Project Data Summary Sheet[227]

Project Number	**JP 2048 Phase 4A/4B**
Project Name	**AMPHIBIOUS SHIPS (LHD)**
First Year Reported in the MPR	2008–09
Capability Type	New
Acquisition Type	Australianised MOTS
Service	Joint Services
Government 1st Pass Approval	Aug 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	**$3,091.0m**
2014–15 Budget	**$86.6m**
Project Stage	**Integration and Test**
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The JP 2048 Phase 4A/4B project **is providing** the Australian Defence Force (ADF) with an increased amphibious deployment and sustainment capability through the acquisition of two Landing Helicopter Docks (LHDs) and associated supplies and support.

Together, these 27,000 tonne LHDs will be able to land a force of over 2,000 personnel by helicopter and watercraft, along with all their weapons, ammunition, vehicles and stores.

1.2 Current Status

Cost Performance

In-year

Year end **underspend of $5.3m** is **predominantly** due to the **delayed** achievement of the **milestones** related to LHD 02 **production and testing.**

Project Financial Assurance Statement

As at 30 June 2015, project JP 2048 Phase 4A/4B has reviewed the approved scope and budget for those elements required to be delivered. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

The project **is to deliver** the **second LHD within the third quarter of 2015, representing an anticipated**

227 Notice to reader

Future dates and Sections: 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery 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 *Independent Review Report by the Auditor-General* in **Part 3** of this report.

delay of approximately two months to the original planned **date** of August 2015.

Major project milestones achieved in **2014–15** include:

- Recommended Provisioning List Contract Change Proposals;
- LHD 01 Harbour Acceptance Trials **80 per cent complete**;
- LHD 01 Sea Acceptance Trials **80 per cent complete**;
- **Delivery of LHD 01 Safety Case;**
- **Delivery and Acceptance of LHD 01;**
- **Achievement of Initial Materiel Release (IMR);**
- **Commissioning of LHD 01 as HMAS *Canberra*;**
- **Commencement of LHD 02 Crew Training; and**
- **Settlement of Liquidated Damages for LHD 01 late delivery.**

Progress of these milestones demonstrates schedule performance and supports the achievement of project **completion, after full transition to in-service sustainment agency, as planned.**

Materiel Capability Delivery Performance

The amphibious capability sought through the provision of two LHDs is as follows:

- Carriage, in addition to the crew, of approximately 1,200 personnel in the force ashore with a further 800 personnel providing helicopter operations, logistics, command and intelligence as well as other supporting units;
- Space and deck strength sufficient to carry around 100 armoured vehicles, including tanks, and 200 other vehicles (approximately 2,400 lane metres);
- Hangar space for at least 12 helicopters and an equal number of landing spots to allow a company group to be simultaneously landed;
- 45 days endurance for crew and embarked force including sustainment, medical, rotary wing and operational maintenance and repair support to these forces whilst ashore for 10 days;
- Command and control of the land, sea and air elements of a Joint Task Force; and
- The ability to conduct simultaneous helicopter and watercraft operations in conditions up to Sea State 4.

Production set to work and test activities, although delayed due to **a combination of** low electrical trade productivity**, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions**, continue to support achievement of project capability outcomes with later than planned acceptance **dates** for **both LHD 01 (achieved) and LHD 02 (forecast)**.

Note

The capability assessments and forecasts by the project are not subject to the ANAO's assurance review.

1.3 Project Context

Background

The Defence Capability Plan 2004–14 identified a requirement to replace the Heavy Landing Ship HMAS *Tobruk* (JP 2048 Phase 4A) and one Amphibious Landing Ship, either HMAS *Manoora* or *Kanimbla* (JP 2048 Phase 4B). In the Defence Capability Plan 2006–16, Phases 4A and 4B of JP 2048 were amalgamated.

A Request For Information was undertaken to gather vessel capability and industry capacity information from international and Australian ship designers and shipbuilders. A Risk Reduction and Design Study and a preliminary Request for Quotation were also undertaken to provide commercial, technical, financial and schedule information for First Pass.

First Pass approval was obtained in August 2005 with the identification of two existing LHD designs that could meet the capability requirements (Armaris' Mistral and Navantia's LHD 'Juan Carlos') and the identification of potential Australian shipbuilders.

After First Pass, a Design Development Activity was conducted at the designers' respective premises to clarify the necessary Australian environmental and technical requirements, resulting in Australianised designs.

During this process, two shipbuilder/designer teams were formed with Tenix Defence working with Navantia

and Thales Australia with Armaris.

A Request for Tender was released in April 2006 to the shipbuilders for the construction of the Australianised designs. Both builders submitted compliant tenders which were evaluated, and Second Pass Approval for the Tenix-Navantia solution was obtained in June 2007.

A contract was signed in October 2007 between the Commonwealth and Tenix Defence (now BAE Systems Australia Defence), for the acquisition of the two Spanish designed *Canberra* Class LHD ships and support systems; the contract came into effect in November 2007.

Uniqueness

While the LHDs are based on an existing Spanish LHD design, the Australianisation changes, the incorporation of an existing SAAB Combat System, and the development and integration of the internal and external communication systems will result in a unique vessel.

Despite the experience gained in amphibious operations with the current amphibious ships in the Royal Australian Navy (RAN), the LHDs will bring a new and unique capability to the ADF by virtue of their size, aviation, well dock, and communications capabilities.

A unique build strategy has been employed. The LHD hulls were built, including the majority of the fit-out, by Navantia at the Ferrol and Fene Shipyards in Spain. They were transported to Australia as individual lifts on a 'float on/float off' heavy lift ship, the Blue Marlin. Construction of the superstructure and its consolidation with the hull was conducted by BAE Systems Australia Defence (BAE Systems) at their Williamstown (Victoria) Shipyard in Australia. The superstructure contains the high level Combat and Communications Systems equipment that will need to be maintained and upgraded in Australia. BAE Systems is also undertaking the final out-fit, set-to-work, and trials.

Major Risks and Issues

The project has completed Preliminary Design and Detailed Design Reviews. The project has experienced issues with the later than planned delivery of LHD 01 Hull from the Subcontractor in Spain to BAE Systems in Australia and the Contractor's inability to deliver supplies in accordance with the deliverable schedule for LHD 01. The project has also experienced a number of minor issues concerning the design and integration.

Productivity in the Williamstown Shipyard and workforce capacity remains an essential enabler for timely project completion. **A combination of lower** than expected electrical trade productivity**, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions**, resulted in delays to sea trials and acceptance of the first LHD. **Despite the application of productivity lessons learnt from LHD 01 and a focus on LHD 02 following delivery and departure of LHD 01 in late 2014, the production schedule for LHD 02 did not regain all lost time, with a follow on delay to delivery of LHD 02 expected.**

While the LHD ships are based on the existing Spanish LHD design, the Australian combat and communication capability **required** 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 **was** complex. Additional time **was** required to address integration issues and resulted in some minor movement of combat and communication system integration milestones. This **impacted** the major milestone of ship delivery.

One of the additional challenges for this project remains the potential for legislative / 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.

The project has engaged regulators and relevant safety subject matter experts to progress delivery / acceptance of LHD Safety Program artefacts.

As the project moves towards closure a reduction in the strategic risk profile is anticipated, with many existing risks to be retired upon delivery of LHD 02 and the associated integrated logistics support products. Such risks include the identification and treatment of technical issues, major ship system or equipment failure, indices escalation, supplies, lack of project personnel, severe weather conditions during sea trials, non-acceptance of the LHD Safety Case and any non-supply of Government Furnished Equipment or Services.

Other Current Sub-Projects

JP 2048 Phase 3: Watercraft system acquisition to be used in conjunction with the JP 2048 Phase 4A/4B Amphibious Ships (LHD) Mission System. This 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.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Nov 03	Original Approved		3.1	1
Sep 04	Real Variation – Scope	4.8		2
Aug 05	Real Variation – Scope	29.6		3
Jun 07	**Government Second Pass Approval**	2,920.8		
Oct 08	Real Variation – Transfer	9.3		4
			2,964.5	
Jul 10	Price Indexation		428.4	5
Jun 15	Exchange Variation		**(305.0)**	
Jun 15	**Total Budget**		**3,091.0**	
	Project Expenditure			
Prior to Jul 14	Contract Expenditure – BAE Systems	**(2,535.7)**		
	Other Contract Payments / Internal Expenses	**(102.5)**		6
			(2,638.2)	
FY to Jun 15	Contract Expenditure – BAE Systems	**(75.2)**		
	Other Contract Payments / Internal Expenses	**(6.1)**		6
			(81.3)	
Jun 15	**Total Expenditure**		**(2,719.5)**	
Jun 15	**Remaining Budget**		**371.5**	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	To fund a risk reduction activity for the Project to obtain design data and develop designs to meet Australian essential requirements.
3	First Pass Approval.
4	Transfer of funding for technical studies from Defence Science and Technology Organisation.
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $350.0m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $78.4m having been applied to the remaining life of the project.
6	Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
142.6	**85.6**	**86.6**	**The variation is primarily due to a combination of cost savings and the movement of activities and milestones associated with LHD 01 Acceptance.**
Variance $m	**(57.0)**	**1.0**	Total Variance ($m): **(56.0)**
Variance %	**(40.0)**	**1.2**	Total Variance (%): **(39.3)**

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Year-to-date variance is predominantly due to delay of production and testing milestones.**
			Overseas Industry	
		(5.3)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
			Additional Government Approvals	
86.6	**81.3**	**(5.3)**	**Total Variance**	
		(6.1)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 15 $m	Type (Price Basis)	Form of Contract / Arrangement	Notes
BAE Systems	Oct 07	2,268.1	**2,710.6**	Variable	ASDEFCON	1, 2

Notes

1	Contract Price at Revision **98**. Amendments to Contract since signature include execution of contracted options for Training and Spares.
2	Contract value as at 30 June 2015 is based on actual expenditure to 30 June 2015 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 15	Scope	Notes
BAE Systems	2	2	LHD ships and integrated support systems.	

Major equipment received and quantities to 30 Jun 15

LHD 01 Delivery and Acceptance achieved. Production and fit-out activities for LHD 02 **continue** and **LHD 02** Sea Acceptance Trials **are in progress**.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mission System (Includes Platform / Combat Systems)	Feb 08	Feb 08	Feb 08	0	
	Support System	Apr 08	Apr 08	Apr 08	0	
Preliminary Design	Communication	Oct 08	Oct 08	Dec 08	2	1
	Navigation	Oct 08	Oct 08	Dec 08	2	1
	Platform System	Nov 08	Nov 08	Nov 08	0	
	Combat System	Dec 08	Apr 09	Apr 09	4	1
	Whole of Ship	Jan 09	May 09	May 09	4	1
	Support system	Mar 09	May 09	May 09	2	1
Detailed Design	Communication	May 09	Sep 09	Sep 09	4	1
	Navigation	Jun 09	Jun 09	Jun 09	0	
	Platform system	Jun 09	Jun 09	Jun 09	0	
	Combat system	Jul 09	Oct 09	Oct 09	3	1
	Whole of ship	Jul 09	Dec 09	Dec 09	5	1
	Support system	Aug 09	Dec 09	Dec 09	4	1

Notes	
1	Due to the complexity of the design and integration of the combat, communications and platform systems, more time was allocated to the design review activities. The Heavy Lift Ship Company, Dockwise, delivered the LHD 01 hull to BAE Systems in Australia on 28 October 2012 (66 days later than planned). LHD 02 departed Spain on the Heavy Lift Ship, Blue Marlin, in December 2013 and arrived in Australia in February 2014 on schedule.

3.2 Contractor Test and Evaluation Progress

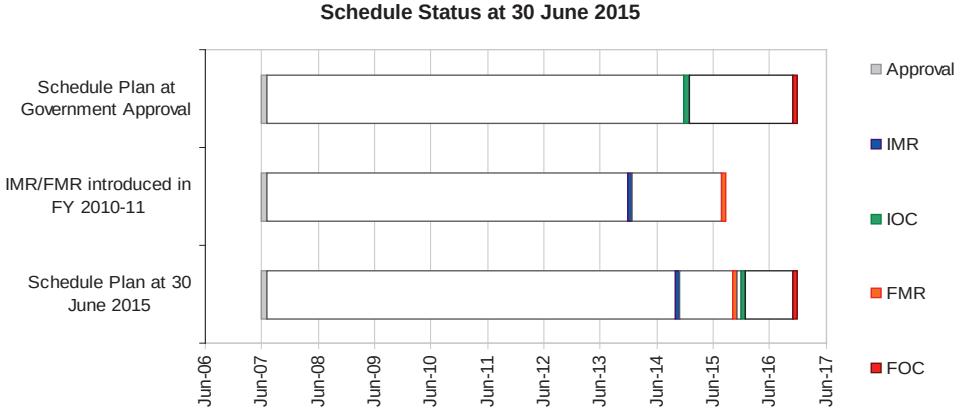
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	**Sep 15**	**6**	1
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Feb 14	**Oct 14**	**9**	2
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	**Oct 15**	**2**	**3**
	LHD Final Acceptance	Sep 15	Sep 15	**Nov 15**	**2**	**4**

Notes	
1	LHD 01 production delays have impacted System Integration and set to work activities, however, System Integration relates to the whole capability, commencing with LHD 01 and completion at LHD 02.
2	Project Acceptance for LHD 01 **occurred** later than planned. The delay **was** a direct result of **a combination of** low productivity in the set to work of electrical systems**, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions**.
3	**A combination of lower than anticipated production and testing performance, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions**, **delayed the planned Sea Acceptance Trials for LHD 02, with an associated follow-on impact of delayed delivery and acceptance of LHD 02.**
4	**Further delay to Final Acceptance is anticipated due to the relationship this has with LHD 02 Project Acceptance.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

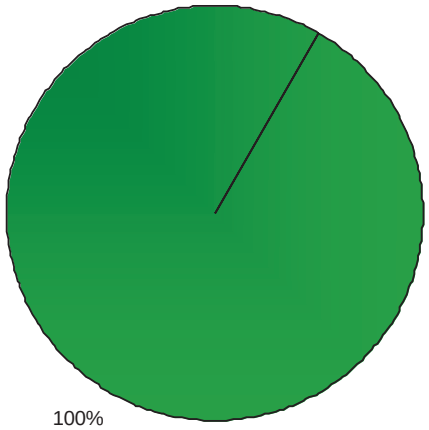
Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR) (LHD 01)	Jan 14	**Oct 14**	**9**	1
Initial Operational Capability (IOC) (LHD 01)	Dec 14	**Dec 15**	**12**	2, **3**
Materiel Release 2 (MR2) (LHD 02)	**Aug 15**	**Oct 15**	**2**	**4**
Final Materiel Release (FMR)	Aug 15	**Oct 15**	**2**	**4**
Final Operational Capability (FOC) (LHD 02)	Nov 16	Nov 16	0	

Notes	
1	LHD 01 production delays impacted System Integration and set to work activities **resulting in the delay to achievement of IMR.**
2	The change is a direct result of **a combination of** low productivity in the set to work of electrical systems**, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions**. **IOC is a Capability Manager responsible milestone which is constituted by an operational capability level delivered through a range of Defence assets. LHD 01 and the associated Integrated Logistic Support products contribute to the achievement of IOC.**
3	**IOC (LHD 01) occurs after FMR, however this is as a result of late delivery of LHD 01 and the programmed workup of operational capability level during the year by the Defence Forces. This delay is not related directly to LHD 02 delivery or dependent on FMR.**
4	**A further variance is anticipated as this is related directly to a combination of lower than anticipated production and testing performance, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, and delayed LHD 02 delivery to the project.**



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** Design, production, set to work and test activities continue to support achievement of **overall** project Materiel Capability Delivery Performance outcomes. **Defects and associated operational capability limitations identified against Materiel Capability Delivery Performance requirements were identified during harbour and sea trials of LHD 01 and declared to the Capability Manager prior to LHD 01 acceptance. All limitations have allocated remediation plans to address and achieve all Materiel Capability Delivery Performance requirements.** **Amber:** N/A **Red:** N/A
Note	
This Pie Chart does not necessarily represent capability achieved. The capability assessments and forecasts by the project are not subject to the ANAO's assurance review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	• **LHD 01 delivered ready for Operational Test and Evaluation.** • **DMO Elements of Fundamental Input to Capability Support System, including Technical Documentation, Spares Support and Training Support (DMO portion).**	**Achieved**
Final Materiel Release (FMR)	• **Completed delivery of LHD 02 and all remaining Acquisition Project Support Deliverables.**	**Not achieved**

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Legislative/Regulatory Changes may affect Contract Requirements and impact on the delivery of **LHD 02**.	• Raise Contract Change Proposals. • Seek Real Cost Increases to Project Funding where affected by Legislative change. • Seek waivers as necessary.

The delivery **of LHD 02** will be affected by scope creep caused by contemporary understanding of requirements.	• Seek schedule and cost relief for changes affected by Stakeholder expectations or changes in related Defence projects. • Program change in the Capability Insertion Program (funding source outside JP 2048 Phase 4A/4B).
Contracted indices escalation exceeds the specialist military supplementation provision.	• **Contingency allocation.** • Reduce contracted scope.
The contractor is unable to deliver supplies in accordance with the deliverable schedule **for LHD 02**. **This is also disclosed as an issue for LHD 01 in Section 5.2.**	• Conduct capability schedule trade-off. • Seek schedule relief.
The LHD Project organisation will be impacted through the lack of the correct number of appropriately qualified personnel available to undertake required LHD Project Office commitments.	• Engaging External Service Providers (Contractors).
The delivery **LHD 02** may be affected by an inability to verify system and functionality requirements during Test and Evaluation.	• Workshops involving BAE Systems and stakeholders to improve quality of test procedures in addressing requirements. • Early engagement of stakeholders for the provision of assets required for testing. • Identify costs of assets for budgeting purposes. • Reschedule activity.
Emergent Risks (risk not previously identified but has emerged during 2014-15)	
Description	Remedial Action
Acceptance Testing during sea trials on LHD 02 will be delayed due to severe weather conditions.	• **Reschedule activity.** • **Ensure BAE planning has sufficient flexibility to accommodate adverse weather conditions.** • **Reallocate Commonwealth resources as required.**
The acceptance test conduct for LHD 02 will be impacted due to the failure or non supply of Government Furnished Equipment or Services required to support testing, resulting in non completion of testing and/or claim by contractor for excusable delay.	• **Maintain regular communications with relevant Government Furnished Equipment or Service stakeholders and suppliers.** • **Seek alternative third-party suppliers.**
The delivery of LHD 02 may be affected by the Contractor failing to inform the Commonwealth of technical issues in a timely manner.	• **Assess the severity of technical issues and determine if they impact acceptance.** • **Apply additional resources into assessment of technical issues in timely manner to lessen impact to schedule.** • **Respond on issues that prevent excusable delay.**
The LHD 01 will be affected by a major ship-system or equipment failure during Delivery that will result in the non-availability of systems post delivery.	• **Contingency budget allocation for CoA to attend re-testing activities.** • **CoA monitoring of Contractor due diligence and quality of manufacture.** • **Contractor issues management provided by on-site construction staff and/or additional sub-contract assistance.**

There is a chance that RAN Regulators may not approve LHD Safety Program process and/or artefacts for LHD 02.	• **Project systematically engaging with RAN regulators and relevant safety subject matter experts to progress delivery/acceptance of LHD Safety Program artefacts.** • **Ship 02 Safety Case built upon Ship 01 basis.**

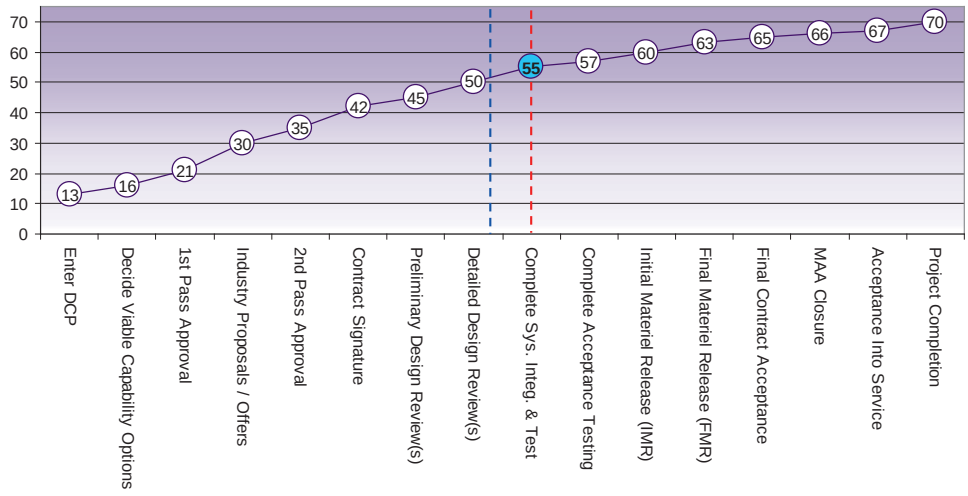
5.2 Major Project Issues

Description	Remedial Action
Intellectual Property (IP) management between BAE and Navantia.	An Intellectual Property Deed was signed by Tenix, BAE Systems, Navantia, and the Commonwealth detailing how **IP** will be managed for the LHD Project. The management of IP will be monitored through **IP** audits. **This issue is retired as the IP Plan has been accepted and IP Records approved with minor amendments.**
Delay of LHD 01 during delivery to Australia.	• **Settlement of Liquidated Damages.** • **Alignment of Contract.** **This issue is proposed for closure due to the settlement of Liquidated Damages.**
The contractor is unable to deliver supplies in accordance with the deliverable schedule for LHD 01.	• **RAN accepted late delivery.** • **Extension of HMAS Tobruk service.** • **Settlement of Liquidated Damages.** **This issue is proposed for closure due to the settlement of Liquidated Damages.**

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	**8**	7	**8**	8	**8**	**8**	**8**	**55**
Integration and Test	Project Status	**6**	**8**	**8**	8	8	8	**9**	**55**
	Explanation	• **Schedule: BAE Systems delivered LHD 01 late, and are forecasting a two month delay to delivery of LHD 02 and Final Acceptance.** • **Cost: The Project is on track to achieve outcomes within the allocated budget.** • **Operations and Support: LHD 01 integration is complete and the capability has transitioned to Sustainment.**							



2013-14 MPR Status - - - -	2014-15 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 2014-15

Position	Name
General Manager	Mr Colin Thorne
Division Head	RADM Mark Purcell
Branch Head	Mr Patrick Fitzpatrick
Project Director	**CAPT (RAN) Craig Bourke (to Dec 14)** **Mr Patrick Fitzpatrick (Dec 14–current)**
Project Manager	CAPT (RAN) Craig Bourke **(to Dec 14)** **Mr David Kingston (Dec 14–current)**