvements to the Aerial Refuelling Boom System.**
4	**Rectification of all non-conformances at initial acceptance and provision of service bulletins for upgrade of delivered aircraft is required to be completed by Contract Final Acceptance.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**Oct 12**	**Oct 12**	**0**	**DMO milestone for delivery and acceptance of two aircraft, training and Australian military certification and initial service release.**
Initial Operational Capability (IOC)	Dec 09	**Dec 12**	**36**	Delays to the development, certification and qualification of the first-of-type aircraft. A further delay has been as a result of **refinement of planning and identification of additional training and operational test and evaluation requirements.** Delays **to Acceptance of the first aircraft** have required alternative arrangements for provision of aerial refuelling **and air logistics** services to meet Air Force operational and training commitments.
Final Materiel Release (FMR)	**Feb 13**	**Feb 13**	**0**	**DMO milestone for delivery and acceptance of five aircraft and mature support system, including training devices, training materials, publications, spares and support and test equipment.**
Final Operational Capability (FOC)	Mar 11	**Dec 13**	**33**	Schedule recovery is not expected through to completion of conversion of the 5th aircraft in Australia due to the increased scope and complexity of the conversion. **Further improvements to the military avionics and boom refuelling systems are necessary to achieve full capability and are planned to be completed by end 2012.** Delays will impact the **workup and** achievement of the expected operational readiness **for FOC.**

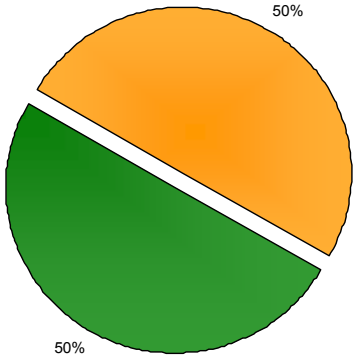
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The project is currently meeting **materiel** capability requirements. These include, but are not limited to:

- Safely and effectively refuelling aircraft equipped with **pod hose and drogue** compatible refuelling systems;
- Ability to accept military and civil pallets and bulk cargo;
- Suitable military and civil communication and navigation suites; and
- Aircraft and through life support system capable of sustaining prescribed annual rate of effort.

Amber:

There is risk to meeting all materiel capability requirements for FOC due to acceptance of aircraft in an initial configuration and the risk of successful remediation of all non-conformances and improvements to the Aerial Refuelling Boom System.

Red:

N/A

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Refuelling system technical, integration or performance envelope issues impacting acceptance of the aircraft.	Actively monitor system design, development and testing and enforce performance goals. **At the acceptance of the first aircraft non-compliances have been documented. Rectification action and schedule has been agreed. Project will closely monitor contractor progress for the development, testing and delivery of the rectifications. Select Resident Project Team positions in Madrid have been extended to maintain close oversight of contractor activities, and also participation in design reviews, testing, and acceptance activities. USAF support is being maintained to provide the CoA with boom refuelling expert knowledge and test support.**
Design and implementation of Human Machine Interface of newly developed systems is not acceptable impacting acceptance of the aircraft.	Continue to contribute to the Human Engineering Program to provide timely feedback. Actively manage and control Human Machine Interface **(HMI)** development with Subject Matter Experts to ensure contracted requirements are met. **HMI deficiencies at initial acceptance have been identified and a remediation plan agreed. Defence Science and Technology Organisation subject matter expert has re-engaged with the project to provide on-going HMI expertise support.**
Lack of air to air refuelling operational experience by key stakeholders impacting the design and certification of the final product.	Provide expert support from RAAF and **USAF** for review of design. Highlight possible short comings to authorities and provide expert oversight of certification process. Involvement of USAF boomers in certification and qualification activities. Airbus Military engagement of additional boom refuelling expertise.
Delivery of a sub-optimal Mission Planning System **(MPS)** impacting final capability.	Clarification and agreement on a finite set of requirements with Airbus Military. Also liaise with other customers to maintain a common set of requirements across the customer base to assist with maintaining a common configuration. **MPS non-compliances for interim aircraft acceptance have been documented and agreed with a remediation plan for the final capability. The impact of delays to the delivery of the final MPS capability has been mitigated by the availability of an interim MPS suite of applications and other workarounds. The project continues to closely monitor contractor activities for the development, testing and acceptance of the final MPS capability.**
Unforeseen hardware or software issues encountered in the fuel system components developed by sub-contractors impacting schedule and/or performance.	Monitor development at reviews and ensure Airbus Military enforces contractual specifications. Ensure Airbus Military has a fallback plan to deliver a minimum capability whilst the full requirements are being met in the longer term. **Fuel system non-compliances at interim acceptance of the first aircraft have been identified and a rectification plan agreed.**
Unavailability of Simulation Subject Matter Experts for acceptance testing impacting acceptance of the Simulation Devices.	Coordinate requirements with the testing working group, identify solutions and provide training as necessary. **RAAF flight test and USAF support is also available if required.** **This risk is now assessed as Medium.**

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
In-service technical issues will complicate rectification of acquisition non-compliances due to new problems being identified.	**The In-service Through Life Support organisations will monitor technical problems through the use of defect reports. These defect reports will be provided to the project office to provide a holistic consideration of the system problems and ensure acquisition design changes are aware of any impacts. A combined acquisition and TLS Configuration Control Board will be operated until Australian Military Type Certification and Service Release is granted. Project Management Reviews with the contractor under the acquisition program will consider this issue and ensure coordination over both the acquisition and TLS programs.**
The final boom system delivered with the MRTT may not provide an operationally acceptable capability.	**The USAF is recognised as the worlds expert for boom testing and operations, and through a FMS case, the USAF has provided support to the project office to advise on boom specification requirements and participate in testing. The boom 'end-state' specification and boom development program has been agreed with Airbus Military and will be contracted as part of a contract change. The USAF will continue to provide support to the project office during future design reviews and flight testing.**

5.2 Major Project Issues

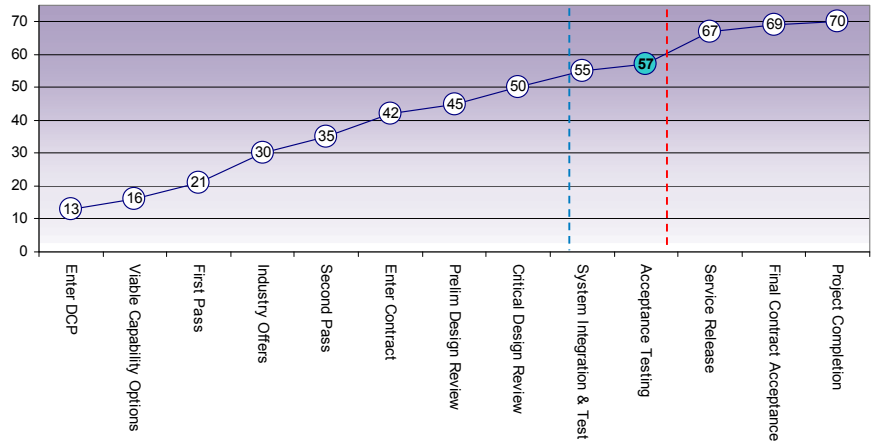
Description	Remedial Action
Human Machine Interface (HMI) Program.	The HMI program require**d** Airbus Military to complete key development and test actions with Defence and the Spanish military certification authority, Instituto Nacional De Tecnica Aerospacial (INTA). Airbus Military conduct**ed** workshops with Defence to complete the Cockpit Acceptance test procedures and in parallel work**ed** with INTA, to resolve the HMI issues associated with the Flight Warning System (FWS) as identified in the INTA HMI report. **The FWS was certified by INTA during October 2010 and an updated certification was provided during April 2011. The FWS will be monitored during the remainder of the acquisition test program and during RAAF in-service operations and Operational Test and Evaluation.**
Non-Compliance Process for Acceptance.	Defence and Airbus Military have agreed the broad approach for managing non-conformances during Acceptance. Defence and Airbus Military **have** finalis**ed** more detailed procedures to ensure appropriate level delegate review and approval of non-conformances and their associated resolution plans. **This process has been used extensively for the achievement of first aircraft acceptance.** **This issue has been retired.**

Description	Remedial Action
Acceptance of the first of type A330-MRTT to meet Defence strategic requirements.	Defence **has worked** closely with Airbus Military to ensure the delivery and acceptance of two A330-MRTT Aircraft and associated logistics support by the end of **June 2011**. Defence is willing to accept the aircraft with capability deficiencies in non-essential systems to achieve this schedule. A framework has been established to manage the delivery of any outstanding capability by **FOC**. In addition, Defence and Airbus Military have established an Acceptance Working Group to ensure the acceptance process is well understood by both parties to reduce the risk of unexpected issues delaying the acceptance of key project elements.
Hardware and software of major refuelling components are still in development by the subcontractor.	**Airbus Military** is providing time in the test program to allow the subcontractor to introduce the required upgrades in stages. There is also senior management commitment from both Airbus Military and the sub-contractor to meet their contractual obligations.
Difficulty in achieving contracted schedule.	**Continue to contribute to maintaining a current and robust joint project schedule and foster commitment by both parties to it. Conduct a detailed schedule analysis at each Project Management Review. Commitment by both parties for open and honest communication for the joint management of schedule risks.**
Maturity of Mission Planning System.	**Detailed sub-system specification has been developed and agreed. System performance at initial acceptance has been tested and shortfalls documented and agreed. An interim MPS solution, with workarounds for shortfalls, has been agreed and implemented. Further development of the MPS will be undertaken under a more robust systems engineering approach.**

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	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	9	7	9	9	9	8	9	60
	Explanation	**The project completed acceptance of the first two aircraft during June 2011 in a configuration able to support the achievement of an Initial Operational Capability.** • **Schedule: Following acceptance of the first two aircraft, the project is now confident of achievement of an In-Service Date by the forecast date.** • **Cost: Costs are within the approved Budget with remaining contingency commensurate with residual risks.** • **Requirements: The project requirements have been tested and plans for rectification of non-compliances at initial aircraft acceptance have been agreed.** • **Technical Understanding: Air Force is fully cognisant of the delivered capability and publications for operation and maintenance of the KC-30A tanker capability.** • **Operations and Support: The Through Life Support Contract is operative and the project is transitioning the KC-30A weapon system to Air Force.**							



2009-10 DMO MPR Status - - - - 2010-11 DMO 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 the DMO 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 the DMO 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, Functional 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 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Robert Lawson
Project Director	Mr Ewan Ward
Project Manager	**Mr Stephen McDonald / Mr Todd Russell**

Project Data Summary Sheet[206]

Project Name	**GUIDED MISSILE FRIGATE UPGRADE IMPLEMENTATION**
Project Number	**SEA 1390 Phase 2.1**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jun 99
Total Approved Budget (Current)	**$1,528.9m**
2010-11 Budget	**$21.1m**
Project Stage	**Final Contract Acceptance**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project seeks to regain a comparative regional maritime capability by upgrading four (originally six) *Adelaide* Class FFGs, and to ensure that they remain effective and supportable until their removal from service between 2015 and 2021. Royal Australian Navy (RAN) FFGs are a derivative of the United States (US) Navy *Oliver Hazard Perry* FFG-7 class Guided Missile Frigates. Each FFG is receiving an improved Anti-Ship Missile Defence (ASMD) system; an On Board Training System; an Electronic Support System; an upgraded Underwater Warfare System, upgraded diesel generators and other ship systems. The upgrade project is also establishing a shore-based Operator and Team Trainer system and a Warfare System Support Centre **(WSSC).**

1.2 Current Status

Cost Performance

Project cost estimate remains within the current approved Project budget.

Schedule Performance

The Prime Contractor has continued to perform to the revised schedule approved in June 2006 and has met the majority of its obligations under the Contract including achieving Acceptance of the FFGs, the WSSC and the Team Trainer.

A Contract Close Out Deed was executed in June 2010 that specifies the Prime Contractor's remaining obligations under the Contract which are to be performed on the terms of the Contract by 28 February 2011.

The FFG Upgrade Prime Contract was successfully completed 2 March 2011 with the Prime Contractor satisfying all its final obligations under the FFG Upgrade Prime Contract by 28 February 2011.

Materiel Capability Performance

All four FFGs have now received their upgraded equipment. Since Acceptance, HMA Ships *Sydney*, *Melbourne*, *Darwin* and *Newcastle* have been in operation with Navy and are now endorsed for Initial Operational Release (IOR) with the Torpedo Defence System and LeScut decoy excluded.

Contractual acceptance of HMAS *Sydney* and *Darwin* and upgraded software was achieved in November

[206] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

2008 in accordance with the provisions of a Deed of Amendment. The requirements of the Deed were met and Contractual Acceptance of FFG Upgraded Software was achieved in May 2009 following closure of open software problem reports. Contractual Acceptance of HMAS *Melbourne* was achieved in December 2008. HMAS *Newcastle*, the last FFG to enter the program, achieved Provisional Acceptance by the DMO and was handed back to Navy in May 2009 **prior to achieving Contractual Acceptance in September 2009.** The Team Trainer also achieved Acceptance in September 2009 and the WSSC achieved Acceptance in December 2009.

Tactical Data Information Link, LINK 16 functionality testing was achieved in August 2008 and assessed suitable for operational use under waiver. The first 'live' LINK 16 Data Link to be established by a RAN unit was achieved in January 2009 between HMAS *Melbourne* and various US Navy units.

A three phased 'incremental' approach for IOR and Operational Release (OR) has been agreed by the Defence Materiel Organisation (DMO) and Navy as the most pragmatic means by which to bring the FFG class to full operational employment. Phase 3 was achieved in January 2010 and IOR by Navy for the FFG Class has been achieved **except the Torpedo Defence System and by association the Le Scut decoy system were both rejected for IOR. Mitigation for the current torpedo defence capability for FFGs has included the installation of an underwater active decoy system (AN/SLQ-25C, NIXIE) in HMA Ships Melbourne and Newcastle. Work has also progressed with Defence Science and Technology Organisation (DSTO) to further Navy's understanding of the demands of the FFG for torpedo defence in various operational environments.**

A Naval Operational Test and Evaluation (NOTE) period was conducted in September 2010 for the Underwater Warfare Systems (UWS) capability. Issues were identified with the availability and serviceability of the UWS capability, human machine interface and operator experience. Remediation of these deficiencies have been undertaken and a further period of testing of the UWS capability, including experimentation with the Torpedo Defence System, is scheduled for third quarter of 2011 and subsequent analysis of trial results in the fourth quarter of 2011.

Similarly, an extensive five week NOTE period to baseline the upgraded FFG Air Warfare capability was conducted in quarter 4 of 2010, and again in June 2011 with HMAS Sydney undertaking the combined Acceptance Test and Operational Test and Evaluation live-fire events for the SM-2 missile test program at the US Navy Pacific Range Facility (Hawaii). System performance for anti-ship missile detection during the combined Acceptance Test and Operational Test and Evaluation period was very good.

The full analysis of the results of both ASMD and UWS NOTE activities will be finalised for a recommendation to Chief of Navy (CN). Chief of Navy consideration of the ASMD and UWS capabilities for Operational Release is anticipated to occur by December 2011.

1.3 Project Context

Project	Explanation
Background	The project's implementation phase commenced in June 1999, when the Prime Contract with Australian Defence Industry (now Thales Australia) was signed. The contract provides for Thales to have total contract performance responsibility and sole responsibility for the upgrade of each FFG. The role of the Systems Program Office in relation to the technical aspects of the upgrade has been, and is generally limited to, reviewing and commenting upon the activities proposed to be conducted by the prime contractor. As a result of the contractor taking substantially longer than the original schedule, the project was re-baselined in April 2004 and again in May 2006. The re-baselining deferred the delivery of all FFGs with the last ship being deferred by four and a half years. In November 2003 the Government determined that the Guided Missile Frigate fleet would be reduced from six to four ships with the two oldest FFGs to be removed from service, prior to their planned upgrade and life extension. In mid 2006 the prime contract was changed with scope reduced from six to four ships (oldest FFGs, HMA Ships *Adelaide* and *Canberra* not upgraded), settlement of delay claims, changes to the master schedule and milestones, and changes to provisional acceptance processes of upgraded ships from the prime contractor all contributed to the delays. The financial impact of this global settlement was reflected by a reduction in prime contract price of $40m. This recognises the engineering development investment and six ship sets of equipment were not affected by the reduction in the number of upgraded ships from six to four. Subsequent difficulties with compliance led the Commonwealth to refuse approval of contractors test procedures. In April 2005 Thales elected to proceed 'at its own risk'

	with a test and trial regime outside of the contractual terms. The contractor saw this as the only feasible approach to completing the project. The complexity of the program was initially underestimated. The performance specifications were not formalised and agreed before contract signature and this has impacted the delivery and agreement of the offered capability and development of the test program. **Nonetheless,** significant progress has resulted in the achievement of contractual acceptance of all four FFGs and facilitated the decision by the CN to approve IOR of this capability and begin planning for its operational employment. All four FFGs were offered for IOR in November 2009 and CN endorsed the IOR in January 2010 with a caveat on the Torpedo Defence System. Also, the Government agreed to remove the FFG Upgrade Project, from the list of Projects of Concern as the issues and problems that had made it a Project of Concern were remediated sufficiently that a path to completion is clearly defined. The RAN **has inducted** the FFGs into a formal program of **NOTE** to fully characterise the performance of the ships in a variety of contemporary operational environments. HMAS *Sydney* is lead ship for this program with further testing **completed** third quarter 2010 **and second quarter 2011**. This Test & Evaluation program supports the tuning, configuration and augmentation of the systems in ships deploying into operational areas to ensure that they have the best available capability to meet the threats in those regions. **NOTE is scheduled to complete in the fourth quarter of 2011 and recommendation for Operational Release of the full FFG Upgraded capability (four upgraded ships and support systems) will be considered by CN at that time.**
Uniqueness	This project presents challenges due to the complex and extensive weapon, sensor, combat, and command and control systems upgrades that are required to be integrated into an Australian developed combat data system architecture. The integration work includes the world's first FFG installation of a Vertical Launching System for firing Evolved Sea Sparrow Missiles and Mk 92 Mod 12 fire control system into the *Adelaide* class FFG. The FFG upgrade project includes the development of the Australian Distributed Architecture Combat System, which contains over one million source lines of newly developed computer code. This software development is occurring in conjunction with electronic system hardware development and integration. The Australian Distributed Architecture Combat System processes and displays radar, sonar and electronic support system data, assisted by a new Australian developed Radar Integrated Automatic Detection and Tracking system.
Major Challenges	Significant challenges were progressed in conjunction with progressive delivery of the capability. Initial Operational Release for the upgrade capability was approved by CN in January 2010 with the exception of the Torpedo Defence System and, by association, the Le Scut torpedo decoy, as the effectiveness of the decoy is dependent upon information provided by the torpedo detection and classification system. This decision initiated the next significant challenge **of** NOTE of the delivered FFG capabilities. This is a period in which the operational effectiveness, suitability and the attendant levels of risk associated with operating the ships in a wide variety of roles will be defined. Also the acquisition and installation requirement for an underwater active decoy system was initiated to satisfy operational preparedness requirements but with due regard to the remaining service life of the ships of the class.
Other Current Projects/Sub-Projects	**SEA 1390 Phase 4A**: Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the Standard Missile 2 at Defence Estate Orchard Hills, Sydney. **SEA 1390 Phase 4B**: Acquire and integrate the Standard Missile 2 into four RAN *Adelaide* Class FFGs at the Mid-Course Guidance standard, and acquisition of Initial Ship Outfit and Inventory Stock missiles.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1390 Phase 4B Standard Missile 1 Missile Replacement	Acquire and integrate the Standard Missile 2 missile into four RAN *Adelaide* Class Guide Frigates at the Mid-Course Guidance standard, and acquisition of Initial Ship Outfit and Inventory Stock missiles.	SEA 1390 Phase 4B builds on the capability from SEA 1390 Phase 2 **and was dependant** on the capability to be sufficiently mature for the inclusion of this additional capability.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Dec 97	Original Approved	1,266.0		1,266.0		1
Nov 98	Real Variation – Budgetary Adjustments	(0.1)	(0.1)			2
Jul 99	Real Variation – Transfer	(152.6)	(152.6)			3
Aug 04	Real Variation – Budgetary Adjustments	(0.7)	(0.7)			4
Jun 11	Price Indexation			**230.3**		**5**
Jun 11	Exchange Variation			**186.0**		
Jun 11	**Total Budget**	1,112.6		**1,528.9**		
2.2 Project Expenditure History						
Prior to Jul 10			1,248.1		Thales Australia	
			94.0		Other	**6**
				1,342.1		
FY to Jun 11			**1.0**		Thales Australia	
			4.3		Other	**7**
				5.3		
Jun 11	**Total Expenditure**			1,347.4		
Jun 11	**Remaining Budget**			**181.5**		

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	Overseas travel not required.
3	Transfer to Project SEA 1428 PH 2A for the procurement of Evolved Sea Sparrow missiles on behalf of SEA 1390 PH 2.
4	Administrative Savings harvest.
5	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $228.1m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $2.2m having been applied to the remaining life of the project.**
6	Other expenditure comprises: operating expenditure, other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure.
7	**Other expenditure relates primarily to External Service providers, spares contract ES 3701, UWS Spares, legal support and other project operating expense.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(0.8)	FMS	**The total variance of ($15.8m) to the estimated 2010-11 year end out-turn is attributable to the following Variance Factors:** **FMS ($0.8m): reduced US Government FMS scheduled payments ($0.9m) attributable to favourable exchange rates.** **DMO PROCESSES ($11.6m): upgraded combat system software and technical support costs ($9.5m) initially funded from and programmed against the Project has been transferred to the FFG Fleet Sustainment program as agreed by Defence delayed procurement of UWS equipment and spares ($1.8m), and Project Support ($0.4m).** **COST SAVINGS ($3.4m): revised (reduced) requirement for Electronic Support spares ($1.5m), land based facilities requirements ($0.9m), Prime Contract close-out costs ($0.7m) and other administrative costs ($0.4m) that have been identified for return to the Defence Capital Program.**
			Overseas Industry	
			Local Industry	
			Bought Forward	
		(3.4)	Cost Savings	
			FOREX Variation	
		(11.6)	Commonwealth Delays	
21.1	**5.3**	**(15.8)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Thales Australia	Jun 99	898.6	**1,042.7**	Variable	DEFPUR 101	1, 2

Notes

1	The original contract was structured requiring price increases to be agreed at the time for each ships major refit concurrent with Upgrade production. $29.1m of work for initial FFG Upgrade equipment spares were not included in the original contract.
2	**The Contract Final Acceptance occurred on 28 February 2011 after an extensive contract closure due diligence review and contractor completion of obligations as recorded in a Contract Close Out Deed established 25 June 2010. The final payment under the Thales Upgrade Contract, being final price variation on Milestone 71(b), was made in June 2011. No further claims from Thales are anticipated.**

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Thales Australia	6	4	Upgraded ships and concurrent refit.	1

Major equipment received and quantities to 30 Jun 11

Four ships have been accepted. Engineering and maintenance arrangements established.

Notes

1	Other items of equipment under this contract include associated support facilities, training devices and spares, as noted in Section 1.2 of the PDSS.

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	Completion of all Software Specification Reviews	Aug 00	Aug 00	May 01	9	1
Preliminary Design	Completion of all Preliminary Design Reviews	Oct 00	Oct 00	May 01	7	1
Critical Design	Completion of all Critical Design Reviews (Critical)	Apr 01	Nov 06	Apr 07	72	1

Notes	
1	Software development and design was delayed due to Australian Defence Industry (now Thales Australia) repatriating the Combat System Design Authority role from Lockheed Martin in early 2001 and implementing the Australian Distributed Architecture Combat System. Thales then elected, as allowed by the Prime Contract, to deliver the contracted capability in three software baselines for technical risk mitigation. Critical Design Review to Baseline Build 2 software completed in December 2006. Critical Design Review for Baseline Build 3 software completed in April 2007.

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	HMAS *Sydney*	Dec 02	Sep 05	Sep 05	33	1
	HMAS *Melbourne*	Jul 03	Feb 07	Jun 07	47	1
	HMAS *Darwin*	Feb 04	Feb 08	May 08	51	1
	HMAS *Newcastle*	Jul 04	Feb 09	Feb 09	55	1
Provisional Acceptance	HMAS *Sydney*	May 03	Dec 06	Dec 06	43	1
	HMAS *Melbourne*	Jan 04	Oct 07	Oct 07	45	1
	HMAS *Darwin*	Jul 04	Aug 08	Aug 08	49	1
	HMAS *Newcastle*	Jan 05	Jun 09	May 09	52	1
	Team Trainer	Apr 02	Feb 07	Nov 07	67	1
	Warfare Systems Support Centre	Apr 04	Nov 08	Nov 08	55	1
Acceptance	HMAS *Sydney*	Apr 04	Nov 08	Nov 08	55	1
	HMAS *Melbourne*	Sep 04	Nov 08	Dec 08	51	1
	HMAS *Darwin*	Mar 05	Nov 08	Nov 08	44	1
	HMAS *Newcastle*	Sep 05	Dec 09	Sep 09	48	1
	Team Trainer	Sep 06	Dec 09	Sep 09	36	1
	Warfare Systems Support Centre	Sep 06	Dec 09	Dec 09	39	1
	Contract Final Acceptance	**Sep 06**	**Feb 11**	**Mar 11**	54	1

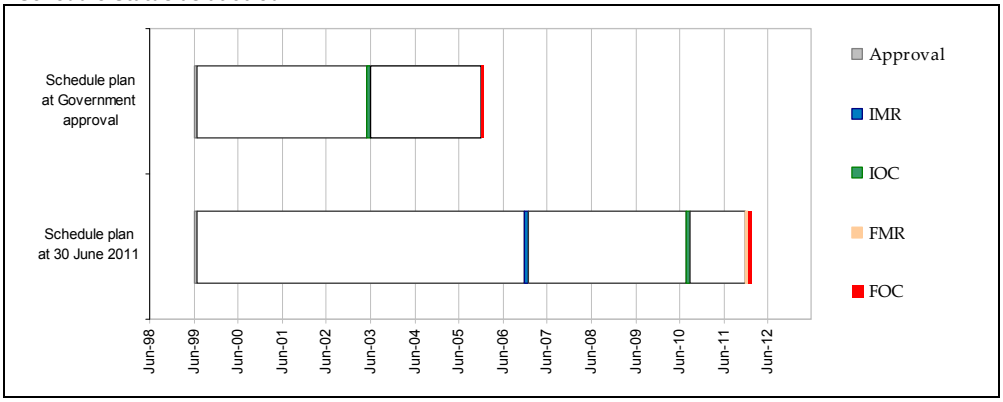
Notes	
1	Schedule delays to this program have resulted from the program complexity being underestimated from the outset. Two schedule re-baseline activities have been undertaken by this project. However, further schedule adjustment to project end date has not been required.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Dec 06**	**N/A**	
Initial Operational Release				
HMAS *Sydney*	May 03	Jan 10	79	A three phased 'incremental' approach IOR and OR has been agreed by the DMO and Navy as the most pragmatic means by which to bring the FFG class to full operational employment. The first three FFGs were at IOR Phase 1 in April 2009 and have been endorsed to IOR Phase 3, along with **the fourth and final upgraded FFG** (HMAS *Newcastle*) in January 2010. IOR for the complete upgrade capability was approved by Chief of Navy in January 2010 **but** the Torpedo Defence System and, by association, the Le Scut torpedo decoy, **were rejected** as the effectiveness of the decoy is dependent upon information provided by the torpedo detection and classification system. The acquisition and installation requirement for an underwater active decoy system was initiated to satisfy operational preparedness requirements but with due regard to the remaining service life of the ships of the class.
HMAS *Melbourne*	Jan 04	Jan 10	71	
HMAS *Darwin*	Jul 04	Jan 10	65	
HMAS *Newcastle*	Jan 05	Jan 10	60	
Initial Operational Capability (IOC)	**N/A**	**Aug 10**	**N/A**	The dates provided in previous MPRs for IOC disclosure represented IOR, which at the time was the most appropriate IOC equivalent as the project did not have an endorsed IOC. As a result of **a revision to the original** Materiel Acquisition Agreement (MAA), the project now has an endorsed IOC which has been disclosed accordingly.
Operational Release				
HMAS *Sydney*	Jul 04	Jul 11	84	Chief of Navy endorsed the FFGs for IOR in January 2010 with limitations addressed in Table 3.3. Final Operational Capability will be informed by the conduct of NOTE managed by Navy, with the allocated period now extended to **the fourth quarter of** 2011 (with endorsement by CN anticipated **by the end of** 2011) to align with the availability of the required test assets and facilities at the Pacific Missile Range Facility (PMRF) in Hawaii. Navy identified a period in June 2011 for ASMD Operational
HMAS *Melbourne*	Dec 04	Jul 11	79	
HMAS *Darwin*	Jun 05	Jul 11	73	
HMAS *Newcastle*	Dec 05	Jul 11	67	

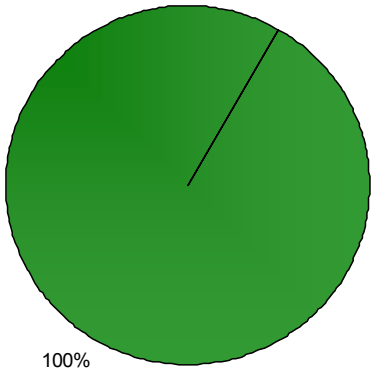
				Evaluation firings in conjunction with Project SEA 1390 Ph4B and the SM-2 Stage 2 (Mid-Course Guidance) Acceptance Test Firings by the DMO, and these were conducted in Hawaii as scheduled. The acquisition and installation requirement for an underwater active decoy system was initiated to satisfy operational preparedness requirements but with due regard to the remaining service life of the ships of the class. All agencies continue to work closely and cooperatively to achieve the remaining operational release targets **by December 2011.**
Final Materiel Release (FMR)	**Dec 11**	**Dec 11**	**0**	**FMR is nominally considered prior to Contract Final Acceptance from the Prime Contractor. The FFG Upgrade Prime Contract Final Acceptance occurred 2 March 2011. The Navy Capability Manager has not yet endorsed FMR for the FFG Upgrade Project and this has now been aligned to the conclusion of NOTE activities and the achievement of FOC included under a revision to the original MAA.**
Final Operational Capability (FOC)	**Dec 11**	**Dec 11**	**0**	The dates provided in previous MPRs for FOC disclosure represented OR, which at the time was the most appropriate FOC equivalent as the project did not have an endorsed FOC. As a result of the transition to the new MAA, the project now has an endorsed FOC which has been disclosed accordingly.

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: The project is currently meeting the capability requirements as expressed in the Materiel Acquisition Agreement.
	Amber: N/A
	Red: N/A

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 2010-11)	
Description	Remedial Action
N/A	N/A

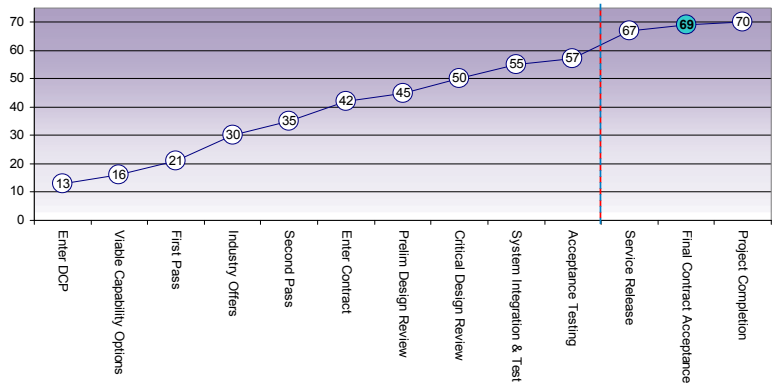
5.2 Major Project Issues

Description	Remedial Action
For Operational Release, the Electronic Support System (C-Pearl) performance may not be met.	**This is a Medium level Project Issue as OR of the Electronic Support System is yet to be achieved.** In January 2010 CN endorsed the ES System for Initial Operational Release **and commencement of** formal Navy Operational Test and Evaluation (NOTE). **Assessment of the ES system concluded with combined Acceptance Test and Operational Test and Evaluation live-fire events for the SM-2 missile test program at the US Navy Pacific Range Facility (Hawaii)** in June 2011. **CN to consider ES Operational Release post analysis and report of trial results in December 2011.**
For Operational Release, the Torpedo Defence Systems integration and performance may not be met and is primarily associated with system grooming and population of supporting libraries.	**This is a Medium level Project Issue.** IOR for the upgraded Underwater Warfare System (UWS) capability was approved by CN in January 2010 with the exception of the Torpedo Defence System as the system was assessed as unlikely to meet operational viability. By association, the Le Scut torpedo decoy was also excluded from IOR as the effectiveness of the decoy is dependent upon information provided by the torpedo detection and classification system. The acquisition and installation requirement for an underwater active decoy system was initiated **for HMA Ships *Melbourne* and *Newcastle*** to satisfy operational preparedness requirements but with due regard to the remaining service life of the ships of the class. **Navy Operational Test and Evaluation of the UWS is programmed for the third and fourth quarters of 2011. The full analysis of the results will be finalised for recommendation to CN for UWS Operational Release in December 2011.**
For Operational Release, the Hull Mounted Sonar (Spherion) performance may not be met.	**Following the Navy Operational Test and Evaluation period which was conducted in September 2010 for the Underwater Warfare System (UWS) capability, performance of the Hull Mounted Sonar has been reinstated as a Medium level Project issue. Issues were identified with the availability and serviceability of the UWS capability, human machine interface and operator experience. Subsequent remediation has been undertaken and further testing of the UWS capability will be conducted in the third and fourth quarters of 2011. The full analysis of the results of the UWS operational test and evaluation program will be finalised for a recommendation for OR to CN in December 2011.**

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	10	10	10	10	10	9	69
Final Contract Acceptance	Project Status	**9**	**8**	**9**	**9**	**9**	10	9	63
	Explanation	• **Schedule:** **Initial Service Delivery has not been achieved. Anticipate CN to consider Operational Release (FOC) of the entire upgraded capability December 2011.** • **Cost:** **The Project Office is confident that the FFG Upgrade will deliver within the approved total Project Cost but is not yet certain (Proven) as some contingency may be required to satisfy Navy requirements for Operational Release (FMR/FOC).** • **Requirement:** **Capability has been contract acceptance tested and achieved IOR. Demonstration Operational Test and Evaluation of capability completed end Aug-11. Analysis and report to be presented to CN for OR in December 2011.** • **Technical Understanding:** **operation of the delivered capability has been transferred to Navy (occurred at IOR). Additional operator knowledge/understanding required for combat system elements identified during the NOTE period (completed August 2011).** • **Technical Difficulty:** **Technical solution design/integration contract acceptance tested and OT&E (completed end Aug-11) by Navy. Analysis and report to be presented to CN for Operational Release (proven) December 2011.**							



2009-10 DMO MPR Status - - - - - 2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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.	Requirements Management
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.	Contract Management Schedule Management 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.	First of Type Equipment
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 logistics support 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.	Contract 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.	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 measures of effectiveness in the MAA.	Contract Management Requirements Management
Major maritime software development should be incremental and delivery does not have to be aligned with the platform modification program.	First of Type Equipment Requirements 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.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall
Branch Head	**CDRE Michael Houghton**
Project Director	Mr Mal Adams
Project Manager	Mr Mal Adams

Project Data Summary Sheet[207]

Project Name	**F/A-18 HORNET UPGRADE STRUCTURAL REFURBISHMENT**
Project Number	**AIR 5376 Phase 3.2**
Capability Type	Upgrade
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Oct 03
Total Approved Budget (Current)	**$951.3m**
2010-11 Budget	**$16.9m**
Project Stage	**Service Release**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The F/A-18 Hornet Upgrade Air 5376 Phase 3.2 project is a structural modification project that is required to address structural deficiencies identified during the F-18 International Follow-On Structural Test Program. The project is divided into two structural refurbishment programs, each providing a different amount of fatigue life to the aircraft to allow the Hornet fleet to reach its Planned Withdrawal Date as explained below:

- A number of aircraft will have their centre barrels (the primary load bearing structure in the aircraft) replaced along with a few other discrete modifications and inspections providing continued airworthiness from 85% to 100% of the intended structural fatigue life. This program is called Structural Refurbishment Program (SRP) 2.
- The remainder of the Hornet fleet will undergo a range of other discrete structural modifications providing continued airworthiness from 78% to 85% of the intended structural fatigue life. This program is called SRP1D.

1.2 Current Status

Cost Performance

32 of **59** aircraft **(54%)** have been modified to SRP1D configuration and 10 aircraft **(100%)** have been modified to SRP2 configuration. All modified aircraft have been accepted within project budget.

Schedule Performance

All modified aircraft have been accepted within project schedule. The remaining aircraft to be modified are scheduled for completion by August 2013 for SRP1D. SRP2 is complete with the tenth and final aircraft delivered in June 2010.

The management and incorporation of remaining modifications have been approved for transition to the in-service sustainment support system. As a result residual project scope and budget has been transferred to the relevant F/A-18 Hornet Materiel Support Agreements.

[207] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability Performance
Modified aircraft meet the project technical specification and have been accepted back into service.

1.3 Project Context

Project	Explanation
Background	The F/A-18A/B Hornet was designed to reach a structural fatigue life of 6,000 hours based on a **United States** (US) Navy fatigue usage spectrum. However, Royal Australian Air Force (RAAF) fatigue usage is more severe than the US Navy fatigue usage meaning that RAAF Hornets would exhaust their fatigue life far earlier than the manufacturer's specified 6,000 hours. Without some further analysis and structural modification, the RAAF Hornet would not reach its Planned Withdrawal Date. In order to address this issue the RAAF, in collaboration with Canada, initiated the F-18 International Follow-On Structural Test Program to determine the fatigue life of the aircraft and identify modifications to ensure the continued safe operation up to 6,000 flying hours. The results of the F-18 International Follow-On Structural Test Program showed that both RAAF and Canadian Forces Hornet fleets required major mid-life structural modifications to reach a structural fatigue life of 6,000 hours. A number of the proposed modifications are being incorporated on the Hornet fleet during the Hornet Upgrade Air 5376 Phase 3.1 Project providing continued airworthiness up to 78% of the intended structural fatigue life. Phase 3.2 incorporates further structural modifications as described in the Project Description above providing sufficient fatigue life for the Hornet fleet to reach its Planned Withdrawal Date. L-3 Communications MAS (Canada) Inc. based in Mirabel, Canada was the contractor selected for design and prototyping of the Hornet Upgrade Phase 3.2 modifications. L-3 Communications MAS (Canada) Inc. was selected due to its experience in designing, prototyping and installing almost identical modifications on the Canadian Hornet fleet. **Through innovative application of airframe structural testing and analysis (by Defence Science & Technology Organisation [DSTO]) of centre barrels obtained from early Phase 3.2 production aircraft, the number of aircraft requiring the costly centre barrel replacement has been reduced from 49 to 10. In December 2010, Government approved the reduction in the number of centre barrel replacements. Concurrently, Government approved closure of Phase 3.1 and 3.2. Some of the funds are programmed for return to the Defence Capability Plan, and are also identified as an offset to address structural ageing aircraft issues to the Hornet sustainment budget under the Hornet structural assurance consolidation project (HSACP).**
Uniqueness	This project does not introduce any new capability to the Hornet aircraft fleet. It is a large structural modification program designed to ensure the structural fatigue life of the fleet is sufficient to meet the Planned Withdrawal Date. Therefore, the project does not have approved **Initial Materiel Release (IMR),** Initial Operational Capability (IOC), **Final Materiel Release (FMR)** and Final Operational Capability (FOC) dates.
Major Challenges	The nature of structural refurbishment of an ageing aircraft is such that unknown conditions may be revealed in the process of disassembly. This may result in more extensive refurbishment work becoming necessary and its unpredictable nature poses a challenge to the production schedule. As a further consequence of the disassembly required during structural refurbishment, additional parts may be required to replace those that are found to be unserviceable. Obtaining these parts in time to maintain the production schedule is a major risk confronting the project.
Other Current Projects/Sub-Projects	**AIR 5376 Phase 3.1 F/A-18 Hornet Upgrade –** This is a complimentary structural modification project that provides continued airworthiness from 64% to 78% of the intended structural fatigue life.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
Air 5376 Phase 3.1	Air 5376 Phase 3.1, the first of a two-staged structural refurbishment program, seeks to extend the structural fatigue life of the F/A-18 Hornet through incorporation of several discrete structural modifications and inspections.	Air 5376 Phase 3.1 must be incorporated on each aircraft before that aircraft can undergo modification by Air 5376 Phase 3.2.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Oct 03	Original Approved	156.6		156.6		
Aug 04	Real Variation – Budgetary Adjustment	(0.1)	(0.1)			1
Aug 05	Real Variation – Budgetary Adjustment	(1.0)	(1.0)			2
Oct 06	Real Variation – Scope	673.6	673.6			
		672.5		672.5		
Jun 11	Price Indexation			**158.8**		**3**
Jun 11	Exchange Variation			**(36.6)**		
Jun 11	**Total Budget**	**829.1**		**951.3**		
2.2 Project Expenditure History						
Prior to Jul 10			158.8		L-3 MAS (C338529)	
			24.7		Boeing Australia Limited	
			23.5		L-3 MAS (C338408)	
			7.2		BAE Systems Australia & L-3 MAS	
			37.7		US Government	
			56.6		Other	**4**
				308.5		
FY to Jun 11			**0.7**		L-3 MAS (C338529)	
			8.4		BAE Systems Australia & L-3 MAS	
			0.0		US Government	
			1.5		Other	**5**
				10.6		
Jun 11	**Total Expenditure**			**319.1**		
Jun 11	**Remaining Budget**			**632.2**		**6**

Notes	
1	Administrative Savings harvest.
2	Skilling Australia's Defence Industry harvest.
3	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $145m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $13.8m having been applied to the**

	remaining life of the project.
4	Other expenditure comprises: expenditure for the initial 4 centre barrels through the FMS system ($3.6m), expenditure for the procurement of aircraft modification via other minor contracts ($17.1m); the procurement of aircraft Fuel Cells and Longerons to support the Project **($7.8m)**; and the movement of Aircraft between Williamtown and Mirabel Canada to undergo the Centre Barrel Replacement Program **($6.5m)**. Remaining expenditure is attributable to contractor and legal costs and general operating expenditure.
5	**Other expenditure comprises the procurement of Contractor support ($1.2m) Freight ($0.2m) and the remaining expenditure is attributable to general operating expenditure ($0.1m).**
6	**HSACP funding was provided by Air Force in April 2011. The remaining budget will be returned to the Defence Capability Plan, there will be a small element that will be provided to DCIP to accommodate FMS case closure costs.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The year end forecast underspend is due to the transfer of residual HUG Phase 3.2 expenses to sustainment under the HSACP.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
		(6.3)	Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
16.9	**10.6**	**(6.3)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 (Current Price – Note 6) $m	Type (Price Basis)	Form of Contract	Notes
L-3 MAS (C338529)	Dec 05	17.0	**173.5**	Fixed Price / Time and Materials	ASDEFCON	1,2
Boeing Australia Limited	Oct 06	7.6	24.9	Time & Materials	DEFPUR Hybrid	3
L-3 MAS (C338408)	Feb 04	3.3	25.5	Fixed Price / Time and Materials	ASDEFCON	4,2
BAE & L-3 MAS	Apr 09	30.4	**31.5**	Fixed Price / Time and Materials	ASDEFCON	5,2
US Government	Aug 04	12.6	52.3	FMS	FMS	6

Notes	
1	Contract C338529 is the prime contract with L-3 MAS for the delivery of 10 centre barrel replacement modified aircraft and **five** SRP1D aircraft. C338529 is managed by **Tactical Fighter Systems Program Office Logistics Management Unit Structures Team**. Signature date is based on signature date of the original contract. **Contract closure action has commenced and is planned to conclude July 2011.**
2	C338529, C338408 and C388618 contract have options for either Survey and quote work or Discrete Task work to be performed against the contract. These activities are related to the relevant contract original scope, however not identified in the statement of work.
3	Contract C338545 is an F/A-18 Maintenance and Modification Contract with BAL that is now complete. Under this contract, BAL were contracted to incorporate SRP1/1D modifications on 14 aircraft. C338545 was managed by the **Tactical Fighter System** Program Office (TFSPO) Hornet Production team. Signature date is based on contract signature date.
4	Contract C338408 is the prime contract with L-3 for the development of the AIR 5376 Phase 3.1 suite of modifications. Under this contract, L-3 were contracted to deliver the SRP1D modifications and prototype the modifications on one aircraft. C338408 is managed by the **TFSPO Logistics Management Unit Structures Team**. Signature date is based on the signature date of CCP8 to C338408 at which the referred scope of work was contracted. **Contract closure action has commenced and is planned to conclude August 2011.**

5	Contract C388618 is the current F/A-18 Maintenance And Modifications Contract with BAE Systems and L-3 MAS. Under this contract, BAE and L-3 are contracted to deliver 22 SRP1D aircraft. C388618 is managed by the TFSPO Hornet Production team. Signature date is based on contract signature date. **A contract change is currently under evaluation for the inclusion of the remaining 14 SRP1D aircraft.**
6	Base date dollars have not been provided for this project. The Commonwealth has undertaken a process of incremental contracting, by way of both new contracts and changes to existing contracts for work packages as they are defined. This contracting strategy results in varying base dates for work packages contracted by each contract change. As a result expressing real price increases/decreases at a total prime contract level in base date dollars is not feasible. FMS however has been calculated at Base date dollars.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 11		
L-3 MAS (C338529)	1	**15**	**Ten** Centre barrel replacement and **five** modifications of SRP1D aircraft	
Boeing Australia Limited	6	14	SRP1/1D aircraft	
L-3 MAS (C338408)	0	1	SRP1D suite of modifications and one prototype Aircraft	
BAE & L-3 MAS	21	**24**	SRP1/1D aircraft	1
US Government	11	30	Centre barrels and modification kits	2
Major equipment received and quantities to 30 Jun 11				
Total of **42** aircraft have been modified and accepted.				
Notes				
1	**Additional 14 aircraft to be included under a Contract Change Proposal to the BAE & L-3 MAS (C388618) contract. These aircraft will be funded by the Hornet Structural Assurance Consolidation Program.**			
2	30 centre barrels were procured on FMS case AT-P-LBZ, a case raised specifically for the AIR 5376 Phase 3.2. However, it should be noted that an additional 4 centre barrels were procured via sustainment FMS Case AT-P-REU.			

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	SRP1D Modifications	Apr 03	N/A	Apr 03	0	
	SRP2 Modifications	Jun 03	N/A	Mar 04	9	1
Preliminary Design	SRP1D Modifications	Jan 04	N/A	Jan 04	0	
	SRP2 Modifications	Feb 05	N/A	Feb 05	0	
Critical Design	SRP1D Modifications	Jul 04	N/A	Dec 04	5	
	SRP2 Modifications	Oct 05	N/A	Oct 05	0	
Notes						
1	The first version was delivered in June 2003, however was rejected in February 2004 due to administrative delays in defining the SRP2 scope.					

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	SRP1D Prototype Modifications – DMO Acceptance	Jan 06	N/A	Jan 06	0	
	SRP2 Prototype Modifications – DMO Acceptance	Dec 07	N/A	Feb 08	2	1
Acceptance	N/A	N/A	N/A	N/A	N/A	
Notes						
1	The first SRP2 prototype aircraft was delayed by two months due to emergent issues discovered during prototype rebuild.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	N/A	N/A	Refer to Table 1.3 Project Uniqueness.
Initial Operational Capability (IOC)	N/A	N/A	N/A	Refer to Table 1.3 Project Uniqueness.
Final Materiel Release (FMR)	N/A	N/A	N/A	Refer to Table 1.3 Project Uniqueness.
Final Operational Capability (FOC)	N/A	N/A	N/A	Refer to Table 1.3 Project Uniqueness.

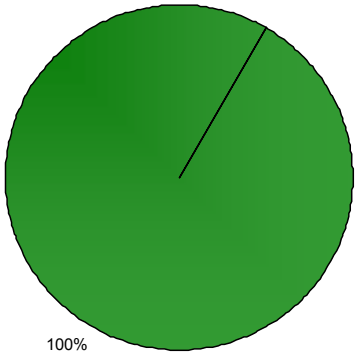
Schedule Status as at 30 Jun 11

This project does not introduce any new capability to the Hornet aircraft fleet. It is a large structural modification program designed to ensure the structural fatigue life of the fleet is sufficient to meet the Planned Withdrawal Date. **Therefore, the project does not have IMR, IOC, FMR and FOC dates.**

Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

- Aircraft modifications shall provide sufficient structural fatigue life.
- The project schedule considers parallel Hornet upgrade and maintenance activities ensuring aircraft availability requirements are being met.

Amber:

N/A

Red:

N/A

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Project Office output schedule, cost and performance adversely affected by loss of critical staff.	**Risk is now assessed as low. Project and sustainment staff are co-located and merged to increase organisational resilience and workload balance. TFSPO staff transition planning shall continue to consider options to best maintain organisational resilience.**
Inner Wing Aft Closure Rib modification will not achieve full life impacting long-term aircraft availability.	Procure Inner Wings to maintain availability should damage at modification location render Inner Wings unserviceable.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	**N/A**

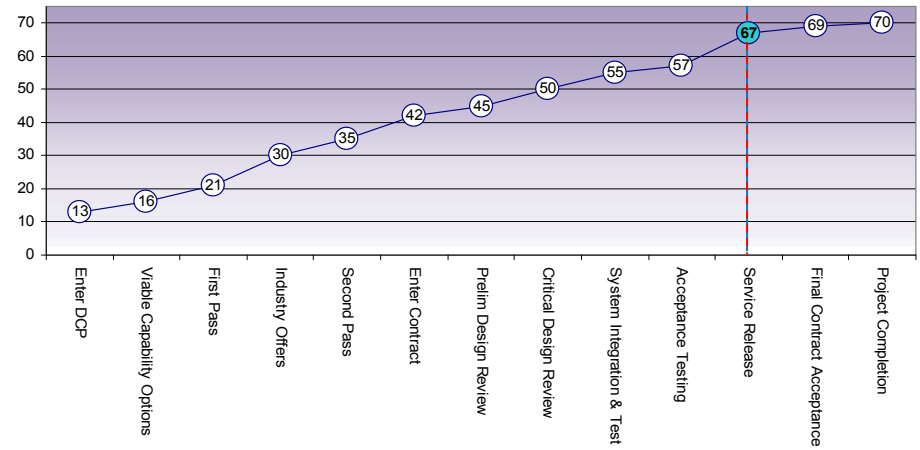
5.2 Major Project Issues

Description	Remedial Action
Lack of Maintenance Managed Items needed during the rebuild of modified aircraft has led to an impact on schedule, cost, and performance.	Renegotiate Maintenance Managed Items critical need dates with installation contractor. Negotiate Maintenance Managed Items provision with Item Managers. Cannibalise Maintenance Managed Items from other aircraft in work.
This is a realised risk from 2009-10 in that a Long-term Hornet aircraft availability may be affected by Ageing Aircraft issues beyond the scope of the modification, leading to an impact on performance.	**Business case developed under Hornet Structural Assurance Consolidation Program (HSACP) detailing immediate remediation requirements and assessment of further Ageing Aircraft issues.**

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	10	10	10	9	9	67
Service Release	Project Status	10	9	10	10	10	8	10	67
	Explanation	• **Commercial:** Contractor is delivering as scheduled and contracted. • **Operations and Support:** Operating system not applicable to this refurbishment project.							



2009-10 DMO MPR Status - - - - -

2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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.**	Schedule Management
The data generated by DSTO 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 aircraft requiring SRP2) and an increased flexibility in aircraft modification induction dates.	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.	Requirements Management

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne
Branch Head	**AIRCDRE Axel Augustin**
Project Director	**GPCAPT Graham Edwards**
Project Manager	**SQNLDR Todd Winterford**

Project Data Summary Sheet[208]

Project Name	**BUSHMASTER PROTECTED MOBILITY VEHICLE**
Project Number	**LAND 116 Phase 3**
Capability Type	Replacement
Service	Australian Army and Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 98
Total Approved Budget (Current)	**$929.8m**
2010-11 Budget	**$109.0m**
Project Stage	Acceptance Testing
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is to deliver **807** vehicles in seven variants; troop, command, mortar, assault pioneer, direct fire weapon, air defence and ambulance as well as up to 184 trailers. **The 807 vehicles being delivered consists of 737 vehicles that are to meet the capability requirement and an additional 70 to meet future operational attrition. The additional 70 vehicles are a component of an acquisition of an additional 101 vehicles that was announced by Government in May 2011, the remaining 31 additional Protected Mobility Vehicle (PMV) are to be managed as a sustainment activity outside of Project Bushranger**. These vehicles will provide protected land mobility to Army units and Royal Australian Air Force (RAAF) 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 impinge upon the project.

1.2 Current Status

Cost Performance

The project remains within approved budget. Some Signal Onboard Two-Wire Audio System internet protocol (SOTASip) payments to the contractor **which had** been rescheduled as a result of delays **have now been paid as a result of the SOTASip contract amendment being signed.**

Schedule Performance

All Production Period 1 (PP1) and PP2 vehicle deliveries are now complete. **The project is currently procuring 293 vehicles for PP3, as of 30 June 2011, 230 of these had been delivered. The delivery of PP3 vehicles to the Commonwealth is on schedule. Delivery of 70 PP4 vehicles will commence in May 2012 and conclude in the first quarter of 2013.**

[208] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability Performance

All variants are meeting their required specifications. **The prototype for the Air Defence variant was completed by Thales and accepted by the project in October 2010.**

The project is currently **in contract** with Thales for the **Detailed Design of an External Composite Armour (ECA) solution. Thales is forecasting completion of the entire ECA Detailed Design in August 2011.**

The PMV Trailer tender response from Thales on 22 May 09 was evaluated and deemed non-compliant and not value for money. The project is currently determining the most appropriate way forward to achieve the trailer capability.

1.3 Project Context

Project	Explanation
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 slippage 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 three 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 period 300 vehicles in six variants were acquired; troop, command, mortar, assault pioneer, direct fire weapon and ambulance. This period reflects the final position of the original protected mobility requirement. 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 period 144 vehicles were acquired in five variants consisting of; troop, command, mortar, direct fire weapon and ambulance. This period reflected the change to the Army's structure under the Enhanced Land Force Phase 1. 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): Currently in progress, this is the acquisition of an additional 293 vehicles to meet the Medium Protected Mobility vehicle component of Land 121 Phase 3 Project Overlander. This will include all six variants and an air defence variant. In addition purpose designed Bushmaster trailers and External Composite Armour will also be 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. Project Bushranger will manage the delivery of all 101 PMVs, however 31 of these PMVs will be managed as a funded sustainment activity outside of Project Bushranger. As part of this requirement Land 116 Phase 3 will also procure 70 MEAO upgrade kits (current standard blast kits as apposed to the improved blast protection). Delivery of the additional 101 PMVs will be completed in the first quarter 2013.** As a result of operational experience a number of enhancements are being made to the Bushmaster vehicle to enhance crew survivability. This includes Protected Weapon Stations, Automatic Fire Suppression Systems and purpose-design Spall Curtains which are being progressively fitted to vehicles under a Rapid Acquisition Framework. These are funded outside of Land 116 Phase 3. In December 2007 the Chief of Army redesignated the Bushmaster Infantry Mobility

	Vehicle as the Bushmaster Protected Mobility Vehicle. This report relates to Land 116 Phase 3 only.
Uniqueness	The Bushmaster Protected Mobility Vehicle has been developed and built in Australia by Thales to meet a niche requirement of Australian forces.
Major Challenges	**Major challenges for the project include achieving Sustained Towing Certification and the Introduction into Service of an External Composite Armour (ECA) solution. The PMV Sustained Towing Certification trials will determine the PMV's capacity to tow. Satisfaction of the PMV Sustained Towing Certification is a precursor to the PMV trailer acquisition activity.** **The achievement of the Detailed Design and acceptance by stakeholders of the ECA solution will be a key milestone in delivering this capability.** In addition, managing the integration and configuration of the baseline vehicle while incorporating upgrades to meet current operational threats will continue to be a challenge.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Nov 98	Original Approved	295.0		295.0		
Jul 07	Real Variation – Scope	154.8	154.8			1
Aug 07	Real Variation – Scope	360.6	360.6			2
		515.4		515.4		
Jun 11	Price Indexation			**124.6**		**3**
Jun 11	Exchange Variation			**(5.2)**		
Jun 11	**Total Budget**	810.4		**929.8**		
2.2 Project Expenditure History						
Prior to Jul 10			475.3		Thales Australia (Prime Contract)	
			7.5		Thales Australia (SOTASip)	
			85.5		Other	**4**
				568.3		
FY to Jun 11			**76.7**		Thales Australia (Prime Contract)	
			20.6		Thales Australia (SOTASip)	
			18.3		Other	**5**
				115.6		
Jun 11	**Total Expenditure**			**683.9**		
Jun 11	**Remaining Budget**			**245.9**		

Notes	
1	Additional Protected Mobility Vehicles for Enhanced Land Force requirements.
2	Additional Protected Mobility Vehicles for Overlander requirements.
3	**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.**
4	Other expenditure comprises: ILS deliverables ($33.5m), facilities ($6.3m), PSPs ($0.1m), project management and operating expenses ($13.1m), Automatic Fire Suppression Kits (AFSS) ($4.5m), ancillary equipment ($19.6m), support test equipment ($0.1m), system engineering ($5.6m), test and evaluation ($1.1m) and travel ($0.7m).
5	**Other expenditure comprises: ILS deliverables ($2.6m), AFSS ($4.8m), SOTAS headsets ($5.2m), PSP ($0.2m), project management and operating expenses ($0.6m), ECA ($4.0m) and Facilities ($0.8m).**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The Year to Date variance of $6.6m is a result of additional price variation claims $0.7m, early delivery of some ECA design elements $1.3m, early completion of facilities in Tamworth $0.8m, early SOTASip deliveries $1.2m, early vehicle delivery milestones $1.8m, early delivery of S&TE $0.7m and $0.1m in other costs.**
			Overseas Industry	
			Local Industry	
		6.6	Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
109.0	**115.6**	**6.6**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Thales Australia	June 99	170.0	**671.5**	Variable	DEF PUR 101	1
Thales Australia (SOTASip)	Feb 09	35.8	35.8	Fixed	ASDEFCON Vol 2	

Notes

1 The date of the original tender and therefore the base dollar date of the original contract was Oct 95.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Thales Australia	370	**807**	Bushmaster Protected Mobility Vehicles	
Thales Australia (SOTASip)	737	737	Communication System	

Major equipment received and quantities to 30 Jun 11

During PP1 300 vehicles in six variants were acquired; troop, command, mortar, assault pioneer, direct fire weapon and ambulance. During PP2, 144 vehicles were acquired in five variants; troop, command, mortar, direct fire weapon and ambulance. In PP3 a further 293 vehicles will be acquired in 7 variants. As of 30 June 2011, 230 PP3 vehicles have been delivered. In PP4 70 additional troop variants will be acquired by the Project.

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		Aug 03	N/A	
	Assault Pioneer Vehicle	N/A		Oct 06	N/A	
	Command Vehicle	N/A		Jan 06	N/A	
	Mortar Vehicle	N/A		Feb 09	N/A	
	Direct Fire Weapon Vehicle	N/A		Feb 09	N/A	
	Ambulance Vehicle	N/A		Feb 09	N/A	
	Air Defence Variant	N/A		**Oct 10**	N/A	
Preliminary Design	Troop Vehicle	Oct 99		Oct 99	0	
	Assault Pioneer Vehicle	Nov 99		Feb 00	3	
	Command Vehicle	Oct 99		Oct 99	0	
	Mortar Vehicle	May 03		Mar 03	(2)	
	Direct Fire Weapon Vehicle	May 03		Mar 03	(2)	
	Ambulance Vehicle	Jul 03		May 03	(2)	
	Air Defence Variant	April 10		Dec 09	(4)	
Critical Design	Troop Vehicle System Verification Review	Oct 02		Sep 02	(1)	
	Assault Pioneer Vehicle Initial Production Vehicle Review	Oct 04		Dec 06	26	1
	Command Vehicle Initial Production Vehicle Review	Oct 04		Mar 06	17	
	Mortar Vehicle Initial Production Vehicle Review	Apr 06		May 07	13	
	Direct Fire Weapon Vehicle Initial Production Vehicle Review	Apr 06		Apr 07	12	
	Ambulance Vehicle System Verification Review	Oct 05		Feb 07	16	
	Air Defence Variant Initial Production Vehicle Review	Sep 11	Sep 11	Sep 11	0	

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 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		Dec 04	6	
	Command Vehicle	Sep 04		Mar 06	18	
	Assault Pioneer Vehicle	Oct 04		Dec 06	26	
	Mortar Vehicle	Apr 06		May 07	13	
	Direct Fire Weapon Vehicle	Apr 06		Apr 07	12	
	Ambulance Vehicle	Aug 07		Feb 08	6	
	Air Defence Vehicle	Sep 11	Sep 11	Sep 11	0	
Acceptance	All PP1 vehicles except Ambulance	Jun 06		Jul 07	13	
	PP1 – Ambulance	Jul 07		May 08	10	
	Troop Vehicle	May 06		Jun 09	37	1
	Command Vehicle	Jul 06		Jun 09	35	
	Assault Pioneer Vehicle	Jan 07		Jun 09	29	
	Mortar Vehicle	May 07		Jun 09	25	
	Direct Fire Weapon Vehicle	Mar 07		Jun 09	27	
	Ambulance Vehicle	Jul 07		Jun 09	23	
	Air Defence Vehicle	Apr 12	Apr 12	Apr 12	0	

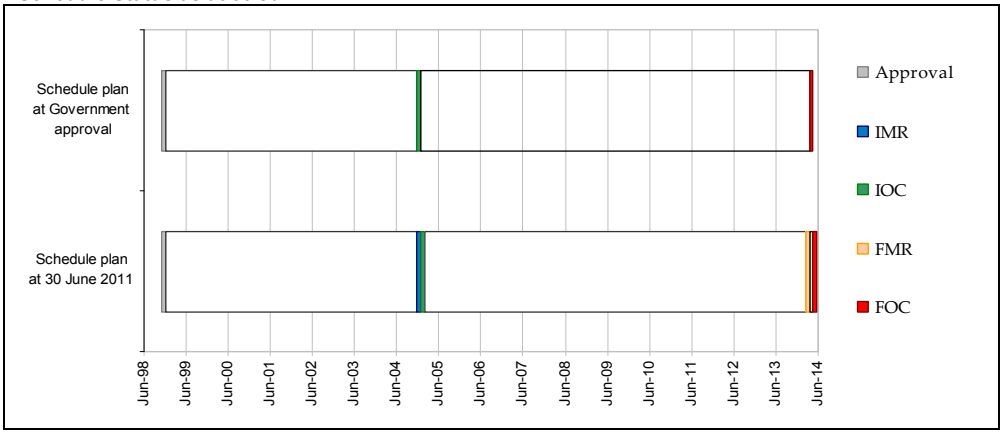
Notes	
1	Additional reviews and testing requirements impacted the ability of Thales to conduct Production Acceptance Testing and Evaluation in the original timeframe. The situation was also impacted by the priority to support vehicles deployed on operations. Technical issues that resulted in design changes impacted on the ability to finalise Production and Acceptance Testing and Evaluation.

3.3 Progress Towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 04	N/A	IMR was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
Initial Operational Capability (IOC) - PP1	N/A	Dec 04	N/A	IOC was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
Final Operational Capability (FOC) - PP1	Oct 07	Nov 10	37	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 are **being** retrofitted before issue to Army.
Initial Operational Capability (IOC) - PP2	Jul 08	Nov 08	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.
Final Operational Capability (FOC) - PP2	Apr 09	Nov 10	19	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 are **being** retrofitted before issue to Army.

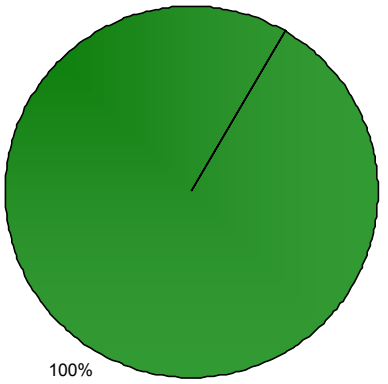
Initial Operational Capability (IOC) - PP3	Oct 11	Oct 11	0	N/A
Final Operational Capability (FOC) - PP3	Apr 12	**Mar 13**	**11**	**This variance is due to clarification of the requirements in reaching FOC. FOC will be achieved when the final subset of PP3 vehicles will be operationally employed by Army.**
Initial Operational Capability (IOC) - PP4	**Jul 12**	**Jul 12**	**0**	**IOC will be achieved when the first subset of LAND 116 PP4 vehicles will be operationally employed by Army.**
Final Materiel Release (FMR)	**Feb 14**	**Feb 14**	**0**	**Completion of delivery of supplies listed in the Projects MAA at section 4 – Supplies, to the Customer.**
Final Operational Capability (FOC) - PP4	**Apr 14**	**Apr 14**	**0**	**FOC will be achieved when the final subset of PP4 vehicles will be operationally employed by Army.**

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability 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

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 PMV may not be certifiable for sustained towing. This will impact on the PP3 requirement to procure a PMV trailer.	**A sustained towing certification program is currently being undertaken to assess the PMV's sustained towing capability.**
There is a chance that the issue of PP3 vehicles to Army will be affected by delays in the processing of Engineering Change Proposals leading to an impact on cost and schedule.	Liaise with the contractor to prioritise resources to manage the Engineering Change Proposal process.
There is a chance that the specifications of the Protected Mobility Air Defence Variant will be affected by changes to current Ground Based Air Defence doctrine during design and development leading to an impact on schedule and performance.	**This risk has been reassessed by the project and is now rated as a moderate risk.**
There is a chance that the delivery of Protected Mobility Vehicle to the Commonwealth will be affected by overseas sales leading to an impact on schedule.	**This risk has been reassessed by the project and is now rated as a moderate risk.**

Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
There is a chance that achievement of the Detailed Design for the ECA solution will be delayed due to unforseen delays in the completion of design, development and verification activities leading to an impact on schedule.	**Engage key stakeholders (Commonwealth and contractor) on a regular basis to ensure early identification of problem areas, and to develop mitigating strategies for reducing time delays.**
There is a chance that the planned draw down of staff due to the upcoming project closure in 2013 will not align with the actual work required to complete the outstanding project activities leading to an impact on schedule.	**Accurately schedule remaining project work, undertake workforce planning activities, inform and liaise with stakeholders and ensure the schedule is fully resourced.**
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, priories and schedule.**

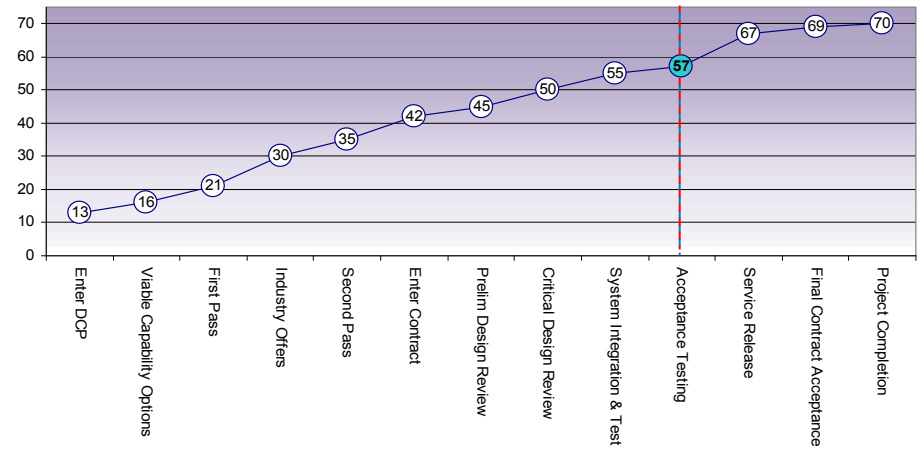
5.2 Major Project Issues

Description	Remedial Action
There is a backlog of engineering changes such as the design and integration of blackout curtains, 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 active management approach and the commitment of additional resources by the Commonwealth and Thales in an effort to reduce the backlog.**
The achievement of Detailed Design for the ECA solution has taken longer than anticipated due to the requirement for Thales to readdress mass and temperature aspects of their proposed solution.	**Engage stakeholders on a regular basis and ensure on-going clarity regarding system requirements.**
Issuing of PMVs to the Army has been impacted by the availability of a communications harnesses.	**The SOTASip communications harness and headsets are currently being introduced into service.**
The construction of project direct funded facilities has been affected by construction delays leading to an impact on cost and schedule.	**This issue has been retired by the project.**
The development of an ECA capability solution will be delayed due to the contractor's Preliminary Design failing to meet the Commonwealth's specification, leading to an impact on schedule and cost.	**This issue has been retired by the project.**

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	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	8	8	8	9	8	8	57
	Explanation	The maturity score has not changed as it is now based on PP3 which includes a new variant, development of a Protected Mobility Vehicle trailer, the replacement communications harness and acceptance testing.							



2009-10 DMO MPR Status - - - - | 2010-11 DMO 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

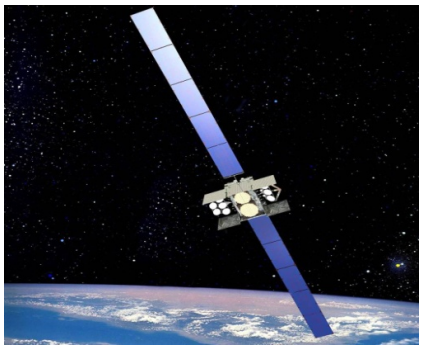
Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	MAJGEN Grant Cavenagh
Branch Head	**BRIG David Shields**
Project Director	**Mr James Palmer**
Project Manager	**Mr Steven Brown**

Project Data Summary Sheet[209]

Project Name	**NEXT GENERATION SATCOM CAPABILITY**
Project Number	**JP 2008 Phase 4**
Capability Type	New Capability
Service	Joint Services
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 07
Total Approved Budget (Current)	**$880.9m**
2010-11 Budget	**$189.3m**
Project Stage	System Integration and Test
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The JP2008 Phase 4 project seeks to deliver high priority components of the next generation (NEXTGEN) satellite communication (SATCOM) system that will support the Australian Defence Force (ADF) from 2008 onwards. The NEXTGEN SATCOM system will introduce a flexible and sustainable SATCOM capability that supports a network centric ADF operating independently or as part of a coalition.

1.2 Current Status

Cost Performance

This project remains within current approved budget.

Schedule Performance

The milestones achieved so far include: Wideband Global SATCOM (WGS) System Service Initial Operational Capability (IOC); Interim Anchor Capability (backhaul); Situational Awareness Tools & Infrastructure training; Interim Anchoring Station **(IAS)** - West and establish WGS Training for ADF personnel. Interim Anchor Capability Full Operating Capability (FOC) (Backhaul & Aust IA Station(s)) is **29** months behind schedule. **No change is anticipated to the Project Completion Date.**

Materiel Capability Performance

The first **three** satellites **are meeting** their operational requirements. Australia used United States (US) infrastructure from June 2008 via the Simpson Trunk (undersea cables) to gain access to the first WGS satellites. This capability was augmented incrementally through the placement of Australian equipment in US satellite anchor stations (offshore anchoring) situated in Hawaii and Landstuhl (Germany) to support increased levels of capability. The mature offshore anchoring capability was set to work October 2009. **The IAS – West has been set to work and is available for operational use.**

[209] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

1.3 Project Context

Project	Explanation
Background	In 2007 the Australian Government considered a range of options to deliver a wideband satellite communications capability for the ADF. The US had an approved program for a five wideband satellite constellation, and in early 2007 offered the Commonwealth the opportunity of partnering in the program on the basis that the Commonwealth would fund the production of a sixth WGS satellite in return for a share of the services provided by the expanded constellation of six WSG Satellites (which is approximately 10% of the overall program). Negotiations of the WGS Memorandum of Understanding (MOU) between the Commonwealth and the US Government began in March 2007, and in September 2007 the JP2008 Phase 4 project received combined First and Second Pass Government Approval for the procurement of the ADF's NEXTGEN SATCOM capability. The WGS MOU was signed in November 2007 at the Australian Embassy in Washington DC enabling the US Government to exercise the contract option for WGS 6 on 1 December 2007. WGS1 with a footprint over the Pacific Ocean and Australia has been operational since early 2008, with progressive launches culminating with the sixth satellite (WGS 6) becoming operational in 2013. Outside the MOU, the project is delivering interim anchoring capability to provide access to the WGS satellite constellation from Australia's eastern and western seaboards. This will be achieved through the delivery of ground stations in Western Australia and at HMAS Harman in the **Australian Capital Territory.** Complimenting the onshore anchoring capability is an offshore anchoring capability that is now operational in Hawaii and Germany. The project is also managing the provision of training of ADF personnel to operate the WGS system through a Foreign Military Sales (FMS) Case with the US Government to enable ADF personnel to operate the WGS system as part of the integrated US Wideband Satellite Communications Operations Centres (WSOC).
Uniqueness	The uniqueness of this project in the main relates to the acquisition strategy that governs the ADF's access to this satellite communications technology. The WGS space segment component of the project will be delivered by the Commonwealth's participation in the US WGS program under a dependable undertaking. Under this arrangement the US Government will manage the contract with Boeing for all satellite production including WGS 6, which is being funded by Australia. The acquisition of the WGS constellation is governed by two contracts, Block I for satellites WGS 1, WGS2 and WGS 3, and Block II for satellites WGS 4, WGS 5 and WGS 6. The steady-state provision of services will occur once WGS 6 is operational under the existing MOU. The MOU agreement between the Commonwealth and US Government invokes the 'Exchange of Notes constituting an Agreement between the Government of the United States of America and the Government of Australia Concerning Certain Mutual Defence Commitments' (known as the Chapeau Defence Agreement) concerning liability and use and disclosure of information.
Major Challenges	A major challenge of this program is the execution of the program under a dependable undertaking where the US Government is the prime contractor. Under the terms of the MOU, **the Commonwealth** has no legal relationship with the satellite provider (Boeing), and receives only limited insight into the program constrained by pre-existing commercial terms within the MOU and International Traffic in Arms Regulations (ITAR). Although the agreement with the US Government is through a joint production operations and support MOU, none of the WGS satellites and associated supplies will be owned by the Commonwealth. Nevertheless, benefits of this capability are realised through access to a six satellite constellation and the embedding of ADF personnel within the WSOC, which in effect allows the ADF to gain further WGS operational knowledge and realise the full capability potential of the WGS system. Other challenges relate to the equitability regime that underpins the MOU. In this context the project is exposed to a share of the risks and rewards of the program. The capability advantages are underpinned by early satellite access and worldwide global coverage. The risk regime requires the Commonwealth to share the risk of satellite failures and schedule

	overruns. To control risk exposure the Commonwealth negotiated into the MOU a financial ceiling cap which is designed to ensure the Commonwealth isn't exposed to cost increases above the cost ceiling. To manage the technical and commercial complexities of the WGS program, a number of important management forums have been established to ensure the Commonwealth has a sufficient level of insight into the WGS program. The most important of these being the bi-annual Program Status Review and a **Senior Executive** Steering Group that meets each year to provide governance over the partnership. The management framework is operating effectively and the partnership is successfully working as an integrated project team. Considerable acceleration of the standard acquisition cycle has meant the project continues to refine project management documentation, relevant to the nature of the agreements governing project execution.
Other Current Projects/Sub-Projects	**JP 2008 Ph 3F ADF SATCOM Terrestrial Enhancements:** This project will provide the mature Australian western seaboard anchoring capability for the WGS constellation.
	JP 2008 Ph 5A Indian Ocean Region UHF SATCOM: This project will provide the ADF with twenty 25kHz UHF SATCOM channels on an Intelsat satellite to provide coverage of the Indian Ocean Region.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
Nil	Nil	Nil

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Sep 07	Original Approved	884.9		884.9		
Jun 11	Price Indexation			**132.4**		**1**
Jun 11	Exchange Variation			**(136.4)**		
Jun 11	**Total Budget**	884.9		**880.9**		
2.2 Project Expenditure History						
Prior to Jul 10			**189.0**		WGS MOU	
			7.8		Interim Anchoring -TBN	
			16.1		Other	**2**
				212.9		**3**
FY to Jun11			**168.8**		WGS MOU	
			2.9		Interim Anchoring- TBN	
			2.6		Other	**2**
				174.3		
Jun 11	**Total Expenditure**			**387.2**		
Jun 11	**Remaining Budget**			**493.7**		

Notes	
1	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $107.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $25.1m having been applied to the remaining life of the project.**
2	Other expenditure comprises: operating expenditure, other minor capital expenditure not attributable to the aforementioned top two contracts and minor contract expenditure.
3	**In August 2010 a review of the project expenditure up to 30 June 2010 was undertaken. As a result of the review some expenditure has been recoded to the correct contracts but overall the total expenditure remains unchanged.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**EY underspend is made up of $3.5m Wideband Global Satellite (WGS) slippage to FY 2011-12 and 12/13, $4.7m foreign exchange gains on USD payments, $2.5m DMO processes and $4.2m which is slippage of existing orders & activities that are not on contract.**
		(3.5)	Overseas Industry	
		(4.2)	Local Industry	
			Brought Forward	
			Cost Savings	
		(4.7)	FOREX Variation	
		(2.5)	Commonwealth Delays	
189.3	**174.4**	**(14.9)**	**Total Variance**	

2.4 Contract Details

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 11 $m			
US Government	Nov 07	866.2	866.2	Firm	MOU Agreement	
The Bridge Network	Nov 08	11.2	**12.0**	Firm	ASDEFCON (Complex)	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 11		
US Government	1	1	WGS 6	1
The Bridge Network	2	2	Ground Station	2

Major equipment received and quantities to 30 Jun 11
Three satellites successfully launched and in operation.

Notes	
1	The MOU will provide access to a constellation of six satellites; however, **Australia's contribution is limited to funding the production of WGS 6 and associated supplies.**
2	The quantity of two Ground Stations comprises single separate ground stations on the eastern and western seaboard.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Design	WGS 6 and WGS Constellation	N/A	N/A	N/A		1
Mission System Review	Interim Anchoring Mission System Review	Dec 08	N/A	Nov 09	11	2

Notes	
1	The MOU construct does not provide the project with insight into the design review process or design data. A Monthly Status Report is provided to the Commonwealth detailing only summary high level progress status.
2	The Interim Anchoring Mission System Review (MSR) delay was attributed to the unfamiliarity of the contractor with Defence contract requirements in relation to documentation and process. Through a contracted requirement, the Contractor experienced difficulties in meeting the quality requirements of the contract resulting in a requirement for re-work to be performed by the contractor. MSR was essentially a combined Preliminary Design Review, System Requirement Review and Critical Design Review that was expected to span three days.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
US Government Acceptance	WGS 6	Nov 13		Nov 13		
System Integration	**WGS 6**	**Sep 11**	**N/A**	**Sep 11**		
Test Readiness Review	IAS – East	Jul 09	N/A	**Jun 11**	**23**	1
	IAS – West	Jul 09	N/A	Mar 10	8	1
Acceptance	IAS - East	Sep 09	N/A	**Dec 11**	**27**	1
	IAS – West	Sep 09	N/A	**Aug 10**	**11**	2

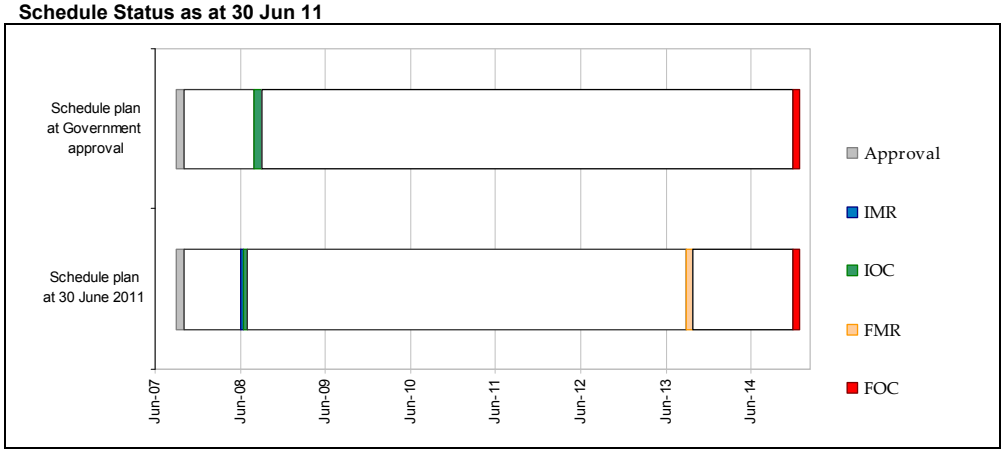
Notes	
1	**Test Readiness Review (TRR) and Acceptance milestones for the IAS have continued to slip over the course of 2010/11. This is primarily due to the determination that the configuration of both Anchor Stations was sufficiently different to warrant a secondary certification event for IAS East. The achievement of IAS East TRR has involved a more extensive and demanding level of engineering process than originally anticipated by the project office and has required that the Interim Anchoring contract be modified to reflect increases in test scope.**
2	**IAS-West Acceptance occurred 11 months beyond the original planned date because the Acceptance Test Report was late due to delays associated with the issue of the WGS Certification, letter of certification and report. Several contractor generated reiterations required prior to Verification Cross Reference Matrix and Acceptance Test Report acceptance, were also delayed.**

3.3 Progress toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
WGS - Initial Materiel Release (IMR)	**N/A**	**Jun 08**	**N/A**	
WGS Service IOC	Aug 08	Jun 08	(2)	Achieved ahead of schedule upon activation of WGS1.
IAS - West- IMR	**N/A**	**Aug 10**	**N/A**	**The level of engineering process and breadth of WGS certification testing has substantially increased the scope of work delaying IMR. This issue has caused significant delays since Quarter 3 of 2009, where the Project Office and The Bridge Network have found themselves in more detailed design reviews and the requirement to conduct additional testing for the Interim Anchoring capability, in order to satisfy WGS Certification processes.**

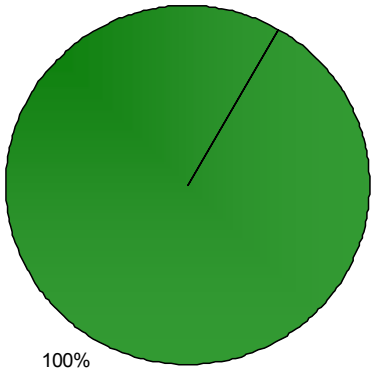
IAS - West IOC	**Jul 09**	**Jan 11**	**19**	**IMR delays have impacted Initial Operational Capability Release.**
IAS - East Final Materiel Release (FMR)	**N/A**	**Dec 11**	**N/A**	**The scope of work and lessons learnt in conducting WGS certification for IAS-West has been incorporated into the schedule for IAS-East. IAS-East is expected to be accepted in December 11 (SG1).**
IAS – East FOC	**Jul 09**	**Dec 11**	**29**	**FMR delays have impacted FOC release.**
WGS FMR	**Sep 13**	**Sep 13**		
WGS Service FOC	Dec 14	Dec 14		Achieved upon US Government operational acceptance of WGS 6. In accordance with the US Acquisition Baseline will be conducted for WGS 6 from June – December 2013. December 2014 relates to the full operational transition of all JP2008 Phase 4 project elements.

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: Technical performance of WGS 6 is tracking well against the US Government's program. The requirement for Offshore anchoring support is also formalised, via the WGS MOU, and delivering capability to the ADF.
	Amber: N/A
	Red: N/A

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 activation of Satellite orbital slots will not be achieved.	In principle agreement with the US Government has been achieved to enact a strategy based on a project developed activation paper.
There is a risk of not having access to Situational Awareness and Planning Tools (SAPT) which will prevent Australia effectively coordinating and planning access to the WGS constellation.	US Government to report on a formal **vulnerability** assessment, which will impact the architecture **and utilisation of the SAPT. This report is expected to be favourable and allow for the operational release of the system for Australian use.**
There is a risk that the remote monitoring and control system is not available in time to launch the WGS satellite into its orbital slot.	Participate in design reviews and highlight through Program Status Review importance of milestone.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
Nil	Nil

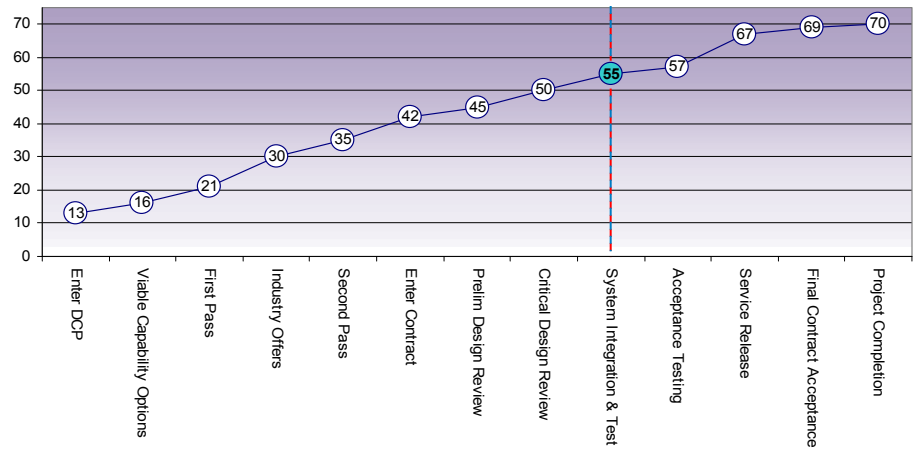
5.2 Major Project Issues

Description	Remedial Action
Failure of IAS to be delivered to the original schedule.	The project fast tracked and dimensioned the offshore anchoring capability to support expected operational traffic as a means to mitigate operational impact of the schedule delay for interim anchoring. Offshore anchoring capability has now been established in Hawaii and Germany supporting the required operational traffic. This capability may be increased once an assessment of interim anchoring FOC is finalised.

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	8	7	8	8	8	8	8	55
System Integration and Test	Project Status	6	9	10	8	8	8	6	55
	Explanation	• **Schedule:** The difference is a result of delays specifically associated with the Certification and subsequent FOC for Interim Anchoring Capability - now scheduled for Q4 **2011**. • **Cost:** The main cost component of the project, the WGS 6 satellite, is more than half complete and is forecast to be produced under budget. • **Requirement:** Three satellites are in orbit and **all** are being used operationally providing a known understanding of the capability to be provided by the constellation. • **Operations and Support:** Interim Anchoring will enter service and provide operational capability later than expected.							



2009-10 DMO MPR Status - - - - - 20010-11 MPR - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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.	Resourcing
Considerable acceleration of the acquisition cycle for the WGS program necessitates a strengthening of the governance process to ensure lines of authority and responsibility are clear in the formation in the definition of business need and option analysis.	Governance

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward
Branch Head	Mr Ivan Zlabur
Project Director/Manager	Mr Greg McKinnon

Project Data Summary Sheet[210]

Project Name	**HIGH FREQUENCY MODERNISATION**
Project Number	**JP 2043 Phase 3A**
Capability Type	Upgrade
Service	Joint Services
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Aug 96
Total Approved Budget (Current)	**$670.8m**
2010-11 Budget	**$19.4m**
Project Stage	Acceptance Testing
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The JP2043 Phase 3A project provides for the procurement of a Modernised High Frequency (HF) Communications System for Defence long-range communications. The Fixed Network component comprises four HF stations in the Riverina, Townsville, Darwin and North West Cape areas together with primary and backup Network Management Facilities in Canberra. The project will also provide upgrades to selected Australian Defence Force (ADF) sea, land and air mobile platforms to make them compatible with the capabilities of the modernised network.

The Fixed Network capability has been provided in two major stages, Core and Final. The Core System replaced the prior Navy and Air Force HF systems from November 2004 with the Final System taking over support to ADF operations since April 2010. Mobiles upgrade and signal improvement (high frequency direction finding (HFDF)) packages of work are on-going.

1.2 Current Status

The project was removed from the Projects of Concern list on 29 Jun 11.

Cost Performance

The project is tracking within its approved budget. The contractor has achieved all major contracted milestones and has received payment against this achievement **including the Contract Complete milestone.**

Schedule Performance

The delays experienced in achieving Final System acceptance under the Prime Contract have led Defence to re-assess the scope of the Mobile platform upgrade program and to submit a proposal to Government for a change of scope. Subject to Government approval the Mobiles program will extend FOC to 2016.

The Black Hawk and Army Land Strategic HF platforms not subject to the proposed change of scope are currently being progressed.

[210] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability Performance

Capability includes a Core System and the Final System (incorporating the upgraded Fixed Network and Mobiles Upgrades).

Operators and maintenance personnel report a good degree of satisfaction with the Final **Fixed Network** System. **The installation of two software maintenance builds has remedied outstanding issues and the system is now providing a reliable service.**

The impact of the delays on the mobile platform upgrades is being addressed with Capability Development Group and the Services. This will lead to changes in scope to the Mobiles Upgrade programs. Issues being addressed include remaining Life of Type of in-scope platforms and the current need for either a full or partial modernised HF communications capability upgrade. **Government approval of changes is currently being sought by Defence.**

1.3 Project Context

Project	Explanation
Background	Defence Communications Corporate Plan of May 1991 directed that existing ADF HF networks be rationalised and modernised. Satellite communications is now the primary system for high and medium data rate communication with mobile ADF platforms (Mobiles) such as ships, aircraft and vehicles, however HF provides a secure alternative means of long range communications for Satellite communications fitted platforms and a primary long-range communication capability for platforms not Satellite communications fitted. The HF Modernisation Project was established in May 1993 and originally envisaged four implementation phases: • Phase 1 (completed 1994) – a preparatory phase including a Network Definition Study to determine the basic requirement and an Invitation to Register Interest process; • Phase 2 (completed 1996) – a more detailed definition phase involving parallel Project Definition Studies undertaken by short-listed Phase 1 companies following a Request for Proposal process; • Phase 3A (commenced 1997) – an implementation phase involving selection of the Prime Contractor through a restricted Request for Tender process, provision of a modernised HF communication network and its follow-on support, and HF upgrades to an initial range of Mobiles; and • Phase 3B (cancelled 1999) – an implementation Phase involving HF upgrades to selected remaining Mobiles. The Phase 3A Prime Contract was signed in December 1997 with Boeing Australia (now Boeing Defence Australia). The Prime Contract has undergone several major amendments and currently provides for the implementation in two stages: • a Core System (accepted October 2004), to provide an upgraded Fixed Network having a capability no less than that provided by the networks being replaced; and • a Final System (accepted April 2010) including enhanced features for the upgraded Fixed Network and a Mobiles Upgrade component. Project approval provides for 87 platforms to be upgraded. The Prime Contract was originally scoped for First-of-Type installations and Upgrade Modification Kits for a total of 56 Platforms. However, amendments made in 2004 reduced the Contract scope to a single First-of-Type Upgrade (CH47 Chinook helicopter), five HF Upgrade Kits for follow-on Chinook installations, plus two Generic HF Upgrade Systems. The Generic Systems will be used to demonstrate functional performance and to verify the suitability of System software and hardware components for platform use prior to implementation of Mobiles upgrades. **The Chinook platform upgrade was subsequently removed from the prime contract scope due to no aircraft being available for upgrade.**

	The Mobiles within current approved project scope are listed below. **Platform Type** — **Qty** CH47 Chinook — 6 Black Hawk — 35 Mine Hunter Coastal — 6 Armidale Class Patrol Boats — 14 Hydrographic Ships — 2 Army Land Strategic HF — 14 RAAF No. 1 Combat Communications Squadron — 4 Defence Force School of Signals Watsonia (Simpson Barracks) — 2 Defence Force School of Signals (Cerberus) — 1 Deployable Mine Countermeasures & Clearance Diving Headquarters — 3 Total: — 87 **Delays have led to a review of and proposed changes to the scope of the Mobile platforms upgrade program. Planned Final Materiel Release (FMR) for the remainder of the in-scope Mobile platform upgrades is February 2016, subject to platform availability. Issues being addressed in the review include remaining Life of Type of in-scope platforms and the current need with each platform type for either a full or partial modernised HF communications capability upgrade, as well as the schedule to completion noting that operational constraints on platform availability may extend the time to completion of all upgrades to 2016.** **Defence has provided Government with a proposal to re-scope the remainder of the project. Government approval is later than previously planned. The Project Office continues progressing Mobile platform upgrades not subject to the proposed scope change.** **The Mobiles subject to the re-scope proposal are listed below.** **Platform Type** **Qty** **Black Hawk — 22** **Mine Hunter Coastal — 4** **Armidale Class Patrol Boats — 14** **Hydrographic Ships — 2** **Army Land Strategic HF (transit case and vehicle module fit) — 25** **RAAF No.1 Combat Communications Squadron** **(transit case and vehicle module fit) — 4** **Defence Force School of Signals Watsonia (Simpson Barracks) — 4** **Defence Force School of Signals (Cerberus) — 1** **Deployable Mine Countermeasures & Clearance Diving Headquarters — 3** **Total: — 79** **The signal improvement package of work has been developed, and will be installed and integrated using an independent contract to the Prime Contract. Planned delivery date is by end 2015.**
Uniqueness	The HF Modernisation Project is a complex software intensive and high risk project involving geographically diverse sites at five major locations across Australia. Implementation of the Fixed Network has involved civil infrastructure development, electrical power generation and transmission, telecommunications infrastructure extension, communications system hardware and antenna installation. It has involved the engineering disciplines of systems engineering, software development, system design and integration, system test and evaluation. It also includes an extensive program to develop, install and integrate upgraded capabilities on selected Mobiles. Because of the complex nature of the project, Integrated Product Development Teams which included Contractor and Commonwealth personnel were established. These provided project insight and reduced risk, particularly in the important areas of requirements clarification, systems engineering and acceptance, test and evaluation.

	The System provided is designed to be one of the most advanced of its type in the world.
Major Challenges	The project suffered implementation delays **with Core and Final Fixed Network systems but these elements of the new communication system have been accepted into service and supporting operations since November 2004 and October 2009 respectively**. The project is now focused on the Mobiles **upgrades and the signal improvement capabilities.** Platform availability will be an issue for all Mobiles upgrades. The upgrade schedules need to be coordinated with the **platform** maintenance **and modification** schedules and operational requirements. Other risk factors related to Mobiles upgrades include the task of integrating HF upgrade equipment with existing communications systems of varying levels of maturity and sophistication, and of accommodating the new equipment within the spaces available. **An emerging challenge is the need to define detailed requirements for the modules for fitment to the LAND 121 vehicles arising out of the scope change. This may require a significant requirements analysis period.** **Difficulty in recruiting suitably skilled staff to vacant key positions is an ongoing issue and could impact the project's ability to achieve schedule.**
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2069 Ph 1B	JP 2069 is a multi phased project to modernise Defence's high grade cryptographic equipment.	JP 2069 will need to replace some cryptographic equipment to be integrated during the Mobile Upgrade program. The integration of this equipment will impact the design, schedule and final configuration of some Mobile platforms, and may require an interim solution to be identified.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Aug 96	Original Approved	505.0		505.0		
Jul 98	Real Variation – Transfers	2.3	2.3			1
Feb 99	Real Variation – Transfers	0.1	0.1			1
Feb 99	Real Variation – Scope	11.0	11.0			2
May 02	Real Variation – Transfers	0.9	0.9			3
Feb 03	Real Variation – Transfers	(6.1)	(6.1)			4
May 03	Real Variation – Transfers	(2.0)	(2.0)			5
Aug 04	Real Variation – Budgetary Adjustments	(0.2)	(0.2)			6
Aug 05	Real Variation – Budgetary Adjustments	(0.7)	(0.7)			7
		5.3		5.3		
Jun 11	Price Indexation			**148.1**		**8**
Jun 11	Exchange Variation			**12.2**		
Jun 11	**Total Budget**	**510.3**		**670.8**		
2.2 Project Expenditure History						
Prior to Jul 10			**351.4**		Boeing Defence Australia	
			62.7		Other	**9**
				413.7		
FY to Jun 11			**5.0**		Boeing Defence Australia	
			12.2		Other	**10**
				17.2		
Jun 11	**Total Expenditure**			**431.3**		
Jun 11	**Remaining Budget**			**239.5**		

Notes	
1	Transfer from other phases of JP 2043.
2	Scope change to include Wideband HFDF capability.
3	Transfer for installation at Robertson.
4	Transfer to DSG as contribution to construction of Defence Network Operations Centre and infrastructure support.
5	Transfer to facilities.
6	Administrative Savings harvest.
7	Skilling Australia's defence Industry harvest.
8	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $139.6m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $8.5m having been applied to the remaining life of the project.**

9	**Other expenditure comprises $18.1m for Government Furnished Equipment for use by the contractor, $6.9m attributable to expenditure in DEFMIS, operating expenditure, contractors, consultants, contingency and other capital expenditure not attributable to the aforementioned.**
10	Other expenditure comprises: **$9.0m** for **Radios and ancillary Radio equipment for issue to users; $0.6m for Null Steering Capability,** and operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Primary reason for the underachievement is delay in purchase of Transit cases due to need to redesign fit out to meet OHS requirements. Slight increase in other costs accounts for variation.**
		(1.2)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(1.0)	Commonwealth Delays	
19.4	**17.2**	**(2.2)**	**Total Variance**	

2.4 Contract Details

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Boeing Defence Australia	Dec 97	309.6	**320.4**	Variable	DEFPUR 101 v46	

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Boeing Defence Australia	1	1	HF Communications Network	

Major equipment received and quantities to 30 Jun 11

Final System level of capability 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	Core System	Apr 98		Jun 98	2	1
	Final Systems (Fixed Network)	Jul 99		Jun 04	59	1
	Mobile Generic (In Contract)	Jul 99		Mar 05	68	1
Preliminary Design	Core System	Nov 98		Jan 00	14	2
	Final Systems (Fixed Network)	Jul 00		Aug 05	61	2
	Mobile Generic (In Contract)	Feb 00		Jul 05	65	2
Critical Design	Core System	Nov 99		Dec 00	13	3
	Final Systems (Fixed Network)	Dec 01		Nov 06	59	3
	Mobile Generic (In Contract)	Dec 02		Nov 06	47	3

Notes

1	System Requirements Review delayed due to requirements instability. The June 1999 Deed of Agreement acknowledges 'requirements instability'.
2	Preliminary Design Review: Requirements instability & scope changes.
3	Critical Design Review Final Systems and Mobile: Contractor delays with software development and system integration design.

3.2 Contractor Test and Evaluation Progress

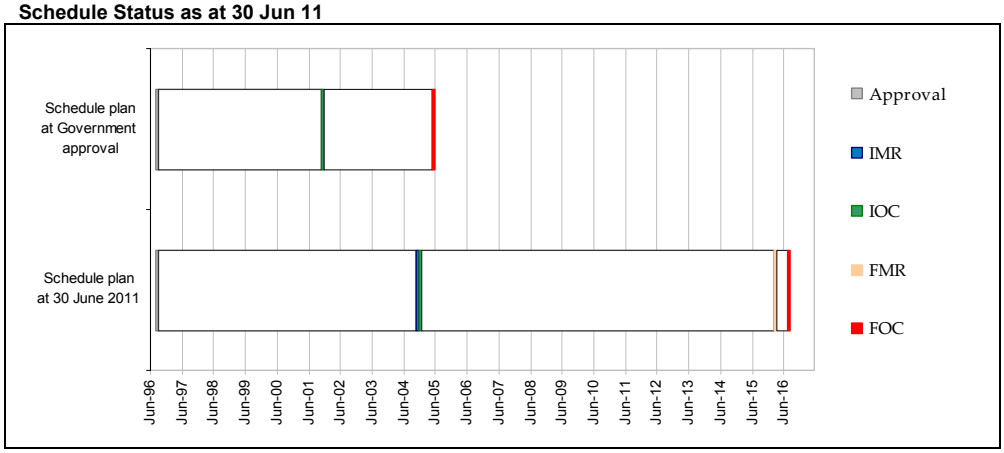
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Final System (Fixed Network)	Sep 03		May 08	56	2
Acceptance	Core System	Mar 01		Jun 04	39	1
	DMO Acceptance – Core System	Nov 01		Oct 04	35	1
	Final System (Fixed Network)	Feb 04		Apr 10	74	2
	DMO Acceptance – Final System	May 04		Apr 10	71	2
	Generic Mobiles	Dec 03		Dec 09	72	2

Notes	
1	Core System: Contractor delays with software development and system instability.
2	Final Systems and Mobiles: Contractor delays with software development, resource shortages and technical reviews.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Nov 04**	**N/A**	
Initial Operational Capability (IOC) – Core System	Nov 01	Nov 04	36	Delays due to Contractor delays with software development and system instability. Core System supported operations until IOC of Final System. No formal Operational Release, leading to FOC, was conducted on the Core System.
IOC – Final System	May 04	Oct 09	65	Contractor delays with software development and system instability. Deferral of operational capability.
Final Materiel Release (FMR)	**Feb 16**	**Feb 16**		**The FMR date is based on the Mobiles program requiring 54 months to complete from Government approval of the scope change.**
Final Operational Capability (FOC)	May 05	**Jul 16**	**134**	Delays in IOC lead to consequent delays in FOC. **FOC date now allows for completion of activities required post FMR (now that FMR date has been identified).** **Delays in gaining scope change approval and availability of skilled project office personnel may impact FOC schedule.** This date is based upon the last of the **79** Mobiles upgrades obtaining FOC. Deferral of operational capability.

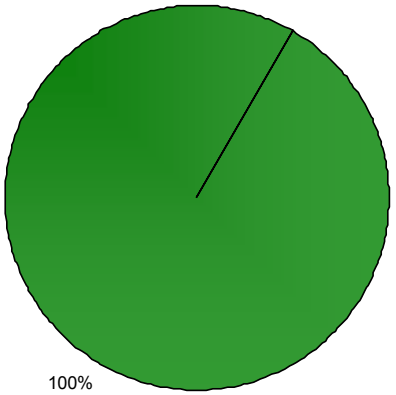
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The Project is currently meeting capability materiel 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

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Delayed implementation of Support Services Contract may impact on support for Mobile Upgrade program.	**Risk retired. Support Services Contract signed 11 March 2011**. Risk is now assessed as low due to progress on relevant Mobile Upgrade work through other contracting mechanisms.
There is a chance that the cryptographic equipment required for the Land Mobile upgrades (which is replacing near-obsolete cryptographic equipment) will not be available in time to meet the schedule for the Land platform upgrades.	**Risk is now assessed as low. Approach has been identified to accommodate both current and replacement cryptographic equipment, obviating any need for rework.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
There is a chance that detailed design and manufacture of the modules for fitment to the LAND 121 vehicles will need to be undertaken by JP2043 before integration of Land capability into the modules can be achieved.	**Risk is assessed as severe. Modules for fitment to the LAND 121 vehicles have not yet been approved by Government; this requirement is being addressed as part of the change of scope being progressed to Government by Capability Development Group.** **Monitor the modules scope under LAND 121 to ensure JP2043 requirements remain extant.**
There is a chance that the Mobile Upgrades completion date will not be achieved due to both the complexity of integrating into the existing integrated communication systems within each platform, as well as gaining access to the platforms to perform the work.	**Undertake integration studies for each platform type to understand the integration issues at the earliest date possible. The schedule has been planned around major maintenance cycles for each platform. The project office will work closely with the Capability Manager to minimise schedule impacts.**
There is a chance that the currently requested basis of provisioning for Land training will exceed the authorised basis of provisioning.	**This requirement is being addressed as part of the change of scope being progressed to Government by Capability Development Group.**

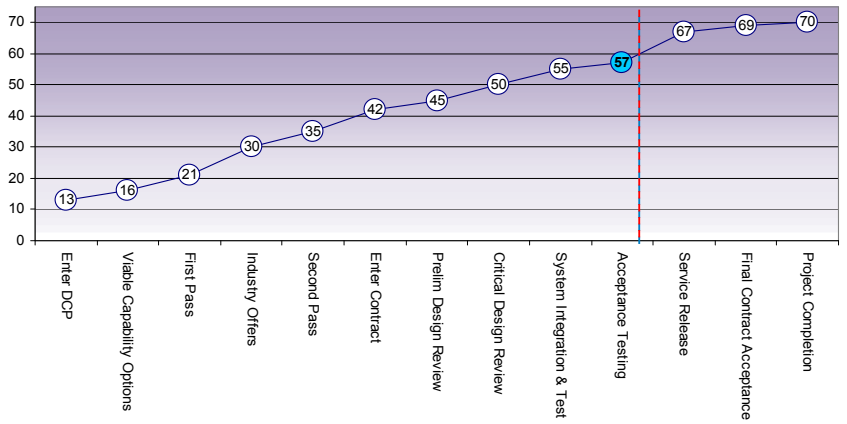
5.2 Major Project Issues

Description	Remedial Action
The proposed Mobile Upgrades scope change is not approved by Government as planned during third quarter 2010, potentially delaying—the Mobiles Upgrade program.	Mobiles Upgrade program has proceeded at risk **within the bounds of current project scope**. Flexibility to adjust the program is being retained pending Government Approval. **However, further significant delay in gaining approval will result in schedule delay. Project office will work closely with Stakeholders to support the submission as necessary. The FMR is based on the Mobiles program requiring 54 months to complete from Government approval.**

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	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	8	9	9	9	7	9	59
	Explanation	• **Requirement:** The Integration and Test program for the Fixed Network and Generic Mobiles has been successfully completed. • **Technical Understanding:** Final System has been accepted by Defence and has been supporting ADF operations since October 2009. Future work is focussed on Mobiles upgrades, which will use the products and design material developed under the Prime Contract. • **Commercial:** Customer working relationship is very good but commercial/contractual issues will need to be addressed for the Mobiles platforms. • **Operations and Support:** Core System has been operational and supported since late 2004. Final System is operational and transition to support organisation is currently being addressed. **Note: MRS score will not be affected under changes proposed in scope**							



2009-10 DMO MPR Status - - - - - 2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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.	Requirements 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.	Contract 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.	Contract Management Schedule 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 Commonwealth.	Contract Management
Substantial developments 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 products, 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.	First of Type Equipment Off the Shelf Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward
Branch Head	Ms Myra Sefton
Project Director / Manager	Mr Andrew Schmidt

Project Data Summary Sheet[211]

Project Name	**SM-1 MISSILE REPLACEMENT**
Project Number	**SEA 1390 Phase 4B**
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	November 2003
Government 2nd Pass Approval	July 2004
Total Approved Budget (Current)	$612.0m
2010-11 Budget	$27.9m
Project Stage	Acceptance Testing
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project will replace the Standard Missile-1 (SM-1) missile with a modern variant of the Standard Missile - 2 (SM-2) missile and improve the air defence capability of the Guided Missile Frigate (FFG) fleet, adding to the capability delivered by the FFG Upgrade project.

1.2 Current Status

Cost Performance

The delivery of the materiel capability remains within current approved project cost. Significant savings are identified to be incorporated in a real cost decrease to the current approved Project cost submission and Materiel Acquisition Agreement update.

Schedule Performance

Procurement and delivery of missiles completed February 2010. FFG SM-2 missile Stage 1 Home-All-the-Way (HAW) Material Release (May 2010), Initial Operational Release (IOR) (July 2010) and Initial Operational Capability (IOC) (August 2010) now achieved. Stage 2 (final stage) Mid Course Guidance (MCG) capability Material Release occurred with Stage 2 software installation aboard HMAS *Sydney* in May 2011.

Subsequent combined Acceptance Test and Operational Test & Evaluation live-fire events for the SM-2 missile test program successfully conducted off Hawaii during June 2011. Final Material Release (FMR) and Final Operational Capability (FOC) (Ship and shore based systems) on schedule to complete third and fourth quarters 2012 respectively.

[211] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability Performance

FFG SM-2 Stage 1 HAW capability baseline was established in May 2010 and has been installed in all four FFGs and the land based Team Trainer. An operational firing event aboard HMAS *Newcastle* was conducted successfully in July 2010, and on 25 August 2010 Chief of Navy (CN) approved IOR of the FFG SM-2 HAW capability. The IOC also achieved coincident with HMAS *Melbourne* deployment in August 2010. The FFG SM-2 stage 2 MCG capability software baseline was established in May 2011 and installed in HMAS *Sydney* in preparation for combined Acceptance Test and Operational Test & Evaluation live-fire events that were successfully conducted off Hawaii in June 2011. The SM-2 stage 2 final software baseline and operational capability is scheduled for delivery first quarter 2012.

1.3 Project Context

Project	Explanation
Background	Project SEA 1390 Phase 4B, as a discrete phase of the SEA 1390 Ph2 FFG Upgrade project, will integrate the SM-2 Block IIIA surface to air missile into the four Royal Australian Navy (RAN) ADELAIDE class frigates (FFGs) at the "Mid-Course Guidance" standard, and acquire Initial Ship Outfit and Inventory Stock missiles. The SM-2 Block IIIA missile is the replacement Area Air Defence (AAD) weapon for the aging SM-1 missile in RAN service with the FFGs. It will provide a modern area air defence missile capability to the RAN FFGs and affording an air defence to escorted vessels and coastal infrastructure or forces deployed nearby. The SM-2 capability will be progressively delivered in two stages to mitigate technical risk with the development and fielding of the required software. Stage 1 provides an SM-2 HAW capability (which was achieved in August 2010 with the deployment of HMAS *Melbourne* to Operation Slipper) with the full capability of MCG to be delivered in Stage 2. The Commonwealth, through the FFG Systems Program Office (SPO), has assumed responsibility as the Prime Systems Integrator (Prime Contractor). This commercial arrangement is important as it provides a sound risk mitigation approach to the projects primary risk – the completion of the production stages of the SEA 1390 Ph2 FFG Upgrade project (particularly the implications of non-availability of the FFG). This level of managerial oversight has allowed the FFG Upgrade project (SEA 1390 PH 2) and the SM-2 Integration (SEA 1390 PH 4B) to occur in parallel without negatively impacting each upon the other.
Uniqueness	Acquisition of the SM-2 capability is being undertaken via a combination of United States (US) Government Foreign Military Sales (FMS) arrangements and US and Australian commercial sources, with overall 'Prime Systems Integrator' responsibility resting with the FFG SPO. There is a strong reliance on Original Equipment Manufacturers (OEM) due either to necessity (sole supplier/ proprietary information/ intellectual property constraints) or to mitigate risk and to maintain technical integrity. In addition, under a Service Level Agreement, Navy Guided Weapons Systems Program Office (NGW SPO) is responsible for the acquisition of the SM-2 missiles, missile support and repair/certification facilities at the Intermediate Level Maintenance Facility (ILMF) Defence Establishment Orchard Hills.
Major Challenges	Ship availability within the RAN Force Generation Plan (FGP) remains a significant challenge and scheduling for installation and test activities is difficult. Navy has accommodated the SM-2 Stage 1 HAW capability test program and the June 2011 SM-2 Stage 2 MCG live-fire events aboard HMAS *Sydney* to a revised schedule.
Other Current Projects/Sub-Projects	**SEA 1390 PH 2.1 – Guided Missile Frigate Upgrade Implementation:** Upgrade FFG Anti-Ship Missile defence, air search radar and missile fire control system/radars, Underwater Warfare, Electronic Support and other ship systems, Data Link, ship and shore based Training Systems and establish a Warfare Systems Support Centre. **SEA 1390 PH 4A – FFG SM-1 Missile Replacement Test Station:** Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the SM-2.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1390 PH 2.1 FFG Guided Missile Frigate Upgrade Implementation	Upgrade FFG Anti-Ship Missile defence, air search radar and missile fire control system/radars, Underwater Warfare, Electronic Support and other ship systems, Data Link, ship and shore based Training Systems and establish a Warfare Systems Support Centre.	The upgraded FFG combat system developed under SEA 1390 Phase 2.1 was a necessary precursor and baseline for the development of the SM-2 capability. The upgraded FFG combat system was developed and delivered progressively as three successive (software) baseline builds and the completion of Baseline Build 2 was necessary for the further development of the SM-2 capability to be completed under SEA 1390 Phase 4B.
SEA 1390 PH 4A FFG SM-1 Missile Replacement Test Station	Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the SM-2.	Project SEA 1390 Phase 4A is another discrete phase of the SEA 1390 FFG Upgrade Project and is directly linked to the SM-2 capability. This phase acquired, installed and set-to-work a Mk 698 Mod 0 Guided Missile Test Set necessary to support the re-certification, maintenance and repair of the SM-2 Block IIIA missiles.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Jul 04	Original Approved	552.6		552.6		
Aug 05	Real Variation – Budgetary Adjustments	(2.1)	(2.1)			1
Jun 11	Price Indexation			127.9		2
Jun 11	Exchange Variation			(66.4)		
Jun 11	**Total Budget**	550.5		612.0		
2.2 Project Expenditure History						
Prior to Jul 10			10.1		AAI Corporation	
			20.3		Lockheed Martin	
			9.6		BAE Systems	
			210.0		US Government	
			22.7		Other	3
				272.7		
FY to Jun 11			1.4		AAI Corporation	
			1.7		Lockheed Martin	
			0.0		BAE Systems	
			14.9		US Government	
			4.0		Other	4
				22.0		
Jun 11	**Total Expenditure**			**294.7**		
Jun 11	**Remaining Budget**			**317.3**		

Notes	
1	Skilling Australia's Defence Industry harvest.
2	Up until July 2010, indexation was applied to project budgets on **a periodic** basis. The cumulative impact of this approach was $118.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $9.2m having been applied to the remaining life of the project.
3	Other expenditure prior to Jul 10 comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top four contracts and minor contract expenditure.
4	Other expenditure FY to Jun 11 comprises Australian Distributed Architecture Combat System (ADACS) (combat system software development) $2.7m, external service providers $0.7m, ship installation $0.2m, and other administrative costs (travel, freight, maintenance) $0.4m.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	Rescheduling of project requirements with procurements tracking below forecasted funding. Foreign Exchange gains have had an affect on Year End outcome. The variation in this rescheduled overseas industry payments also includes anticipated exchange rate gains. There have been some delays in various minor procurements without impact on schedule resulting in a AUD price saving to Defence.
		(2.3)	Overseas Industry	
		(0.8)	Local Industry	
			Brought Forward	
		(0.6)	Cost Savings	
		(1.6)	FOREX Variation	
		(0.6)	Commonwealth Delays	
27.9	**22.0**	**(5.9)**	**Total Variance**	

2.4 Contract Details

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 11 $m			
AAI Corporation	20 Jul 07	10.4	14.8	Firm	ASDEFCON	
Lockheed Martin	20 Jul 07	23.9	25.7	Firm	ASDEFCON	
BAE Systems	4 Feb 08	7.8	8.3	Firm	ASDEFCON	
US Government	15 Aug 05	218.9	246.8	FMS	FMS	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 11		
AAI Corporation	Various	Various	Upgraded On-board Training System (OBTS), ship Guided Missile Launcher System (GMLS) and Land Based Simulation System (LBSS).	
Lockheed Martin	Various	Various	MK92 Continuous Wave Illuminated upgrade	
BAE Systems	Various	Various	Guided Missile Launcher System upgrade	
US Government	Various	Various	Acquisition of SM-2 Missiles, Weapon Control System software upgrade	

Major equipment received and quantities to 30 Jun 11

Delivery of approved suite of missiles achieved. Hardware installations 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 Requirements	GMLS Mk-13	Oct 05	N/A	Oct 05	0	
	OBTS/LBSS	Dec 05	N/A	Dec 05	0	
	Mk-92 Fire Control System Solid State CWI	Oct 05	N/A	Oct 06	12	1
	Command & Control (C2) ADACS Software	Feb 09	N/A	Feb 09	0	
	Weapons Control System	Oct 07	N/A	Oct 07	0	
Preliminary Design	GMLS Mk-13	N/A	N/A	N/A	0	
	OBTS/LBSS	Sep 07	N/A	Sep 07	0	
	Mk-92 Fire Control System Solid State CWI	Oct 07	N/A	Sep 07	(1)	
	C2 ADACS Software	Jun 10	N/A	Feb 10	(4)	
	Weapons Control System - Stage 1: HAW	Mar 08	N/A	Apr 08	1	2
	Weapons Control System - Stage 2: MCG	Jan 09	N/A	Feb 09	1	2
Critical Design	GMLS Mk-13	Oct 07	N/A	Nov 06	(11)	
	OBTS/LBSS	Jan 08	N/A	Jan 08	0	
	Mk-92 Fire Control System Solid State CWI	Jan 08	N/A	Jan 08	0	
	C2 ADACS Software	Jun 10	N/A	Feb 10	(4)	
	Weapons Control System – Stage 1: HAW	Aug 08	N/A	Aug 08	0	
	Weapons Control System – Stage 2: MCG	Jul 09	N/A	Jul 09	0	

Notes

1	Delay due to mutually agreeing considerations with respect to Limitation of Liability and Intellectual Property.
2	Delay attributable to consolidation of travel to US for multiple events including this 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 - Weapons Control System Stage 1 HAW	Standard Missile Adjunct Processor (SMAP) Integration	Feb – Mar 09	N/A	Feb – Mar 09	0	
	Weapons Control Processor (WCP)//SMAP Integration Surface Warfare Engineering Facility	Mar – Jun 09	N/A	Mar – Jun 09	0	
	HAW CWI Engineering Development Model	Jun 09	N/A	Jun 09	0	
	System Integration Test - Shipboard	Aug – Sep 09	N/A	Sep – Oct 09	1	1
	System Acceptance Test - Shipboard	Oct – Nov 09	N/A	Nov 09	0	
System Integration - Weapons Control System Stage 2 (Mid-Course-Guidance)	WCP/SMAP Integration Surface Warfare Engineering Facility	Jul – Nov 10	N/A	Nov 10	0	
	ADACS/WCP/SMAP Integration – Garden Island, Sydney	Jul – Sep 10	N/A	Oct 10	1	2
	System Integration Test - Shipboard	Dec 10 – Jan 11	N/A	Jan 11	0	
	System Acceptance Test - Shipboard	Jan – Mar 11	N/A	Mar 11	0	
Acceptance	WSN-7B Ring Laser Gyro-compass	N/A	N/A	Sep 07 – Aug 09	0	3
	SM-2 Missiles	Sep07 - Dec 08	N/A	Jul 08 - Oct 09	10	4
	GMLS Mk-13 Installation (4 ships)	Feb 09 - Feb 10	N/A	Apr 09 - Jun 10	4	5,6,7
	GMLS Mk-13 Roundhouse 1 Installation	Jan 09	N/A	Apr 09	2	8
	OBTS	Mar 09	N/A	Jun 10	9	9
	Team Trainer (TT)	Jul 09	N/A	Dec 09	5	10
	WSSC	Jul 09	Oct 09	Sep 09	-2	
	Mk-92 Fire Control System Solid State CWI (4 Ships)	Nov 08 – Jul 09	N/A	Aug 08 – Apr 10	9	11
	Mk-92 Fire Control System Solid State CWI for Ship Set 5	Nov 09 - Mar 10	N/A	Oct 09 - Jun 10	3	11
	Mk-92 Fire Control System Solid State CWI for Moorestown NJ, USA.	Dec 09 - Jul 10	N/A	Jan 10 - Apr 11	9	12
	Mk-92 Fire Control System Solid State CWI for Garden Island, Sydney.	Aug 10 – Sep 10	N/A	Apr 10 - Jun 11	9	12
	C2 ADACS Software	Feb 12	N/A	Feb 12	0	
	Weapons Control System Stage 1	Dec 09	N/A	Aug 10	8	13
	Weapons Control System Stage 2 Firing Event Capability Demonstration	Mar – Apr 11	Jun 11	Jun 11	3	14
	Weapons Control System Stage 2 Final Operational Capability	N/A	Oct – Dec 12	Oct – Dec 12	0	15

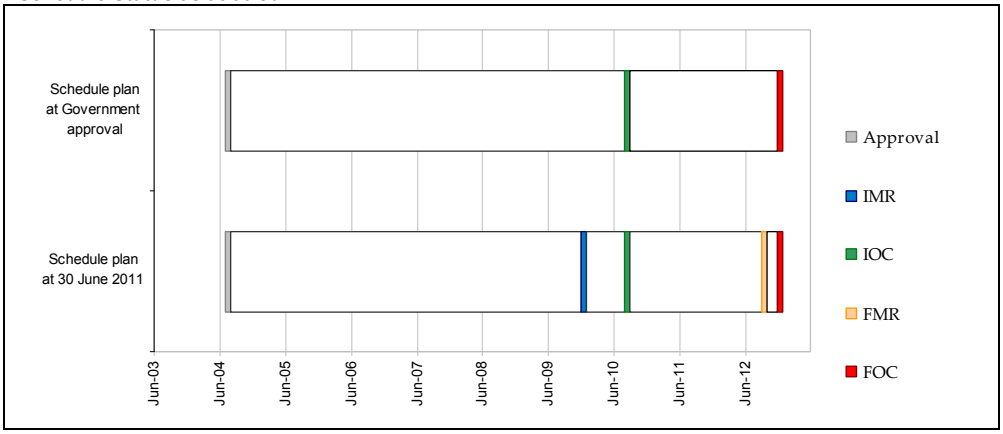
Notes	
1	A slight delay of nine days to coincide with ship completion of scheduled maintenance availability, thereby allowing the commencement of system testing.
2	Delay attributable to ADACS software development and related follow-on certification for the FFGs to operate on the Australian tactical Multi-TDL Network (MTN).

3	Delivery schedule for listed items procured under FMS Case AT-P-GMG not specified. Original planned date for delivery is not applicable.
4	Delay attributable to requisition of missile components by US Navy during (FMS Case ATP-LCY) production phase.
5	Ship 1 Installation was completed as scheduled in January 2009, however, Milestone achievement was delayed for resolution of minor design issues. This delay had no effect on the overall project delivery schedule.
6	Ship two installation completed, milestone awaiting resolution of N260469 CCP-5 (in progress This delay had no effect on the overall project delivery schedule.
7	Ship four Installation was completed as scheduled in December 2009. However the Test Results and Supplies Acceptance Certificate was provided and accepted by the Commonwealth in January 2010. This delay had no effect on the overall project delivery schedule.
8	Installation completed as scheduled in January 2009. However, the Test Results and Supplies Acceptance Certificate was provided and accepted by the Commonwealth in April 09 after installations and minor design corrections were made. This delay had no effect on the overall project delivery schedule.
9	Initial Acceptance Testing onboard HMAS MELBOURNE showed defect in Government furnished Equipment (GFE) inertial navigation system Finalisation of the OBTS Acceptance was withheld pending correction of this defect.
10	The test and acceptance of the Land Based Simulation System software was dependant on the availability of the site for this purpose within the overall RAN training schedule. Since the Team Trainer (TT) was not available at the contracted time, the obligation was deferred until the TT was available and was coordinated with other visits to Australia by the US vendor (AAI Corporation) personnel. This delay had no effect on the overall project delivery schedule.
11	MK92 CWI updates included the classified Stable Master Oscillator (STAMO). The alterations required a turn-around program for the classified items through the OEM (Lockheed Martin MS2) in USA and its supplier. There is a limited number of classified shipments through the Australian Freight Forwarder in USA and RAAF Richmond in Australia. Additionally these classified items require licencing by the US Department of State for international transfer. Several issues were encountered where the Australian Freight Forwarder changed its street address in USA and this required re-issuing of the licence, a process that takes about three months through the US Department of State. Coordination of ship availability for installation testing of modified STAMOs and to provide the GFE for the turn-around program needed to be undertaken with the classified shipments. The purpose was to ensure that the ships were always operational during the turn-around program with some variation to the contracted milestones, which was appreciated by both parties. The delay had no effect on the overall project delivery schedule.
12	A latent defect in the original FFGUP STAMO design was discovered midway through the SM2 alteration turn-around program. This meant that additional design and fabrication was required and that all STAMOs needed to be turned around again. The re-work was agreed under contract change and the existing contract milestones rescheduled. The redesign, fabrication, and proof of correction took longer than expected due to material supply lead-time and issues associated with the shipment of classified items to/from USA (see Note 13). Additionally STAMOs in the turn-around program not being available for ships (see Note 13) which perturbed the overall program since a modified STAMO was necessary before an unmodified STAMO could be returned. The delay had no effect on the overall project delivery schedule.
13	Shipboard testing identified issues which required resolution.
14	Delay attributable to the RAN Reduced Activity Period in the December/January 2010 period, which meant ships were unavailable over a two month period for the conduct of shipboard integration and testing per the original schedule. An additional delay of one month was caused by the unavailability of the US Pacific Missile Range Facility where the live-fire test events are scheduled to be conducted.
15	Update of Materiel Acquisition Agreement (MAA) has recognised the need to allow for update of the software to account for issues in the test program that need to be corrected before being fielded for operational use. The revised MAA now allows for both a correction and regression test period and a roll-out to all ships and shore sites depending on the availability of those locations within the RAN FGP and Training Program.

3.3 Progress Towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 09	0	
Initial Operational Capability (IOC)	Aug 10	Aug 10	0	
Final Materiel Release (FMR)	Sep 12	Sep 12	0	
Final Operational Capability (FOC)	Dec 12	Dec 12	0	

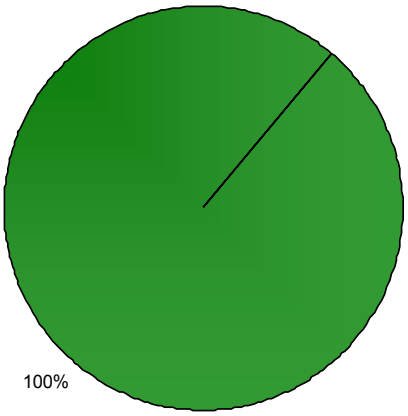
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The project is currently meeting the capability requirements as expressed in the Materiel Acquisition Agreement.

Amber:

N/A

Red:

N/A

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 installation and test program, necessary to deliver the SM2 capability to meet the In-Service Dates, will be affected by the unavailability of Upgraded FFGs, due to their Fleet Activity Schedule (now Force Generation Plan).	The FFG SPO is working to establish alternative strategies for installation outside scheduled maintenance periods (if possible).
There is a chance that the SM-2 test program will be affected by the non availability of Target/Range services to conduct firing within Australia leading to a delay to schedule and increased costs.	The FFG SPO is engaging the RAN operators and regulators to provide indigenous Test & Evaluation options.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

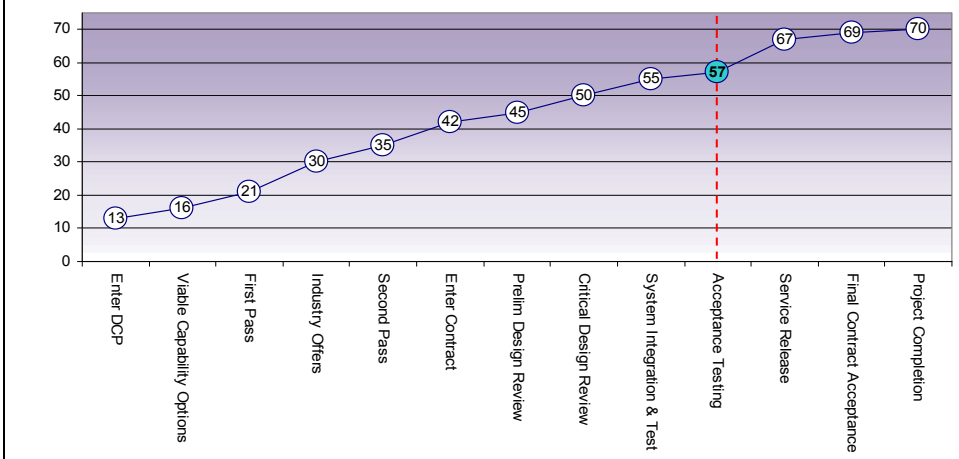
5.2 Major Project Issues

Description	Remedial Action
US Government FMS Technical Services and commercial contracts with US based OEMs have exceeded allocated Budget per service.	Commonwealth accept the risk and allocate contingency as required. Project Contingency provision adequate to manage this issue.
Project delivery and timing will not be met if appropriately qualified and experienced Project staff are not recruited.	Increase Australian Public Service position levels to attract/retain personnel. Engage professional service providers to meet shortfall in required expertise.

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	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	9	9	7	9	8	7	57
	Explanation	• **Cost:** Contingency (97% of the total provision available to the project) remains. A Real Cost Decrease via the Approved Major Capital Investment Program 2011-12 Portfolio Budget Statements has been proposed. • **Requirement:** HMAS *Sydney* has successfully completed the Stage 2 Mid-Course Guidance lead-ship Acceptance Test live fire events (June 2011). • **Technical Understanding:** Knowledge needs to operate and support the solution understood. No major impediments to acquiring and transferring this knowledge to the RAN. • **Operations and Support:** The support systems have been defined and procurement of long-lead support elements progressed.							



2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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.	Requirements Management 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 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
For significant and high technological upgrades to major systems the acquirer (Commonwealth) acting as the Procurement Coordinator managing separate contracts directly with Original Equipment Manufacturers allows for better risk management, schedule control and influence on the quality of the contracted supplies.	Requirement Management Contract Management Performance (Quality)
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 Foreign Military Case.	Contract Management

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall
Branch Head	CDRE Michael Houghton
Project Director	Mr Mal Adams
Project Manager	Mr Mal Adams

Project Data Summary Sheet[212]

Project Name	**ADDITIONAL MEDIUM LIFT HELICOPTERS**
Project Number	**AIR 9000 Phase 5C**
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Sep 07
Government 2nd Pass Approval	Feb 10
Total Approved Budget (Current)	$584.6m
2010-11 Budget	$6.2 m
Project Stage	Enter Contract
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project seeks to replace the extant Australian Defence Force (ADF) Medium Lift Helicopter capability of five CH-47D Chinook helicopters with seven new modernised CH-47F Chinook helicopters, two Transportable Flight Proficiency Simulators and associated supporting systems.

1.2 Current Status

Cost Performance

The project remains within its current approved budget. Amendment 2 to the Foreign Military Sales (FMS) case is currently under development and will add further fidelity to FMS expenditure forecasts.

Schedule Performance

The Project successfully achieved Government Second Pass approval on schedule in February 2010. Shortly thereafter and ahead of schedule, an FMS case was signed with the United States (US) Government in March 2010. The next major milestone will see all contracts in place and all remaining Project plans completed no later than December 2012. All these activities are expected to be completed ahead of schedule. There are currently no impediments to the Project achieving all future milestones.

Materiel Capability 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 two years and the capability has achieved outstanding results in Iraq and in particular the Afghanistan theatre, where its hot and high altitude performance are unmatched by any other rotary wing aircraft. The ADF has yet to take delivery of any aircraft however there are currently no impediments to the Project achieving the materiel capability performance requirements.

[212] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

1.3 Project Context

Project	Explanation
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 support and training 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 current ADF CH-47D fleet is small (original fleet of six reduced to five through attrition) and loss or severe damage of a single aircraft would result in a significant capability loss. The growth in fleet size (to seven) will enhance the robustness of the ADF Medium Lift Helicopter capability. With the current ADF CH-47D fleet operationally committed in Afghanistan, a MOTS procurement strategy via the government-government FMS program, 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 is currently in contract negotiations 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 sought through 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 which have 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. The CH-47F is a modern digital aircraft. The Common Avionics Architecture System (CAAS) and Digital Automatic Flight Control (DAFCS) 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 includes delivery of two Transportable Flight Proficiency Simulators (TFPS) to provide an organic ADF CH-47F simulator capability. Previous simulator training support for the CH-47D has been provided by the US Army. The Cargo Helicopter Management Unit (CHMU) is the organisation responsible for acquiring the CH-47F capability. The CHMU is also responsible for the in-service support to the extant CH-47D capability as well as the CH-47F model following transition into service. Having the CHMU as the single acquisition and sustainment organisation provides synergistic benefits due to the high degree of commonality between the CH-47D and CH-47F aircraft.
Major Challenges	The current ADF CH-47D Chinook fleet is operationally committed in Afghanistan on Operation SLIPPER. Fielding a replacement CH-47F Chinook fleet in parallel with an operational deployment provides transition and capability realisation challenges. 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.
Other Current Projects/Sub-Projects	**Project Air 9000 Chinook (CH-47F) Capability Alignment Program (CAP):** A pre-second pass project that seeks to provide continuous upgrades to the ADF CH-47F fleet to ensure configuration alignment is maintained with the US Army CH-47F fleet. The benefits of configuration alignment are primarily reduced cost of ownership through the ability to leverage off US Army CH-47F support arrangements, increased interoperability and reduced obsolescence risks/costs attributable to operating a small orphan fleet of aircraft.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Sep 07	Original Approved	3.4		3.4		1
Apr 10	Government Second Pass Approval	634.2	634.2			
		637.6		637.6		
Jun 11	Price Indexation			46.9		2
Jun 11	Exchange Variation			(99.9)		
Jun 11	**Total Budget**	637.6		584.6		
2.2 Project Expenditure History						
Prior to Jul 10		11.8	11.5		US Government	3
		0.9	0.9		Other	
		12.7		12.4		
FY to Jun 11		0.0	0.0		US Government	3
		1.7	1.7		Other	4
		1.7		1.7		
Jun 11	**Total Expenditure**	14.4		14.1		
Jun 11	**Remaining Budget**	623.2		570.5		

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	For Base Date calculations for FMS cases, a consistent de-escalation factor has been applied to all projects which is derived from Defence's cost estimation methodology.
4	Major items of expenditure include development of crashworthy seats $0.3m, data pack for crashworthy seats $0.5m, general Workforce and Operating Expenses of $0.1m and Embedded Workforce & Operating Expenses for salaries of $0.7m.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(4.5)	FMS	At initial budget development stage information to hand suggested FMS payments would be required during the 2010-11 financial year. However this was not the case as US Government disbursements were less than expected.
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
6.2	**1.7**	**(4.5)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
US Government	Mar 10	513.5	515.4	FMS	FMS	1

Notes	
1	Amendment in December 2010 adds better definition to the contracted materiel and services.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
US Government	7	7	CH-47F	1

Major equipment received and quantities to 30 Jun 11
No equipment has been received as at 30 June 2011

Notes	
1	First aircraft delivery is expected in 2014

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	0	1
	Rotor Brake	Feb 12		Feb 12	0	2
	ADF Unique Modifications	Jul 11		Jul 11	0	3
Preliminary Design	CH-47F Chinook helicopter	N/A		N/A	0	1
	Rotor Brake	TBA		TBA	0	2
	ADF Unique Modification	N/A		N/A	0	3
Critical Design	CH-47F Chinook helicopter	N/A		N/A	0	1
	Rotor Brake	TBA		TBA	0	2
	ADF Unique Modifications	Apr 14		Apr 14	0	3

Notes	
1	CH-47F Chinook helicopter system requirements and design reviews not required as it is a MOTS aircraft.
2	Rotor brake design is being 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.
3	All ADF unique modifications are mature designs that have been previously certified on the ADF CH-47D Chinook.

3.2 Contractor Test and Evaluation Progress

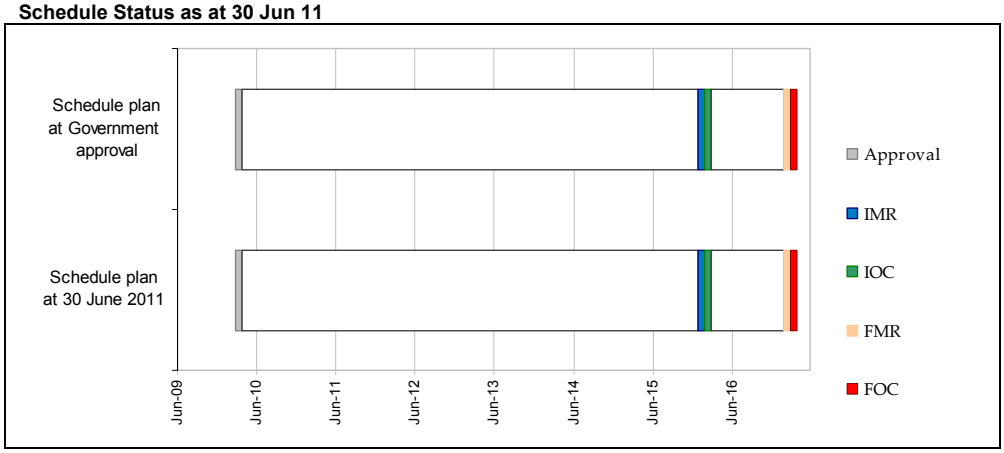
T&E	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Rotor Brake	Nov 11 – Feb 14		Nov 11 – Feb 14		2
Acceptance	CH-47F Chinook helicopter	Mar14 – Nov 15		Mar 14 – Nov 15		1
	Rotor Brake	Apr 14		Apr 14		2

Notes	
1	CH-47F Chinook helicopter acceptance dates are currently estimates only as US Army has yet to sign the production contract for ADF aircraft with Boeing.
2	Rotor brake acceptance dates are currently estimates only as US Army has yet to sign the contract for rotor brake integration with Boeing.

3.3 Progress Towards Materiel Release and Operational Capability Milestones

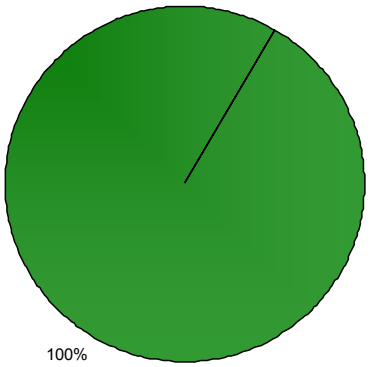
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jan 16	Jan 16	0	
Initial Operational Capability (IOC)	Jan 16	Jan 16	0	
Final Materiel Release (FMR)	Jan 17	Jan 17	0	
Final Operational Capability (FOC)	Jan 17	Jan 17	0	

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: The Project is currently meeting 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

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 CH47F Mission and Support Systems will be affected by inadequate project management of the FMS case by the US Army leading to an impact on capability, cost, schedule and reputation.	Continued performance monitoring of US Army project management efforts by the in country ADF Project Liaison Officer. Increased overseas travel to enable greater level of direct interaction between ADF and US Army. Increased size of a Resident Project Team, co-located with US Army implementing organisation to provide further oversight (Business Case in approval phase).
There is a chance that the Australian Military Type Certification will be affected by differences in US certification requirements leading to an impact on schedule.	Access to technical data and US Army Subject Matter Experts early to ensure any issues are identified and rectified in a timely manner. 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.

There is a chance that the training plan will be impacted by limited availability and positions within the US Army's CH-47F Chinook training system leading to an impact on schedule.	Clearly define training requirements in the Project Training Plan. Early engagement with the US Army to secure training courses and positions. Frontload transition training to ADF instructors and supervisors to improve future opportunities for internal training and enable early development of ADF training packages. Obtain simulators and training materials necessary to minimise the requirement of dependency on the US Army for currency training.
There is a chance that aircraft delivery will be affected by delays in aircraft production at Boeing leading to an impact on schedule.	Continued liaison with US Army on ADF delivery schedule and configuration requirements until US Army is on contract with Boeing and production slots are secured.
There is a chance that the Australian Transportable Flight Proficiency Simulator (TFPS) accreditation will be affected by lack of prior US qualification / certification leading to an impact on schedule.	TFPS assessment by ADF Subject Matter Experts conducted January 2011. US Army has been contracted to develop TFPS Australian Visual Database which will meet Australian accreditation requirements. Development of TFPS Qualification Plan detailing accreditation requirements and schedule.
There is a chance that the CH-47F embarked operations requirement will be affected by corrosion to the aircraft leading to an impact on performance and supportability.	Conduct detailed Logistic Support Analysis for embarked operations in order to identify requirements for: increased use of corrosion prevention maintenance activities, increased corrosion inspections to monitor the risk, and dehumidification rig and other Support & Test Equipment for use in embarked operations.
There is a chance that the ongoing support of the ADF CH-47F will be affected by an inadequate transfer of technology and information leading to an impact on capability.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Residual risk low.
There is a chance that the Australian unique Modifications will be affected by failure to achieve Service Release of the Engineering Change Proposal leading to an impact on schedule.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Residual risk low.
There is a chance that the project budget will be affected by prime equipment costs exceeding those provided in the Letter of Acceptance leading to an impact on cost.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Residual risk low.
There is a chance that the Australian unique modification program will be affected by cost increases in individual mods leading to an impact on cost.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Residual risk low.
If the responsibility for managing Chinook Helicopter Capability Alignment Program is placed on the Chinook Helicopter Project Office, the schedule may be affected due to increased workload under current workforce defined in Workforce Definitions V5.0.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Residual risk low.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

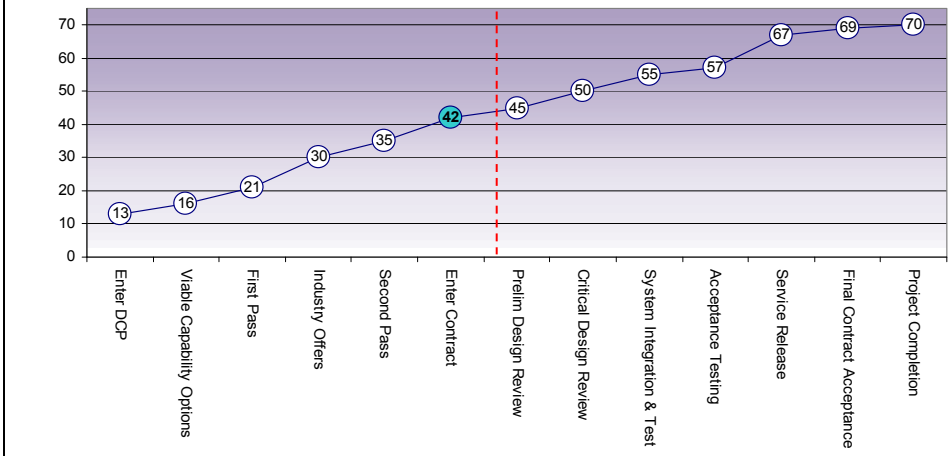
5.2 Major Project Issues

Description	Remedial Action
N/A	N/A

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	6	6	6	6	7	6	7	44
	Explanation	• **Technical Difficulty:** All intended modifications to baseline US Army specification CH-47F Chinook are mature designs and are ready for integration. • **Operations and Support:** Support systems are being procured or remain extant from CH-47D.							



2010-11 DMO 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 (DCS) 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 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 synch 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

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Mark Campbell
Branch Head	BRIG Andrew Mathewson
Project Director	GPCAPT David Scheul
Project Manager	LTCOL Tyron de Boer

Project Data Summary Sheet[213]

Project Name	**ARMIDALE CLASS PATROL BOAT**
Project Number	**SEA 1444 Phase 1**
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	Jun 01
Government 2nd Pass Approval	Oct 02
Total Approved Budget (Current)	**$537.2m**
2010-11 Budget	**$7.2m**
Project Stage	**Service Release**
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is to deliver 14 Armidale class patrol boats (ACPB) and provide 15 years in-service support. In addition the project is providing funding to DSG to deliver patrol boat facilities at Cairns and Darwin.

The new patrol boats will improve the Navy's capability to intercept and apprehend vessels suspected of illegal fishing, quarantine, customs or immigration offences and will provide 3500 days availability with the scope to surge up to 600 days per annum.

1.2 Current Status

Cost Performance

Project remains within **its current approved** budget.

Schedule Performance

Progress continues towards achievement of final operational capability (FOC), which remains dependent on rectification of outstanding build defects.

Materiel Capability Performance

All vessels continue to meet the Navy's operational requirements. The Patrol Boat Systems Program Office continues to close extant build-related issues. HMAS GLENELG, representing the ACPB capability, achieved operational release (OR) on 19 May 2010. The final vessel will achieve OR after the completion of the rectification work at the end of 2011. Closure of the acquisition phase of the project will commence after FOC is achieved in **February** 2012.

[213] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

1.3 Project Context

Project	Explanation
Background	In June 2001 Government required Defence to analyse private finance and direct purchase options and to recommend a preferred procurement strategy. Defence requested tenders for private finance and/or direct purchase. After Government approval of the preferred acquisition strategy, Stage 1 short-listing occurred, then a Stage 2 Request For Tender was released to the short-listed companies. In June 2002 after the Stage 1 bids from nine tenderers were evaluated, Government decided not to proceed with private financing as there was no clear financial advantage in pursuing that option. The Stage 2 Request For Tender for direct purchase closed in November 2002 and in August 2003 the Minister for Defence announced the preferred tenderer as Defence Maritime Services (DMS). In December 2003 Defence signed a contract with DMS for the supply and support of 12 ACPB. The scheduled delivery for the vessels was to be from May 2005 to June 2007. In May 2005 further funding was provided for an additional two vessels to be acquired under Project Sea 1444, to operate as part of the Government's Securing the North West Shelf policy. All 14 vessels have been delivered and achieved initial operational release (IOR) and commissioned into the Navy. The last vessel achieved IOR in November 2007 and commissioned in February 2008.
Uniqueness	The contractor had to propose the number of vessels required to meet the operational requirements and their maintenance obligations. In the original tender, 12 vessels was the minimum that could be supplied to meet the proposed requirement. This approach also involved Navy moving to a multi-crewing philosophy for the ACPB fleet. Also, following Government direction (equivalent to first pass) the acquisition strategy considered both private finance and ownership models for the acquisition of the required capability. This strategy meant that with either model DMO contracted for the acquisition and support of the fleet in one single contract rather than the traditional acquisition model followed by a separate support contract.
Major Challenges	***ACPB Rectification Program***. A rectification program was instigated with the prime contractor in July 2009 to bring all vessels to the product baseline as represented by HMAS GLENELG by December 2011. **This program will enable the achievement of FOC for the class in February 2012. HMA Ships MARYBOROUGH, CHILDERS, ARMIDALE, LAUNCESTON, LARRAKIA, BATHURST and ALBANY completed their rectification work as scheduled and have now achieved OR.** **Fuel system**. The problem of water contamination causing fuel pump failures and fuel cloudiness has been resolved through a series of design changes and changes to operating procedures. **Modified fuel oil purifier sets were successfully trialed on three vessels and fitment across the remainder of the Class has commenced.** **Sea-boat davit hydraulics**. **Tests conducted by AUSTAL on the sea-boat davits indicate that hydraulic piping modifications and upgrades to the hydraulic power packs are unable to deliver a system that meets the contracted performance. DMS has engaged a specialist hydraulic sub-contractor to carryout modifications to HMAS BUNDABERG and will conduct their own tests to assess system performance to enable delivery of a compliant davit hydraulic system.** **Austere Accommodation Compartment**. As a result of successful trials following modifications to the exhaust stacks and the black and grey water system and the installation of gas sensors in the Austere Accommodation Compartment (AAC), the Navy has lifted the restrictions on the use of the compartment (on the modified vessels) for appropriately trained Defence personnel. **Sewerage Treatment Plant**. A repeat of the First of Class Sewage Treatment Plant (STP) trial indicated that there was no evidence of Hydrogen Sulphide (H_2S) generation affecting the AAC but found environmental concerns related to overboard discharge quality not meeting the latest IMO, MEPC targets. **These concerns are still under investigation however the Classification Society only requires an**

	International Maritime Organisation (IMO) compliant STP to be fitted. This issue does not impact the safety of the STP or sewage system in relation to the production of H_2S or other toxic gases.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2043 HF Modernisation	The Project is to provide the ADF with a secure, cost-effective information exchange capability for the command and control of deployed forces as a primary survivable system and as a parallel system to satellite communications.	The HF communications capability for the ACPB will be funded by JP 2043 and fitted after delivery.
JP 2008 MILSATCOM	The Defence Mobile Communications Network is a mobile satellite communication system, using the Cable and Wireless Optus service.	This capability has been fitted to the ACPB.
SEA 1430 Phase 2A - Navigation Display Systems	Project SEA 1430 Ph2A will provide Electronic Chart Display and Information Systems for the navigation of Navy ships and submarines. The project is titled Navigation Display Systems. The project will also deliver Navigation Display Systems to selected command and training shore establishments.	This capability has been fitted to the ACPB.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Jun 02	Original Approved	436.8		436.8		
Jun 04	Real Variation – Budgetary Adjustment	2.6	2.6			1
Aug 04	Real Variation – Budgetary Adjustment	(0.4)	(0.4)			2
Nov 04	Real Variation – Transfer	(0.2)	(0.2)			3
Jun 05	Real Variation – Transfer	(1.8)	(1.8)			4
Jun 05	Real Variation – Scope	67.1	67.1			5
Aug 05	Real Variation – Budgetary Adjustment	(1.5)	(1.5)			6
Aug 08	Real Variation – Transfer	(27.8)	(27.8)			7
		38.0		38.0		
Jun 11	Price Indexation			**74.5**		**8**
Jun 11	Exchange Variation			**(12.1)**		
Jun 11	**Total Budget**	474.8		**537.2**		
2.2 Project Expenditure History						
Prior to Jul 10		**374.5**	**428.3**		DMS	
		15.3	**15.3**		BAE	**9**
		35.3	**35.3**		Other	**10**
		425.1		**478.9**		
FY to Jun 11		**3.1**	**4.4**		DMS	
		0	**0**		BAE	
		1.4	**1.4**		Other	**11**
		4.5		**5.8**		
Jun 11	**Total Expenditure**	**429.6**		**484.7**		
Jun 11	**Remaining Budget**	**45.2**		**52.5**		

Notes	
1	Real adjustment due to incorrect currency mix used at time of approval.
2	Administrative Savings harvest.
3	Transfer to Joint Materiel Agency for supply of medical allowance list.
4	Joint Ammunition Logistic Organisation for Typhoon (gun) 22mm rounds.
5	Increased scope for the number of Patrol Boats from 12 to 14.
6	Skilling Australia's Defence Industry harvest and transfer to DSG for office fit out in Darwin.
7	Transfer to DSG for upgrades of wharf facilities at Darwin and Cairns.
8	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $72.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $1.6m having been applied to the remaining life of the project.**
9	**The BAE contract is a fixed price contract which does not contain indexation or foreign exchange and therefore base date dollar value is the same as current dollar value.**
10	**Other expenditure comprises: Legal Services $1.3m, Purchase of Rafael Typhoon Cannons $5.3m, Purchase of Cryptographic equipment $2.4m, Consultant Activities $7.1m, Fuel Settlement Deed $1.4m and other operating and capital expenditure not attributable to the aforementioned top two contracts.**

11	**Other expenditure comprises: DMS supplies in support of OR, $0.7m, Software upgrades\installations, $0.2m, Site Project Management Services for four rectification periods, $0.3m, generator hire in support of OR activities, $0.1m and $0.2m of other operating and capital expenditure not attributable to the aforementioned top two contracts.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Variations due to contractor achievement, cost savings with retirement of contingency and delays in finalisation of BAE (PRISM III) contract.**
			Overseas Industry	
		(0.5)	Local Industry	
			Brought Forward	
		(0.5)	Cost Savings	
			FOREX Variation	
		(0.3)	Commonwealth Delays	
7.2	**5.8**	**(1.3)**	**Total Variance**	

2.4 Contract Details

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
DMS	Dec 03	316.6	391.6	Variable	SMART 2000/ ASDEFCON	**1**
BAE	Sep 04	13.0	16.1	Fixed	SMART 2000/ ASDEFCON	**2**

Notes	
1	The majority of the variation in price is as a result of the additional 2 vessels. There have been other minor contract changes that have not had a significant impact on the price.
2	The variation in price is as a result of the PRISM III acquisition and installations on the additional 2 vessels.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
DMS	12	14	Armidale Class Patrol Boats	
BAE	12	14	PRISM III System	

Major equipment received and quantities to 30 Jun 11

All 14 boats accepted at IOC. Engineering and maintenance arrangements established.

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	ACPB	Feb 04		Feb 04	0	
Critical Design	ACPB	May 04		Apr 04	(1)	

3.2 Contractor Test and Evaluation Progress

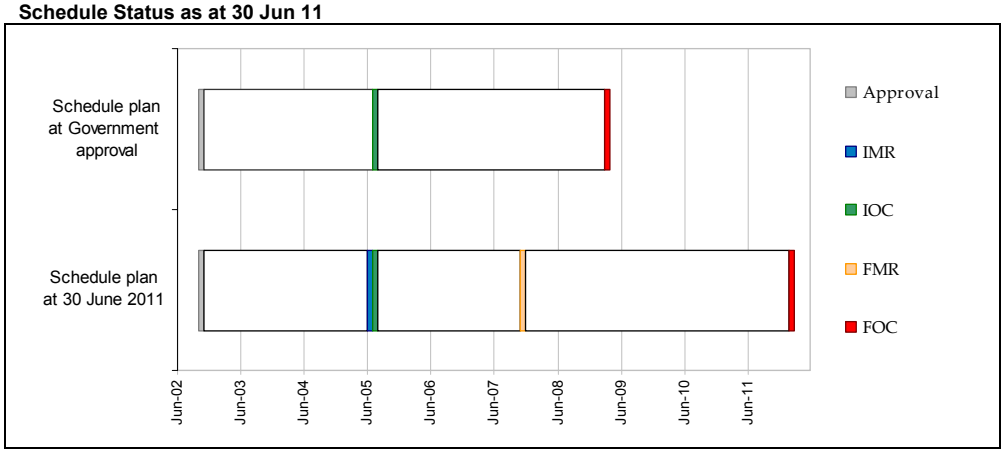
Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Acceptance	**ACPB 01 (HMAS ARMIDALE)**	May 05		Jun 05	1	1
	ACPB 02 (HMAS LARRAKIA)	Oct 05		Nov 05	1	1
	ACPB 03 (HMAS BATHURST)	Nov 05		Dec 05	1	1
	ACPB 04 (HMAS ALBANY)	Mar 06		Apr 06	1	1
	ACPB 05 (HMAS PIRIE)	Mar 06		Apr 06	1	1
	ACPB 06 (HMAS MAITLAND)	Jun 06		Jun 06	0	
	ACPB 07 (HMAS ARARAT)	Jul 06		Jul 06	0	
	ACPB 08 (HMAS BROOME)	Oct 06		Oct 06	0	
	ACPB 09 (HMAS BUNDABERG)	Nov 06		Nov 06	0	
	ACPB 10 (HMAS WOLLONGONG)	Mar 07		Apr 07	1	2
	ACPB 11 (HMAS CHILDERS)	Mar 07		May 07	2	2
	ACPB 12 (HMAS LAUNCESTON)	Jun 07		Jul 07	1	2
	ACPB 13 (HMAS MARYBOROUGH)	Sep 07		Sep 07	0	
	ACPB 14 (HMAS GLENELG)	Nov 07		Nov 07	0	

Notes	
1	Boats 1-5 delayed due to contractor labour shortages - permissible delays.
2	Boat 10-12 delayed due to configuration changes and change to delivery location – permissible delays, plus defect rectifications by the contractor.

3.3 Progress toward Materiel Release and Operational Capability Milestones

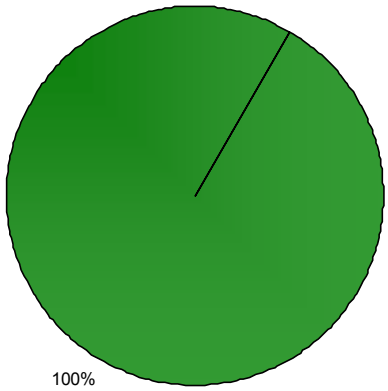
Item	Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Jun 05**	**N/A**	
Initial Operational Capability (IOC)				
ACPB 01	N/A	Jul 05	N/A	The IOC date for each boat was not specified by Navy until after boat acceptance had been achieved.
ACPB 02	N/A	Jan 06	N/A	
ACPB 03	N/A	Feb 06	N/A	
ACPB 04	N/A	May 06	N/A	
ACPB 05	N/A	May 06	N/A	
ACPB 06	N/A	July 06	N/A	
ACPB 07	N/A	Aug 06	N/A	
ACPB 08	N/A	Nov 06	N/A	
ACPB 09	N/A	Nov 06	N/A	
ACPB 10	N/A	May 07	N/A	
ACPB 11	N/A	Jul 07	N/A	
ACPB 12	N/A	Aug 07	N/A	
ACPB 13	N/A	Oct 07	N/A	
ACPB 14	N/A	Nov 07	N/A	
Final Materiel Release (FMR)	**N/A**	**Nov 07**	**N/A**	
Final Operational Capability (FOC)	Mar 09	**Feb 12**	36	Delay in achieving FOC due to outstanding latent defects that must be rectified to satisfy Navy OR requirements. OR of the first vessel was achieved on 19 May 2010. A rectification program has been instigated and is on schedule to bring all vessels to the product baseline by December 2011. This will enable the achievement of FOC for the class **February** 2012. HMA Ships **GLENELG, MARYBOROUGH, CHILDERS, ARMIDALE, LAUNCESTON, LARRAKIA, BATHURST and ALBANY** have completed their rectification work as scheduled.

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: The project shall provide sufficient operational capability across the following elements: • Range; • Reliability; • Speed; • Towing; • Fit for purpose; and • Sea Keeping/Handling Characteristics.
	Amber: N/A
	Red: N/A

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Contractor inability to provide or support vessels throughout the life of the in-service phase of the contract (performance risk).	Actively manage and monitor performance under the contract through the partnering governance frame work and Quarterly Progress Reviews and as necessary exercise contractual remedies.
There is a chance that FOC for the ACPB Class will be affected by the inbility of the contractor to meet the rectification schedule leading to an impact on cost and schedule.	Actively engage with the contractor to manage the remediation program and emergent work to ensure commitment to the schedule is maintained. Maintain direct oversight over contractor activities and consultation on program risk.

There is a chance that the FOC for the ACPB Class will be affected by RAN Operational Commitments leading to an impact on cost and schedule.	Open dialogue and regular meetings with Navy and the contractor to ensure operational requirements are considered during planning activities and managing the rectification schedule. Streamline the Operational Release process for the remainder of the Class.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
There is a chance that the FOC date for the ACPB Class will be affected by delays in Navy approving Operational Release of the vessels.	**Open dialogue and regular meetings with Navy to ensure commitment to the schedule is maintained.**

5.2 Major Project Issues

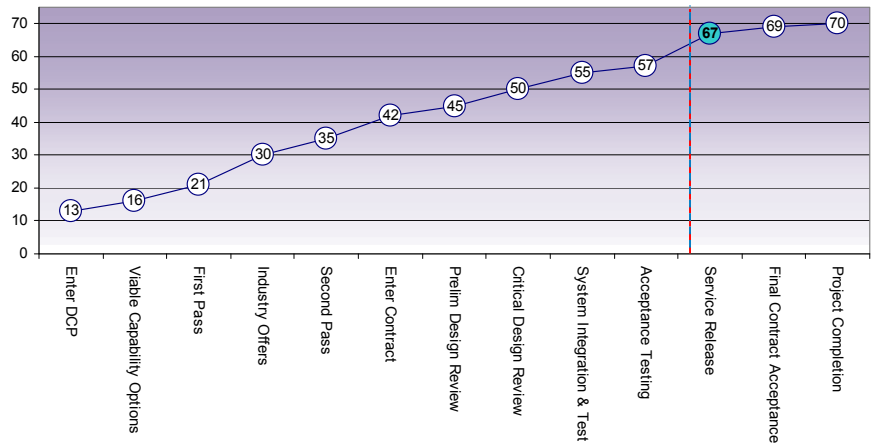
Description	Remedial Action
Completion of the ACPB Extended Rectification Periods.	HMAS GLENELG underwent an Extended Rectification Period in 2008 where all major build related defects were rectified. The modifications were trialled and refined during 2009 and a program is now underway to bring the remaining vessels up to the GLENELG product baseline. To date HMA Ships **MARYBOROUGH, CHILDERS, ARMIDALE, LAUNCESTON, LARRAKIA, BATHURST and ALBANY** have completed rectification work with the last vessel due to be completed in December 2011.
Installation of the modified fuel treatment and filtration systems.	The major cause of the original high pressure (HP) fuel pump failures was resolved by a combination of system redesign and revised operating procedures. Shrouds have been fitted to the fuel pumps to mitigate risk should a failure occur. **Modified fuel oil purifier sets were trialed on three vessels and results indicated that the modifications were successful in reducing the amount of returned fuel and in preventing the shearing of excess fuel which contributed to the cloudy fuel issue. Fitment of these purifier sets to the remaining vessels has commenced**. The cause of recent fuel pump failures thought to be a lack of lubrication is still being investigated. However, these failures are not related to the previously identified water in fuel problems. **The OEM recently completed the installation and functional testing of a modified high pressure fuel pump and data collection equipment on HMAS MARYBOROUGH. The equipment is working as anticipated and thus far no faults have been reported.**
Limitations on the use of ACPB Austere Accommodation due to Toxic Hazard.	HMAS GLENELG had exhaust system modifications implemented during the Extended Rectification Period in 2008 including modifications to the black/grey water system. A gas ingestion trial undertaken in 2009 found no traces of toxic gases and confirmed that the modifications have been successful in overcoming exhaust ingestion into the Austere Accommodation (AAC). These changes have now been completed on HMA Ships **MARYBOROUGH, CHILDERS, ARMIDALE, LAUNCESTON, LARRAKIA, BATHURST and ALBANY**. Modifications to the H_2S and CO sensors and connection to Marinelink were also completed in all vessels. This has enabled Navy to lift the restrictions on the use of the AAC on the modified vessels.

Sea Boat Davit performance does not meet contractual requirements.	**An upgrade to the hydraulic pressure piping, davit hydraulics and power pack was completed on HMAS MARYBOROUGH however test results indicated that the modified system was still unable to meet the contracted ship specification. Due to the ongoing failure by AUSTAL to deliver an acceptable solution, DMS has now engaged a specialist hydraulic company to carryout system redesign and modifications to HMAS BUNDABERG and will conduct their own tests to assess system performance to enable delivery of a compliant davit hydraulic system.**
A range of evaluations conducted on the ACPB training delivered by the contractor have consistently highlighted that the training management regime does not satisfy the ACPB contract with Defence.	**DMS continues to make steady progress with the remediation of the deficiencies identified in ACPB training. Revised curriculum for all courses has been delivered and is under review by the Training Authorities. DMS has engaged a new trainer who will take on responsibility for maintenance of the ACPB course material and will provide a level of redundancy to the five RAN trainers.**

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
Service Release	Project Status	10	9	10	10	9	8	9	65
	Explanation	• **Technical Difficulty:** The capability has been released for operational use but FOC has not yet been achieved and some elements of contract delivery remain outstanding. • **Commercial:** Some contracted requirements against acquisition contract remain outstanding and performance against the MAA and MSA is broadly satisfactory.							



2009-10 DMO MPR Status - - - - 2010-11 DMO MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
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 ACPB 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 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
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.	Requirements 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.	Contract Management
The ACPB contract is principally a 15 year fixed price contract with the option for a 5 year extension. Existing contract provisions provide no incentive to the contractor to improve or implement changes in the delivery of In Service 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.	**Contract Management**

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall
Branch Head	Mr Alan Evans
Project Director / Manager	Mr Frank Kresse

Project Data Summary Sheet[214]

Project Name	**ANZAC ANTI-SHIP MISSILE DEFENCE**
Project Number	**SEA 1448 Ph 2B**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	Nov 03
Government 2nd Pass Approval	Sep 05
Total Approved Budget (Current)	**$462.0m**
2010-11 Budget	**$73.8m**
Project Stage	**Acceptance Testing**
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA1448 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 SEA1448 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 (ESSM) 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 (TIR), at the same time replacing the obsolescent Krupp Atlas 9600.

1.2 Current Status

This has been a Project of Concern **since June 2008.**

Cost Performance

The Project is currently working within its approved budget for delivery of the lead ship; determination of any real cost increase required to complete all eight ships will be advised to Government on successful completion of lead ship sea testing after July 2011.

[214] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Schedule Performance Based on the revised acquisition strategy approved by Government in July 2009, the systems being delivered in Phase 2B are currently on schedule. The overall variance from the original Second Pass (eight ship) Government approval of the Project in September 2005 is **19 months.**
Materiel Capability Performance **Between October 2010 – June 2011, harbour and sea acceptance testing was successfully carried out in the lead ship HMAS *Perth*. Based on this successful testing, it is anticipated that the Chief of Navy will formally accept the ASMD upgrade capability delivered to HMAS *Perth* and its associated support systems in July/August 2011.**

1.3 Project Context

Project	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 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 for $404m. 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. Phase 2A is a low risk component whilst it remains part of the confederated project and there are no Phase 2A risks that will migrate to the ASMD Project as enterprise risk. Due to its leading edge and developmental technology, Phase 2B is a high risk phase either as a stand-alone component or as part of the confederated ASMD Project, and these risks do migrate as enterprise risks to the confederated ASMD Project. 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 scheduled to accept this initial operational capability in July/August 2011.**
Uniqueness	The phased array radar component of the Anti-Ship Missile Defence 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 PAR system.
Major Challenges	During 2007, it was determined from system engineering reviews and DSTO modelling and analysis that the integration of the phased array radar with the existing ANZAC Class radar systems suggested that existing financial provisions were insufficient to deliver an eight ship Program without a real cost increase. As a direct result, Defence reviewed the acquisition strategy for the Project and modified it to a single ship installation that would need to prove the capability at sea before consideration was given by Government to install into the remaining ships within the Class. Government agreed to this updated strategy in July 2009.

Other Current Projects/Sub-Projects	**SEA 1448** Phase 2A of the ASMD Project **is intended 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.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1448 Phase 2A	This is the initial phase of the ASMD Project that will 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 Phases 2A and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. As a result, any delays in delivery of Phase 2B will drive delays with Phase 2A, but as Phase 2A is a low risk Project the risk to delays from Phase 2A to Phase 2B is assessed as minimal.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Sep 05	Original Approved	248.8		248.8		
Mar 06	Real Variation – Transfers	155.4	155.4			1
May 06	Real Variation – Transfers	(6.7)	(6.7)			2
		148.7		148.7		
Jun 10	Price Indexation			**76.1**		**3**
Jun 10	Exchange Variation			**(11.6)**		
Jun 10	**Total Budget**	397.5		**462.0**		
2.2 Project Expenditure History						
Prior to Jul 10		**28.8**	33.9		BAE Systems Australia	
		37.8	44.5		SAAB Systems Pty Ltd	
		57.1	69.7		CEA Technologies (P3 Contract)	**4**
		54.7	64.4		CEA Technologies (PAR Production)	**5**
		7.9	8.7		ICWI Membership	
		3.7	3.7		Other	**6**
		190		224.9		
FY to Jun 11						
		15.0	**17.6**		BAE Systems Australia	
		8.6	**10.1**		SAAB Systems Pty Ltd	
		0	**0**		CEA Technologies (P3 Contract)	
		24.0	**28.3**		CEA Technologies (PAR Production)	
		0	**0**		ICWI Membership	
		1.8	**1.8**		Other	**6**
		49.4		**57.9**		
Jun 11	**Total Expenditure**	**239.4**		**282.8**		
Jun 11	**Remaining Budget**	**158.1**		**179.2**		

Notes	
1	$155.355 transferred from SEA448 PH 2A after Government agreed that initial Very Short Range Air Defence (VSRAD) was to be replaced with the phased array radar 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	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $71m. 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.**
4	(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 phased array radar system.
5	This is the current production contract for the delivery of the first phased array radar system into HMAS Perth (lead ship). This contract is a single ship contract in accordance with the revised

	acquisition strategy, but has options that can be activated by the Commonwealth for an additional seven ship sets builds if Government approves this post successful at sea testing of the lead ship. 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 includes forward component buys.
6	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.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The Project has underspent by $15.9m against the 2010-11 Pre-ERC exercise. The reasons behind the underspend were identified from the outset during the 2010-11 Budget Estimates exercise as strategic opportunities and a high risk of non achievement due to government restrictions on project funding outside of Ship 1 approval.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(15.9)	Commonwealth Delays	
73.8	**57.9**	**(15.9)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 11 $m			
BAE Systems Australia	Jul 05	2.1	**57.7**	Variable	Alliance	
SAAB Systems Pty Ltd	Jul 05	3.1	**67.0**	Variable	Alliance	
CEA Technologies P3 Contract	Dec 05	8.9	69.6	Variable	ASDEFCON	
CEA Technologies PAR Production Contract	Dec 08	16.0	109.6	Variable	ASDEFCON	
Interrupted Continuous Wave Illumination (ICWI) Membership	Nov 08	20.9	20.9	n/a		

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 11		
BAE Systems Australia	-	2	Ship 1 and land based test system	
SAAB Systems Pty Ltd	-	2	Ship 1 and land based test system.	
CEA Technologies P3 Contract	2	2	Phased array radar systems for Ship 1 and land based test system	1
CEA Technologies PAR Production Contract	1	2	Phased array radar systems for Ship 1 and land based test system	2
Interrupted Continuous Wave Illumination (ICWI) Membership	-	-	Technical documentation and Intellectual Property for use with the Evolved Seasparrow Missile	

Major equipment received and quantities to 30 Jun 11

Most Critical/Detailed (PAR) Design Reviews have been completed.

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 phased array radar system.
2	This is the current production contract for the delivery of the first phased array radar system into HMAS Perth (lead ship). This contract is a single ship contract in accordance with the revised acquisition strategy, but has options that can be activated by the Commonwealth for an additional seven ship sets builds if Government approves this post successful at sea testing of the lead ship. 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 includes 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		May 06	2	1
	Mk3E Combat Management System – Stage 2 (Requirements Review)	N/A		Aug 09	N/A	1
	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Functional Review)	Jun 06		Aug 06	2	
Preliminary Design	Mk3E Combat Management System/Phased Array Radar Preliminary Design Review	Dec 06		Aug 07	8	1
	ASMD Shore Facilities (HMAS *Stirling*)	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		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		Dec 08	N/A	
	Phased Array Radar	Oct 07		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 has been 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 is no impact to final Stage 2 software release date.**

3.2 Contractor Test and Evaluation Progress

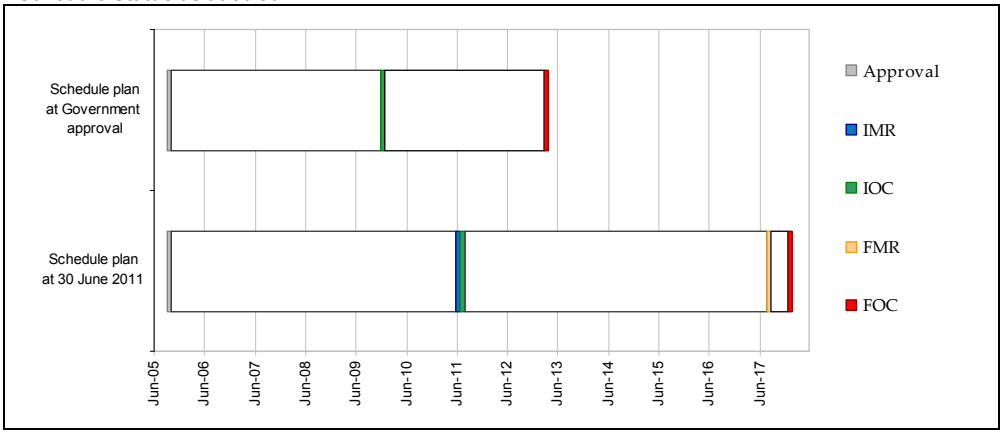
Test & Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Phased Array Radar System/Navigation Radar System - Harbour Phase)	Dec 08	Aug 10	Aug 10	20	1
Acceptance (Initial Operational Capability)	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Navigation Radar System)	Dec 09	**Jul 11**	**Jul 11**	**19**	1

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.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Jun 11**	N/A	
Initial Operational Capability (IOC)	Dec 09	**Jul 11**	**19**	Variance is directly linked to the change of acquisition strategy - movement from an eight ship program to a single ship program.
Final Materiel Release (FMR)	**Jul 17**	**Jul 17**	0	***Note: this milestone is subject to variation dependant on approval of ships 2-8 by Government.***
Final Operational Capability (FOC)	Mar 13	**Dec 17**	57	Variance is directly linked to the change of acquisition strategy - movement from an eight ship program to a single ship program.

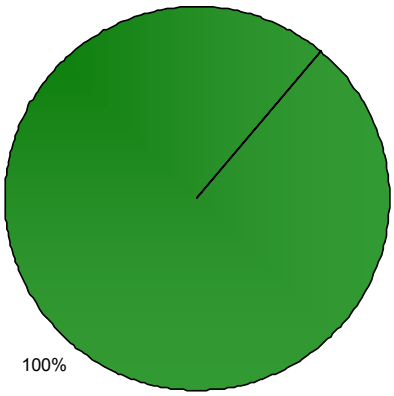
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

Based on lead ship (HMAS *Perth*) successful acceptance testing and initial materiel certification being achieved in June 2011, 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

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 initial materiel certification; however this risk will not be retired until all capability is delivered (Stage 2 software update in 2013).**
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.
There is a chance that under the revised acquisition strategy of a lead ship fully tested before Government approves additional ships, that obsolescence of critical phased array radar components will occur.	Commonwealth is working to introduce a Contractor acquisition obsolescence monitoring program that advises of component obsolescence and any requirement to procure.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

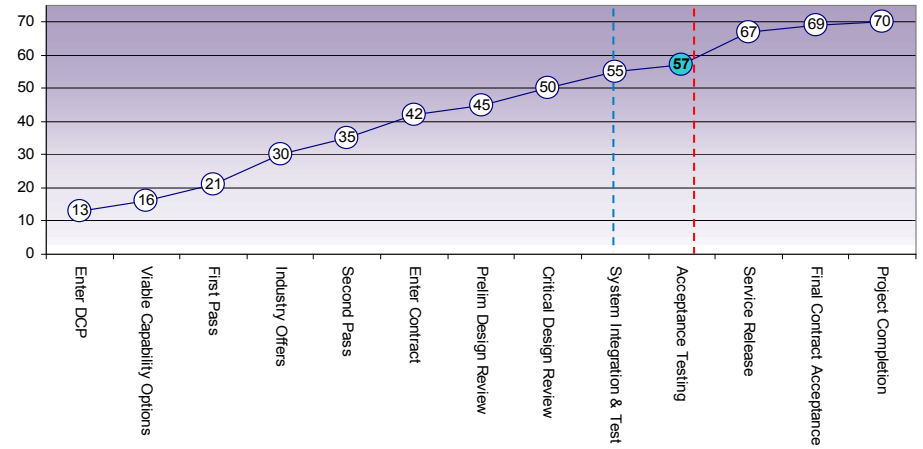
5.2 Major Project Issues

Description	Remedial Action
Due to technical problems (which have since been rectified), the phased array radar system factory acceptance testing for the lead ship has been delayed by six months.	**Based on the successful installation of the phased array radar system into HMAS *Perth* in October 2010, this issue has been reassessed by the Project and has been retired.**

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	8	**8**	8	8	**9**	8	8	**57**
Acceptance Testing	Project Status	**8**	8	**9**	8	**9**	8	8	**58**
	Explanation	• **Requirement: Based on the completion of this phase of testing and achievement of the initial materiel certification of the initial Stage 1 capability in June 2011, the benchmark maturity score was updated to reflect that testing continues to confirm the originally contracted requirements.**							



2009-10 DMO MPR Status - - - - - | 20010-11 DMO 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 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall, RAN
Branch Head	CDRE Mick Uzzell, RAN / **CDRE Michael Houghton, RAN**
Project Director / Manager	CAPT Rob Elliott, RAN

Project Data Summary Sheet[215]

Project Name	**COLLINS REPLACEMENT COMBAT SYSTEM**
Project Number	**SEA 1439 Phase 4A**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 02
Total Approved Budget (Current)	**$450.4m**
2010-11 Budget	**$4.8m**
Project Stage	Service 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 Royal Australian Navy (RAN) *COLLINS* Class submarines with the United States (US) Navy (USN) Tactical Command and 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 HMA Submarine 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
The project is working within project approval; no real cost increases have been required.

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 2015, with Final Materiel Release (FMR) in January 2016.

Materiel Capability Performance
The RCS baseline (CS04) installed in HMA Submarines 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 WALLER and FARNCOMB is consistent with that identified in the project. **Sonar towed array trials scheduled for DECHAINEUX were completed with OR of the COLLINS Towed Array Processor (CTAP) being awarded on 20 January 2011.**

Installations and Harbour Acceptance Testing for the upgraded combat system baseline (CS05) installed in DECHAINEUX were completed in February 2010. Installation of CS05 baseline in HMA Submarine SHEEAN is progressing consistent with the FCD schedule. The project schedule is dependent on boat FCD,

[215] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

consequently the completion date may vary. IOR of the CS05 baseline as installed in DECHAINEUX, scheduled for December 2010, **was finalised by the project office in August 2010. With completion of the external review process IOR approval occurred on 8 March 2011.**

IOR marks the point at which the RAN is satisfied that the capability is fit for purpose and when management passes from Defence Materiel Organisation (DMO) to the RAN. Following IOR the capability enters a period of Navy Operational Test and Evaluation (OT&E) to determine the performance boundaries and if the capability is suitable for OR.

OR is the milestone which represents the In-Service date at which CN is satisfied that the equipment is in all respects ready for operational service.

1.3 Project Context

Project	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 standard DMO 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 DMO and industry. This role has required close collaborative relationships to be formed between the DMO, the USN and industry partners in Australia and the US. By adopting an innovative approach, the project developed a successful acquisition strategy for managing the difficult situation of merging rapidly changing and sensitive US technology with the existing Australian platform sensors, and other submarine infrastructure. This also includes complex constraints associated with International Traffic in Arms Regulations (ITAR) and the export control of US military equipment. In July 2001 the Minister for Defence terminated the original tender process for the *COLLINS* Class RCS and made the following announcement: "The Government has decided that a comprehensive arrangement with the USN on submarine issues is in Australia's best strategic interests and has therefore decided that the selection of the combat system for the *COLLINS* Class submarines cannot proceed at this time." In September 2002 the Government approved the Project based on the procurement of the following off-the-shelf sub-systems: • the US Tactical Command and 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 Tactical Command and Control System is being supplied under an Armaments Cooperative Project which provides for system upgrades developed on a bi-annual basis. The project will provide one system baseline for the first two submarines and a later baseline for the remaining four submarines. These initial baselines 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 and at locations in South Australia and Western Australia. Installation in all submarines is coordinated with the submarine docking program and is currently scheduled to complete in 2015. 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, 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 placed additional pressure on the Commonwealth project team to manage and coordinate a number of separate contracts and ultimately the integration, installation and testing of the delivered products. Participation in a Joint Development Program with the USN to introduce hardware and software upgrades for Tactical Command and Control System and implementing that evolving system baseline into RCS.
Major Challenges	Changes to the submarine docking program challenge the completion of the RCS installation schedule. This is being managed by engaging with the RAN to maximise compatibility between the submarine docking cycle and installation schedules.
Other Current Projects/Sub-Projects	**SEA 1439 Phase 1-6:** Following completion of SEA 1114 (Submarine Build Program) it was planned to address the remaining discrete upgrades and material deficiencies identified under that program through SEA 1439. There are six phases of project SEA 1439 constituting studies, replacement, and enhancement and improvement programs. The six phases, excluding project Phase 4A RCS are: • Phase 1&2 Platform and Combat System Studies (Both Closed); • Phase 3 Reliability and Sustainment Improvement and Phase 4B Weapon and Sensor Enhancement Program (both current); and • Phase 5 Continuous Improvement Program and Phase 6 Sonar Replacement System (Pre 2nd Pass and Pre 1st Pass respectively).

1.4 Linked Projects

Project	Description of Project	Description of Dependency
Replacement Heavyweight Torpedo System SEA 1429 Phase 2	To acquire a replacement Heavyweight Torpedo for the *COLLINS* class submarine to replace the USN Heavyweight Torpedo currently in service with the RAN.	Required to provide Heavyweight Torpedoes compatible with RCS.
Navigation Display Systems SEA 1430 Phase 2A	To provide Electronic Chart Display and Information Systems for the navigation of RAN ships and submarines. The project also delivers Navigation Display System systems to selected command and training shore establishments.	Navigation Display System installed in conjunction with RCS.
COLLINS Class Improvement Program SEA 1439 Phase 5B2	To provide *COLLINS* Class Submarines with a replacement communications centre and a High Data Rate communications capability, and to provide the *COLLINS* Class Submarines with an upgrade to the Sub-Microwave Electronic Support Measures.	Possible inclusion of Tactical Data Link.
Sonar Improvement Program SEA1439 Phase 6	To upgrade the existing sonar system in the *COLLINS* Class Submarines through a program of replacement and improvement.	Sonar tracking and analysis data passed to the RCS.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Sep 02	Original Approved	455.3		455.3		
May 03	Real Variation – Transfers	(0.9)	(0.9)			1
Aug 04	Real Variation – Budgetary Adjustments	(0.8)	(0.8)			2
		(1.7)		(1.7)		
Jun 11	Price Indexation			**56.5**		**3**
Jun 11	Exchange Variation			**(59.7)**		
Jun 11	**Total Budget**	453.6		**450.4**		
2.2 Project Expenditure History						
Prior to Jul 10					US Government (FMS)	4
			79.2			
			57.9		US Government (ACP)	5
			99.2		Raytheon Australia	
			26.5		Thales Underwater Systems	
			26.8		Sonartech Atlas	
			132.7		Other	**6**
				422.3		
FY to Jun 11					US Government (FMS)	
			0			
			0.2		US Government (ACP)	
			0		Raytheon Australia	
			0		Thales Underwater Systems	
			0		Sonartech Atlas	
			3.0		Other	**7**
				3.2		
Jun 11	**Total Expenditure**			**425.5**		
Jun 11	**Remaining Budget**			**24.9**		

Notes	
1	Transfer to 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 $1m having been applied to the remaining life of the project.**
4	The FMS case value is $79.2 (written back from $143.9m - see Note 1 in Section 2.4 below). The supplies remaining under the most significant FMS case would then be delivered under the Armaments Cooperative Project (ACP).
5	The ACP is the main vehicle for supplying equipment and services for the Tactical Command and Control hardware and software development.

6	Other expenditure **of $132.7** includes an amount of $43.6m to ASC for platform design and installation (under the Through Life Support Agreement - Submarine Sustainment Contract); a total of $42.3m on supplies and services provided by other Contractors. The remaining expenditure comprises: operating expenditure, consultants, contingency.
7	**The amount of $3.0m is predominantly ASC Pty Ltd and Engineering & Scientific System contracts with remainder as sundry contractor services.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**DMO directive to reduce Australian industry contracted labour involvement in project management; engineering and testing activities resulted in lower local industry use than planned. Integrated Logistics System remediation, Advanced Processor Build (APB) software development and Defence Science and Technology Organisation (DSTO) Capital reduction have also contributed to the overall budget reduction this financial year.** **(Table does not sum precisely due to rounding)**
			Overseas Industry	
		(1.5)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
4.8	**3.2**	**(1.5)**	**Total Variance**	

2.4 Contract Details

Contractor	Signature Date	Price (base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 11 (current) $m (Note 4)			
US Government (FMS)	Jun 03	143.9	79.2	Fixed	FMS	1
US Government (ACP)	Nov 04	92.7	121.0	Fixed	ACP	2
Raytheon Australia	Aug 03	53.9	101.6	Variable	ASDEFCON Strategic	3
Thales Underwater Systems	Oct 03	22.9	26.47	Variable	ASDEFCON Strategic	
Sonartech Atlas	Jun 03	22.5	35.76	Variable	ASDEFCON Strategic	

Notes	
1	Included on-going involvement in the Tactical Command and Control hardware and software development process for the duration of the MOU. The FMS Case valued at $143.9M was written back to $79.2M with the introduction of the Armaments Cooperative Project (ACP).
2	Includes on-going involvement in the Tactical Command and Control hardware and software development process for the duration of the MOU. The ACP value was increased from $92.7M and subsequently to approximately $121M to support system changes and replacement of the Multi-Tube Weapon Simulator. The ACP incorporates elements from SEA 1429 Phase2-Heavyweight Torpedo and Combat System Sustainment. The SEA 1439 Phase 4A component of the original $92.7m was $51.75m and has a current value of $68.7m.
3	Includes on-going involvement in the Tactical Control and Command hardware and software development process for the duration of the Memorandum of Understanding (MOU). 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 SEA1439 Phase 4A.
4	Base date dollars have not been provided for this project. As the prime systems integrator the Commonwealth has, as a risk management strategy, undertaken a process of incremental contracting, by way of both new contracts and changes to existing contracts, for work packages as they are defined. This strategy results in varying base dates for work packages contracted by each contract change. In particular, the materials component of any contract change is struck in current prices and not linked to the contract base date. As a result expressing real price increases/decreases at a total prime contract level in base date dollars is not feasible.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 11		
US Government (FMS)	7	7	US Tactical Control Command Subsystem	
US Government (ACP)	7	7	US Tactical Control Command Subsystem	
Raytheon Australia	7	7	Tactical System sub-systems and components	
Thales Underwater Systems	7	7	Scylla Sonar and associated sub-systems	
Sonartech Atlas	4	7	**Sonar subsystem equipment**	1

Major equipment received and quantities to 30 Jun 11

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 quantity 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 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 subsystems 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 submarine docking program. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the submarine FCD program. In some instances slippage has occurred as a result of project management intervention to delay finalisation of sub-system and major component design until the evolving US Tactical Command and 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 impairment cost. Preliminary Design Review and Critical Design Review slippage has not impacted capability delivery because of the dependency on the submarine docking 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 & Evaluation Progress

Test & 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		Jun 06 - Apr 08	0	
	Combat System - Harbour Acceptance Trials Stage1-3	Nov 06 - May 08		Nov 06 - May 08	0	
	Combat System-Sea Acceptance Trials Stage 1-2	Dec 07 - Jun 08		Dec 07 - Jun 08	0	
	Category 3 System Integration Testing Combat System CS05.00.01 (TI06/APB06)	Apr 09		Apr 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.00 (TI06/APB06)	Nov 09		Dec 09	1	1
	Category 3 System Integration Testing Combat System CS05.01 (TI06/APB06)	Jan 09		Jan 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.01 (TI06/APB06)	Feb 10		Feb 10	0	
	Category 5 Sea Acceptance Trials Combat System CS05.01 (TI06/APB06)	Apr 10		Aug 10	4	1

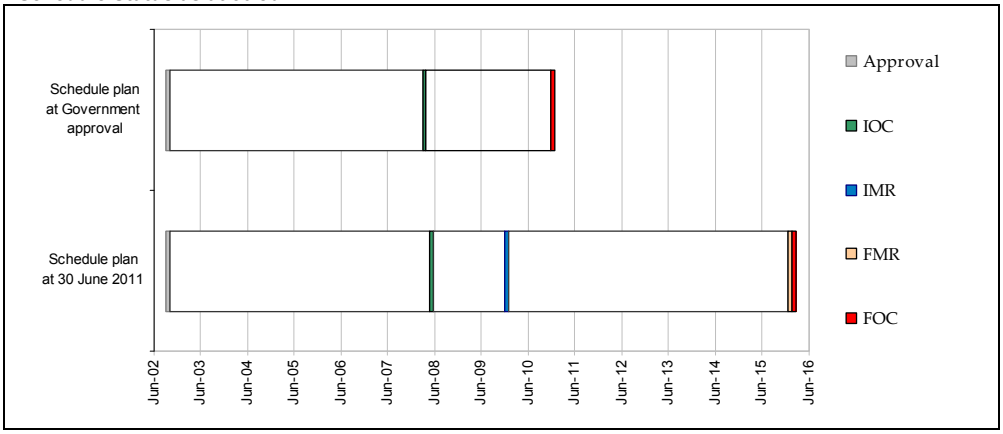
Notes	
1	**Combat System CS05.01 baseline Sea Acceptance Trials and associated shore based analysis were completed in August 2010. The variance for CAT 4 & CAT 5 testing is due to HMA Submarine DECHAINEUX's FCD schedule delays and the need to complete additional testing of the Towed Array (TA) (previously delayed because of non project related equipment malfunction) and the ECDIS. The ECDIS and the TA increased the scope of the subsequent CAT 5 trials.** Combat System CS05 baseline 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. **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 (IMC) for DECHAINEUX was achieved 22 September 2010. CS05 Initial Operational Release (IOR) was awarded by Chief of Navy on 8 March 2011. Operational release of the CS04 COLLINS Towed Array Processor (CTAP) was awarded on 20 January 2011.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Dec 09**		The RCS baseline (CS04) installed in HMA Submarines 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.
Initial Operational Capability (IOC)	Mar 08	May 08	2	
Final Materiel Release (FMR)	**Jan 16**	**Jan 16**		
Final Operational Capability (FOC)	2010	2016	Up to 72	WALLER and FARNCOMB have achieved OR and are awaiting confirmation by the Capability Manager that other FIC are complete. FOC date was set at project approval before the submarine FCD programme 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. The project has been able to recover some schedule following the promulgation of the Integrated Master Schedule. However, there is no opportunity to recover the original schedule. The final installation will be completed in COLLINS in May 2015, with FOC currently expected to occur in 2016.

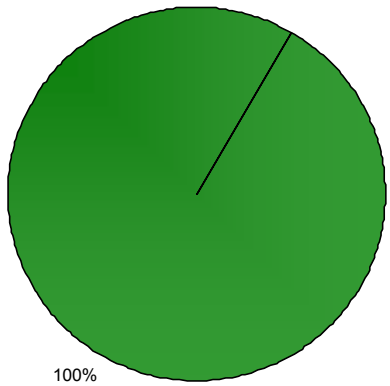
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

CAT5 sea trials for CS04 completed in July 2009. CS04 installed in WALLER and FARNCOMB. CS05 installed and CAT 5 sea trials have been completed with full analysis completed in August 2010.

Amber:

N/A

Red:

N/A

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 replacement combat system installation schedule will be affected by on-going changes to the FCD schedule and boat availability, leading to schedule extensions and significant cost increases to be borne by the project.	This risk is being treated by: • Monitoring the impact of a revised Usage Upkeep cycle. • Establishing project prolongation costs. • Assigning contingency funding to the last boat installation. • Monitoring remaining project funds and budget spend.
There is a possibility that completion of Category 3 and 4 Testing of future system integration and boat installations will be affected by a shortage of skilled personnel leading to an impact on schedule.	• **This risk has been retired.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

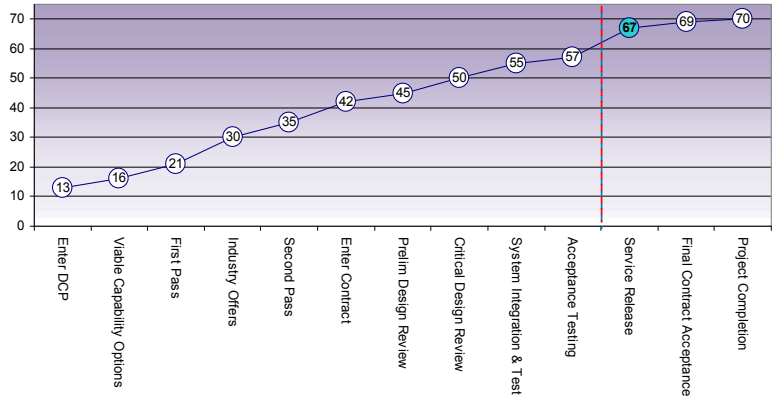
5.2 Major Project Issues

Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the installation schedule.	• **This risk has been reduced as a result of the stabilisation of the COLLINS Integrated Master Schedule (IMS) in April 2010, which has been accepted by all relevant parties.**

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	10	10	10	9	9	67
Service Release	Project Status	9	**8**	9	**9**	9	9	9	62
	Explanation	• **Cost:** Confidence in cost is lower than the benchmark because of potential cost effects of delay due to submarine availability affecting the installation program. • **Schedule: The last boat installation for the project to achieve FMR is HMA Submarine COLLINS, which has its FCD scheduled to complete in May 2015. FCD timings have changed substantially in the past, however with the introduction of a CM controlled COLLINS IMS, the project is now confident that schedule will be met.** • **Requirements, Technical Understanding and Technical Difficulty:** These elements are slightly lower than the benchmark to reflect that the final version of software (APB 07) being developed under the Project has not yet been fully tested and installed which is scheduled for **mid** 2011. **Additionally the technical understanding is at variance because transitioning of CS05 into service for HMA submarine DECHAINEUX has not yet occurred and is planned for late 2011. Transitioning of the final baseline on HMA Submarine COLLINS is expected in early 2016.**							



2009-10 DMO MPR Status - - - - -

2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing is available, in particular if DMO is to be the prime system integrator.	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 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 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 2010-11

Position	Name
General Manager	Mr Warren King
Division Head	AVM Chris Deeble
Branch Head	CDRE Bronko Ogrizek
Project Director	CMDR Stephen O'Hearn
Project Manager	**Mr Eric McCandless**

Project Data Summary Sheet[216]

Project Name	**REPLACEMENT HEAVYWEIGHT TORPEDO**
Project Number	**SEA 1429 Phase 2**
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jul 01
Total Approved Budget (Current)	**$425.4m**
2010-11 Budget	**$19.2m**
Project Stage	Acceptance Testing
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is acquiring a Heavyweight Torpedo (HWT) for the Collins Class submarine to replace the United States Navy's (USN) Mk 48 Mod 4 HWT currently in service with the Royal Australian Navy (RAN). The torpedo is being supplied by the United States (US) Government under a Memorandum of Understanding (MOU), with work performed by Raytheon US and the US Naval Undersea Warfare Center (NUWC). The project is also acquiring associated logistic support, weapon system interface equipment, and operational support and test equipment. ASC Pty Ltd (ASC) is undertaking integration to the Collins Class submarine platform.

1.2 Current Status

Cost Performance

The project is working within the approved budget. Note: the project incurred a real cost increase to establish the MOU for the procurement of the torpedoes (as detailed at Section 2.1).

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, not related to HWT, during each submarine docking. As a result of these non project related delays, completion of the submarine modification program has slipped from 2010 to 2016.

Development of the HWT software is progressing to schedule and the Spiral 1 software baseline has achieved Operational Release (OR). The next software baseline to be implemented by the RAN will be **Advanced Processor Build (APB)** 4 and that development is progressing to schedule.

[216] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

The Torpedo deliveries from the US have been slower than planned but have had no operational impact on the RAN.
Materiel Capability Performance The replacement HWT with Spiral 1 software and the integration modifications to Collins Class Submarines were approved for OR by the Chief of Navy (CN) on 10 March 2010. **The replacement HWT with APB 4 software was approved for Initial Operational Release (IOR) by CN on 8 March 2011.** Operational Release is the milestone which represents the In-Service date at which CN is satisfied that the equipment is in all respects ready for operational service. Platform modifications have been completed in HMA Submarines WALLER, FARNCOMB and DECHAINEUX and are progressing in concert with the FCD for SHEEAN. Platform modifications in HMA Submarines COLLINS and RANKIN will be completed in conjunction with the FCD program. As first of class specific testing was carried out for WALLER, all subsequent testing for platform modifications will be undertaken in conjunction with standard post docking testing.

1.3 Project Context

Project	Explanation
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 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 MK 48 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 Mk 48 ADCAP torpedo. A Joint Project Office was then established in Washington, DC. Development of the Mk 48 ADCAP Common Broadband Advanced Sonar System (CBASS) torpedo will result in 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, a Torpedo Analysis Facility (TAF) at the Defence Scientific and Technology Organisation (DSTO); and upgrades to the Torpedo Maintenance Facility (TMF). The TAF has been formally transitioned to DSTO. Upgrades to the TMF and the management responsibility for torpedo sustainment, 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 Mk 48 Advanced ADCAP/CBASS 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 Challenges	Major challenges associated with the Project include the stability of the installation schedule when that schedule is dependent on the submarine FCD program. To date, emergent maintenance problems, not related to HWT, have resulted in significant slippage of the FCD program and, as a result, significant slippage in the SEA 1429 Phase 2 HWT Project installation programs. A second challenge is the management of the certification of the US developed Spiral software baselines for the torpedo within the Naval Technical Regulatory Framework. **RAN operational schedules and priorities may also present a challenge to the testing program.**
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1439 Phase 4A	Collins Class Replacement Combat System	Installation of the Replacement Combat System is to be completed on each boat, including modifications for the replacement torpedo, prior to commencement of the torpedo installation program.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Jul 01	Original Approved	238.1		238.1		1
Mar 03	Real Variation – Scope	213.3	213.3			
Aug 04	Real Variation – Transfers	1.0	1.0			2
Sep 04	Real Variation – Budgetary Adjustments	(0.2)	(0.2)			3
		214.1		214.1		
Jun 11	Price Indexation			**99.4**		**4**
Jun 11	Exchange Variation			**(126.3)**		
Jun 11	**Total Budget**	452.2		**425.3**		
2.2 Project Expenditure History						
Prior to Jul 10			194.9		US Government Initial MOU	
			13.4		US Government Follow on MOU	
			58.9		Other	
				267.2		
FY to Jun 11			**0.0**		US Government Initial MOU	**5**
			13.0		US Government Follow on MOU	
			4.8		Other	
				17.8		
Jun 11	**Total Expenditure**			**285.0**		
Jun 11	**Remaining Budget**			**140.3**		

Notes	
1	Heavyweight Torpedoes purchase under Armament Co-operative Project with the US.
2	Transfer from SEA 1429 PH1.
3	Administrative Savings Harvest.
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	**US Government Initial MOU is in the process of being closed and has no expenditure for FY 10/11.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Overseas variance is due to reduced Joint Project Office (JPO) operating costs. Local industry variance is due to less than planned work levels by ASC Pty Ltd. Forex variation due to stronger Australian dollar.**
		(0.7)	Overseas Industry	
		(0.6)	Local Industry	
			Brought Forward	
			Cost Savings	
		(0.1)	FOREX Variation	
			Commonwealth Delays	
19.2	**17.8**	**(1.4)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
US Government Initial MOU	Mar 03	$336.7	$336.7	Fixed	MOU Agreement	**1**
US Government Follow-on MOU	Nov 09	**$43.8**	**$50.8**	Fixed	MOU Agreement	**2**

Notes	
1	**US Government Initial MOU is in the process of being closed and has no expenditure for FY 10/11.**
2	**US Government Follow-on MOU was reported as $131.9m in the 2009-10 MPR, however, this figure included sources of funding other than SEA 1429 Phase 2. The Price Base at Signature has been revised to reflect the SEA 1429 Phase 2 contribution to the Follow-on MOU. An additional $6.1m to the SEA 1429 Phase 2 contribution to the Follow-on MOU was approved in July 2010.**

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
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 11
Spiral 1 Software baseline achieved. Platform modifications in three submarines completed.

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		Oct 05	4	1
	Submarine Weapon Handling & Discharge System Modifications	Jan 06		Nov 06	10	1
Acceptance	Weapon Handling & Discharge Training Rig Modifications	Nov 05		Nov 07	24	1
	Submarine Weapon Handling & Discharge System Modifications	Mar 06		Jun 07	15	1
Design Review	MK48 ADCAP Torpedo Specification Compliance	Dec 07		Feb 08	2	1
	Explosive Ordnance Approval Process MK48 Mod 6 ACOT and Mod 7 CBASS HWT **(Spiral 1)**	Mar 08		Mar 08	0	1
	Explosive Ordnance Approval Process MK48 Mod 6 ACOT and Mod 7 CBASS HWT (APB 4 – Exercise)	**Nov 12**		**Feb 11**	**(21)**	**1**
	Explosive Ordnance Approval Process MK48 Mod 6 ACOT and Mod 7 CBASS HWT (APB 4 – Warshot)	**Jul 13**	**Jul 13**		**0**	
Incorporation Approval	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate SMCSPO 0094 Version 1.0 1 May 08 **(Spiral 1)**	May 08		May 08	0	2
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Exercise	**Dec 12**		**Mar 11**	**(21)**	
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Warshot	**Jul 13**	**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 submarine docking 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 submarine docking 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.
2	The Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate, the RAN independent assessment of the suitability of the weapon for use on Collins Class submarines was not separately scheduled but was dependent on the issue of the US Torpedo Specification Compliance (issued 22 February 2008) and was a pre-requisite for granting Initial OR (7 May 2008). The Compatibility Certificate was issued on 1 May 2008.

3.2 Contractor Test and Evaluation Progress

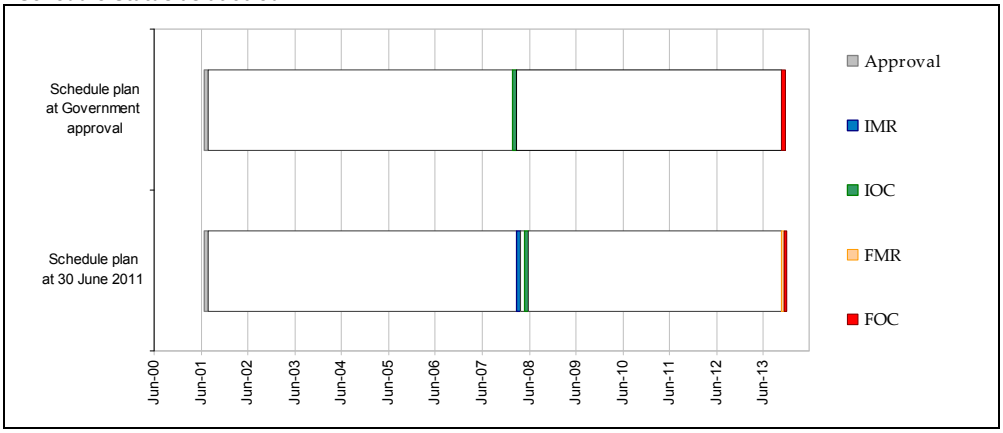
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Harbour Acceptance Tests	Weapon Handling and Discharge Systems Post MK 48 MOD 7 Heavyweight Modification Test HMAS WALLER (First of Class) (CAT 4 Testing]	Jan 07		Apr 07	3	1
Sea Acceptance Trials	Weapon Discharge System MK 48 MOD 6/7 Heavyweight Torpedo Modification for HMAS WALLER CAT 5 Testing	Oct 07		Dec 07	2	1

Notes	
1	Variance is 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)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Mar 08**	1	
Initial Operational Capability (IOC)				
Platform Modifications and Spiral 1	Feb 08	May 08	3	Variance is attributable to the Navy Regulatory Review process.
APB 4	Nov 12	**Mar 11**	**(20)**	Dependent upon US Government acquisition process.
Final Materiel Release (FMR)	**Nov 13**	**Nov 13**	0	
Final Operational Capability (FOC)				
Platform Modifications and Spiral 1	Jan 10	Mar 10	2	Variance is attributable to the Navy Regulatory Review process.
APB 4	Nov 13	Nov 13	0	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 (FIC) are complete.

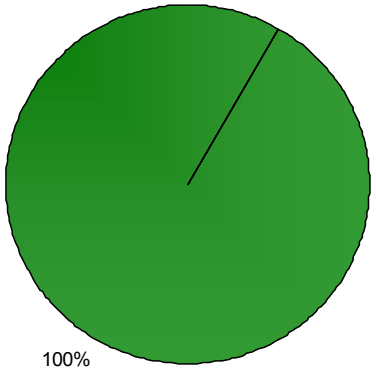
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

Torpedo performance and training and simulation facilities requirements currently being met.

Amber:

N/A

Red:

N/A

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 project weapon testing program will be affected by limitations in production capacity at the Torpedo Maintenance Facility, leading to an impact on scheduled turn-around times for weapon preparation, and cost increases.	This risk is being treated by Engaging with Submarine Force (SUBFOR) and Navy Guided Weapons System Program Office (NGWSPO) to maximise weapon output to meet test schedule requirements.
There is a chance that the weapon software development and testing program will be affected by submarine operational demands and priorities, leading to an impact on schedule and cost increases.	This risk is being actioned by: • Engaging with stakeholders and SUBFOR to coordinate weapon testing and operational demands and priorities; and • Engaging with SUBFOR to maximise weapon testing in order to maintain schedule.
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: • Recruitment of appropriately skilled staff to fill vacant positions; • Training of staff to maintain requisite skills and knowledge; • Engaging with project stakeholders and Submarine Branch resources to mitigate loss of corporate knowledge; and • Engagement of contractors for specific tasks where expertise is not available in house.
There is a chance that Final Operational Release will be affected by non-compliance with the Certification Basis, leading to an impact on cost and schedule.	**This risk is being mitigated by:** • **Working collaboratively with the USN to incorporate Australia's requirements in the TEMP and CDD.** • **Constant engagement at the Executive Steering Committee level to ensure the USN maintains a focus on meeting Australia's requirements.** • **Using USN performance measures, which exceed those in current use for Australian weapons, to meet IOR requirements.** • **Develop traffic light report to agree requirements baseline with stakeholders.** • **Maintaining a management reserve to cater for change and re-testing of failed requirements.** • **The RAN conducting a number of the in-water runs.**
There is a chance that transition to the sustainment organisations will be more complicated than planned, leading to an impact on supportability, schedule and cost.	**This risk is being mitigated by:** • **Managing the In Service Support budget in accordance with the approved NPOC submission.** • **Developing an MSA change proposal to transfer funding directly to NGWSPO.** • **Definition of and agreement to SM Branch sustainment responsibilities prior to formal transition occurring.** • **Maintaining a management reserve to cater for change and unforseen requirements.**

Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

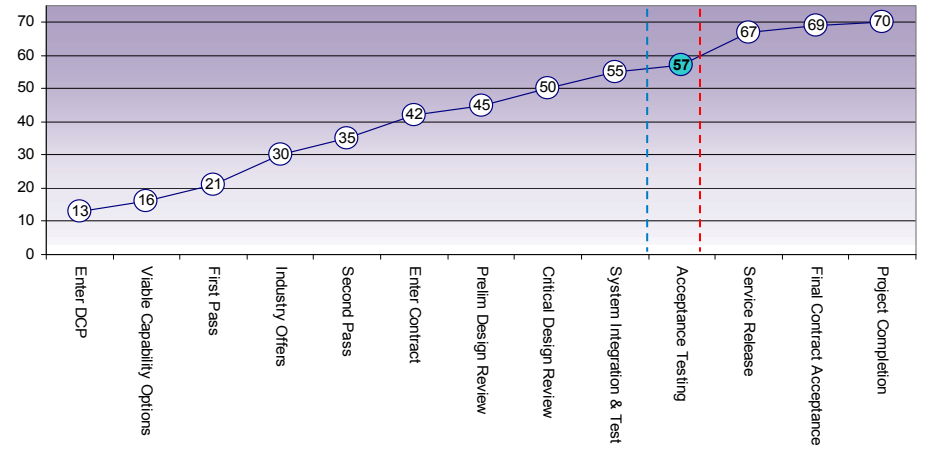
5.2 Major Project Issues

Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the heavyweight torpedo installation schedule.	Monitor Submarine Availability Group outcomes. The Project Office is not in a position to treat this issue, but is monitoring opportunities to install systems earlier.

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	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	**8**	9	8	8	8	**9**	**58**
	Explanation	• **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. Therefore, the assessment score is marginally ahead of the benchmark score for this particular maturity gate. • **Technical Difficulty:** Spiral 1 software had been granted OR; **APB 4** software is still under development **and testing**. Although there is high confidence that all technical issues will be solved it is appropriate to retain the maturity assessment against this attribute at the lower level at this time. • **Operations and Support:** **APB 4** software has been granted Initial OR and has entered into operational testing. Therefore the maturity score is marginally ahead of the benchmark score for this particular maturity grade.							



2009-10 DMO MPR Status - - - - -	2010-11 DMO 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 2010-11

Position	Name
General Manager	Mr Warren King
Division Head	AVM Chris Deeble
Branch Head	CDRE Bronko Ogrizek
Project Director	CMDR Stephen O'Hearn
Project Manager	Mr Walter Daly

Project Data Summary Sheet[217]

Project Name	**COLLINS CLASS SUBMARINE RELIABILITY AND SUSTAINABILITY**
Project Number	**SEA 1439 Phase 3**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 00
Total Approved Budget (Current)	**$411.4m**
2010-11 Budget	**$16.9m**
Project Stage	**Critical Design Review**
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.

1.2 Current Status

Cost Performance

The Through Life Support Agreement with ASC Pty Ltd (ASC), when combined with an annual contracting methodology, creates the main concern for the completion of the project within the existing budget. Recent financial years have realised improvements in the annual cost estimation process for programming of work and achieving financial performance outcomes. However, overall cost over the life of the project has suffered through previous inaccurate estimation of work content, and the inability to control implementation schedules. **Improvement is expected in future, now that the majority of engineering design work has been completed.**

Schedule Performance

Current scheduled dates will not be achieved due to changes in the Submarine Full Cycle Docking (FCD) program (a result of unscheduled maintenance arisings), which is beyond the control of the project. Installation of engineering enhancements on HMA Submarines SHEEAN **and RANKIN** will also be subject to FCD delays.

Harbour and Sea Verification Trials of the Torpedo Decoy were successfully completed in HMA Submarine DECHAINEUX over June and July 2010.

Materiel Capability 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 modifications are planned to**

[217] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

be implemented in HMA Submarine DECHAINEUX during its next docking in the first half of 2012. Torpedo Decoy Operational Test and Evaluation **(OT&E) has slipped due to delays in achieving Initial Operational Release (IOR) for reasons outside of Project's control (revisions in Navy Regulations). The project has attained a regulator endorsed Certification Plan and Safety Case Report and is working closely with Directorate of Navy Certification to achieve IOR by December 2011.**

Five 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.

1.3 Project Context

Project	Explanation
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 (HSMCT) 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 the1999 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, consisting of two new capabilities and 22 engineering enhancements, have been identified for action under the project. Five engineering enhancements have been completed and the two new capabilities are being implemented. However, completion of the remaining 17 engineering enhancements is 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: • **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. • **Torpedo Counter Measures Internal Stores (Torpedo Decoy) (New Capability):** To provide a programmable counter measure against torpedos. • **Fire Fighting Upgrade (Engineering Enhancement):** Upgrade to the fire fighting systems onboard, including greater protection from fire and its toxic by-products. • **Sewage System Upgrade (Engineering Enhancement):** Automation of the sewage discharge system and thereby reduce the risks of exposure to toxic gases. • **Fast-Track mods to SM1,2,3&6 (Engineering Enhancement):** Address platform build deficiencies in a holistic get-well program. **Details outlining the remaining 19 platform upgrades (engineering enhancements) were provided 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 boats. Engineering enhancements are undertaken by ASC under an annualised cost-plus Through Life Support Agreement (TLSA) contract, with the complex matrix of designs across the submarine fleet, scheduled for completion in 2022. Implementation of the ASC contract scope of work is linked to the boat FCD schedule and driven by availability requirements mandated by Chief of Navy and Program Manager Collins.
Major Challenges	Engineering enhancements are managed on a prioritised basis within the limited funding available, with implementation aligned to the Integrated Master Schedule (IMS) which is not controlled by the project. Where schedule slippage occurs, there is the potential for impact on project cost performance. A further challenge is to obtain capability sponsor acceptance of delivered supplies, given that the full range of engineering enhancements has not been supported with Capability Definition Documentation that enables ready acceptance of the delivered supplies. Project staff have developed Statements of Work (SOW) for contractor work. The SOWs have driven the development of System Requirement Specifications by contractors, thus allowing more conventional requirements management.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1439 Phase 4A	Replacement Combat System	SEA 1439 Phase 3 have provided Global Positioning Systems (GPS) to SEA 1439 Ph 4A for installation with each Replacement Combat System (RCS) implementation.
SEA 1446 Phase 1	Interim Minimum Operating Capability	SEA 1446 Phase 1 supplied approved and verified fast track platform designs for implementation into four submarines.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Sep 00	Original Approved	72.0		72.0		
Apr 01	Real Variation – Transfers	3.7	3.7			1
Jul 01	Real Variation – Scope	302.8	302.8			2
Sep 02	Real Variation – Transfers	(42.0)	(42.0)			3
Aug 04	Real Variation – Budgetary Adjustments	(0.3)	(0.3)			4
Aug 05	Real Variation – Budgetary Adjustments	(0.5)	(0.5)			5
Oct 06	Real Variation – Scope	7.5	7.5			6
		271.2		271.2		
Jun 11	Price Indexation			**74.4**		**7**
Jun 11	Exchange Variation			**(6.2)**		
Jun 11	**Total Budget**	**343.2**		**411.4**		
2.2 Project Expenditure History						
Prior to Jul 10			**189.5**		ASC Pty Ltd	
			109.8		Other	**8**
				299.3		
FY to Jun 11			**13.2**		ASC Pty Ltd	
			0.5		Other	**9**
				13.7		
Jun 11	**Total Expenditure**			**313.0**		
Jun 11	**Remaining Budget**			**98.4**		

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	RCI of $7.499m for Special Forces 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 $54m against multiple minor contracts with Defence companies (including Australian companies). These companies provide goods and services to support the various activities being undertaken by this project. Specific examples of significant expenditure include $14m with Thales for the Underwater Telephone and the Towed Array Handling System. It includes $12m to L3 Nautronix Ltd for the underwater communications system (HAIL) and sonobuoy (Pasor). $5m was also paid to Societe Technique Energy Atomique for the Propulsion Control Reference System (PCRS). Remaining expenditure relates to general operating expenditure including contractor and consultancy services associated with the delivery of this project.
9	**Other expenditure comprises: operating expenditure, contractors, consultants, contingency, and other capital expenditure not attributable to ASC under the TLSA.**

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**ASC invoice for June not received and minor slippages in work conducted during FCD have contributed to the under spend this FY.**
			Overseas Industry	
		(3.2)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
16.9	**13.7**	**(3.2)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
ASC Pty Ltd	Dec 03	N/A	N/A	Variable (Cost Plus)	Strategic Agreement	1

Notes	
1	All work carried out by ASC is managed under the TLSA contract and is programmed on a year by year basis (the TLSA provides a framework under which all submarine sustainment and project activities are managed) and the SEA 1439 Phase 3 project provides funding to support the scope of work for each of the 24 platform upgrades (two new capabilities and 22 engineering enhancements), consequently, there is no individual contract established with ASC for the 24 platform upgrades.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
ASC Pty Ltd	N/A	N/A	See 1.2 Background for further information.	

Major equipment received and quantities to 30 Jun 11
A total of 24 platform upgrades (consisting of two new capabilities and 22 engineering enhancements) continue to be progressed for each of the six submarines - subject to the FCD Program.

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	Special Forces	N/A		Dec 04	N/A	2
	Torpedo Decoy	Jun 10		**Jul 10**	1	1
	Fire Fighting Upgrade	N/A		Jun 04	N/A	2
	Sewage System Upgrade	N/A		Nov 04	N/A	2
	Fast Track Enhancements	N/A		N/A	N/A	1
First of Class Implementation	Special Forces (COLLINS)	Jun 05		Oct 07	28	**3**
	Torpedo Decoy (DECHAINEUX)	Jun 10		Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Jul 06		Oct 07	15	1
	Sewage System Upgrade (WALLER)	Jul 06		Jul 08	24	1
	Fast Track Enhancements (RANKIN)	May 01		Jun 06	61	1
Full Class Implementation	Special Forces **(COLLINS)**	May 08		Feb 10	21	1, **3, 4**
	Torpedo Decoy (RANKIN)	Oct 13		Oct 13	0	1
	Fire Fighting Upgrade (SHEEAN)	Sep 22		Sep 22	0	1
	Sewage System Upgrade (FARNCOMB)	Mar 17		Mar 17	0	1
	Fast Track Enhancements (WALLER)	Jul 06		Nov 07	16	1

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 (CCP). 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 Materiel Acquisition Agreement), 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. 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 Collins Class Interim Minimum Operating Capability (IMOC).
3	**HMA Submarine COLLINS received modifications for Multi Swimmer Release and Float on/Float off which comprise two of the three Special Forces capabilities. The third (Exit & Re-entry) required redesign to increase diver safety following sea trials conducted in HMA Submarine COLLINS in 2008. The first opportunity to install these safety enhancements will be in HMA Submarine DECHAINEUX to be completed by September 2012 which will enable IOR to be achieved. Installation in HMA Submarine COLLINS will follow when its FCD commences in July 2012.**
4	**Full class implementation will not be achieved until HMA Submarine COLLINS has completed its FCD in 2015 in accordance with the Integrated Master Schedule (IMS).**

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 Test (HAT)	Special Forces (COLLINS)	Jun 05		Sep 06	15	1
	Torpedo Decoy (DECHAINEUX)	Jun 10		Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Oct 13		Oct 13	0	
	Sewage System Upgrade (WALLER)	Jul 06		Mar 07	8	1
	Fast Track Enhancements	N/A		N/A	N/A	
Sea Acceptance Test (SAT)	Special Forces (COLLINS)	Aug 05		Dec 07	28	1, **2**
	Torpedo Decoy (DECHAINEUX)	Jul 10		**Jul 10**	0	
	Fire Fighting Upgrade	N/A		N/A	N/A	
	Sewage System Upgrade (WALLER)	Aug 06		Oct 07	14	1
	Fast Track Enhancements	N/A		N/A	N/A	

Notes

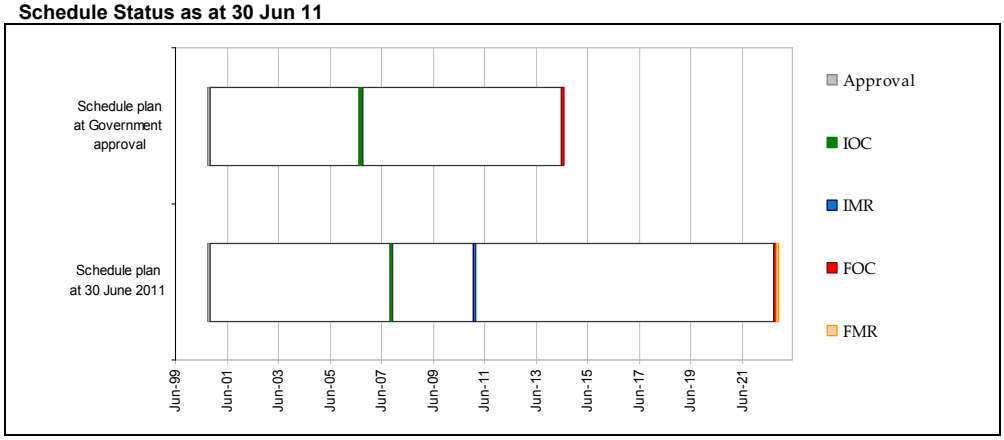
1	The original planned schedule for all sub projects was incorporated into the submarine maintenance schedule which is maintained by ASC. ASC update the maintenance schedule annually and do not retain original schedule information. Additionally, test and evaluation is linked to the post docking test and trials, therefore, the true variance will reflect the variance in Table 3.1. 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	**HMA Submarine COLLINS received modifications for Multi Swimmer Release and Float on/Float off which comprise two of the three Special Forces capabilities. The third (Exit & Re-entry) required redesign to increase diver safety following sea trials conducted in HMA Submarine COLLINS in 2008. The first opportunity to install these safety enhancements will be in HMA Submarine DECHAINEUX and completed by September 2012 which will enable IOR to be achieved. Installation in HMA Submarine COLLINS will follow when its FCD commences in July 2012.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Jan 11**	**N/A**	
Initial Operational Capability (IOC)				
Initial Operational Release Special Forces **(DECHAINEUX)**	Nov 10	**Sep 12**	**22**	**Refer Section 1.2 Current Status: Material Capability Performance.**
Initial Operational Release Torpedo Decoy (DECHAINEUX)	Aug 10	**Dec 11**	**16**	**Refer Section 1.2 Current Status: Material Capability Performance.**
Fire Fighting Upgrade (RANKIN)	Oct 13	Oct 13	0	IOC is linked to successful completion of the Harbour Verification Testing (HVT), where any variance will be caused through movement in the docking maintenance schedule. These dates are based on the IMS of April 2010.
Sewage System Upgrade (WALLER)	Aug 06	Oct 07	14	IOC is linked to completion of the FOC Sea Acceptance Testing (SAT). Variance due to changes in docking maintenance schedule since original Materiel Acquisition Agreement (MAA).

Fast Track	N/A	N/A	N/A	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.
Final Materiel Release (FMR)	**Oct 22**	**Oct 22**		
Final Operational Capability (FOC)				
Operational Release of Special Forces	Jun 07	Dec 15	102	The MAA delivery date was for HMA Submarine COLLINS only. HMA Submarine 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 Release of Torpedo Decoy	Jun 14	Oct 13	(8)	This modification is largely independent **on** the constraints of the docking maintenance schedules and can be simultaneously rolled out to platforms.
Fire Fighting Upgrade (SHEEAN)	Jun 14	Sep 22	**99**	Variance due to changes in docking maintenance schedule since original MAA.
Sewage System Upgrade (FARNCOMB)	Jun 14	Mar 17	**33**	Variance due to changes in docking maintenance schedule since original MAA.
Fast Track (WALLER)	Jul 06	Nov 07	16	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.

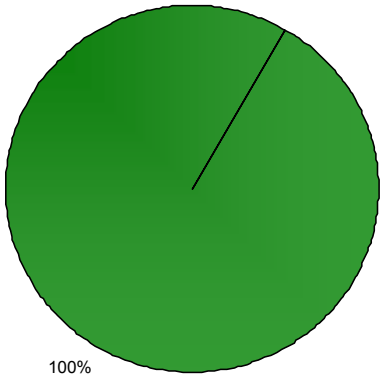
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

Upgrades to platform and shore infrastructure are meeting operational, functional and safety requirements.

Upgrades are rectifying capability deficiencies with the initial system.

Appropriate & timely training provided to operators and maintainers is occurring.

Submarines meet the requirements of the Navy Technical Regulations.

System upgrades meet supportability requirements as defined under individual system upgrade certification plans.

Amber:

N/A

Red:

N/A

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 slippages to the boat FCD schedule will impact the installation of engineering enhancements and new capability, leading to cost and schedule increases to the project.	This risk is being treated by: • Obtaining endorsement of the IMS at the senior management level; • Improving management of maintenance schedules; **and** • **Ensuring configuration changes are captured in the targeted maintenance availabilities Total Work Package.**
There is a chance that competing workload demands will reduce the skilled resources available at the contractor facility and impact the installation and testing of engineering enhancements on boats, leading to cost and schedule increases.	This risk is being treated by: • Undertaking engineering enhancement in accordance with the IMS; • Resolving design issues with engineering enhancements early to improve design maturity; and • Coordinating the engineering enhancement workload on the ASC capped workforce.
There is a chance that a lack of submarine sea time will impact the completion and evaluation of sea trials of prototype engineering enhancements, leading to schedule delays and cost increases to the final design.	This risk is being treated by: • Using the IMS to establish long-term planning of sea trials to improve the coordination of submarine availability; • Engaging with stakeholders to communicate, in advance, test schedules and boat availability needs; and • Monitoring the status of submarine availability and impact on sea acceptance testing and trials.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

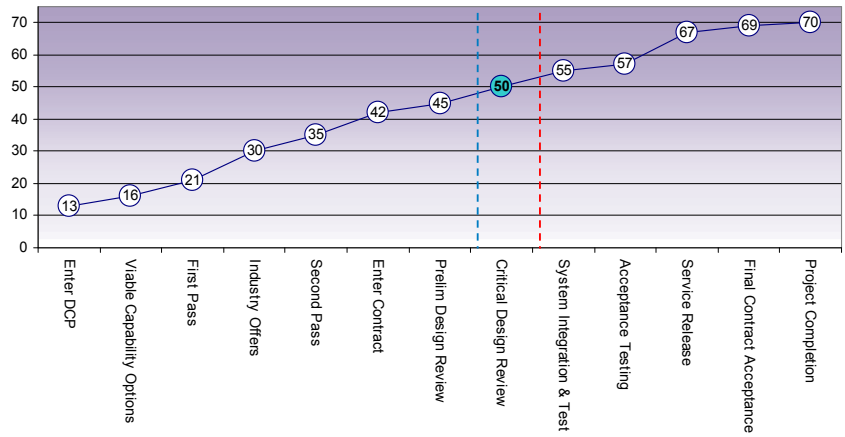
5.2 Major Project Issues

Description	Remedial Action
Uncertainty in the submarine docking cycle (a result of unscheduled maintenance arisings) and the delayed availability of submarines has impacted the schedule for installing engineering enhancements and new capability on the boats.	The Project Office is not in a position to treat this issue, but is monitoring priorities and opportunities to install engineering enhancements earlier, when practicable.
That Torpedo Decoy (SUBSCUT) Capability will not be accepted prior to life expiry of Acoustic Decoy Countermeasures (ADC).	**This risk has been realised. ADC life has expired. SUBSCUT is yet to achieve interim operational capability status but is available for training purposes.**

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
Critical Design Review	Project Status	6	6	8	8	8	8	9	53
	Explanation	• **Schedule:** Establishment of the IMS and maturity of the majority of designs gives confidence in the schedule. • **Cost:** Project estimates for individual enhancements were **not feasible** given the TLSA and undefined project scope. Removal of selected capability or engineering enhancements is required in order to deliver other enhancements within the remaining budget. • **Requirement:** Designs are either complete or well advanced for most platform upgrades projects. Many are partially implemented across the class. • **Technical Difficulty**: Some verification of designs have been completed, however some technical design challenges remain in progress; such as, composite external pressure vessels **for Special Forces.** • **Commercial: Transition to an In Service Support Contract (ISSC) from TLSA is providing Project with confidence that the remaining project cost will be reduced or stabilise as the ISSC is a fixed price contract which will facilitate better control of cost.** • **Operations and Support: Project has achieved IMR for a number of sub-project enhancements and is now primarily in the implementation phase.**							



2009-10 DMO MPR Status - - - - - 2010-11 DMO 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

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Mr Warren King
Division Head	AVM Chris Deeble
Branch Head	CDRE Bronko Ogrizek
Project Director	CMDR Stephen O'Hearn
Project Manager	**CMDR Stephen O'Hearn**

Project Data Summary Sheet[218]

Project Name	**INDIAN OCEAN REGION UHF SATCOM**
Project Number	**JP 2008 Phase 5A**
Capability Type	Upgrade
Service	Joint Services
Government 1st Pass Approval	Mar 09
Government 2nd Pass Approval	Mar 09 and Mar 10
Total Approved Budget (Current)	$407.2m
2010-11 Budget	$110.9m
Project Stage	System Integration and Test
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 (IOR), and associated ground infrastructure to provide network control upgrades and data channel increases.

1.2 Current Status

Cost Performance

Project remains within its current approved budget.

Schedule Performance

The IS-22 satellite remains on schedule for a launch in March 2012, which will meet Government requirements of the project, with a number of crucial activities planned for completion in order to successfully realise the scheduled launch.

Materiel Capability Performance

The IS-22 satellite is currently meeting all performance measures, including:

- the hosted payload,
- the Communications System Monitor (CSM).

The Network Control Systems (NCS) requirements are currently under review but are not likely to impact the overall capability provided by the IS-22 satellite.

[218] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

1.3 Project Context

Project	Explanation
Background	The JP2008 Phase 5 project was created to provide capability originally planned for under the JP2008 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 (MEAO), particularly to Special Forces in Afghanistan. Current coverage is provided by leases on two commercial satellites and channels loaned by the United States (US) Government on an availability basis, which has proven 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. LEASAT 5 now has an extended life beyond 2013 due to a change in orbital location, however, only a single channel is available on LEASAT 5. A market survey was conducted in September 2008 to inform cost and capability options for JP 2008 Phase 5. 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 (RFT) 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 in March 2009 for the project to pursue a Memorandum Of Understanding (MOU) 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. Defence also successfully completed a similar project under JP2008 Phase 3D in 2003 which was the procurement of a hosted payload on the Optus C1 satellite.
Uniqueness	The contract with Intelsat is based on the standard DMO 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.
Major Challenges	A major challenge for the project resulted from a compressed Government approval process, which impacted on the timely generation of the Capability Development Documentation (CDD) suite. This compressed approvals process also meant that ancillary parts of the capability such as the Network Control System were not fully considered for cost and schedule as would have occurred if a full first to second pass process had occurred. Notwithstanding this, these sub-systems represent relatively small parts of the capability and cost of the project. The major challenges in the last 12 months have related to the ground systems. The project released an RFT in December 2010 for the Network Control System but no successful tenderers were found. The project is now replanning this activity to meet the requirement in time to support in orbit operations of the IS-22 satellite.
Other Current Projects/Sub-Projects	**JP2008 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. **JP2008 Phase 3F ADF SATCOM Terrestrial Enhancements:** This project will provide the mature Australian Western Seaboard anchoring capability for the WGS constellation. **JP2008 Phase 4 Next Generation SATCOM Capability:** Provision of WGS.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Feb 09	Original Approved	4.0		4.0		
Apr 09	Real Variation – Government Initial 2nd Pass Approval	269.1	269.1			
Apr 10	Real Variation – Government Final 2nd Pass Approval	187.8	187.8			
		457.0		457.0		1
		461.0		461.0		
Jun 11	Price Indexation			(3.0)		2
Jun 11	Exchange Variation			(50.7)		
Jun 11	**Total Budget**	461.0		407.2		
2.2 Project Expenditure History						
Prior to Jul 10			123.8		Intelsat Prime	
			0.6		Other	3
				124.4		
FY to Jun 11			116.3		Intelsat Prime	
			6.2		Other	3
				122.5		
Jun 11	**Total Expenditure**			246.9		
Jun 11	**Remaining Budget**			160.3		

Notes	
1	Government Approved 2nd Pass for the full hosted payload. This figure does not sum precisely due to rounding.
2	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 $(19.6) m having been applied to the remaining life of the project.
3	Other expenditure comprises project operating expenditure not attributable to the aforementioned contract.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	An opportunity arose to achieve a July 2011 payment early in FY2010-11. A Program Variation Certificate (PVC) (072 10/11) was completed to take advantage of this.
			Overseas Industry	
			Local Industry	
		12.5	Brought Forward	
			Cost Savings	
		(0.9)	FOREX Variation	
			Commonwealth Delays	
110.9	**122.5**	**11.6**	**Total Variance**	

2.4 Contract Details

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Intelsat	Mar 09	202.5	422.9	Firm	ASDEFCON (COMPLEX)	

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Intelsat	8	20	25kHz UHF SATCOM channels on IS-22 Hosted Payload	

Major equipment received and quantities to 30 Jun 11
No equipment has been delivered to 30 June 2011

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		
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		
	CSM Critical Design Review	Mar 11	N/A	Mar 11		

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.

3.2 Contractor Test and Evaluation Progress

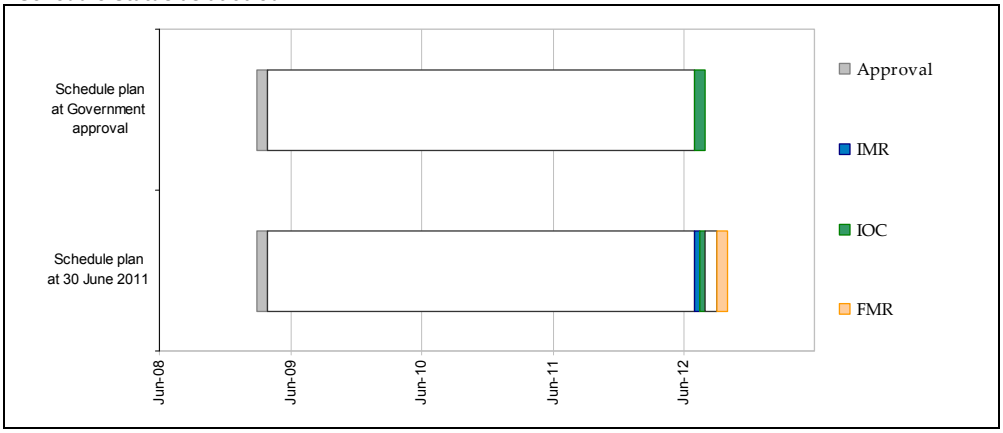
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	IS-22 Hosted Payload	Nov 10	N/A	Feb 11	3	1
	CSM	Sep 11	N/A	Sep 11		
Acceptance	IS-22 Hosted Payload	Jun 12	N/A	Jun 12		
	CSM	Jul 12	N/A	Jul 12		

Notes	
1	Delay to commencement of integration was driven by a number of delays in sub system deliveries including C and Ku antennas (not forming part of this capability) and the UHF antenna. Margin in the schedule has been used to ensure these delays do not delay the Final Acceptance milestone.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul 12	Jul 12		
Initial Operational Capability (IOC)	Jul 12	Jul 12		On track to meet IOC (coincident with IMR).
Final Materiel Release (FMR)	Sep12	Sep 12		
Final Operational Capability (FOC)	N/A	N/A		Not defined in Material Acquisition Agreement, nor in Government second pass documentation.

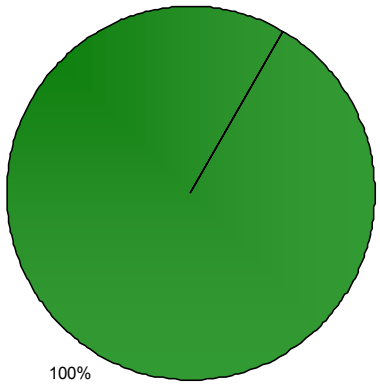
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

Material will meet overall performance requirements which are determined by the hosted payload.

Amber:

N/A

Red:

N/A

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
In Orbit Test (IOT) & Acceptance Tasks identify reduced capability or total loss of capability - There is a risk that the system will incur a loss of capability due to a launch failure or satellite deployment failure leading to an impact on operational capability.	Contractor test program designed to minimise risk. Also insurance provides financial return in case of failure or reduced capability.
There is a risk that the CSM will not be available for IS-22 IOT due to CSM program delays leading to delay in IMR.	Contract requires delivery well ahead of need date thus providing enough schedule float to accommodate.
There is a risk that other non-JP2008 projects will impact on JP2008 Ph5A installations at HMAS STIRLING due to: • Unknown site requirements until other building works are completed at site • Inability to implement changes in support of CSM due to conflicting requirements from other projects.	Engaging with HMAS STIRLING Configuration Control Board to ensure all requirements are known and can be scheduled.
There is a risk the Project Office will not gain approval to operate the CSM due to inability to gain necessary security accreditation leading to delay in IMR.	Engaging with Chief Information Officer Group to ensure system is designed to meet network security requirements.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
There is a risk that the technical solution for the Network Control System provided by the Project will not meet Defence's full requirements.	The project office has a regime in place to test the existing system to understand the function and once function is understood ensure an incremental delivery to meet requirements.
The risk is that the facility at HMAS STIRLING will not be completed by IS 22 Launch including installation of CMS.	Project office through Defence Support Group will undertake the facility upgrade of power and antenna mountings prior to RFT response to reduce contractor installation time. Project Office also has the option to expand Darwin capability as a short term solution.
There is a risk that technical issues will be encountered during installation of the Network Control System, such as an error in cabling, delaying installation.	Project Office will include in the RFT a survey and quote clause to allow immediate resolution of any minor issues.
There is a risk is that Asbestos will be found on site at HMAS STIRLING delaying installation. The building is known to have asbestos, it has been reported that Asbestos has been removed from the switchboards however testing is required to confirm. It takes Defence approximately seven weeks from the raising of a submission to the commencement of work.	A survey and quote clause included in RFT, this will allow immediate tasking by the Project manager to remove any hazardous substances found.
There is a risk that Defence Communication Station (DEFCOMSTA) West cannot accommodate the Project equipment due to the inability to relocate existing equipment and people at HMAS Stirling, thus impacting schedule.	Project Office will work with DEFCOMSTA CCB to redesign space.
There is a risk that the current facilities are not fit for purpose or do not meet Building Safety and Design Requirements.	The Project Office will ensure that this requirement is investigated and included in the statement of work that is released to the building contractor.

There is a risk that due to there being a lack of an agreed set of requirements from Defence for the Reduced Radio Configuration, the project office won't be able to deliver a capability that is suitable.	A requirements review process will be implemented to align capability requirements to capability delivered.
There is a risk that the Project is given an additional TEMPEST requirement post Equipment installation due to the equipment room being shared with other projects.	A TEMPEST risk assessment is to be undertaken by the Project Office to identify all TEMPSEST requirements prior to installation.
As a result of the Commonwealth having insufficient Intellectual property (IP) access rights for the high power amplifier (HPA) design, there is a risk that this may compromise schedule and operational use of the UHF SATCOM capability.	The Commonwealth will investigate what it currently owns and commence contract change action with the contractor to ensure the necessary level of IP access.
There is a risk that the Project is impacted by the slow process in getting Information Communication Technology Business Requests (ITCBR) approved through Chief Information Officer Group.	Project Office will continuously engage with CIOG on progress of ICTBRs.
There is a risk that the OT&E scope will delay the currently agreed FMR date.	The Project Office will recommend the scope of testing to the Capability Manager for early endorsement.

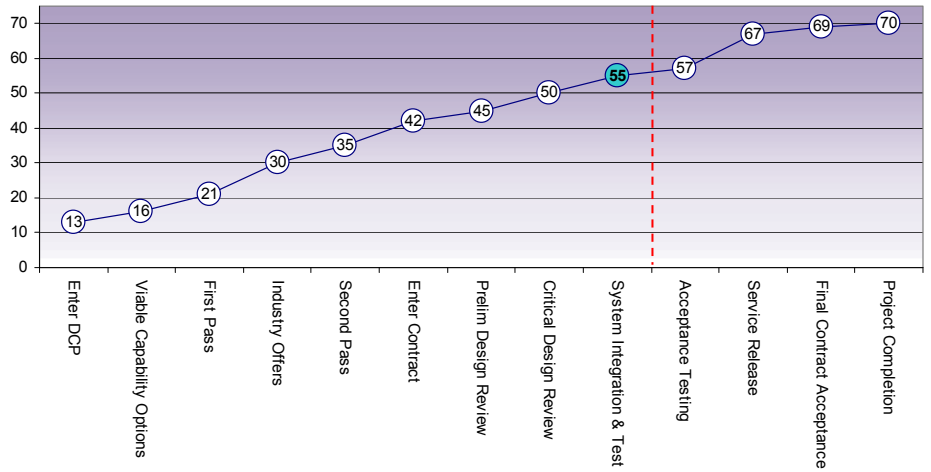
5.2 Major Project Issues

Description	Remedial Action
Network Control System Requirements are currently being refined as the Project improves its understanding of the Military Standards (MILSTDs).	Currently replanning activities to ensure the minimum capability is provided to support IMR with a plan to provide additional capability if required.
Network Control System Delivery currently unclear due to the failure of the tender process to find a successful tenderer.	Currently planning activities for the Project Office to act as the prime systems integrator to provide the required capability.

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	8	7	8	8	8	8	8	55
System Integration and Test	Project Status	8	9	9	7	8	8	7	56
	Explanation	• **Cost:** IS-22 is essentially an off the shelf product on a firm fixed price contract which means the project is ahead of the benchmark. • **Requirement:** The essentially off the shelf nature of the IS-22 hosted payload means it is ahead of the bench mark for testing against the requirements. • **Technical Understanding and Operations and Support:** The project is lagging slightly in Technical Understanding and Operational support primarily due to Defence still developing the Concept of Operations for the capability.							



2010-11 DMO 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 2010-11

Position	Name
General Manager	Shireane McKinnie
Division Head	Michael Aylward
Branch Head	Ivan Zlabur
Project Director	Greg McKinnon
Project Manager	Edward Louis

Project Data Summary Sheet[219]

Project Name	**ANZAC ANTI-SHIP MISSILE DEFENCE**
Project Number	**SEA 1448 Phase 2A**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 03
Total Approved Budget (Current)	**$389.5m**
2010-11 Budget	**$41.4m**
Project Stage	**Acceptance Testing**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA1448 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 SEA1448 Phase 2. Phase 2A of the ASMD Project, **is intended 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.

1.2 Current Status

Cost Performance

This phase of the ASMD Project is currently progressing within the approved budget and the capability is anticipated to be delivered within the approved budget.

Schedule Performance

The systems being provided under Phase 2A are being delivered to schedule. Overall though, due to the linking of Phase 2A with Phase 2B and the Government approving a change of acquisition strategy for Phase 2B in August 2009, there is a 38 month variance to the original delivery of the capability. **During 2010-11, schedule has continued to be maintained, with installation and acceptance sea-testing of all systems being successfully conducted.**

Materiel Capability Performance

Between October 2010 – June 2011, harbour and sea acceptance testing was successfully carried out in the lead ship HMAS *Perth*. Based on this successful testing, it is anticipated that the Chief of Navy will formally accept the ASMD upgrade capability delivered to HMAS *Perth* and its associated support systems in July/August 2011.

[219] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

1.3 Project Context

Project	Explanation
Background	The need for an Anti-Ship Missile Defence (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 $475m (December 2003 prices). This included an element for the Very Short Range Air Defence System (VSRAD) (two per ship) of $155.5m, which was quarantined pending the outcome of investigations into an active phased array radar system (referred to as CEAFAR) and its Sea trials conducted in 2004. 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, whereas Phase 2B represents a high risk due to the leading edge (developmental) technology involved, and these risks migrate as enterprise risks to the confederated SEA 1448 Phase 2 ASMD Project. 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 has 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 IRST, a combined ASMD Integration and Training Centre was built by the Defence Support Group (DSG) in 2006. This building was added to the existing ANZAC System Support Centre (ASSC) located at HMAS *Stirling* in Western Australia. **This facility was made available for lead ship training between September 2010 and April 2011 and will be formally handed to Navy in August 2011.** The only remaining contract yet to be signed for Phase 2A of the ASMD Project is for the first 3 years of in service support for the IRST. This **was** intended to occur before December 2010, **but due to contractual considerations this has been delayed to last quarter of 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.
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 XP windows 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 Challenges	The Major Challenges for SEA 1448 Phase 2A have been: • The decision to investigate the option of a Phased Array Radar for Phase 2B in lieu of the originally selected VSRAD option. Consequently, Phase 2A was directed to commence in isolation to the Phase 2B decision. The planned decision of December 2004 to use the Phased Array Radar in Phase 2B was delayed to September 2005, impacting on the systems engineering aspects of the project, as several decisions made during the first year were required to be revisited when the Phase 2B decision was made to ensure the viability of the decision and design. This has also delayed the completion of the integration and training facilities at the ANZAC Systems Support Centre; and • Ensuring sufficient spares for the Commercial-Off-The-Shelf (COTS) based Combat Management System has been mitigated through the procurement of key COTS components of the ASMD Mk3E Combat Management System.

Other Current Projects/Sub-Projects	Phase 2**B** - 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.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1448 Phase 2B	This Phase completes the ASMD Upgrade by delivering a 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 ESSM. This phase also replaces the existing ANZAC Class navigation radar.	SEA 1448 Phases 2A and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. As a result, any delays in delivery of Phase 2B will drive delays with Phase 2A.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Jan 04	Original Approved	449.0		449.0		
Aug 04	Real Variation – Budgetary Adjustments	(0.1)	(0.1)			
Mar 06	Real Variation – Transfers	(155.4)	(155.4)			1
Feb 07	Real Variation – Transfers	(4.4)	(4.4)			2
		(159.9)		(159.9)		
Jun 10	Price Indexation			101.3		**3**
Jun 10	Exchange Variation			**(0.9)**		
Jun 10	**Total Budget**	**289.1**		**389.5**		
2.2 Project Expenditure History						
Prior to Jul 10		**71.7**	**92.4**		SAAB Systems Pty Ltd CMS	**4**
		5.6	**6.9**		SAAB Systems Pty Ltd FOC	**5**
		56.3	**72.5**		BAE Systems Australia CMS	**6**
		9.1	**11.1**		BAE Systems Australia FOC	**7**
		12.9	**12.9**		Other	**8**
		155.1		195.8		
FY to Jun 11		**10.5**	**13.5**		SAAB Systems Pty Ltd CMS	
		2.1	**2.6**		SAAB Systems Pty Ltd FOC	
		10.9	**14.1**		BAE Systems Australia CMS	
		7.9	**9.6**		BAE Systems Australia FOC	
		1.4	**1.4**		Other	**8**
		32.8		**41.2**		
Jun 11	**Total Expenditure**	**187.9**		**237.0**		
Jun 11	**Remaining Budget**	**101.2**		**152.5**		

Notes	
1	155.355 transferred to Project SEA1448 PH 2B for phased array radar procurement vice procurement of Very Short Range Air-Defence (VSRAD) capability as directed by Government.
2	Transferred to 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 $88.7m. 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	Expenditure on the contract for upgrading the eight Combat Management Systems and Fire Control Systems.
5	Expenditure on the contract for First of Class Installation of the Combat Management Systems and Fire Control System.
6	Expenditure on the contract for eight Infrared Search and Track Systems.
7	Expenditure on the contract for First of Class Installation of the Infrared Search and Track System.

8	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned top five contracts and minor contract expenditure.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The Project had ended the financial year with a minor $0.260k underspend against the 2010-11 Additional Estimates exercise which represents minor reprogramming of work into the next financial year.**
			Overseas Industry	
		(0.3)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
41.4	**41.1**	**(0.3)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
SAAB Systems Pty Ltd	Apr 05	$123.1m	$119.7m	Variable	Alliance	
SAAB Systems Pty Ltd	Apr 07	$9.9m	**$13.9m**	Variable	Alliance	
BAE Systems Australia	Apr 05	$104.9m	$108.6m	Variable	Alliance	1
BAE Systems Australia	Apr 07	$26.2m	**$27.5m**	Variable	Alliance	1

Notes

1	These contracts are listed with BAE Systems Australia who were formally Tenix Defence.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
SAAB Systems Pty Ltd	8	8	Combat Management Systems and Fire Control System upgrades	1
SAAB Systems Pty Ltd	N/A	N/A	First of Class (Lead Ship) Installation	
BAE Systems Australia	8	8	Infrared Search and Track Systems	1
BAE Systems Australia	N/A	N/A	First of Class (Lead Ship) Installation	

Major equipment received and quantities to 30 Jun 11

All major design reviews completed. Equipment has been delivered into store and is being appropriately maintained until required by Ph2B for its installation.

Notes

1	155.355 transferred to Project SEA1448 PH 2B for phased array radar procurement vice 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		Aug 05	18	1
	Mk3E Combat Management System/Fire Control Director – Stage 1 (Functional Review)	Apr 05		Aug 06	16	1
	Mk3E Combat Management System/Fire Control Director - Stage 1 (System Performance Review)	N/A		Nov 06	N/A	
	ASMD Shore Facilities (HMAS *Stirling*)	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		Aug 07	21	1
	ASMD Shore Facilities (HMAS *Stirling*)	N/A		Nov 06	0	
Critical Design	Stage 1 Critical Design Review – Part 1 (All except Phased Array Radar in the AFT mast)	Sep 06		May 08	20	1
	Stage 1 Critical Design Review – Part 2 (Remaining components of AFT mast)	N/A		Aug 08	0	
	ASMD Shore Facilities (HMAS *Stirling*)	N/A		Jun 07	0	

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

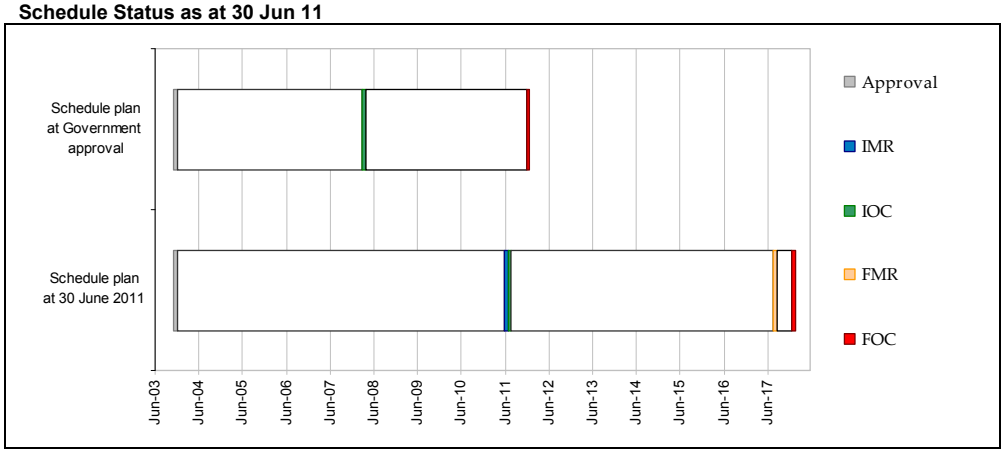
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Nov 07		**Mar 11**	**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 is 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 1 month due to production completion delay of 1 month in lead ship HMAS *Perth*.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

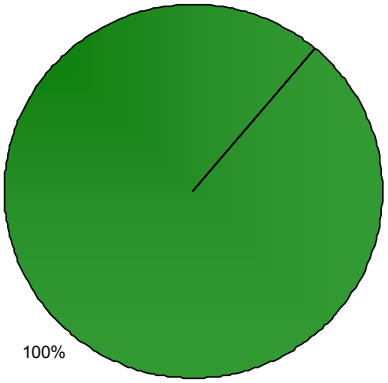
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	**N/A**	**Jun 11**	N/A	
Initial Operational Capability (IOC)	Mar 08	**Jul** 11	**40**	Variance is directly linked to: the Government decision to investigate phased array radar 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 additional delay to July 2011 is due to anticipated Navy considerations.**
Final Materiel Release (FMR)	**Jul 17**	**Jul 17**	0	**Newly added DMO milestone as part of update to master acquisition agreement between Defence and DMO.** ***Note: this milestone is subject to variation dependant on approval of ships 2-8 by Government.***
Final Operational Capability (FOC)	Dec 11	**Dec 17**	**72**	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. *Note: this milestone is subject to variation dependant on approval of ships 2-8 by Government.*

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: **Based on lead ship (HMAS *Perth*) successful acceptance testing and initial materiel certification being achieved in Jun 2011,** 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

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 any delays in phased array radar component of Phase 2B will impact installation of Phase 2A products. **This risk will remain until completion of all subsequent ships.**	The equipment being delivered under Phase 2A independently undergoes partial system test and system integration before being warehoused awaiting ship installation. As a result, equipment delivered under Phase 2A will be ready for installation pending outcomes from Phase 2B.
Recognising that the Infra-Red Search and Track 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.	Project has had an operational system at the ANZAC Systems Support Centre in Western Australia since the end of 2007 and has been ensuring that the RAN have been actively involved in its testing and operation. **Successful completion of acceptance testing for HMAS *Perth* has seen all systems achieving initial materiel certification in June 2011.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
N/A	N/A

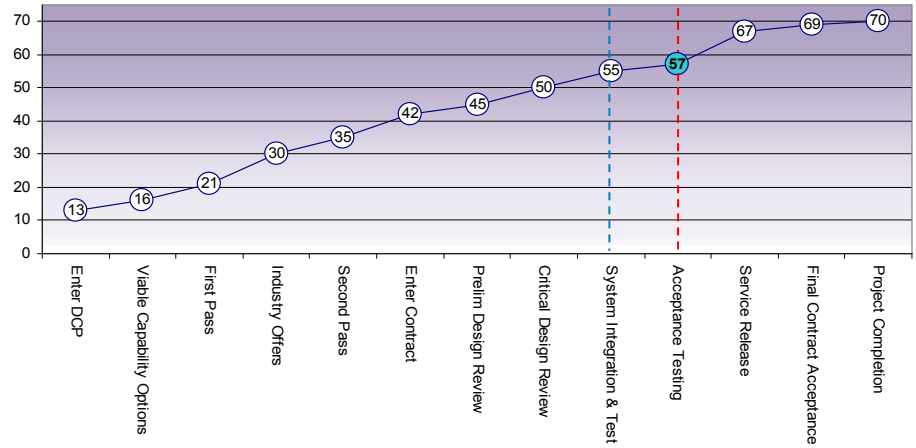
5.2 Major Project Issues

Description	Remedial Action
There are no major issues impacting on the project.	N/A

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	8	**8**	8	8	**9**	8	8	**57**
Acceptance Testing	Project Status	**8**	**8**	**9**	**7**	**9**	**8**	**8**	**57**
	Explanation	• **Requirement:** Phase 2A is well understood in this area; the upgrade of the Combat Management System to Mk3E and the introduction of the Infra-Red Search and Track System are low risk to the Project and well understood to the customer. • **Technical Understanding:** With the Infra-Red Search and Track System being new to the RAN (although fielded elsewhere in foreign Navies), there is some risk that the use of this technology will not be fully understood until a period of operation has occurred. **Although sea acceptance trials are now successfully complete, Navy operational test and evaluation will not complete until 2013.**							



2009-10 DMO MPR Status - - - - -

20010-11 DMO 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 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall, RAN
Branch Head	CDRE Mick Uzzell, RAN and **CDRE Michael Houghton, RAN**
Project Director / Manager	CAPT Rob Elliott, RAN

Project Data Summary Sheet[220]

Project Name	**FOLLOW ON STAND OFF WEAPON**
Project Number	**AIR 5418 Phase 1**
Capability Type	New Capability
Service	Royal Australian Air Force
Government 1st Pass Approval	**Aug 04**
Government 2nd Pass Approval	Dec 05
Total Approved Budget (Current)	**$343.3m**
2010-11 Budget	**$48.4m**
Project Stage	**Acceptance Testing**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project will acquire the Lockheed Martin AGM-158A Joint Air-to-Surface Standoff Missile (JASSM) and support systems, and integrate the JASSM onto the Royal Australian Air Force (RAAF) F/A-18 A/B Hornet aircraft. The Follow On Stand Off Weapon (FOSOW) system will increase aircraft survivability and weapon terminal effectiveness against defended targets from launch ranges in excess of those afforded using air delivered weapons currently in the ADF inventory. The FOSOW system will provide the capability to successfully, and effectively, conduct stand-off strike operations against a range of targets.

1.2 Current Status

This Project has been a Project of Concern since November 2010.

Cost Performance

The project remains within its current approved budget. A Submission to hand back $50m from funding allocated to the moving target capability was noted by Government in May 11. The remaining project scope will be delivered within the decreased project budget.

Schedule Performance

The project is meeting approved schedule. The Submission advising current project status and revised Initial Operational Capability (IOC), Initial Material Release (IMR), Final Material Release (FMR) and Final Operational Capability (FOC) dates was noted by Government in May 11.

Materiel Capability Performance

The live fire of a JASSM from an Australian F/A-18 A/B Hornet aircraft was completed successfully on 3 December 2010. The United States Navy (USN) provided formal aircraft Operational Flight Program (OFP) certification on 28 February 2011. Delivery to Australia of missiles required for Initial Operational Capability is now complete. A Submission advising the removal of the maritime strike (moving target) capability from project scope on the basis of technical feasibility and associated cost and schedule was noted by Government in May 11. Completion of a successful end-to-end testing of JASSM remains the key risk. However as at 30 June 2011 plans for Operational Test and Evaluation firings at Woomera in July 2011 were well advanced.

[220] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

1.3 Project Context

Project	Explanation
Background	Project AIR 5418 **was originally** scoped to acquire a FOSOW capability to provide Australia with the ability to conduct effective airborne precision land strike against well-defended targets. The F/A-18 A/B Hornet aircraft was nominated as the delivery platform to carry and employ the FOSOW system. A Request for Proposal was conducted in 1999 to determine what weapon solutions were available to meet Project AIR 5418 requirements. The Lockheed Martin JASSM was found to offer the best value for money solution at the culmination of the Request For Proposal. However, the project was subsequently delayed in the Defence Capability Plan, and Government First Pass approval was achieved in **August 2004.** At the direction of the Defence Capability Committee, prior to requesting Government Second Pass approval, a Request for Tender was released in December 2004 for three options to gain more reliable cost and schedule information. Lockheed Martin's JASSM was selected as the preferred option and Project AIR 5418 Phase 1 gained Second Pass Approval on 5 December 2005. JASSM is being procured through — a Foreign Military Sales (FMS) Case with United States Air Force (USAF) for the supply of the operational and test missiles, support equipment and USAF program management support; a FMS case with the USN for weapon to aircraft integration; and a Direct Commercial Sales contract with Lockheed Martin Missiles and Fire Control for the supply of certification/airworthiness data, integration support, and missile capability enhancements. The original definitions for IOC and FOC differentiated the capability to: a) engage fixed and relocatable land targets - IOC December 2009, and b) mobile maritime targets - FOC December 2010. The ability to achieve the mobile maritime targeting capability [also known as Maritime Interdiction or Anti-surface Warfare (ASuW)] was always identified as high risk and was noted as such in the Government approval of the AIR 5418 Phase 1 Second Pass submission. The capability requirement to engage a moving maritime target was an option under the contract. Proceeding with this option was dependent upon USAF development of an ASuW capability within a timeframe that was suitable for the Australian application. Lockheed Martin simulation studies into the missile performance in a maritime environment (funded by the AIR 5418 Phase 1 project) were completed September 2009. However, the US Government has yet to provide the USAF with funding to develop the weapon data link and associated technology required for this capability. The Defence Capability and Investment Committee (DCIC) was briefed on the status of the JASSM capability progress on 28 May 2010. The DCIC accepted the advice that an ASuW variant of JASSM was not feasible due to delays in US Government funding. Notwithstanding, Government, at Second Pass approval, noted that the JASSM system without a moving maritime target capability is still a very effective strike weapon and would be the preferred solution. Integration of JASSM onto the F/A-18 A/B Hornet was undertaken by the USN Advanced Weapons Laboratory at China Lake, California. The integration effort required the inclusion of the JASSM capability into the F/A-18 A/B Hornet Operational Flight Program (OFP) software. Flight testing to authorise the F/A-18 A/B Hornet to carry JASSM was conducted in Australia, while the USN developed the F/A-18 A/B Hornet OFP software. **A successful JASSM live firing was completed at the USN China Lake Weapons Range on 3 December 2010. Analysis of data from this test firing confirmed JASSM functionality in the 21X OFP software, resulting in a Letter of Certification being issued by the USN on 28 February 2011.** The F/A-18 A/B Hornet will carry the JASSM and use the USN developed OFP in an Australian test and evaluation program. **A full end-to-end test is required in order to confirm that Australia has a full independent JASSM IOC and does not need US assistance to use the capability. Defence plans to conduct up to two** live missile firings in Australia **during** 2011. **A Submission advising the status of project AIR 5418 was noted by Government in May 2011, including the following changes to project baseline:** **- A revised IOC date of December 2011 (pending a successful Operational Test**

	and Evaluation (OT&E) outcome in August 2011); **- Removal of the moving target capability from project scope;** **- A Real Cost Decrease of $50 million; and** **- A revised FOC date of Dec 2012, for fixed and relocatable targets only.**
Uniqueness	JASSM is an Australianised Military-Off-The-Shelf (MOTS) guided weapon acquisition. The Commonwealth of Australia **was** the first FMS customer authorised by the US Department of State to purchase this product. This weapon is operated by the USAF from platforms which are not in the Australian inventory. Australian integration of JASSM onto the F/A-18 A/B Hornet platform is a world first. JASSM represents the longest range (greater than **300** kilometres) guided weapon to be introduced into ADF capability, and as a result poses safety challenges for test/training over Australian land ranges.
Major Challenges	As this project represents the first integration of JASSM into the F/A-18 A/B Hornet platform, anomalies discovered during the software integration process had not been experienced previously by the USN (developers of the F/A-18 A/B Hornet OFP software) or the original equipment manufacturers – Lockheed Martin. Consequently, extensive engineering effort was required for software integration. Integrating newer weapon technology with older aircraft technology has presented many challenges; for example, host platform upgrades not required in the past are now required. **The maximum range of JASSM exceeds the size of all available test ranges, including the Woomera Test Range. Extant ADF range safety methodologies cannot be applied and Government has agreed to adopt US range standards, and accept the risk posed by the JASSM testing planned to be conducted at the Woomera Test Range.** **There are some elements of JASSM, particularly software design data, which have not been provided to Australia due to US foreign disclosure and proprietary information restrictions. Gaining the required design disclosure to achieve technical certification has been difficult or unachievable due to the US Government International Trade in Arms Regulations restrictions.**
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR05376PH2	Hornet Upgrade Phase 2	AIR5418 is reliant upon Hornet Upgrade Phase 2 for delivery of the Joint Mission Planning System and upgraded F/A-18 A/B Hornet Operation Flight Program software (21X), required to enable the operation of JASSM on the Hornet.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Aug 04	Original Approved	14.9		14.9		1
Dec 05	Government Second Pass Approval	355.3	355.3			
		370.2		370.2		
Jun 11	Real Cost Decrease	(50.0)	**(50.0)**			**2**
Jun 11	Price Indexation			**62.5**		**3**
Jun 11	Exchange Variation			**(39.4)**		
Jun 11	**Total Budget**	320.2		**343.3**		
2.2 Project Expenditure History						
Prior to Jul 10			**99.6**		US Government (2 FMS cases)	**4**
			73.2		Lockheed Martin	
			27.7		Other	**5**
				200.5		
FY to Jun 11			**34.5**		US Government (2 FMS cases)	**4**
			5.0		Lockheed Martin	
			4.7		Other	**6**
				44.2		
Jun 11	**Total Expenditure**			**244.7**		
Jun 11	**Remaining Budget**			**98.6**		

Notes	
1	First Pass approval.
2	**Government Approved Real Cost Decrease in June 2011 to remove moving target from project scope.**
3	**Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $59.2m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $3.4m having been applied to the remaining life of the project.**
4	Section 2.4 Prime Acquisition Contracts covering acquisition of the JASSM Materiel System and integration with the AF/A-18 have been combined due to classification.
5	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure **(e.g. travel)** not attributable to the aforementioned top three contracts and minor contract expenditure. **Additionally, AIR 5418 was required to fund the Resident Project Team at China Lake for calendar year 2011 due to ongoing integration activities.**
6	Other expenditure to June 2011 includes activities by Defence Science & Technology Organisation, Aerospace Operational Support Group, Tactical Fighter Systems Program Office integration support, Joint Mission Planning System (JMPS) support and specialist engineering services for the AIR 5418 Project Office.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The current actual expenditure reflects expenditure to 30 June 2011. The end year variation of $4.2m relates to a $2.0m underspend for exchange/gains, $1.6m due to slippage in the Woomera Live Fire event (previously planned for May 2011) with the remainder relating to delays in Interagency invoicing.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		(2.0)	FOREX Variation	
		(2.2)	Commonwealth Delays	
48.4	**44.2**	**(4.2)**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 11 $m			
US Government (x 2 FMS cases)	Jul 06 Jun 06	**160.4**	**212.1**	FMS	FMS	**1**
Lockheed Martin	Sep 06	**67.1**	**91.2**	Fixed/Firm	ASDEFCON	

Notes

1	**Prime Acquisition Contracts covering acquisition of the JASSM system and software integration with the F/A-18 A/B have been combined due to classification.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 11		
US Government	Classified	Classified	JASSM **Operational and Test Missiles**	1
Lockheed Martin	Various	Various	JASSM Data, Training and Integration Support	
US Government	**Various**	**Various**	F/A-18 A/B Hornet OFP Software development, testing and certification.	2

Major equipment received and quantities to 30 Jun 11

All major Design and Build Readiness Reviews have been completed. Delivery of IOC missiles has been achieved. USN certification of F/A-18A/B aircraft software providing JASSM capability achieved.

Notes

1	FMS Case AT-D-YLA
2	FMS Case AT-P-GJO

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Prior Certification	AGM 158A Missile System	Aug 06	Jan 07	Feb 07	6	1
System Requirements	AGM 158A Missile System	Jun 07	N/A	Jun 07	0	
	F/A-18 A/B System Segment	Sep 05	N/A	Sep 05	0	
Preliminary Design	AGM-158A Missile System		N/A	N/A	N/A	2
	F/A-18 A/B System Segment 21X (IOC)	Mar 06	N/A	May 06	2	3
	F/A-18 A/B System Segment 23X (FOC)	**Jun 08**	**N/A**	**Jun 08**	**0**	**4**

Critical Design	AGM 158A Missile System	N/A	N/A	N/A	N/A	2
	F/A-18 A/B System Segment 21X (IOC)	Aug 06	N/A	Mar 07	7	3
	F/A-18 A/B System Segment 23X (FOC)	**Jan 09**	**N/A**	**Jan 09**	**0**	**4**
Build Readiness	F/A-18 A/B System Segment 21X (IOC)	Nov 07	N/A	Jul 09	20	3
	F/A-18 A/B System Segment 23X (FOC)	**Feb 11**	**N/A**	**Feb 11**	**0**	**4**

Notes	
1	Variance due to protracted commercial contract negotiations. Prior Certification Review was completed in late January 2007. The approval to exit the Prior Certification Review was dated 01 February 2007.
2	The weapon is MOTS. Preliminary Design Review and Critical Design Review issues were addressed in the Prior Certification Review.
3	**Data listed is for the F/A-18 21X Build 3.4.1 (JASSM functionality) OFP software which will be used for the IOC.** Variance due to the detection of software anomalies and the undertaking of corrective and preventative action.
4	**Data listed is for the F/A-18 23X Build 3.1.3 (JASSM functionality) OFP software which will be used for the FOC.**

3.2 Contractor Test and Evaluation Progress

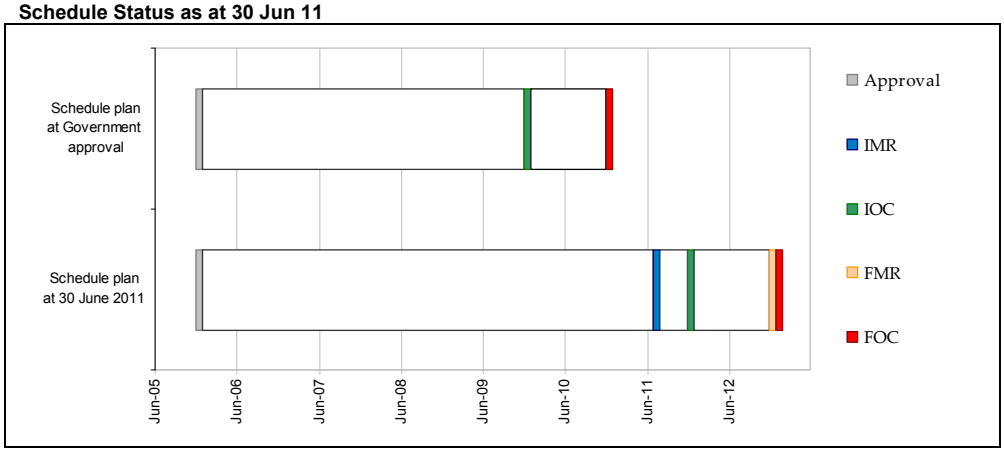
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	JASSM System (Weapon integrated into platform) 21X	Jun 09	Feb 11	**Feb 11**	20	1
	JASSM System (Weapon integrated into platform) 23X	**N/A**	**Jun 11**	**Jun 11**	**0**	
Acceptance	JASSM System (Weapon integrated into platform)	Dec 09	Dec 11	**Dec 11**	**24**	**2**

Notes	
1	**Data listed is for the F/A-18 21X Build 3.4.1 (JASSM functionality) OFP software which will be used for the IOC**. Variance is attributable to the delays associated with correcting software anomalies detected during software development and testing, which required extensive redevelopment and retesting to ensure airworthiness and operational effectiveness.
2	**An additional variation of four months** between System Integration and **Acceptance has been realised due to: delayed delivery of JASSM Test Missiles, Government acceptance of risk associated with Woomera test firings and** availability of **the** Woomera Test Range and support agencies

3.3 Progress Towards Materiel Release and Operational Capability Milestones

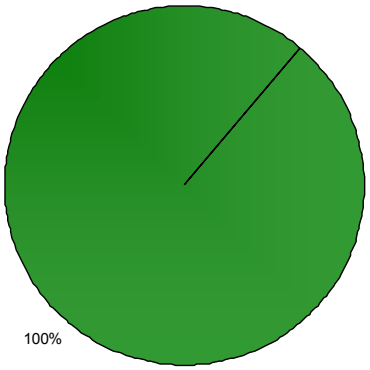
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release	Jul 11	Jul 11	0	**The AIR 5418 Project Office is working toward achieving an IMR which will allow OT&E to occur in July 2011.**
Second Materiel Release (MR2)	**Dec 11**	**Dec 11**	**0**	**The AIR 5418 Project Office is currently working toward achieving MR2 which will allow IOC to occur by December 2011. MR2 will be achieved when all design approval and acceptance required from DMO to enable a declaration of IOC is complete.**
Initial Operational Capability	Dec 09	Dec 11	24	The AIR 5418 Project Office is currently working toward achieving an IMR which will allow IOC by December 2011. The variance is attributable to delays in the AF/A-18 A/B software development and certification process, which has required extensive testing and redevelopment to ensure airworthiness and operational effectiveness.
Final Materiel Release	**Dec 12**	**Dec 12**	**0**	**The AIR5418 Project Office is currently working toward achieving a FMR which will allow FOC by December 2012.**
Final Operational Capability	Dec 10	Dec 12	24	FOC requires delivery of the approved full quantity of JASSM war stock. The FOC war stock missiles are being manufactured in Lot 8. The USAF contract for the Lot 8 missiles was delayed due to US JASSM program delays and missile reliability concerns.

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: **The United States Navy provided formal aircraft certification of F/A-18 A/B OFP 21X on 28 February 2011 and 23X on 29 June 2011. The Operational Test and Evaluation event at Woomera to test the end to end capability for Air Force is scheduled for 18-29 July 2011. Initial JASSM warstock missiles (IOC quantity) have been received in country.**
	Amber: N/A
	Red: N/A

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 ability to conduct OT&E in Australia will be affected by the JASSM range safety template leading to an impact on cost, schedule and sustainability.	Project AIR 5418 has engaged DSTO to develop a Range Safety Template Tool which provides a probabilistic weapon danger area. Ministerial guidance has been provided for public risk exposure levels. JASSM range safety issues will be briefed to the Defence Explosive Ordnance Committee for advice on accepting public risk. **This risk is now retired following Government endorsement of the Air Force Headquarters Submission – JASSM Launches at the Woomera Test Range.**
Certification will be affected by JASSM not meeting Technical Airworthiness Regulator (TAR) requirements for airworthiness leading to an impact on schedule, cost and performance.	Project AIR 5418 has engaged Directorate General Technical Airworthiness (DGTA), Capability Development Group and Air Force Headquarters to remediate requirement deficiencies. Progress has been made through the provision of issue papers addressing the technical and airworthiness risks. The remaining TAR risk has been realised and as such is now reflected as an issue **regarding unresolved Safety Critical Software issues in Table 5.2. This risk/issue will be retired following sign-off of the Issue Papers.**
IOC will be affected by failure to achieve an acceptable level of capability leading to an impact on Cost, Schedule and Performance.	Thorough development and acceptance testing has been performed by USN at China Lake. Identified performance deficiencies have been addressed (where possible) through engineering re-development. Remaining deficiencies have been assessed as acceptable to allow **IMR and** progression to IOC. **Test assets required to conduct OT&E were delivered in June 11. This risk will be retired following achievement of MR2**

Successful integration of JASSM onto the RAAF Hornets may not be completed within the OFP timelines, leading to a delay to IOC.	This risk **is now** retired following a successful China Lake Live Fire event and the subsequent issue of a USN certification letter.
Certification will be affected by USN/USAF non or partial release of data leading to an impact on Cost, Schedule and Performance	Project AIR 5418 has engaged with DGTA and solicited Capability Development Group (CDG) support to engage with higher level authority. An issues paper on post launch safety has been prepared for DGTA consideration. The project office has continued to engage with US Air Force for release of data. **This risk/issue will be retired following sign-off of the Issue Papers.**
JASSM 21X capability will be affected by delays in the capability of the AF/A-18 Embedded GPS/ Inertial Navigation (EGI) JASSM interface leading to an impact on capability and schedule.	**This risk has been overcome and retired through the use of Black Crypto Variable Monthly Keys.**
The planned China Lake and Woomera Live Fire events may be delayed due to expiry of Flight Termination System Lifed components.	**This risk is now retired. The China Lake live fire event was successfully completed on 3 December 2010. The Test Missiles for the Woomera OT&E event have Lifed components which will not expire until well after the scheduled OT&E event.**
Delay in obtaining approval to conduct Operational Test and Evaluation in Australia may impact range and test support resources availability, and delay achievement of IOC.	**This extreme risk has been included following reassessment and can be retired following the OT&E event scheduled for 18-29 July 2011. The AIR 5418 project office and Air Combat Group are engaging Woomera range management for ongoing updates. Potential test dates are being reserved through range bookings well in advance of testing. When final test dates are known, AIR 5418 will negotiate with stakeholders to enable the Operational Test and Evaluation to proceed as scheduled.**
JASSM Certification (against the Functional Performance Specification) will be affected by incomplete software testing or data, requiring further testing to allow full certification. Certification will be affected by USN/USAF none or partial release of data leading to an impact on cost and, schedule and performance.	**Project AIR 5418 has engaged with DGTA and solicited CDG support to engage with higher level authority. An issues paper on post launch safety has been prepared for DGTA consideration. The project office has continued to engage with US Air Force for release of data. This high identified risk has been included following reassessment.**
The JASSM project will be affected by the lack of skilled/experienced staff leading to an impact on Schedule, Cost, Performance and Sustainability.	**This risk is reducing with completion of 21X certification and expected completion of 23X certification. This high identified risk has been included following reassessment. The risk will be retired following achievement of IOC.**
The JASSM Mission Planning System - PTM & JMPS can not be integrated with the Defence Information Environment and Defence Secret Network (DSN) leading to an impact on Cost, Schedule, Supportability and Performance.	**The project office is working with Command and Intelligence System Support Office to resolve this issue. This high identified risk has been included following reassessment.**
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
JASSM certification may be affected by incomplete operational testing or test failure, requiring rework and further testing to allow full certification.	**AIR 5418 have a full time Test & Evaluation manager, assisted by a uniformed understudy. There has been high level engagement with the Test & Evaluation Working Group members, including Air Force and Capability Development Group. This risk will be retired following successful completion of OT&E.**

FMR will not be realised due to the lack of the specific aspects of mission planning infrastructure support leading to an impact on Performance.	**DMO and CDG staff are liaising with Defence Imagery and Geospatial Organisation and Defence Signals Directorate to establish a process to provide the required operational resources to support JASSM mission planning.**
There will be a delay in the approval and issue of the JASSM Instructions for Continuing Airworthiness leading to an impact on Schedule and Supportability.	**Publications have been drafted for use at OT&E and will be published prior to IOC. This risk will be retired following publication release.**
Some of the Precision Strike Targeting LAN (PSTL) specific software will not be compatible with the Defence Standard Operating Environment and potentially affect the use of the software or the interface with the DSN.	**This risk has been considered and will be addressed in the development of the PSTL system if issues become apparent.**

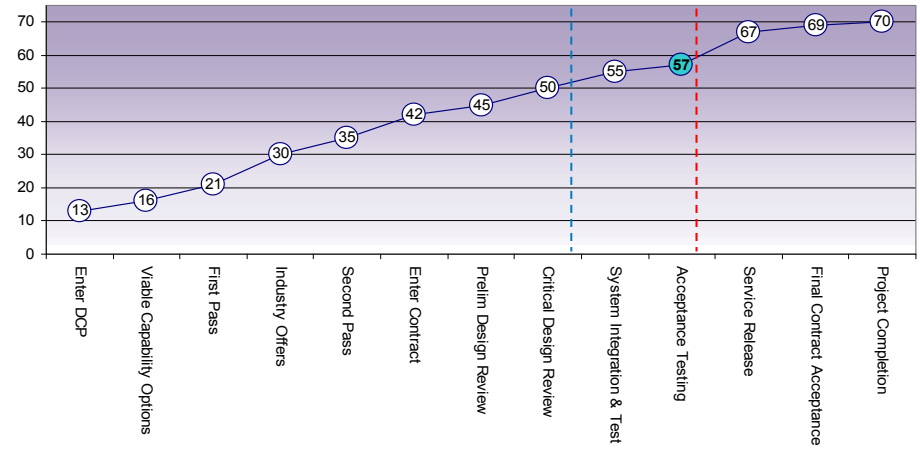
5.2 Major Project Issues

Description	Remedial Action
The JASSM China Lake Live Fire has been delayed due to insufficient JASSM 21X functional/capability maturity leading to an impact on Schedule.	System integration and acceptance testing is being performed by the USN at its China Lake facility. Identified performance deficiencies have been addressed (where possible) through engineering re-development. Remaining deficiencies have been assessed as acceptable to allow progression to IOC. **The China Lake Live Fire event was successfully completed on 3 December 2010. This issue is now retired.**
Initial Operational Test & Evaluation may be affected by unresolved Safety Critical Software issues between Project Office and DGTA leading to an impact on Schedule.	DGTA are being engaged early and often with respect to resolution of this issue. The Hornet Weapon Integration Team is updating the urgency of this risk to the project office on an ongoing regular basis. **This issue is now retired following Government endorsement of the Air Force Headquarters Submission – JASSM Launches at the Woomera Test Range.**
On 26 November 2010, Minister for Defence and Minister for Defence Materiel announced that AIR 5418 was to be added to the list of 'Projects of Concern' for failure to keep Government properly and fully informed as to the progress with respect to this major project.	**As a PoC, Deputy Chief Executive Officer DMO provides an initial Gate Review, oversight of remediation activities, followed by bi-monthly PoC review meetings. A DMO Submission has been drafted and will provide Government with an update on the current project status.**
A USAF JASSM test firing failure occurred during January 2011. A USAF Failure Review Board determined that the failure was caused by an unplanned operation of the missile's flight termination system.	**To overcome this, the manufacturer has developed a Flight Termination System screening process which has been endorsed and recommended by the USAF. All USAF and Australian JASSM Flight Termination Systems are being screened, and replaced if required, prior to further flight tests. The systems fitted to the Australian test assets have been screened and cleared.**

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	**8**	8	8	8	**9**	8	8	**57**
Acceptance Testing	Project Status	**9**	**8**	**9**	**8**	**9**	8	7	**58**
	Explanation	• **Schedule: The project is currently within the revised schedule which is being formalised following Government endorsement of the Cabinet Submission.** • **Requirement: Requirements are fully understood and approaching final stages of delivery.** • **Operations and Support:** Operational and Support elements are being procured. System Acceptance cannot be finalised until completion of Operational Test and Evaluation.							



2009-10 DMO MPR Status - - - - - 2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Stability of interfaces on ageing platforms may not be reliable, leading to an underestimation of integration complexity.	First of Type Equipment
Interface Control Documents are not always correct or may not have been interpreted correctly during host platform design.	Requirements Management
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.	First of Type Equipment
Sufficient resident project staff is important to ensure US Government and contractors understand our requirements and expectations.	Resourcing
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.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Anthony Klenthis
Branch Head	Mr Martin Weir
Project Director	Mr Peter Kiss
Project Manager	**WGCDR Jamie Scott**

Project Data Summary Sheet[221]

Project Name	**ARTILLERY REPLACEMENT PROJECT**
Project Number	**LAND 17 Phase 1A**
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Feb 06
Government 2nd Pass Approval	Jul 09
Total Approved Budget (Current)	$326.1m
2010-11 Budget	$64.5m
Project Stage	System Integration & Test
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project will deliver 35 M777A2 Lightweight Towed 155mm Howitzers (LW155) and the Advanced Field Artillery Tactical Data System (AFATDS) as the Battle Management System - Fires (Command and Control) (BMS-F (C2)) through Foreign Military Sales (FMS) with the United States (US) Government to replace major systems of the current fleet of 105mm and 155mm Howitzers. It is also acquiring the XM1156 Precision Guidance Kit as the Course Correcting Fuze (CCF) capability.

1.2 Current Status

Cost Performance

The project remains within its current approved budget.

Schedule Performance

LW155 and BMS-F (C2) capabilities - The project is on track to deliver the required Mission System and Support System materiel for the Initial Materiel Release (IMR) of November 2011 and Final Materiel Release (FMR) in August-September 2013.

The CCF capability is currently not available through US Government FMS. In February 2011, the US Government advised that the CCF will be subjected to a further program of testing prior to reaching a production milestone decision, which is now planned for December 2012. Based on the US Government's advice of an 18 month hardware delivery timeframe, achievement of the December 2013 Final Operating Capability (FOC) that includes the CCF capability is at risk.

[221] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability Performance

The Indirect Fire capability sought is as follows:

- The LW155 capability will provide Army with a digitised, mobile, medium indirect fire platform.
- The BMS-F (C2) capability will provide Army with a digitally networked, interoperable command and control system that will allow for automated transmission of digital calls for fire from combat units and the rapid calculation of ballistic solutions and effects for firing; and
- The CCF capability will provide Army with improved ammunition precision to minimise collateral damage, avoid incidents of friendly fire and increase lethality against high value targets.

The Project is on track to deliver the LW155 and BMS-F (C2) capabilities; the CCF capability is currently not available for sale through FMS.

1.3 Project Context

Project	Explanation
Background	Government First Pass approval for Land 17 Ph1A was provided on 14 February 2006, and allowed the project to explore capability solutions to enhance the Australian Army Indirect Fire Support (IFS) system through the replacement or upgrade of the 105mm Hamel Howitzer and 155mm M198 Howitzer fleets when they reach the end of their service life. In July 2009, Government provided Second Pass Approval and agreed to split the Land 17 project into two phases. Phase 1A for delivery of the LW155 and an Australianised AFATDS, and Phase 1B for delivery of the Self Propelled Howitzer (SPH) and the Digital Terminal Control System (DTCS). An FMS Case for the supply of the LW155 was established with the US Government in September 2009. The first M777A2 Lightweight Howitzer arrived in Australia in August 2010, with the remainder expected to arrive during 2011-12. An FMS Case for the supply of the AFATDS was established with the US Government in May 2010. A Systems Requirements Review (SRR) was conducted between Land 17 Ph1A project, the US Government and Raytheon Network Centric System (NCS) in September 2010 resulting in the US Government signing a contract with Raytheon NCS for the AFATDS providing the BMS-F (C2) capability in December 2010; first delivery of Australian AFATDS is expected September 2011. A Letter of Request (LOR) was submitted to the US Government for the acquisition of the CCF in September 2009, however in November 2009 the US Government advised that it was unable to offer an LOA as final costs in relation to testing were not available. On advice from the US Government, the LOR was resubmitted in January 2010; however, in September 2010 the US Government advised that the US Program was on hold due to continued delays in the CCF development. In February 2011, the US Government advised that the CCF will be subjected to a further program of testing prior to reaching a production milestone decision, which is now planned for December 2012.
Uniqueness	Whilst this project is considered a replacement project, the inclusion of the BMS-F (C2) and the ability to perform digitised calls for fire and ballistic computations is a new capability for the ADF. The digital capability provided by AFATDS and Digital Fire Control System (DFCS) will enable connectivity and interface with external systems and thereby contribute to the higher intent for joint and Network Centric Warfare (NCW).
Major Challenges	**Mission System Architectures –** The creation of the BMS-F Joint Fires Network Architecture was a major technical challenge. Full ADF interoperability will require a higher order Joint Fires Support communications architecture that supports the BMS-F Joint Fires Network. This task is technically challenging and will require engagement of major stakeholders. **Integration and interoperability** with the broader ADF will mean overcoming the following challenges: **Technical –** The LW155 must operate with Army's current and future fleet of vehicles, must be transportable by in-service aircraft and naval vessels, and utilise both in-service and future 155mm ammunition.

	Technical – AFATDS must interface and integrate with multiple systems across the ADF, which utilise different platforms, standards and protocols. **Commercial –** Combining systems from different Original Equipment Manufacturers (OEM) and countries of origin, where each has specific background and foreground Intellectual Property (IP) restrictions will be commercially challenging. Many of the identified systems, including the LW155 and AFATDS, are subject to the US Government's International Trade in Arms Regulations (ITAR). **Scheduling –** Organising the test and certification activities performed in collaboration with DMO projects and external agencies creates a major schedule challenge. **Sustainment –** The delivery of the Australian AFATDS presents a complex sustainment challenge. Both the hardware and software will require ongoing upgrades in synchronisation with all interfaces throughout the entire Life Of Type of the capability. Land 17 Phase 1A aims to transition an evolutionary acquisition process into the sustainment office.
Other Current Projects/Sub-Projects	**Land 17 Phase 1B:** Covers the acquisition of new and improved Forward Observer (FO) equipment including a Control Terminal and the Tactical Full Motion Video System (TFMVS). **Land 17 Phase 1C:** Covers the acquisition of the Self Propelled Howitzer. Both these acquisitions will be utilised in conjunction with Phase 1A equipment.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2085 Phase 1B	Explosive Ordnance Warstock Remediation Project	JP 2085 Ph1B has procured the XM982 Excalibur Global Positioning System guided artillery precision munition, as well as the Smart 155 Sensor Fuzed Munition (SFM). JP2085 Ph1B is also procuring an initial quantity of the AFATDS as part of the Excalibur capability through the FMS program. This acquisition of AFATDS was planned to be the baseline mission system and support system for Land 17 Ph1A to expand. It included integration with ADF vehicles and interoperability with a number of ADF battle systems.
JP 2072	Battlespace Communications System (Land)	JP 2072 is responsible for designing the Battlespace Communications Systems (Land) (BCS (L)) architecture. The BCS (L) will be a 'system of systems' incorporating Combat Net Radio (CNR) and wide band radio, Trunk Communications and local area voice and data systems that will act as the bearers used to network force elements. JP 2072 will be the primary acquisition body for the Land 17 Ph1A communications bearers required under the BMS-F Joint Fires Network architecture.
Land 200	The Land 200 nomenclature is the combination of the following projects/phases: • Land 75 Ph3.2 and Ph3.3. Battlefield Command Support System (BCSS); • Land 75 Ph3.4. Battle Management System – Mounted (BMS-M); and • Land 125 Phase 3. Battle Management System – Dismounted (BMS-D).	The systems within Land 200 will be utilised by manoeuvre elements and generate a current and Common Operating Picture (COP). Interoperability with this COP is essential for Land 17 Ph1A to create a shared situational awareness that is central to the safe and effective application of Joint Fires. The BMS-M that will be located in the Bushmaster Protected Mobility Vehicle - Command (PMV-C) variant and the interim Mack Gun Tractor, will impact on the integration work required for the LW155 vehicle modifications and AFATDS integration.

Land 106	M113 Armoured Vehicles Upgrade Project	This project is responsible for upgrading in-service M113A1 vehicles for Army. There will be seven variants of the M113AS produced. The primary interface for Land 17 will be between AFATDS and the Armoured Command Vehicle (M113 AS4 - C).
Land 116	Project Bushmaster	Land 116 introduced the Protected Mobility Vehicle (PMV) in seven configurations. The Land 17 Ph1A interface will be to the Troop (PMV-T) and Command (PMV-C) variants. The Troop variant has been proposed as the personnel vehicle for the LW155 Gun Crew. The Command variant will be used as Royal Australian Artillery (RAA) Command Posts and will require AFATDS integration.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m	Contractor	Notes
2.1 Project Budget History					
Dec 09	Original Approved	348.3	348.3		
Jun 11	Price Indexation		17.2		1
Jun 11	Exchange Variation		(39.3)		
Jun 11	**Total Budget**	348.3	326.1		
2.2 Project Expenditure History					
Prior to Jul 10		9.0	8.8	US Government (AT-B-UCZ)	2
		0.4	0.4	US Government (AT-B-UDQ)	2
		0.3	0.3	Other	3
		9.7	9.5		
FY to Jun 11		70.5	60.8	US Government (AT-B-UCZ)	2
		5.0	4.5	US Government (AT-B-UDQ)	2
		9.7	9.7	Harris Corporation	
		4.4	4.4	Other	3
		89.7	79.3		
Jun 11	**Total Expenditure**	99.4	88.9		
Jun 11	**Remaining Budget**	248.9	237.2		

Notes	
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $8.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $8.4m having been applied to the remaining life of the project.
2	For Base Date calculations for FMS cases, a consistent de-escalation factor has been applied to all projects which is derived from Defence's cost estimation methodology.
3	Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		9.3	FMS	Expenditure is $79.3m against latest plan $64.4m. Variance of $14.9m is primarily due to accelerated FMS payments for the Lightweight Towed Howitzers of $9.3m, radio payments of $9.7m brought forward from FY11/12, rescheduling of vehicle integration activities to FY11/12 ($3.0m), and foreign exchange gains ($1.1m).
			Overseas Industry	
			Local Industry	
		9.7	Brought Forward	
			Cost Savings	
		(1.1)	FOREX Variation	
		(3.0)	Commonwealth Delays	
64.4	**79.3**	**14.9**	**Total Variance**	

2.4 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
US Government (AT-B-UCZ)	Sep 09	130.8	136.4	FMS	FMS	
US Government (AT-B-UDQ)	May 10	22.8	22.1	FMS	FMS	
Harris Corporation	Feb 11	11.1	11.1	Fixed	ASDEFCON	

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
US Government (AT-B-UCZ)	35	35	The delivery of M777A2 Lightweight Towed 155mm Howitzer and support system	1
US Government (AT-B-UDQ)	108	108	The delivery of Australian AFATDS	2
Harris Corporation	255	255	Supply of HF, VHF and UHF radios, ancillaries and spares.	

Major equipment received and quantities to 30 Jun 11
Fifteen LW155 received to date.

Notes	
1	Delivery of 20 LW155 expected between November 2011 and February 2012.
2	These quantities are exclusive of JP 2085 Ph1B – The complete quantity is 168 (combined total), which includes AFATDS software, Effects Management Tool (EMT) software and Sistim Software.

Section 3 – Schedule Performance

3.1 Design Review Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	AFATDS	Sep-10	Sep-10	Sep-10	0	
Preliminary Design Review	N/A	N/A		N/A		1
Critical Design Review	N/A	N/A		N/A		2

Notes	
1	As both the LW155 and AFATDS are Off The Shelf (OTS) acquisitions, there is no Preliminary Design Review.
2	As both the LW155 and AFATDS are OTS acquisitions there is no Critical Design Review.

3.2 Contractor Test and Evaluation Progress

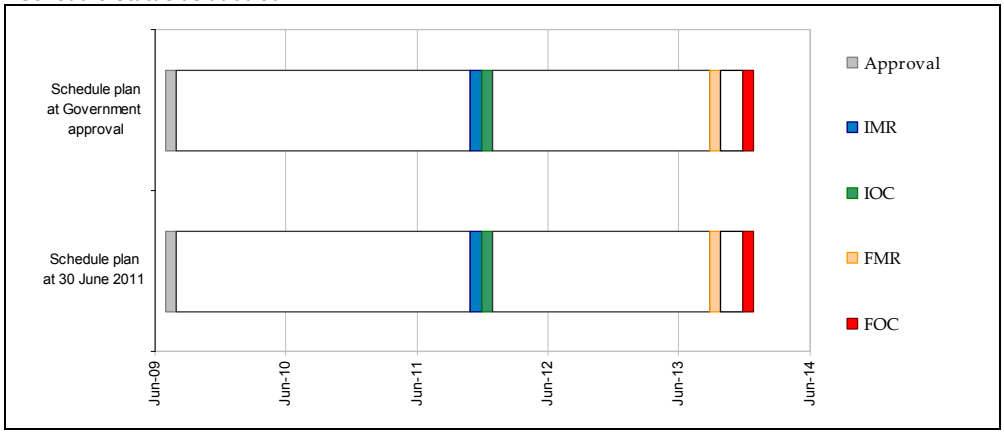
Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LW155	Sep 11		Sep 11	0	1
	AFATDS	Sep 11		Sep 11	0	2
Acceptance Test and Evaluation	LW155	Sep 11		Sep 11	0	3
	AFATDS	Sep 11		Sep 11	0	3

Notes	
1	The project will conduct certification activities in collaboration with relevant Defence agencies, to qualify the LW155 for external and internal airlift and sea transport and compliance with the ADR for road transport.
2	The AFATDS will be tested and certified with multiple combat management systems.
3	Acceptance Test and Evaluation activities are planned from March through to September 2011.

3.3 Progress Towards Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Nov 11	Nov 11	0	
Initial Operational Capability (IOC)	Dec 11	Dec 11	0	
Final Materiel Release (FMR)	Aug/Sep 13	Aug/Sep 13	0	
Final Operational Capability (FOC)	Dec 13	Dec 13	0	

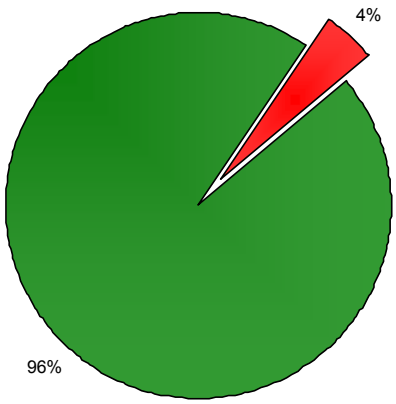
Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The Land 17 Ph1A project forecasts delivery of the LW155 and AFATDS to the required level of capability in accordance with FMR requirements and associated completion criteria outlined in the MAA.

Amber:

N/A

Red:

The Land 17 Ph1 A project assess the CCF materiel element as Red, noting the capability will be subject to a further program of testing to resolve reliability issues, prior to the US Government agreeing to a production milestone. Government has been advised of the current status. A decision to progress the acquisition of CCF under this phase of Land 17 will be made by December 2012.

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
LW155 Configuration Management: There is a chance that configuration management for the M777A2 howitzer will be affected by US configuration changes leading to an impact on supportability and performance.	The Project Office will convene a Configuration Control Board (CCB) to develop strategies for the management of hardware and software upgrades, and enhancements to maintain interoperability with Coalition systems. The CCB will also assess the Block Scale Upgrades of the BMS-F AFATDS to ensure interoperability with DFCS. The Project Office will ensure when the support contract is signed, that the contractor has the ability to upgrade the M777A2 in accordance with the US baseline.
AFATDS System integration Complexity: It is likely that the complex integration requirements of the BMS-F (C2) with internal Land 17 sub-system elements and external ADF battle management, command and control, and joint offensive support systems will delay IMR and FMR.	The project has engaged multiple DMO and Defence agencies for test and certification activities. This includes the commissioning of the AFATDS Requirements Centre at Puckapunyal and the semi-permanent installation of AFATDS terminals in the Land Network Integration Centre (LNIC) where the first testing activity commenced in May 2011.
AFATDS - Delivery of Radios – There is a chance that a complete delivery of communications bearers will not occur in time to meet IMR, leading to an impact on performance.	The Project Office has collaborated closely with JP2072 to ensure a timely delivery of the BMS-F (C2) communications bearers.
AFATDS Vehicle integration not met by FMR date: It is likely that a PMV-C mounted BMS-F (C2) capability by the FMR date may not be achieved due to the inability of JP2085 Ph1B to deliver vehicle integration designs for the PMV-C prior to November 2010. JP2085 Ph1B was to set the conditions for Land 17 Ph1A vehicle integration activities.	The Project Office engaged multiple stakeholders (DMO projects and Defence agencies including Land Engineering Agency (LEA)) in December 2010 and gained stakeholder endorsement on an integration plan to leverage off the Land 75 vehicle integration work. In collaboration with Land 116 Bushranger Project, the project has commenced work to develop four Bushmaster PMV-C ADATDS conversion kits utilising the terms and conditions of an extant Bushmaster PMV-C services contract.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
Project Interoperability Scope Boundaries: The complexities of achieving a seamless interface between AFATDS and external ADF systems was not clearly defined when the CDD suite was developed. It is likely that future, as yet unknown, additional activities will need to occur for successful integration into the ADF.	The Project Office is engaging key stakeholders, including Army Headquarters (AHQ) and Capability Development group (CDG), to identify and define the interoperatability requirements and associated challenges. The project is also assisting key stakeholders with the development of an AFATDS roadmap for the ADF and a higher order Joint Fire Support communications architecture that supports BMS-F in order to identify future interoperability technicalities with other systems as early as possible.

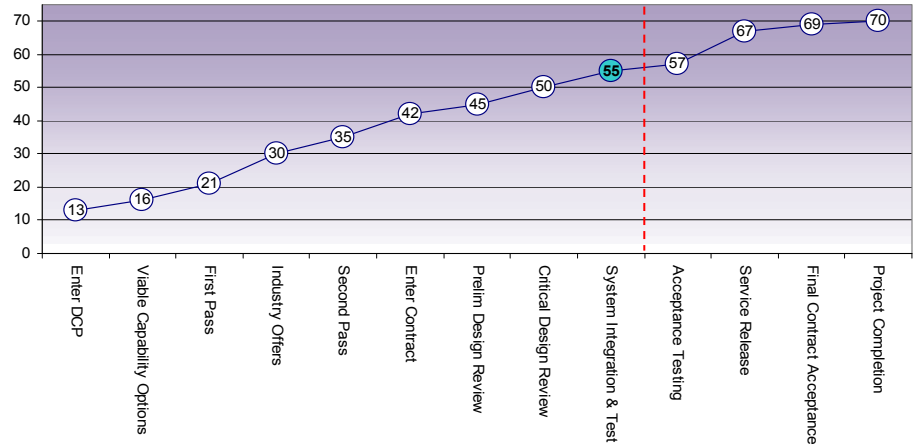
5.2 Major Project Issues

Description	Remedial Action
LW155/AFATDS - Scope change: Land 17 Ph1A has encountered additional demands to project requirements as a result of: • Changes to the Functional Performance Specification (FPS) and Operational Concept Document (OCD), and • New lower level requirements identified during the Systems Engineering acceptance process.	The project is currently in the processes of reviewing the FPS to adjust the baseline in consultation with AHQ and CDG. The end-state of this work effort will result in an established Verification Cross Reference Matrix (VCRM).
AFATDS – JP2085 Ph1B: The inability of JP2085 Ph1B to deliver AFATDS software, hardware, radios and vehicle integration to set the conditions for the Land 17 Ph1A AFATDS upgrade has brought additional schedule risk to the project.	A process is currently being undertaken to request from Government a transfer of the relevant scope and budget from JP2085 Ph1B to Land 17 Ph1A and determine the appropriate schedule adjustments.
CCF – Schedule: The US Government has been unable to offer the CCF for acquisition via FMS due to ongoing testing and certification of the fuze accuracy and reliability. The US Government advised in February 2011 that a production milestone decision for the CCF will not be made until December 2012.	The project is planning to have CCF work packages scheduled, resourced and ready to commit once the CCF is approved by the US Government for sale through FMS. An Options Plan is in place to move the CCF scope to alternate phases of Land 17 if the delay exceeds the scheduled life of Ph1A.

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	8	7	8	8	8	8	8	55
System Integration & Test	Project Status	9	10	8	7	7	8	7	56
	Explanation	• **Schedule:** Critical Path activities are being managed in accordance with DMO policy and guidelines, current schedule sees the major milestones of IMR and FMR being met. • **Cost:** Projects remain within the budget allocated by Government at Second Pass approval; • **Technical Understanding:** Due to the train the trainer courses and ongoing collaboration with the US Government the level of technical understanding within the Project is high. • **Technical Difficulty:** As system integrator Land 17 Ph1A has commenced desktop analysis and verification of integration and interoperability between the individual component systems. An interoperability test plan has also been drafted. • **Operations and Support:** No operational support has been required at this time.							



2010-11 DMO MPR Status - - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Collaboration with key stakeholders required – As the project progressed, the technical understanding of the project office increased faster than that of the external stakeholders and this has required a pro-active management approach to ensure a common understanding.	Governance Requirements Management
Network Centric Warfare – while representing a clear intent for ADF future war fighting, NCW is a relatively new and evolving concept. As NCW evolves it imposes demands for projects as a result of incremental changes to organisational understanding, standards, and operating methods. The experience underlines the importance for the project of having well-defined and stable requirements.	Requirements Management
Foreign Military Sales – When pursuing an FMS contract with the US Government it is important to factor in schedule contingency.	Schedule Management

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	MAJGEN Grant Cavenagh
Branch Head	BRIG David Shields
SPO Director	COL Michael Chadwick
Program Director Land 17	Mr Adrian Ford
Project Manager Land 17 Phase 1A	LTCOL John Dougall

Project Data Summary Sheet[222]

Project Name	**BATTLEFIELD COMMAND SUPPORT**
Project Number	**Land 75 Phase 3.4**
Capability Type	New Capability
Service	Australian Army
Government 1st Pass Approval	Dec 05
Government 2nd Pass Approval	Nov 09
Total Approved Budget (Current)	$325.9m
2010-11 Budget	$58.5m
Project Stage	Critical Design Review
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The Land 75 Phase 3.4 Battlefield Command Support System (BCSS) project will provide a digital command and control support system to enhance combat capability of the Australian Army through supporting timely and quality decision-making in the land tactical environment. The BCSS project will also deliver Battle Management Systems (BMS) to over 1000 field vehicles, including; Bushmaster Protected Mobility Vehicles (PMV), M113 Armoured Personnel Carriers (APC), G-Wagons, Macks and Unimogs. The BMS is a computer-based command and control system designed to enhance the tactical commanders Situational Awareness and ability to execute operations. The BMS consists of software that is simple and intuitive to use; and hardware that can survive in the land tactical [combat] environment.

The BMS is the central component of the Battle Group and Below Command, Control and Communications System (BGC3) that is being jointly delivered by the Land 75 Phase 3.4, Land 125 Phase 3A and JP 2072 Phase 1 projects, and will incorporate a mobile, data capable communications system and be able to exchange combat information with BCSS and other BMS. The BGC3 will form the basis of a land combat identification (Blue Force Tracking) system by providing commanders with a 'real-time' Situational Awareness display of friendly force locations.

1.2 Current Status

Cost Performance

This Project remains within its current approved budget.

Schedule Performance

The project remains on schedule with delivery of equipment and training for Initial Materiel Release (IMR) planned for June 2011, which will meet Army's requirement to conduct Initial Operating Capability (IOC) in July 2011. To date the project has achieved System Design Review (SDR), Preliminary Design Review (PDR) and Detailed Design Review (DDR) on a number of platforms, IMR was achieved on 14 June 2011. Bushmaster vehicles from the production facility are scheduled for delivery to 7 Brigade by early 2012.

Major contract milestones remain on schedule with Final Material Release (FMR) planned for April 2013 and Final Operating Capability (FOC) in April 2013.

[222] Notice to reader

Future dates, Sections; 1.3 (Major Challenges), 4.1 (Measures of Materiel Capability Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p.175.

Materiel Capability Performance

The BMS designs have been agreed through the DDR conducted in November 2010. The Contractor (Elbit Systems Ltd) has commenced production of the initial systems for delivery to the Commonwealth to achieve IMR.

1.3 Project Context

Project	Explanation
Background	The capability need was identified in 2002-03 by Capability Development Group (CDG) and the Land Warfare Development Centre. The need arose from analysis of operational experience through the use of BCSS, regional threat and technology assessments, and support from allied programs and technology growth. The capability was refined from 2003 to 2005 culminating in the submission for first pass approval in late 2005. The duration of time from concept to contract has allowed the Australian Defence Force (ADF) to capitalise upon generational advancements in technology and support the alignment of complementary projects to deliver an holistic solution. The project received Government first pass approval in December 2005. In June 2006, the Minister for Defence agreed that the solicitation of the Land 75 Phase 3.4 BMS and the Land 125 Phase 3 C4I sub-system was to be combined to enable Defence to obtain a fully integrated system for mounted and dismounted battle management. The communications bearer (originally to be provided separately by the JP2072 project) for the mounted BMS was added in January 2007. Combining the Request For Tender (RFT) enabled Defence to seek a coherent and integrated solution from industry. The BGC3 RFT closed on the 27 August 2007, with tenders received from four companies. The initial down selection was to two preferred tenders in January 2008. Phase 1 of the Offer Definition Activity (ODA) selected Elbit Systems Ltd (Elbit) as the preferred tender to proceed to Phase 2 of ODA in May 2008. Elbit successfully completed the ODA and provided a refined risk, schedule and cost proposal that constituted the basis of the approval proposal. Government second pass approval was gained in November 2009, with the contract being awarded to Elbit as the prime contractor in March 2010.
Uniqueness	The capability introduced by this project will fundamentally change the methods used by tactical forces in the implementation and collaborative distribution of battlefield data. Command and Control processes will move from analogue, hard copy based information distribution to an electronic, near-real time capability with improved situational awareness. Implementation of this capability is considered a conversion rather than simply a rollout for the ADF, as it introduces a significant number of organisational and personnel change management requirements.
Major Challenges	There is a significant Government Furnished Equipment (GFE) component to this project and it's management poses a challenge as the Commonwealth works to accommodate the GFE requirements of Elbit Systems. The type of GFE ranges from systems that can only be sourced through the United States (US) Government and hence subject to International Traffic in Arms Regulations (ITAR), and Australian Defence Force (ADF) controlled assets, including personnel and vehicle platforms. Meeting the design approval requirements continues to remain a challenge for the program as the project is exposed to multiple platform design authorities which creates a complex management environment. Melding of the processes required to achieve an approved design continue to consume a large portion of the projects management and engineering resources. The majority of the components in the BMS are off the shelf, as are many of the external systems to which the system is to integrate. Managing the interfaces to ensure that the system specifications can be achieved remains a key challenge.
Other Current Projects/Sub-Projects	**Land 75 Phases 3.2, 3.3 and 3.3B BCSS**: A digital command post system used for deliberate planning, operational monitoring, controlling and reviewing functions. The BCSS will provide the higher level command and control processes to complement and inform the lower tactical information generated from the BMS.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2072 Phase 1 Battlespace Communications System	This is a project to enhance communications for ADF land elements through the development of a holistic battlespace communications architecture for the land environment.	Communications radio solution and architectures that underpin the BGC3.
Land 125 Phase 3A Soldier Combat System	This project will enhance communications for ADF soldiers through the development of a BMS Dismounted component.	Land 125 Phase 3A C4I sub-system will enable the ADF to streamline delivery of an integrated system for mounted and dismounted battle management.
JP 5408 phase 2B Navigation Warfare	This project will incrementally implement the enhancements and replacements to the ADF's GPS equipment.	These navigational and timing GPS equipment form an integral component of the BGC3.
Land 116 Phase 3 Bushranger	This project is providing protected land mobility to Army units and RAAF Airfield Defence Guards with the Bushmaster PMVs.	The Bushmaster PMV is one of the vehicle platforms identified for installation of the BMS. This is the highest priority vehicle for Land 75 Phase 3.4 project
Land 121 Phase 3 Overlander	This project will acquire up to 1,200 unprotected lightweight/light vehicles, 2,400 protected medium/heavy vehicles, 2,800 trailers and 290 Bushmaster PMVs	The G-Wagon (lightweight/light vehicle) is one of the vehicle platforms identified for installation of the BMS.
Land 106 M113 Upgrade	This project will upgrade the M113 APC fleet to provide significant enhancements in protection, lethality and mobility whilst also providing improved supportability.	The M113 APC is one of the vehicle platforms identified for installation of the BMS.
Land 17 Phase 1B BMS-Fires and AFATDS	This project will deliver an enhanced indirect fire support system.	The BMS-Fires system of the 105mm Hammel Artillery Replacement and 155m Howitzer Artillery Replacement will need to exchange data with the BMS being acquired by the Land 75 Phase 3.4 project.

Section 2 – Financial Performance

Date	Description	Base Date $m	Current $m		Contractor	Notes
2.1 Project Budget History						
Dec 05	Original Approved	7.9		7.9		1
Nov 09	**Government Second Pass Approval**	325.0		325.0		
		332.9		332.9		2
Jun 11	Price Indexation			15.6		3
Jun 11	Exchange Variation			(22.6)		
Jun 11	**Total Budget**	332.9		325.9		
2.2 Project Expenditure History						
Prior to Jul 10		17.7	18.5		Elbit Systems Limited	
		7.4	7.4		Other	4
		25.1		25.9		
FY to Jun 11		48.8	53.7		Elbit Systems Limited	
		3.3	3.3		Other	5
		52.1		57.0		
Jun 11	Total Expenditure	77.2		82.9		
Jun 11	Remaining Budget	255.7		243.0		

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	Second Pass Approval
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $8.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $7.3m having been applied to the remaining life of the project.
4	Other expenditure comprises: Operating Expenditure ($1.3m), Offer Definition ($3.0m), Consultants ($2.9m), Contractor Support ($0.2m) and Minor Capital expenditure not attributable to the Prime contract.
5	Other expenditure comprises: Operating Expenditure ($1.3m), Consultants ($0.2m), Contractor Support ($0.7m) and Minor Capital ($1.2m) expenditure not attributable to the Prime contract.

2.3 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	The variation is due to the earlier than programmed payment for the Support System Detail Design Review, which was originally programmed in FY 2011-12. Offsetting this is the slippage, to next FY, of the payment for the Delta Detail Design Review and Training Readiness Review for Group 1.
		(14.8)	Overseas Industry	
			Local Industry	
		13.3	Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
58.5	**57.0**	**(1.5)**	**Total Variance**	

2.4 Contract Details

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 11 $m	Type (Price Basis)	Form of Contract	Notes
Elbit Systems Limited	15 Mar 10	176.2	176.2	Variable	ASDEFCON	1

Notes

1	This value represents the Land 75 Phase 3.4 aspect of a contract which covers two other discrete projects. Total contract value is $275.7m, this includes both Acquisition and Sustainment.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 11	Scope	Notes
Elbit Systems Ltd	Various	Various	Delivery of BMS installations or installation kits for: - Mack Truck: 131 - Unimog Truck: 225 - Bushranger PMV: 193 - M113 APC: 115 - G-Wagons: 388	

Major equipment received and quantities to 30 Jun 11

Most Critical/Detailed Design Reviews have been completed.

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 Design Review - BMS	May 10	N/A	Aug 10	3	1
Preliminary Design	Group 1 – Various Vehicles	Sep 10	N/A	Sep 10	0	
	BMS	Aug 10	N/A	Sep 10	1	2
	Preliminary Design Review – Group 2 & 3 Various Vehicles	Aug 11	N/A	Sep 11	0	
Detailed Design	Group 1 – Various Vehicles	Dec 10	N/A	Jan 11	1	3
	BMS	Dec 10	N/A	Jan 11	1	
	Delta DDR - Group 1 PMV only	Dec 11	N/A	Dec 11	0	
	Group 2 & 3 – Various Vehicles	Nov 11	N/A	Dec 11	1	

Notes

1	The System Design Review was achieved when all major action items resulting from the review were completed, and the progress certificate was issued.
2	System Preliminary Design Review was delayed to align with the conduct of the Dismounted and Group 1 reviews.
3	The Detailed Design Reviews were aligned to incorporate the conduct of dismounted human factors trials and the dismounted design review and input from vehicle Original Equipment Manufacturers relating to Detailed Design Review Group 1. Delay is also attributable to the finalisation of a contract change to the design schedule.

3.2 Contractor Test and Evaluation Progress

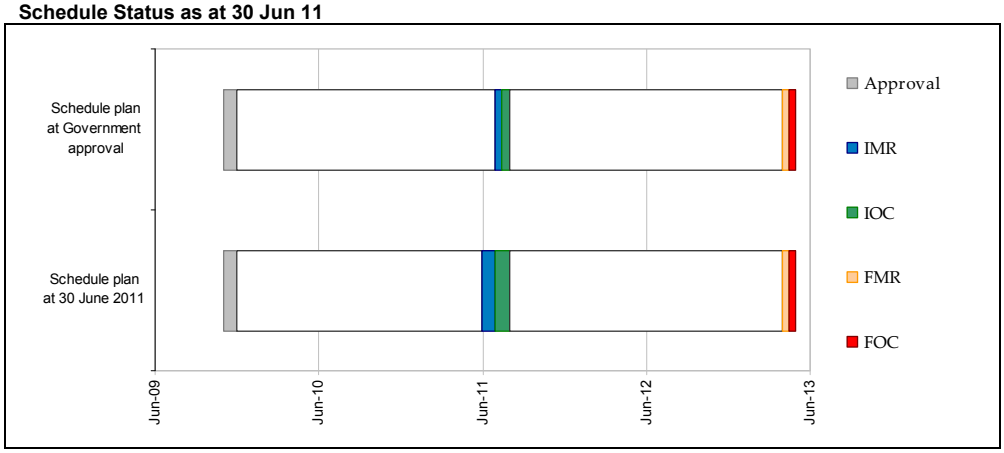
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	VMF Conformance to standard testing	Jun 11	N/A	Jun 11	0	1
	Communications	May - Oct 10	N/A	Jul - Oct 10	0	
	Acceptance Test and Evaluation – Command Post – Man Portable (CP-MP)	Apr - Jun 11	N/A	May - Jun 11	1	2
	Acceptance Test and Evaluation - Group 1 Various Vehicles	Apr - Jun 11	N/A	May – Jul 11	1	2
	Acceptance Test and Evaluation - System	Jun - Aug 11	N/A	Jun - Aug 11	0	
	Acceptance Test and Evaluation - Group 2 Various Vehicles	Feb 12	N/A	Feb 12	0	

Notes	
1	The first tranche of testing is complete, further testing is planned for the next 12 months
2	Delays in formal testing are attributable to: delays in the receipt of some equipment, and the receipt and agreement of final test procedures. In addition, availability of specialist test chambers remain a key constraint.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

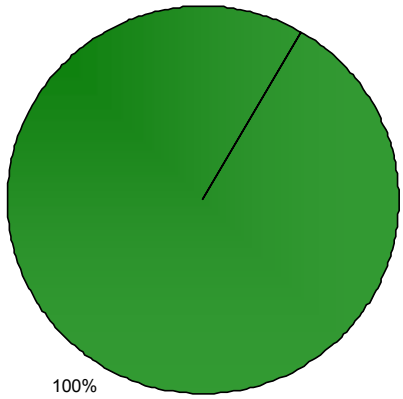
Item	Original Planned	Achieved / Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul 11	Jun 11	(1)	N/A
Initial Operational Capability (IOC)	Jul 11	Jul 11	0	N/A
Final Materiel Release (FMR)	Apr 13	Apr 13	0	N/A
Final Operational Capability (FOC)	Apr 13	Apr 13	0	N/A

Schedule Status as at 30 Jun 11



Section 4 – Materiel Capability Performance

4.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: The project is currently meeting capability requirements as expressed in the Material Acquisition Agreement and supporting suite of capability definition documentation, although the schedule risk of achieving full compliance to the technical regulatory authorities requirements, especially for the Bushmaster is rated as medium.
	Amber: N/A
	Red: N/A

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 currently a Provisional ICT Accreditation for BGC3 that expires in May 2012. There is a risk that full accreditation may not be achieved in this time, leading to the retraction of ICT Accreditation. Without ICT Accreditation, BGC3 cannot be used in a classified environment.	Project Security Working Group to monitor progress on the roadmap to full accreditation on a regular basis. Regular engagement with CIOG.
There is a chance that contractor performance and achievement of contractual obligations will not be met as a result of the contractor being based overseas (Israel).	Contractor establishment of an in-country corporate entity to effectively manage its contractual obligations to the Commonwealth and to closely manage contractor/sub-contractor arrangements.
There is a chance that the timely provision of Government Furnished Materials (GFM) and equipment (GFE) will be affected by non-availability of ADF assets or ITAR controlled assets.	The project has established formal agreements and processes with relevant parties which are designed to enable the pro-active management of GFM requirements through close consultation and coordination.
There is a risk that ESL will not gain approval to progress to the Training Readiness Review Stage (TNGRR) due to the Training Needs Analysis Report (TNAR) and training packages not being developed to the required standard. This would lead to a delay to the TNGRR date.	• Support ESL in the production of TNAR and Course Packs to meet schedule deliverables. • Engage ESL and Army to ensure delivery against scheduled dates.
There is risk to schedule if a design baseline is not established for the Bushmaster Protected Mobility Vehicle and the M113.	The project will involve the expected design approver as early as possible to limit the likelihood of submitting an inadequate design pack. An Integrated Project Team will liaise with Thales Australia and ESL to mitigate design issues early.

There is an integration risk in relation to fitting the Dismounted Battle Management System (BMS-D) into the Modular Combat Body Armour System (MCBAS) and/or its replacement Tiered Body Armour System (TBAS).	The project will maintain regular contact with ISSD to ascertain design changes to TBAS and to advise of changes that may need to be made to TBAS in order to fit the BMS-D.
There is a risk of physical integration of the BGC3 into the vehicles with other equipment and systems in the vehicles.	The project will work closely with Vehicle SPOs to maintain space claims.
There is a risk that the Defence Advanced GPS Receiver (DAGR) data and power cable not suitable for operational use with the BCSS.	The project is working closely with ESL to investigate options for resolving the security of the data cable.
Failure to achieve user acceptance of the BMS-D would present a schedule risk.	The project will consult with end user stakeholders to ensure appropriate configuration baselines are established and to ensure adherence to communications architectures.
There is a high risk that terrain representation software will misrepresent actual terrain and entity position.	Ensure end users are familiar with software and related conversion procedures during release and training in the use of map conversion software.
There is a chance that vehicles delivered to the Meeandah facility do not meet the minimum level of acceptance criteria in the Quality Plan. This would force those vehicles to be removed from the production sequence while issues are rectified, causing a production throughput less than contractually required, with the potential for ESL to submit claims for postponement (and costs) and the extension of achievement of FOC.	• The project will pro-actively work to ensure that all vehicles presented for production meet the Quality Plan acceptance criteria. • For vehicles that do not meet these criteria, a remediation process will be instigated with checks in place for installation.
Emergent Risks (risk not previously identified but has emerged during 2010-11)	
Description	Remedial Action
There is a chance that ADF personnel will not be available to support achievement of IMR and MR due to an increase in ADF operational requirements.	The project is continually liaising with Army Headquarters (AHQ) to ensure availability sufficient personnel numbers.
There is a chance that the acceptance of the PMV design by the Design Authority will not be achieved.	The project is working pro-actively to keep the Design Authority informed of the engineering aspects associated with the PMV design and that it has access to all relevant material.

5.2 Major Project Issues

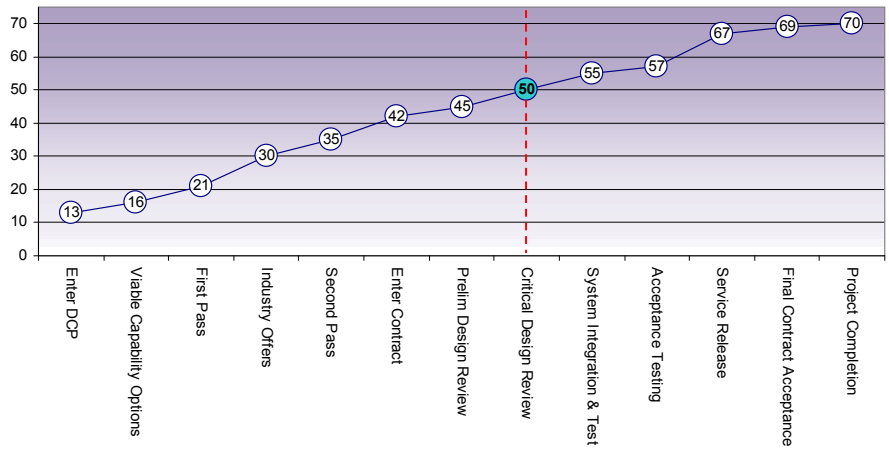
Description	Remedial Action
Finalisation of the BMS design for installation into the PMV is critical to the start of full rate installation of the PMV.	The Land 75 Phase 3.4 and JP 2072 Phase 1 projects are planning to fit the PMV at the IMR baseline agreed at DDR in late 2010 (pending the outcomes of the Delta DDR) in order to maintain the schedule target of supplying all BMS equipped PMVs to Army by early 2012. The Delta DDR will be completed in FY 2011-12, and will involve very close consultation and agreement with Thales Australia, who are the Design Authority for the Bushmaster.
The need for Retrofits at a later date but before FOC has increased.	Additional Costs allocated to budget to accommodate for retrofits at a later date.
MILIS Requirements may mean that vehicles can't be issued back to ESL for retrofits.	Survey & Quote for the setup of Land 200 MILIS program to enhance tracking of vehicle availability.

Although unlikely, the BGC3 radios may cause injury resulting from an explosion due to Hazards of Electromagnetic Radiation to Ordnance (HERO).	It has been recommended that the BGC3 transmitters are not to be used if UNSAFE EO is within 39m of BMS-D nodes and within 88m of BMS-CP-MP mast antennas. A warning is to be included in Training and Publications. This Issue has been transferred to the Capability Manager for mitigation.

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
Critical Design Review	Project Status	7	7	8	7	7	7	7	50
	Explanation	• **Technical Understanding:** Despite the successful exit from the support system detailed design review, several important elements of the logistic support system such as the Training Management Plan and the Training Equipment and Materials List are yet to be approved. Once these are in place, the necessary logistic data and arrangements in support of the capability are likely to be in place. • **Requirement:** Definition of the system and sub-system design and the required system integration is very nearly complete. There are still challenges in execution of the program within the aggressive schedule, but there is a high confidence that the requirements will be satisfied by the system when it is delivered.							



2010-11 DMO MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
For Network Centric Warfare 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.	Requirements Management
The project has refurbished an existing facility to create a first of type installation facility. The key lesson is to have a sufficient reserve of space to accommodate growth in first of type integration requirements. Having this facility where stakeholders can view progress has been invaluable.	First of Type equipment
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 Government Furnished Material (GFM) by accession rather than via a formal contract change proposal, which allows far greater agility in the management of GFM and GFE requirements.	Contract Management
It is essential to ensure an adequate level of resourcing for the management of tender preparations and evaluations through a risk management based approach. This approach would have greatly assisted the project as it experienced a significant and unexpected increase to the workload.	Resourcing
During the course of the program, it was found to be essential to continue with an expanded Integrated Project Team (IPT) which had senior stakeholder representation of all groups involved, including projects delivering the platforms, technical regulatory agencies and the Capability Managers.	Governance
Considering the many stakeholder interfaces involved in the Network Centric Warfare (NCW) programs (which this project is but one), the traditional Project Management Stakeholder Group (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.	Governance

Section 8 – Project Line Management

8.1 Project Line Management in 2010-11

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward
Branch Head	Mr Brad Flux
Project Director	LTCOL Roger Grose
Project Manager	LTCOL Roger Grose

Appendices

Appendix 1: Guidance for Readers of the DMO's 2010-11 MPR Project Data Summary Sheet

The Project Data Summary Sheet (PDSS) is the core of the Major Projects Report (MPR), tabled in Parliament each year, and is the element of the MPR that the Auditor-General reviews to express an independent opinion.

The CEO DMO provides a Statement that the PDSS's comply in all material aspects with the formal Section 20 (s.20) Agreement (signed between the Auditor-General and CEO DMO) and reflect the project by way of cost, schedule and capability status. This Statement is accompanied by a Management Representation Letter (MRL) to the Auditor-General on the accuracy and completeness of the PDSS data.

The ANAO conducts an assurance review of all projects included in the MPR, in accordance with the Auditor-General's Independent Review Report's scope, criteria and methodology – as contained in the s.20 Agreement. The ANAO exercises independent and professional judgement in determining its review methodology and in formulating an opinion.

Projects included in the 2010-11 MPR are either "Repeat" projects i.e. projects that appeared in the 2009-10 MPR and are providing an update in the 2010-11 MPR or "New" projects not previously reported in an MPR.

Security classified data is not included in the MPR, however such information is made available to the ANAO where it is relevant in support of the ANAO's review of the PDSSs.

GUIDELINES FOR THE DEVELOPMENT OF THE PROJECT DATA SUMMARY SHEETS (PDSSs)

Data Element No / Heading	Data	Definition/ Description
SECTION 1 – PROJECT SUMMARY		
Project Header	Project Name	The name of the project as approved by Government
	Project Number	The number of the project as approved by Government
	Capability Type	Is one of the following: • New Capability; • Replacement; or • Upgrade.
	Service	Could be either one or a combination of: • Royal Australian Navy; • Australian Army; • Royal Australian Air Force; or • Joint Services.
	Government 1st Pass Approval	The date Government 1st Pass Approval was given.
	Government 2nd Pass Approval	The date Government 2nd Pass Approval was given.
	Total Approved Budget (current)	The current approved budget for the project.
	2010-11 Budget	The estimated project expenditure for 2010-11 as detailed in the Portfolio Additional Estimates Statements (PAES).
	Project Stage	The Lifecycle Gate as reported in the Monthly Reporting System (MRS).
	Complexity	The Acquisition Categorisation (ACAT) level of the project.
Section 1.1 – Project Description	Description	One paragraph description of the project which should be written in terms of capability delivery and, where appropriate, mention equipment quantities. This information should be consistent with other sections of the PDSS.
Section 1.2 – Current Status	Cost Performance	At a strategic level, state the project's current progress against its approved and in-year budgets, and provide a succinct explanation of causes for variations. 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.

Data Element No / Heading	Data	Definition/ Description
		This section must be consistent with what is stated in Section 3 Schedule Performance.
	Materiel Capability Performance	At a strategic level, detail how the systems under acquisition are performing. Detailed technical performance of systems is to be avoided and classified information is not to be disclosed in this section.
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.
	Uniqueness	Brief explanation of the particular aspects that make the project unique.
	Major Challenges	Describe the challenges the project faced in the reporting year and what it is likely to face in the coming year. The focus should reflect those risks and issues that are of a strategic nature rather than short-term problems.
	Other Current Projects / Sub-projects	Only include approved projects with the main project number e.g. Sea xxxx and state the phase of the project. Describe the name of the project and a brief description of the capability (i.e. one or two short sentences).
Section 1.4 – Linked Projects	Linked Projects (Project Dependency)	The name and number of the project. Provide a brief description of the project and the nature of the dependency. Linked projects are those projects that you depend on to deliver your project outcomes.
SECTION 2 – FINANCIAL PERFORMANCE		
Section 2.1 – Project Budget History	Original Approved	The approved project cost for the DMO element of the project at Government Approval. The Approved Cost is to be expressed in both 'Base Date' and in 'Current' Dollar terms.
	Real Variation	Variations are to be expressed in both 'Base Date' and in 'Current' Dollar terms. **"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. *Note: Where the original approved amount above*

Data Element No / Heading	Data	Definition/ Description
		is not Second Pass Government Approval, Projects are to disclose the actual Government Second Pass Approval amount as such in the description column (in bold) and not as a scope real variation. **"Transfers"** occur when a portion of the budget and corresponding scope is transferred to or from another approved project in DMO 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 estimation errors that might occur from time to time. Also included under this heading are Departmental administrative decisions that result in variations such as efficiency dividends harvested from project budgets or adjustments made to fund initiatives such as Skilling Australia's Defence Industry (SADI). *The elements above are to be subtotalled to give a single amount for all real variations (including Government Second Pass approvals).*
	Price Indexation Variation	Variations to the Original Approved project cost for the DMO element of the project due to price indexation adjustments to take account of variations in labour and materiel indices over time.
	Exchange Variation	The variations to the Original Approved project cost for the DMO element of the project 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.
Section 2.2 – Project Expenditure History	Prior to Jul 10	This item comprises all amounts incurred in all periods prior to the current reporting period (i.e. contract level expenditure up to 30 June 2010) expressed in both 'Current' dollars (for all projects) and 'Base Date' (for those projects listed below at a minimum). 1. Airborne Early Warning & Control Aircraft – AIR 5077 Phase 3; 2. Multi Role Helicopter – AIR 9000 Phase 2, 4

Data Element No / Heading	Data	Definition/ Description
		& 6; 3. Amphibious Deployment and Sustainment – JP 2048 Phase 4A/4B; 4. Armed Reconnaissance Helicopter – AIR 87 Phase 2; 5. Air to Air Refuelling Capability – AIR 5402; 6. C-17 Heavy Airlifter – AIR 8000 Phase 3; 7. Bushmaster Protected Mobility Vehicle – LAND 116 Phase 3; 8. Next Generation Satellite Program – JP 2008 Phase 4; 9. Armidale Class Patrol Boat – SEA 1444 Phase 1; 10. Anzac Ship Anti-ship Missile Defence – SEA 1448 Phase 2B; 11. Anzac Ship Anti-ship Missile Defence – SEA 1448 Phase 2A. Reporting of expenditure is to be split into the following: **"Contractor"** expenditure against each of the top 5 contracts, restricted to contracts valued at 10% of the current approved project cost or $10m. **"Other"** which comprises operating expenditure, contractors, consultants, contingency, 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. *The two expenditure elements above are to be subtotalled to give a single amount for all prior period expenditure.* Note: Base Date Dollar reporting will not be included in some instances as the DMO resource effort and cost to calculate the Base Date Dollar amounts has been considered to be excessive.
	FY to Jun 11	This item comprises all amounts incurred in the current reporting period (i.e. contract level expenditure from 1 July 2010 to 30 June 2011)

Data Element No / Heading	Data	Definition/ Description
		expressed in both 'Current' dollars (for all projects) and 'Base Date' (for those projects listed below at a minimum). 1. Airborne Early Warning & Control Aircraft – AIR 5077 Phase 3; 2. Multi Role Helicopter – AIR 9000 Phase 2, 4 & 6; 3. Amphibious Deployment and Sustainment – JP 2048 Phase 4A/4B; 4. Armed Reconnaissance Helicopter – AIR 87 Phase 2; 5. Air to Air Refuelling Capability – AIR 5402; 6. C-17 Heavy Airlifter – AIR 8000 Phase 3; 7. Bushmaster Protected Mobility Vehicle – LAND 116 Phase 3; 8. Next Generation Satellite Program – JP 2008 Phase 4; 9. Armidale Class Patrol Boat – SEA 1444 Phase 1; 10. Anzac Ship Anti-ship Missile Defence – SEA 1448 Phase 2B; 11. Anzac Ship Anti-ship Missile Defence – SEA 1448 Phase 2A. Reporting of expenditure is to be split into the following: **"Contractor"** expenditure against each of the top 5 contracts, restricted to contracts valued at 10% of the current approved project cost or $10m. **"Other"** expenditure which comprises operating expenditure, contractors, consultants, contingency, 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. *The two expenditure elements above are to be subtotalled to give a single amount for FY expenditure.*

Data Element No / Heading	Data	Definition/ Description
		Note: Base Date Dollar reporting will not be included in some instances as the DMO resource effort and cost to calculate the Base Date Dollar amounts has been considered to be excessive.
	Total Expenditure	This item discloses total project expenditure as at the reporting date (i.e. 30 June 2011) and is the sum of prior period and current period expenditure reported above.
	Remaining Budget	Is the subtraction of total expenditure from total budget, thus showing the unspent portion of the approved budget, as at reporting date, expressed in current dollar terms.
Section 2.3 – In-year Budget Expenditure Variance	Estimate ($m)	The estimated project expenditure for 2010-11. The data needs to present the project's 'Year to Date' performance in financial terms. It must explain the difference between the PAES and the End of Financial Year Actual Expenditure (If projects are subject to variation post PAES, then disclosure is required in a note).
	Actual ($m)	The actual project expenditure incurred in the current reporting period (i.e. 2010-11).
	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 Budget 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: • Foreign Military Sales (FMS); • Overseas Industry; • Local Industry; • Brought Forward; • Cost Savings; • FOREX Variations; and • Commonwealth Delays.
	Explanation	Explanations must address all of the variance factors noted above, where relevant.
Section 2.4 – Contract Details	Contractor	List the name of the contractors for the top 5 contracts. Note that the top 5 contracts will be restricted to contracts that are valued at 10% or more of the current total budget or $10m.
	Signature Date	The date the contract was signed.

Data Element No / Heading	Data	Definition/ Description
	Price (Base) at Signature	This is the value of the contract at contract signature and the contract value at 30 June 2011.
	Price (Base) at 30 Jun 11	This is the value of the contract, in Base Date dollars, at 30 June 2011. Where projects are the Prime Systems Integrator or where the structure of a contract prevents disclosure of 'Base Date' values, these projects will disclose contract values in 'Current' dollars as at 30 June 2011.
	Type (Price basis)	The usual choices for this include: Variable, Firm or FMS
	Form of Contract	This refers to the genesis of the contract i.e. DEFPUR 101, ASDEFCON (Strategic, Complex). For unique arrangements such as Alliance or PPP they would need to be specially treated. For Foreign Military Sales - say "FMS"
	Quantities at Signature and 30 Jun 11	The quantity of equipment under contract as at the date the contract was signed and also as at 30 June 2011. The quantity of contracted equipment should only be provided at a summary level.
	Scope	Generally only include hardware in this section and restrict it to a platform level summary, disclosing only prime mission and support system elements (e.g. 4 x C-17 Globemaster Aircraft).
	Major Equipment received and quantities to 30 Jun 11	Detail the Major equipment and quantities the project has received to 30 June 2011.
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 Review • Preliminary Design Review • Critical Design Review.
	Major System/ Platform Variant	State the major system that the Design review refers to.
	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. 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

Data Element No / Heading	Data	Definition/ Description
		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 • Acceptance.
	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. 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 3.3 – 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 Mission or Support System element was scheduled to achieve the key milestone.
	Current Planned	Replanned dates as evidenced by a contract amendment.
	Achieved/ Forecast	Achieved: The date the event was achieved. Forecast: The expected date for achievement.
	Variance (months)	The difference between original and achieved.
	Variance Explanations	A top level description of the reasons for the variance to 'Achieved / Forecast' dates.
Schedule Status Bar Graph		DMO MPR Management will input the projects existing detail on: 2nd Pass Approval, IMR, IOC, FMR and FOC into the Bar Graph formula and produce the Graph.
SECTION 4 – MATERIEL CAPABILITY PERFORMANCE		
Section 4.1 – Measures of Materiel Capability Performance	Capability Pie Chart and associated Traffic Light Analysis	Capability Pie Chart and associated narratives will provide a percentage breakdown of the FMR Milestones and Completion Criteria, as identified in the respective MAA, prior to ANAO site visit and further updated to reflect status at 30 Jun 11. The pie chart analysis / narrative (Green, Amber & Red) is to be provided at the strategic level, including:

Data Element No / Heading	Data	Definition/ Description
		• Issue: Strategic level detail of the issue/s impacting the milestones and completion criteria. • Remediation: Strategic level detail of remedial activity to recover performance.
SECTION 5 – MAJOR RISKS AND ISSUES		
Section 5.1 – Major Project Risks	Identified Risk (Risk identified by standard project risk management processes)	Description: A major project risk is one that is rated high or extreme pre-mitigation and has DMO Executive attention. Remedial Action: The risk mitigation / treatment proposed for the risk identified (These must be actionable measures).
	Emergent Risk (Risk identified during 2010-11)	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 and has DMO Executive attention. Remedial Action: The risk mitigation / treatment proposed for the risk identified (These must be actionable measures).
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.
	Remedial Action	What remedial action is proposed for the issue identified.
SECTION 6 – PROJECT MATURITY		
Section 6.1 – Project Maturity Score and Benchmark	Benchmark	Benchmark Maturity Score.
	Project Status	The maturity score recorded in the June 2011 MRS record.
	Explanation	A short explanation is required for each element of the Maturity Score where there is a difference between the Current and Benchmark scores.
SECTION 7 – LESSONS LEARNED		
Section 7.1 – Key Lessons Learned	Project Lesson	Describe the project lesson (at the 'Strategic' level) that has been learned.
	Reference to DMO Systemic Lessons Learned	Select one of the following 'DMO Systemic Lessons' that can be cross referenced back to each individual Project Lesson. Lessons learned can include: • Requirements Management • First of Type Equipment • Off-the-shelf Equipment • Contract Management • Schedule Management

Data Element No / Heading	Data	Definition/ Description
		• Resourcing • Governance
SECTION 8 – PROJECT LINE MANAGEMENT		
Section 8.1 – Project Line Management in 2010-11	Line Managers List	• General Manager • Division Head or Program Manager • Branch Head • Project Director This list will contain those persons who occupied their respective position during the course of 2010-11.

Appendix 2: Types of Acquisition Undertaken by the DMO

There are three main types of acquisition undertaken by the DMO:

- **Military-Off-The-Shelf (MOTS) –** Military products that are available for purchase Off-The-Shelf (OTS) and will typically have been delivered to another military or Government body, or commercial enterprise in a similar form to that being purchased at the time of approval. The definition of OTS needs to strike a balance between sensible variations to a design with low cost and risk impact; such as small modifications to meet Australian environmental laws; and those that add to complexity, cost and risk such as overseas systems that require integration with existing platforms.
- **Australianised MOTS –** A modified MOTS product where modifications are made to meet particular ADF operational requirements. The modification involved may include an increased level of technical complexity and risk with a general increase in cost and schedule.
- **Developmental –** A product that is not available off-the-shelf and has to be developed specifically to meet the ADF's particular operational requirements. These products generally involve a high degree of technical development and associated risk which in turn is reflected in cost and schedule.

As indicated in Chapter 1, the cost-schedule-risk parameters increase as the level of Australianisation of Off-the-Shelf equipment or the level of development required increases.

Appendix 3: Categorising Acquisitions

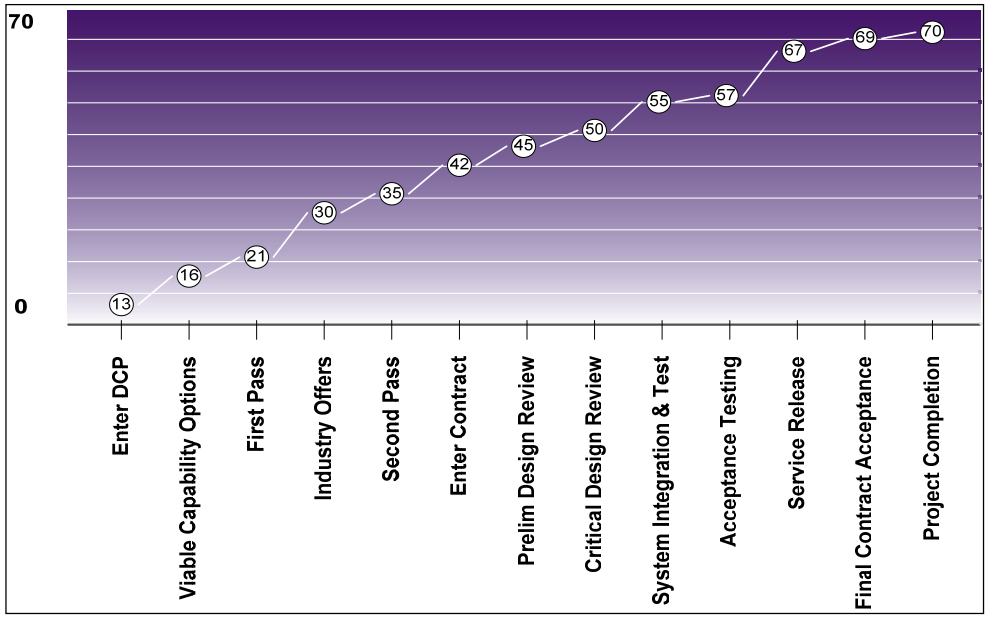
The DMO categorises its acquisition projects to enable it to differentiate between the complexity of business undertakings, focus management attention, provide a basis for professionalising its workforce and facilitate strategic workforce planning. Projects are graded into one of four Acquisition Categories (ACATs) which are as follows:

- 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; and
- 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.

Appendix 4: Project Maturity Scores – Monitoring Progress

The DMO's Project Maturity Score quantifies the maturity of a project by way of an objective 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 at 13 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; and
- 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. As the scores are subjective, they 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 Attributes

ATTRIBUTE DESCRIPTORS VS MATURITY SCORE							
	Schedule	**Cost**	**Requirements**	**Technical Understanding**	**Technical Difficulty**	**Commercial**	**Operation and Support**
DELIVERING THE DMO ACQUISTION PROJECT (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
DEFINING THE DEFENCE PROJECT (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 CDG_Responsibility DMO_Responsibility	Represents	Benchmark Maturity Score
Enter Defence Capability Plan	The stage at which a project is recommended to Government for inclusion in the Defence Capability Plan	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 CCDG	16
1st Pass Approval	The stage at which 1st Pass options to be put to Cabinet are endorsed by the DCC	21
Industry Proposals/ Offers	The stage at which formal responses from industry to an RFP or RFT 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 TEMP	57
Initial Materiel Release (IMR)	Occurs when the materiel components that represents the DMO contribution to Initial Operational Release (IOR) are ready for transition to the Capability Manager	60
Final Materiel Release (FMR)	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[223]	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

[223] Where multiple elements of a mission system are involved (e.g. 3 surface combatants) this date represents Initial Operational Capability (IOC) of the initial Subset, including its associated operational support, i.e. when the Initial Operational Capability is achieved. (DI(G) OPS 45-2 refers).

Appendix 5: JCPAA Report 422: REVIEW OF THE 2009-10 DEFENCE MATERIEL ORGANISATION MAJOR PROJECTS REPORT

Recommendations and DMO Response

Major Projects Report Work Program

Recommendation 1

That the Major Projects Report (MPR) Work Plan (which contains the MPR Guidelines) be provided to the Joint Committee of Public Accounts and Audit (JCPAA) concurrently with the list of proposed projects for inclusion and exclusion in the following year's MPR, not later than 31 August each year.

DMO Response: Agree

Recommendation 2

That Projects of Concern (PoC) not be specifically included in the selection criteria for projects to be reported on in the MPR, but where projects reported on in the MPR are also PoC, that they continue to be identified as such.

DMO Response: Agree

Recommendation 3

That the exit criteria for projects reported on in the Major Projects Report be the point at which both Final Materiel Release and Final Operational Capability (as currently defined by the Defence Materiel Organisation and Department of Defence respectively) is achieved.

DMO Response: Agree in Principle

Recommendation 4

That in determining whether the exit criteria is appropriate for future Major Projects Reports (MPRs), that the Defence Materiel Organisation's assessment of the difference in scale, size and incidence of requirements to be completed between Final Materiel Release and Final Operational Capability be provided to the Joint Committee of Public Accounts and Audit as soon as possible to allow for the implementation of any changes to occur for the 2011-12 MPR. In conducting its analysis, the DMO should consult with the three services, the Department of Defence, the Australian National Audit Office and industry representatives.

DMO Response: Agree

Recommendation 5

That once projects have met the exit criteria, they be removed from the Major Projects Report (MPR) and for each project which has been removed, the lessons learned at both the project level and the whole-of-organisation level are included as a separate section in the following MPR.

DMO Response: Agree

Auditor-General's Review

Recommendation 6

That the Defence Materiel Organisation include in the format of a comparison table, for the listed eleven projects included in the Major Projects Report, columns appearing side by side showing base date dollars, out-turned dollars and current dollars for expenditure information.

DMO Response: Agree

Recommendation 7

That the Defence Materiel Organisation present the findings of its examination of the presentation of financial data on all possible methods for project expenditure information (Eg. base date dollars, out-turned dollars and current dollars) to the Joint Committee of Public Accounts and Audit (JCPAA) as soon as it is completed and no later than 31 August 2011.

This examination should include a: (1) preferred method, and (2) comprehensive proposal for transition towards the proposed new arrangement. In addition, the proposed examination should be reviewed by the Australian National Audit Office before it is submitted to the JCPAA for consideration and recommendation prior to inclusion in the MPR.

DMO Response: Agree

Recommendation 8

That the way that Measures of Effectiveness data is presented in the Major Projects Report not be changed until a thorough analysis outlining the reasons for and implications of the change has been undertaken and presented to the Joint Committee of Public Accounts and Audit for consideration and endorsement.

DMO Response: Agree in Principle

Recommendation 9

In line with the previous Committee's recommendation, that the Defence Materiel Organisation in conjunction with the Australian National Audit Office develop a standardised graphical representation of each project's cost and schedule variance for inclusion in the Project Data Summary Sheets for the 2011-12 Major Projects Report Guidelines.

DMO Response: Agree

Appendix 6: Glossary

Acquisition Category	Definition of each of the four Acquisition Categories.
Additional estimates	Where amounts appropriated at Budget time are required to change, the Parliament may make adjustments to portfolios through the Additional Estimates Act.
ADF Customer	Army, Navy, Air Force or Joint Capability.
ASDEFCON	AUStralian DEFence CONtracting suite of contracting templates.
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. It is delivered by systems that incorporate people, organisation, doctrine, collective training, platforms, materiel, facilities, in-service support, and command and management.
Capability Manager	The Group Head or Service Chief responsible for a specific area of Australian Defence Force capability. The role of the Capability Manager is to raise, train and sustain in-service capabilities through the coordination of Fundamental Inputs to Capability and includes the service Chiefs for Army, Navy, Air Force and the Vice Chief of the Defence Force for Joint Projects.
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
Contract Master Schedule	A time and resource based schedule for executing work under the contract.
Corporate Governance	The process by which agencies are directed and controlled, and encompasses; authority, accountability, stewardship, leadership, direction and control.
Defence Procurement and Sustainment Review (Mortimer Review)	In September 2008, the Defence Procurement and Sustainment Review was published providing an independent review of the DMO and the effectiveness of Australia's defence procurement systems with the review being chaired by Mr David Mortimer AO. This became known as the Mortimer Review.
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.
DEFPUR 101	DEFence PURchasing (101) contracting template used prior to the formation of the DMO.
Final Material Release (FMR)	A milestone that marks the completion and release of DMO Acquisition Project Supplies required to support the achievement of the Final Operational Capability (FOC).
Final Operational Capability	The point in time at which the final subset of a capability system that can be operationally employed is realised. It is a capability state endorsed at project

(FOC)	approval at Second Pass, and reported as having been reached by the Capability Manager.
Financial Management and Accountability Act 1997	The FMA Act establishes the regulatory framework for financial management within public sector agencies, including the DMO.
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.
First Pass Approval	The process that gives Government the opportunity to narrow the alternatives being examined by Defence to meet an agreed capability gap. First Pass approval allocates funds from the Capital Investment Program to enable the options that Government endorses to be investigated in further detail, with an emphasis on detailed cost and risk analysis.
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.
Fundamental Inputs to Capability	The standard list for consideration of what is required to generate capability, comprising organisation, personnel, collective training, major systems, supplies, facilities, support, and command & management. It is to be used by Defence agencies at all levels and is designed to ensure that all agencies manage and report

	capability, using a common set of management areas.
Initial Material Release (IMR)	A milestone that marks the completion and release of DMO Acquisition Project Supplies required to support the achievement of the Initial Operational Release (IOR).
Initial Operational Capability (IOC)	A point in time at which the first subset of a capability system that can be operationally deployed is realised. It is a capability state endorsed at project approval at Second Pass, and reported as having been reached by the Capability Manager.
Initial Operating Release (IOR)	The milestone at which the Capability Manager is satisfied that the initial operational and material state of the capability system-including any deficiencies in the fundamental input capability-are such that it is sufficiently safe, fit for service and environmentally compliant to proceed into a period of operational test and evaluation leading to an endorsed capability state
Major Capital Acquisition Project	A Defence project that meets one or more of the following criteria: a. it has an estimated total one-time cost of bringing the capital equipment concerned into operation of $A 20 million or more; b. the unit cost of an individual item in a multi-item acquisition is estimated at $A 1 million or more; and/or c. the project is strategically important and/or has significant Defence policy or joint Service implications.
Materiel Acquisition Agreement	An agreement between Defence and the DMO which states in concise terms what services and products the DMO (as a supplier) will deliver, for how much and when.
Materiel Capability	The traffic lights, based on a subjective assessment, indicate: • **Green:** Materiel Capability Performance measures for

Performance Measures	which there is a high level of confidence that they will be met; • **Amber:** Materiel Capability Performance measures that are under threat but still considered as manageable and able to be met; and • **Red:** Materiel Capability Performance measures that at this stage are unlikely to be met.
Materiel Sustainment Agreement	Materiel Sustainment Agreements will be between the Capability managers and the Chief executive Officer of the Defence Materiel Organisation. These agreements will cover the sustainment of current capability, including services such as repairs, maintenance, fuel and explosive ordnance.
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.

Outcomes	The results that the Government, and Defence as the purchaser, seek from the DMO and which are achieved by the successful delivery of its products and services.
Output	The product or service produced by the DMO on behalf of the Government and Defence.
Platforms	Refers to air, land, or surface or sub-surface assets that are discrete and taskable elements within the ADF.
Portfolio Budget Statement	A document presented by the Minister to the Parliament to inform Senators and Members of the basis for Defence/DMO budget appropriations in support of the provisions in Appropriation Bills 1 and 2. The statements summarise the Defence/DMO budget and provides detail of outcome performance forecasts and resources in order to justify agency expenditure.
Prescribed Agency	A prescribed agency is an agency established by regulation under the *Financial Management and Accountability Act 1997*. It provides financial management authority to, and requires accountability by, the Chief Executive of an agency.
Prime System Integrator	The entity that has prime responsibility for delivering the mission and support systems for the project.
Project Executive Summary and Status Outline	A summarisation of the project's status, challenges it faces and its performance.
Project Management Stakeholder Group	A group representing the key stakeholders in a project that meets periodically to review the status of the project, advise senior executives of issues and provide guidance to the Project Manager.
Project Maturity Score	A means of measuring the maturity against benchmark measures of a project at defined milestones.
Risk	At the highest level, it involves the identification and

Management	mitigation of those risks that have the potential to affect adversely the achievement of agreed output performance at the agreed price.
Second Pass	The final milestone in the requirements phase at which point Government endorses a specific capability solution and approves funding for the acquisition phase.
Service Customer	The Defence Group that is the end user of products and services delivered by DMO.
System Program Office	One of the core business units in the DMO. They provide a crucial link between the DMO and its customers. They provide acquisition and sustainment services to the ADF.
Test Concept Document	The basis for the DMO's 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.
Two pass approval process	The process by which major capital investment proposals are developed for consideration and approval by the Government.
Type of Capability	'New' – a capability that has not previously existed in the ADF. 'Replacement' – a current capability that is being replaced by a more up to date technology or to respond to a changing threat. 'Upgrade' – an upgrade to existing capability.
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.

Verification and Validation	Validation is the proof through evaluation of objective evidence that the specified intended end use of a product or system is accomplished in an intended environment. Validation is confirmation by examination and provision of objective evidence that specified requirements to which a product or service, or aggregation of products and services, is built, coded, assembled and provided have been fulfilled.

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