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Assurance Report

2009–10 Major Projects Report

Defence Materiel Organisation

Australian National Audit Office

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Canberra ACT
30 November 2010

Dear Mr President
Dear Mr Speaker

In accordance with the authority contained in the *Auditor-General Act 1997*, the Australian National Audit Office has undertaken a review of the status of selected Defence equipment acquisition projects as at 30 June 2010 as presented by the Defence Materiel Organisation. I present the report of this review to the Parliament. The report is titled *2009–10 Major Projects Report.*

Following its tabling in Parliament, 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 and financial statement audits 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

ADF	Australian Defence Force
ANAO	Australian National Audit Office
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
CDR	Critical Design Review
CEO	Chief Executive Officer
DEFMIS	Defence Financial Management Information System
DMO	Defence Materiel Organisation
ERMF	Enterprise Risk Management Framework
EVMS	Earned Value Management System
FFG	Guided Missile Frigate
FMS	Foreign Military Sales
FOC	Final Operational Capability
GRAB	Gate Review Assurance Board
HF	High Frequency
Hw	Heavyweight
IOC	Initial Operational Capability

IT	Information Technology
JCPAA	Joint Committee of Public Accounts and Audit
LHD	Landing Helicopter Docks
MAA	Materiel Acquisition Agreement
MOE	Measure of Effectiveness
MPR	Major Projects Report
MRH	Multi–Role Helicopter
PDSS	Project Data Summary Sheet
RCS	Replacement Combat System
ROMAN	Resource and Output Management and Accounting Network
R&S	Reliability and Sustainability
US	United States

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, which is not unique to Australia. With major Defence equipment acquisition often expensive and technically complex, there are significant risks to delivering the required capability on schedule and within budget.

This third review of the status of selected Defence acquisition projects continues to build 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 preparation of the Major Projects Report (MPR) has received ongoing support from the Joint Committee of Public Accounts and Audit (JCPAA) and the Government, and has been an area of ongoing interest for the Joint Standing Committee on Foreign Affairs, Defence and Trade. The JCPAA's review of the 2007–08 MPR has contributed to a number of enhancements to this year's report.

The 2009–10 MPR includes a further seven projects, bringing the total number to 22. The report's presentation has been further developed and a greater level of information about each project's performance is now available. This includes data on DMO's assessment of progress towards delivering the key capability requirements involved in each project, which was provided only at a summary level in the DMO section of the 2008–09 MPR. This data provides some insight into a system's likely suitability for planned operational service.

The program is well placed to incorporate another six projects in the 2010–11 MPR to bring the total number of projects to 28; and the DMO and the ANAO are working with the JCPAA to continue to enhance the value of the report.

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 ANAO with its review.

I would like to again thank the Chief Executive Officer of the DMO, Dr Stephen Gumley AO, and his staff at the corporate and project levels for their considerable work on this third report, and the high level of assistance provided to the ANAO staff in conducting the project reviews.

Ian McPhee
Auditor–General

19 November 2010

Summary

Introduction

1. Defence acquisition projects are the subject of considerable Parliamentary and public interest, in view of their planned contribution to national security and the challenges involved in bringing major projects in on time, within budget and with the required capability.

2. The Defence Materiel Organisation (DMO), which is responsible for contributing to the development and sustainment of capability for the Australian Defence Force (ADF) in support of Australia's national security, expended some $6.0 billion on major and minor capital acquisition projects in 2009–10.[1]

2009–10 Major Projects Report (MPR) projects

3. This third report covers 22 of the DMO's major acquisition projects (Major Projects), an increase of seven projects on last year's report and an increase of 13 projects when compared to the first MPR, which was tabled in Parliament in November 2008. The 22 Major Projects and their approved budgets are set out in Table 1.

4. In total, the approved budgets for the 22 Major Projects amount to $40.8 billion, as at 30 June 2010. This represents just over half of the budget for the DMO's approved major capital investment program.

5. 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.

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[1] Department of Defence, *Defence Annual Report 2009–10*, Volume 2 Defence Materiel Organisation, p.49.

Table 1

2009–10 MPR Projects and Approved Budgets at 30 June 2010

Project	DMO Abbreviation	Approved Budget $m
Air Warfare Destroyer Build (SEA 4000 Ph 3)	AWD Ships	7 740.1
Airborne Early Warning and Control Aircraft (AIR 5077 Ph 3)	Wedgetail	3 883.5
Multi–Role Helicopter (AIR 9000 Phs 2/4/6)	MRH90 Helicopters	3 754.6
Bridging Air Combat Capability (AIR 5349 Ph 1)	Super Hornet	3 629.1
Amphibious Deployment and Support (JP 2048 Ph 4A/4B)	LHD Ships	3 160.8
Field Vehicles and Trailers (LAND 121 Ph 3)*	Overlander Vehicles	2 879.2
Armed Reconnaissance Helicopter (AIR 87 Ph 2)	ARH Tiger Helicopters	2 076.3
F/A–18 Hornet Upgrade (AIR 5376 Ph 2)	Hornet Upgrade	1 946.6
Air to Air Refuelling Capability (AIR 5402)	Air to Air Refuel	1 889.4
C–17 Globemaster III Heavy Airlifter (AIR 8000 Ph 3)	C–17 Heavy Airlift	1 834.6
Guided Missile Frigate Upgrade Implementation (SEA 1390 Ph 2.1)	FFG Upgrade	1 529.6
F/A–18 Hornet Upgrade Structural Refurbishment (AIR 5376 Ph 3.2)	Hornet Refurb	943.5
Bushmaster Protected Mobility Vehicle (LAND 116 Ph 3)	Bushranger Vehicles	926.2
Next Generation Satellite Communications System (JP 2008 Ph 4)*	Next Gen Satellite	894.1
High Frequency Modernisation (JP 2043 Ph 3A)	HF Modernisation	662.7
Armidale Class Patrol Boat (SEA 1444 Ph 1)	Armidales	536.7
ANZAC Anti–Ship Missile Defence (SEA 1448 Ph 2B)*	ANZAC ASMD 2B	458.5
Collins Replacement Combat System (SEA 1439 Ph 4A)	Collins RCS	458.0
Replacement Heavyweight Torpedo (SEA 1429 Ph 2)*	Hw Torpedo	441.5
Collins Class Submarine Reliability and Sustainability (SEA 1439 Ph 3)*	Collins R&S	407.7
Follow–On Stand Off Weapon (AIR 5418 Ph 1)*	Stand Off Weapon	399.6
ANZAC Anti–Ship Missile Defence (SEA 1448 Ph 2A)*	ANZAC ASMD 2A	377.1
Total		**40 829.4**

Source: 2009–10 MPR, Part 3, Project Data Summary Sheets.

Note: *Indicates the project is included in the MPR program for the first time in the 2009–10 Report.

Role of the Joint Committee of Public Accounts and Audit (JCPAA)

6. The JCPAA has been influential in establishing the MPR and has taken an active role in the development of the MPR program. The committee has viewed the program as a means by which accessible, transparent and accurate information could be made available to the Parliament and the Australian public about the state of Defence's major equipment acquisition projects.[2]

7. In reviewing the first MPR report (2007–08 MPR), the committee indicated that it was encouraged by the achievements with this report and was in no doubt about the utility of future MPRs.[3] The JCPAA review provided constructive input to both the ANAO and the DMO on ways the MPR could be improved; including those now incorporated into this report.

Report objective and review scope

8. The objective of this report is to provide:

- comprehensive information on the status of projects as reflected in the Project Data Summary Sheets (PDSSs) prepared by DMO, and a review by the ANAO (the Auditor–General's formal conclusion on the review of the PDSSs is contained in Part 3 this report);
- ANAO analysis, in particular longitudinal analysis of projects over time; and
- further insights by the DMO on issues highlighted during the year (not included in the scope of the review by the ANAO).

9. 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.[4] 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 Effectiveness), and major risks and issues. By its nature, this

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[2] Following consultation with the ANAO, the DMO provided a set of guidelines for JCPAA endorsement in March 2010. The guidelines set out the requirements for DMO project offices to provide complete and accurate Project Data Summary Sheets and supporting information for the ANAO to review.

[3] Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–08*, November 2009, p.v.

[4] Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements other than Audits or Reviews of Historical Financial Information*.

information relates to events and depend 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.[5]

10. 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 22 Major Projects is less than that typically provided by our performance audits.

Overall conclusion

11. This third MPR has progressed the development of an annual reporting program focused on improved transparency and accountability for performance relating to budgeted 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.

12. Overall, the program is well placed to incorporate a further six new projects in the 2010–11 MPR to bring the total number of Major Projects reported to 28.

Review conclusion

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

[5] Further information on the scope of the review is set out in paragraphs 1.8 and 1.9.

14. The conclusion of the review of the PDSSs was that, except for the non-inclusion of project expenditure history expressed in base date dollars[6] for 19 Major Projects and the prime contract price in base date dollars for four Major Projects (as explained further in paragraph 1.21 below), 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 aspects, in accordance with the guidelines on completing the PDSSs. Table 2 below details the specific PDSS table items that are subject to qualification by the ANAO.

Table 2

ANAO's Review of 2009–10 PDSSs: Qualifications

PDSS Table
2.2 Expenditure in base date dollars
2.3 Contract price in base date dollars

Projects' performance

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

16. The ANAO's analysis indicates that maintaining Major Projects on schedule remains the major challenge for the DMO and industry contractors, affecting when the capability is made available for operational release and deployment. DMO data indicates that at 30 June 2010, the total time for the

[6] Base date dollars is the amount, adjusted for the impact of inflation (prices) and foreign exchange movement over the period from a specified date. 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. Alternatively, original budgets could be inflated for price and foreign exchange movements to allow for a current day comparison. This method will be explored further by the DMO, in consultation with the ANAO, in the 2010–11 MPR.

22 Major Projects to achieve their final operational capability (FOC) date is expected to be almost one-third longer than was originally planned.[7]

17. The management of projects' budgeted cost is, to a significant degree, assisted by routine supplementation to deal with both price changes (via price indexation) and foreign exchange movement (via a whole-of-government 'no win, no loss' policy); 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.[8] None of the Major Projects in this report have exceeded their approved budgeted cost.

18. The DMO believes it is likely to deliver almost all the key capabilities associated with the Major Projects in this report.[9] This assessment by the DMO was outside the scope of the ANAO's review as explained in paragraph 9.

19. Table 3 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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7 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.

8 In the 2009–10 MPR, the DMO is reporting less than one per cent negative variation in the total budgeted cost of the 22 Major Projects. Net variation involves budgeted cost movements between Second Pass Approval to 30 June 2010 that are not due to price indexation, foreign exchange, government approved scope changes and transfers to other areas of Defence. See 2009–10 MPR, DMO Executive Summary, Table 1.

9 The one key capability the DMO reports will not be met is the performance level required for the phased array radar on the Wedgetail project, at final delivery.

Table 3

2007–08, 2008–09 and 2009–10 MPR Headline Data: Approved Budgeted Cost, Schedule Performance and Progress Towards Delivering Capabilities

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

Sources: 2007–08 MPR Parts 2 and 3; 2008–09 MPR Parts 2 and 3; 2009–10 MPR, Parts 2 and 3.

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

Note 2: ^This figure relates to the 15 Major Projects in the 2008–09 MPR and the schedule variation of 39 months that occurred with these Major Projects in 2009-10.

Note 3: The grey section of the table covers data that is not within the scope of the ANAO's assurance review.

Schedule

20. The ANAO's analysis of the lead or main capability for the 22 Major Projects covered in the 2009–10 MPR shows that thirteen projects have experienced schedule slippage. The total slippage across the Major Projects amounts to 688 months, which represents a 31 per cent increase on the original planned schedule for achieving the final operational capabilities (FOC).[10] [11] This figure includes the C–17 Heavy Airlift, which is forecast to achieve FOC 11 months ahead of schedule. The average schedule slippage per Major Project amounts to 34 months (almost three years).

21. The projects currently forecast to experience delays of four or more years are: HF Modernisation (120 months), Collins Reliability and Sustainability (99 months), FFG Upgrade (84 months), Collins Replacement Combat System (72 months), ANZAC Anti–Ship Missile Defence Phase 2A (64 months), ANZAC Anti–Ship Missile Defence Phase 2B (49 months) and Wedgetail (48 months).

22. Analysis of the 2009–10 PDSSs indicates that five of the 22 projects in this report have experienced in-year schedule slippage totalling 39 months. These involve FFG Upgrade (*HMAS Sydney* - 19 months), Bushranger Vehicles (11 months), Air to Air Refuel (three months), Hornet Upgrade (three months) and Armidales (three months). In contrast, the expected FOC date for the HF Modernisation project decreased by eight months.[12]

23. The reasons for schedule slippage vary, but primarily reflect the underestimation of both the scope and complexity of work by industry and the DMO. PDSS data shows that for more complex projects such as Wedgetail and the FFG Upgrade, the actual schedule for technical work involving system design and integration is often significantly underestimated compared to the original planned schedule. In this regard, the ANAO notes that DMO Major

[10] 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 2009–10 PDSSs. These two valid approaches lead to a small difference in the calculated percentage by which the Major Projects' total schedule has slipped for the 2009–10 MPR (ANAO – 31 per cent; and DMO – 30 per cent).

[11] The Hornet Refurb project does not have an FOC date and therefore is not included in schedule calculations. The C–17 Heavy Airlift project is forecast to achieve the original FOC date 11 months ahead of schedule, and this has been deducted from the total schedule slippage amount.

[12] See Part 1, Figure 9.

Projects' 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. However, an independent review (known as a non-advocate review) can be requested by a Gate Review Assurance Board (GRAB) if considered necessary.[13]

Budgeted cost

24. The total budgeted costs for the Major Projects included in this year's MPR have increased by $7.8 billion (or 24 per cent) since the projects received their Second Pass Approval from government. Within this increase, $4.0 billion is due to price (materials and labour) indexation and exchange rate variations, and $3.8 billion relates to real variations (such as scope changes and budget transfers between projects).[14] Projects with greater than a $500 million real budgeted cost increase since Second Pass Approval comprise the MRH90 Helicopters, Hornet Refurb and Bushranger Vehicles (additional quantities/upgrades).

25. In relation to project budgeted costs in 2009–10, a significant feature compared to the previous year was the positive impact of the strengthening Australian dollar. In 2008–09, the budgeted cost of the 22 projects increased by $3.7 billion (14 per cent) as a result of foreign exchange movements. In 2009–10, foreign exchange movements had the effect of reducing the total budgeted cost for the 22 projects by $3.8 billion (or 11 per cent), although this was slightly offset by a $0.5 billion increase in the budgeted cost due to price indexation. In general, this highlights the year-to-year volatility that can arise with projects heavily exposed to foreign currency movements.[15]

Progress towards delivering key capabilities

26. 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.

27. The 2009–10 MPR provides, for the first time, unclassified data on DMO's level of confidence with achieving each project's key capability

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[13] See paragraphs 3.3 to 3.6 for further information on the GRAB review process.

[14] An explanation of the definition of real budgeted cost variations is included at Part 1, paragraph 2.8.

[15] 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.

attributes (Measures of Effectiveness - MOEs). The MOEs predominantly focus on the future achievement of certain technical, functional and safety requirements associated with the platform or system. As the MOE data concerns forecasting future achievements, it has been excluded from the scope of the ANAO's review.[16]

28. Across the Major Projects in the 2009–10 MPR[17], DMO's assessment is that it has a high level of confidence in delivering 89 per cent of the key capabilities associated with the projects, while the delivery of 10 per cent of the key capabilities is considered to be under threat but the risk is still considered manageable and able to be met.[18] The DMO's key capability data shows one project, Wedgetail, is assessed by the DMO as unlikely to achieve one of its five key capability requirements, involving the performance of the phased array radar which will not meet the specification at final delivery.[19]

Governance over acquisition processes

29. Consideration of the DMO's acquisition process is important in understanding 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 covers a number of specific governance areas that the JCPAA requested the ANAO to examine in the course of reviewing the project data. This includes Earned Value Management Systems (EVMS) at a project level, the controls over the use of contingency budgets, and the management of prepayments to contractors.

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16 ANAO analysis of the DMO's MOE framework is set out at paragraphs 2.24 to 2.27.

17 The DMO has advised that all MPR projects, other than the Super Hornets, have endorsed MOEs.

18 Noting the caution that needs to be exercised with year-to-year comparisons of MOE data (see Table 3, Note 1), in the 2008–09 MPR, DMO stated it had a high level of confidence in delivering 86 per cent of key capabilities for the 14 projects with MOEs. In this regard, the 2008–09 and 2007–08 MPRs did not include MOE data in the PDSSs. Instead, DMO provided an aggregate capability section in its section of the MPR (Part 2).

19 A number of projects have included non-capability measures (such as achieving dates or schedules) as MOEs. These non-capability measures have been excluded by the DMO from its MOE data.

30. Relevant governance areas in the review included:

- DMO's new assurance mechanism, the GRAB process, which is designed to provide the Chief Executive Officer of the DMO (CEO 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 Minister's Projects of Concern process, which is designed to address project issues deemed to be of concern to the DMO and the Government;[20]
- the DMO's business systems rationalisation process, which is aimed at consolidating process and systems in order to provide a more manageable system environment; and
- the project skills professionalisation and development program in DMO and industry, which is directed to enhancing the skill sets available to manage the DMO's Major Projects.

31. During the 2009–10 MPR review, the ANAO continued to observe a lack of consistency in the application of various policies, practices and systems at a project level which were 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 varied 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 DMO level.

32. The ANAO also noted 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 one Major Project during the ANAO's review, where a number of monthly project status reports were examined for the period during which it was experiencing a major issue. The ANAO found little in the way of report

[20] The previous Minister for Defence Materiel and Science and the current 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.

metrics and narrative to adequately alert the reader to the impact of the issue on the project's position.[21] [22]

33. Nevertheless, there are a range of enterprise and project level acquisition governance initiatives underway, although some, such as the inclusion of project level GRAB reviews in 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 GRAB review process to flow through across the portfolio of the DMO's Major Projects. An assessment of these governance initiatives and the outcomes they have been able to achieve will be made by the ANAO following advice from DMO in 2010–11, and when the results become available.

34. Beginning in 2010–11, the method of indexing DMO project budgets is changing such that each project's price updated component of their budget will be indexed at a fixed indexation of 2.5 per cent per annum. Previously, price updates to budgets reflected movements in the non-farm Gross Domestic Product implicit price deflator.[23] The ANAO plans to have regard to how fixed price indexation is being dealt with at a project level, and the impact in areas such as contingency budgets and general contract management, as part of its review next year.

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21 The greater enhancement of the DMO's project reporting and monitoring mechanisms has been highlighted in previous ANAO reports (see for example, Australian National Audit Office, *Lightweight Torpedo Replacement Project*, Performance Audit Report No.37 2009-10, p.20).

22 The DMO has recently advised that, from the beginning of 2011, it intends to change its monthly project reporting template to be more key metric focused and less narrative.

23 In the five year period 2004–05 to 2008–09, the non-farm GDP 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. 2009–10 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 2009–10 PDSSs completed by the DMO and the outcomes of the review.

1.2 The chapter also examines administrative issues raised in earlier reviews by the ANAO and progress made in 2009–10. In particular, the 2008–09 MPR review highlighted issues with the governance of Major Projects that presented challenges to the DMO including the financial control framework, the uncertainty of prospective information and the maturity of the enterprise risk management framework. These areas have remained challenging and are addressed later in this chapter, along with further issues arising from the 2009–10 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.

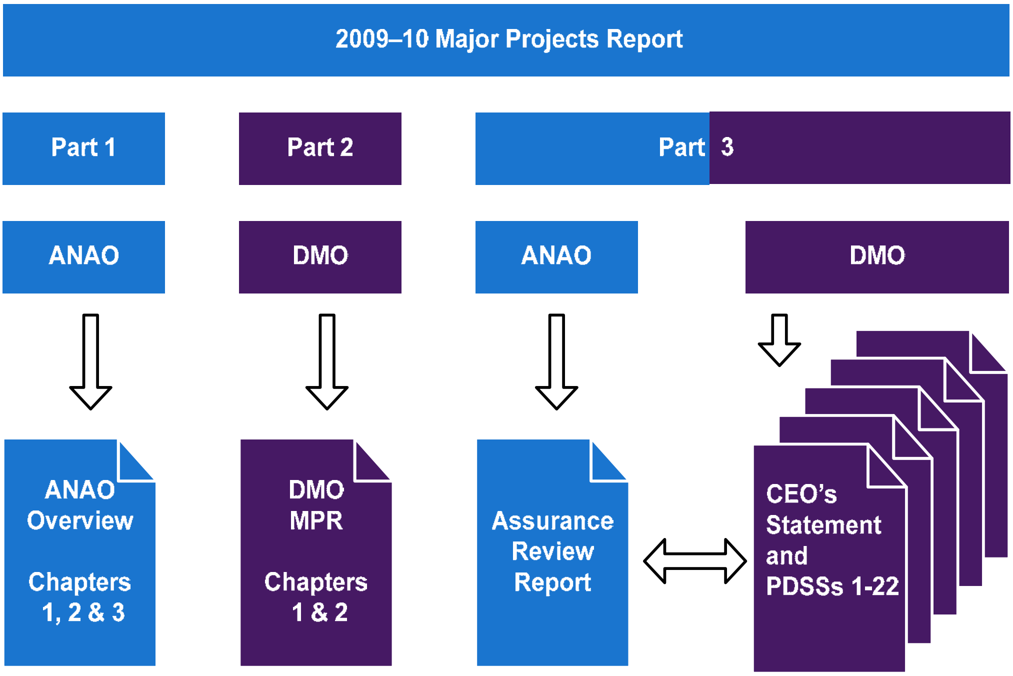
Report structure

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

- Part 1 comprises the ANAO's *Summary* as well as *Chapter 1: 2009–10 MPR Review*, *Chapter 2: Projects' Performance*, and *Chapter 3: Governance over Acquisition Processes*;
- Part 2 comprises the DMO's commentary and analysis on Major Projects and is not included within the scope of the Auditor–General's review, and
- Part 3 incorporates the Auditor–General's assurance review report; a statement by the CEO DMO, and the 22 PDSSs prepared by the DMO and provided to the ANAO for review as part of the assurance review process.

Figure 1

Report structure



1.4 The PDSSs describe each project and contain information on individual project performance according to the approved budgeted cost, 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 DMO having regard to the guidelines provided to project offices for completing the PDSSs.[24] Each PDSS comprises:

- Section 1 - a summary of the project, including management details, project context, industry suppliers, unique project features, major challenges, the project's current status and maturity score;
- Section 2 - an outline of the project's budgeted cost and variances that have occurred over the life of the project to date, as well as major

[24] The DMO, in consultation with the ANAO, developed a work plan for the ANAO's 2009–10 MPR. As part of this process, a set of guidelines were developed to provide direction in the development of the PDSSs by the DMO project offices and provided to the JCPAA for endorsement.

contracts in place (adopting a new format in 2009–10, following consultation with the JCPAA);

- Section 3 - information on the project's design development and test and evaluation status; forecasts of the expected timing of projects achieving initial and final operational capability; and, following a request from the JCPAA, for the first time, the DMO's assessment of progress on delivering key capabilities (also referred to as Measures of Effectiveness - MOEs) is also included;
- Section 4 - an outline of the major and emergent risks and issues faced by the project, and reference to other projects that depend on the reported project to achieve their objectives; and
- Section 5 - an outline of the key lessons that have been learned.

1.5 The statement by the CEO DMO (p. 135) lists significant events that have taken place affecting the status of projects as set out in the PDSSs, since 30 June 2010.

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

Review approach

1.7 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.

1.8 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 MOEs), risks and issues. By its nature, this information relates to events and depend 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.

1.9 In this regard, Table 4 lists the PDSS items which are out of scope for the review due to their high levels of inherent uncertainty.

Table 4

ANAO's Review of 2009–10 PDSSs: Items in the PDSS that are Out of Scope

PDSS Table	Out of Scope	Reference in ANAO Review Conclusion – 'Scope'
1.2 Project Context	Future dates	(c)
1.2 Major Challenges	Complete table	(a)
3.1 Design Reviews	Future dates	(c)
3.2 Test and Evaluation	Future dates	(c)
3.3 Initial Operational Capability	Future dates	(c)
3.4 Final Operational Capability	Future dates	(c)
3.5 Measures of Effectiveness	Complete table	(b)
4.1 Major Risks	Complete table	(a)
4.2 Major Issues	Complete table	(a)

1.10 As part of the review process the DMO has developed an MPR work plan, incorporating a set of PDSS guidelines, in consultation with the ANAO. The guidelines provide direction to the DMO's project offices in providing complete and accurate PDSSs and supporting information for the ANAO to then review.

1.11 As part of the development of the guidelines, they were provided to the JCPAA for endorsement. The JCPAA is also briefed on key aspects of report development to ensure that it meets the committee's needs and the objectives of enhancing transparency and accountability in relation to the performance of Major Projects.

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

- 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 PDSS information is accurate and complete;

- interviews with persons responsible for the preparation of the PDSSs and those responsible for the management of the 22 projects;
- taking account of industry contractor comments on draft PDSS information; and
- an examination of the statements and management representations by the CEO DMO and senior DMO managers, and confirmations from the three ADF Service Chiefs concerning the overall accuracy and completeness of the PDSSs, including the reporting of projects' status in terms of progress towards or achievement of initial and final operational capability.

1.13 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 22 Major Projects is less than that typically provided by our performance audits.

Areas of Review Focus

1.14 As an initial stage of the ANAO's development of processes and procedures to provide independent assurance over the PDSSs, the ANAO has focused on reviewing the DMO's project management and reporting arrangements, and the number of the different processes in place that contribute to the overall governance of Major Projects within the DMO. This focus has 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 revised 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 PDSSs from each project;
- specific programs for the management of acquisition such as GRABs, the tailored oversight arrangements for projects on the Projects of Concern list, assurance mapping processes and skilling;

- as recommended by the JCPAA:[25]
  - lessons learned that are unique to the individual project and their incorporation into future policy and practice;[26]
  - the disaggregation of information on capability at the project level by way of inclusion of MOE data (DMO's assessment of its likelihood of delivering projects' key capabilities);
  - ongoing disaggregated reporting of maturity scores and explanation of the benchmarks;[27] and
- following the JCPAA's interest, the review also involved analysis of the use of the Earned Value Management System (EVMS), contingency management, and prepayments to contractors.

1.15 This review has informed the ANAO's understanding of the DMO systems and processes used to populate the PDSSs for 2009–10, and highlighted issues in those systems and processes to be addressed in the longer term.

Efficiency of the MPR development process

1.16 The compilation and review of the MPR continues to improve in terms of efficiency, with seven extra projects being incorporated in 2009–10, bringing the total number to 22. The DMO prepared indicative PDSSs and supporting evidence packs, which were reviewed by the ANAO during visits to all project offices prior to 30 June. This activity was completed within the agreed schedule, and as a result the ANAO observed improved efficiency, and in many cases a reduced number of exceptions were noted in the site reports compared to the previous year.

1.17 The DMO was also able to recommend to the JCPAA in September 2010 the inclusion of an additional six new projects in the 2010–11 MPR. This was

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25 Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, p.x.

26 Lessons learned were incorporated in the 2008–09 MPR.

27 Disaggregated project maturity scores were incorporated in the 2008–09 MPR.

provided following consultation with the ANAO, against the criteria specified by the JCPAA[28].

Review outcomes

Financial control framework

1.18 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 in relation to the non-disclosure of information in relation to prime contract price and expenditure in base date dollars.[29] 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.

1.19 The application of the financial control framework differed in respect of each of the projects examined, due to the wide range of corporate and project management systems being employed and the varying financial management policies being adopted by different project offices. As a result, there was inconsistency between the information produced by each project's record keeping systems, and efficiencies could not be gained by adopting a consistent approach to developing and subsequently reviewing each PDSS.

1.20 The difficulties encountered by the DMO in presenting PDSS data included:

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28 Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, p.18.

29 Base date dollars is the amount, adjusted for the impact of inflation (prices) and foreign exchange movement over the period from a specified date. 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.

- projects where the DMO is the systems integrator can involve many different contractors and/or Foreign Military Sales (FMS) cases, often with different contract base dates, in addition to subsequent contract amendments at differing base dates to the original contracts;[30]
- legacy system issues, where projects that were still using 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, could not readily disaggregate progress payment information;[31]
- projects involving FMS cases and Memoranda of Understanding (MOUs), for which records are 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;[32] and
- for some projects, while contracts may have been struck in base date dollars, transactions are not subsequently managed in a way that supports the calculation of payments in base date dollars.[33]

1.21 As a result of the above issues, the DMO did not populate the PDSSs with the prime contract price in base date dollars for three projects and prime contract progress payments in base date dollars for 11 of the 15 projects included in the 2008–09 MPR. The DMO has continued to encounter difficulties in this area, and the review conclusion has again been qualified due to departures from this aspect of the guidelines. In the 2009–10 MPR, the project financial information for 19 of the 22 projects does not provide project expenditure history in base date dollars, and for four projects the prime contract price in base date dollars is not provided.

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30 This applies to the Hornet Upgrade, Hornet Refurb and Collins RCS projects. In addition, the AWD Ships project also has numerous contracts and FMS cases, and the DMO was unable to reliably report expenditure in base date dollars for this project, despite it having a much more recent inception than many other Major Projects.

31 This applies to the FFG Upgrade, Bushranger Vehicles and HF Modernisation projects.

32 This applies to the Super Hornet, C–17 Heavy Airlift, Next Gen Satellite, Hw Torpedo and Stand Off Weapon projects.

33 This applies to the Overlander Vehicles, ARH Tiger Helicopters, Armidales, Collins R&S and ANZAC ASMD 2A and 2B projects, and Wedgetail for the ‘other’ component of the financial year to the end of June 2010 expenditure.

Prospective information

1.22 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.

1.23 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 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[34], alternative processes for the validation of 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.

1.24 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 DMO have continued to invest resources in this area as part of the development of the 2009–10 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

1.25 In the 2008–09 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 on these could not be considered complete because of

[34] Australian National Audit Office, *2009–10 MPR*, Part 2, p.73.

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.

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

1.27 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.

1.28 The development of the DMO's enterprise risk management framework was identified last year by ANAO as a challenging but necessary step for DMO in striving to achieve its goal of improving project management. The ANAO highlighted particular challenges, such as the gap between risk management practices and those preferred practices as set out in the enterprise risk management framework.[35]

1.29 This year's review noted a strong corporate focus on these challenges, although broader organisational engagement was less evident. Currently, work is being undertaken by 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. At a more applied level, work has been undertaken in areas such as updating the Chief Executive's Instructions on enterprise risk management and DMO's Project Risk Management Manual; upgrading the main risk management tool; and improving management's awareness of enterprise risk management by examining findings from past ANAO audits as well as Defence and DMO internal audits. Nevertheless, considerable work remains to be undertaken before effective enterprise risk management is in place to assist in improving the DMO's approach to the identification and management of risks to delivery of Major Projects.

1.30 This is particularly noticeable at the project level, where the ANAO's review indicated that there had been no significant progress over the last year in improving the consistency of risk management across the Major Projects. In

[35] Australian National Audit Office, *2008–09 MPR*, Part 1, pp.38-39.

some cases, planned updates to risk management systems and plans were not undertaken due to other organisational priorities. In terms of IT systems, the upgrade to DMO's main risk management software tool had implementation problems, and caused a degree of frustration at the project level. Linked to the implementation of this software upgrade, timely access to risk management training for project staff also featured as an issue during the ANAO's review.

Project key capability measures - Measures of Effectiveness

1.31 DMO's assessment of the likelihood of delivering the key capabilities (also called Measures of Effectiveness - MOEs) for major capital acquisitions, is specified publicly at the project level for the first time in the 2009–10 MPR. This data is set out as a 'traffic light' percentage pie chart in Table 3.5 of each project's PDSS. It is important to emphasise that MOEs predominately focus on the expected future achievement of certain technical, regulatory and operational requirements. Budgetary and schedule requirements are generally not included as an MOE. For example, the eight current MOEs for the FFG Upgrade project solely focus on the forecast achievement of certain technical capabilities.

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

1.33 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).[36] In light of this subjectivity and inherent uncertainty, this information is excluded from the scope of the ANAO's review. Nevertheless, noting this caveat, the ANAO has included some 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.

1.34 The ANAO's examination of MOEs, which are drawn from the Materiel Acquisition Agreements (MAAs) between Defence's Capability Development Group (as the purchaser) and the DMO (as the supplier), noted that the MOE

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

framework is not sufficiently developed to ensure consistency in the level and scope of MOEs across projects.

1.35 DMO has recently advised that it is unlikely that MOEs will be reported in their current form in the 2010–11 MPR as DMO established a new MAA template at the beginning of 2010 for implementation in 2010-11. 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 is likely to be a matter for consideration by the JCPAA and further examination by the ANAO in the 2010–11 MPR.

2. Projects' Performance

Introduction

2.1 Key project performance information is important in monitoring whether the required capability is expected to be delivered on schedule and within budget. Such information has the potential to act as an alert to under-performance and a focus for management action.

2.2 Four key measures on the status of each project have been derived from data in the PDSSs to provide snapshots on project performance.

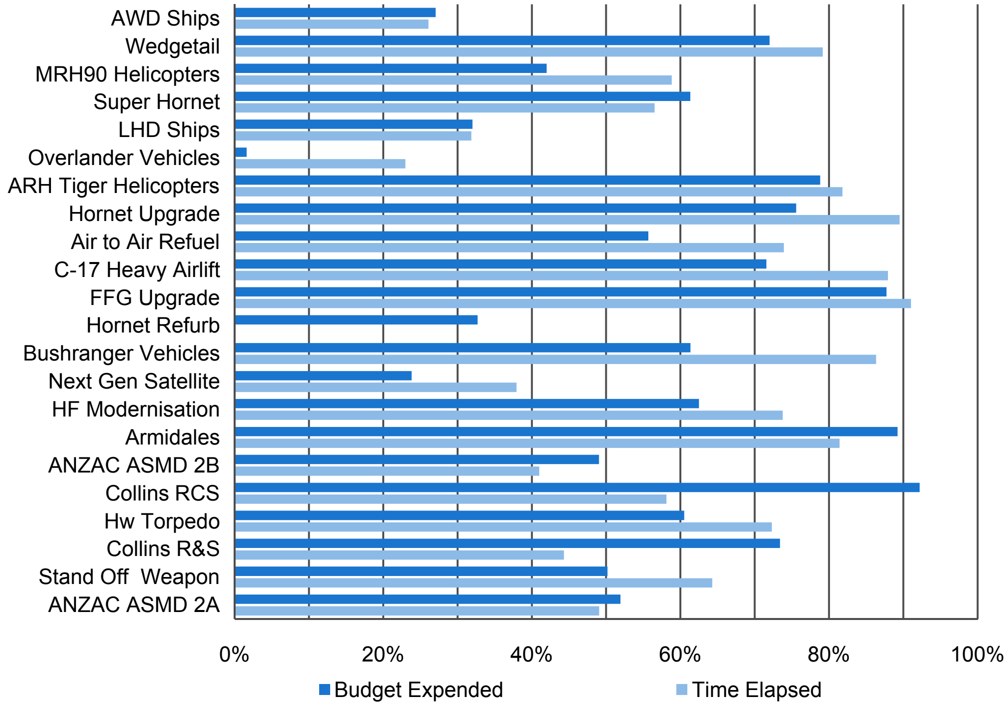
2.3 Figure 2 sets out two of these measures: percentage of budgeted cost expended and percentage of the scheduled time elapsed. The figure shows that, for most projects, the budgeted cost expended is broadly in line with the proportion of time that has elapsed in projects' schedules.[37] [38] The main exceptions 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 difficulties in obtaining a sufficient amount of time in the submarines' full cycle docking program to install the equipment has pushed out each project's schedule. In other cases, issues related to contractor delivery against the contract (Air to Air Refuel) and delays in entering into the contract (Overlander Vehicles – Medium/Heavy Capability) have impacted on the extent of budgeted cost expended relative to the current point in their planned schedule.

[37] Projects' budgeted cost and schedule data is the position as at 30 June 2010, and may differ from originally approved budgets and schedules.

[38] Projects' 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.

Figure 2

Project Snapshot - Budget Expended and Time Elapsed (percentage)



Source: 2009–10 MPR and ANAO analysis.

Note 1: The budget expended data for this figure is the percentage of the approved budget costs expended, as at 30 June 2010. The schedule time elapsed data is the percentage of months elapsed from the original project approval date to the forecast final operational capability date, as at 30 June 2010.

Note 2: The Hornet Refurb project does not have an FOC date as it does not introduce new capability to the Hornet aircraft fleet.

2.4 The second snapshot, Figure 3, sets out each project's current maturity score and the DMO's assessment of the likelihood of delivering all the key capability requirements it has agreed to deliver.[39] [40] The DMO's assessment is informed by the range of risks and issues that the project has identified and is addressing. Whether a project is primarily developmental in nature (such as the Wedgetail project), or a military-off-the-shelf solution (such as the Super Hornets or C–17 Heavy Airlift aircraft), has been shown to be a significant factor affecting the likelihood of delivering all the key capabilities; with the risk 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's maturity score increases.

2.5 While 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,[41] overall, the DMO's assessment is that 20 of the 21 projects with key capability data in this year's MPR will deliver all their key capability requirements. The project of note that is not expected to deliver all its key capability requirements is Wedgetail, where the system's radar performance is not expected to meet the required current specification at final delivery.

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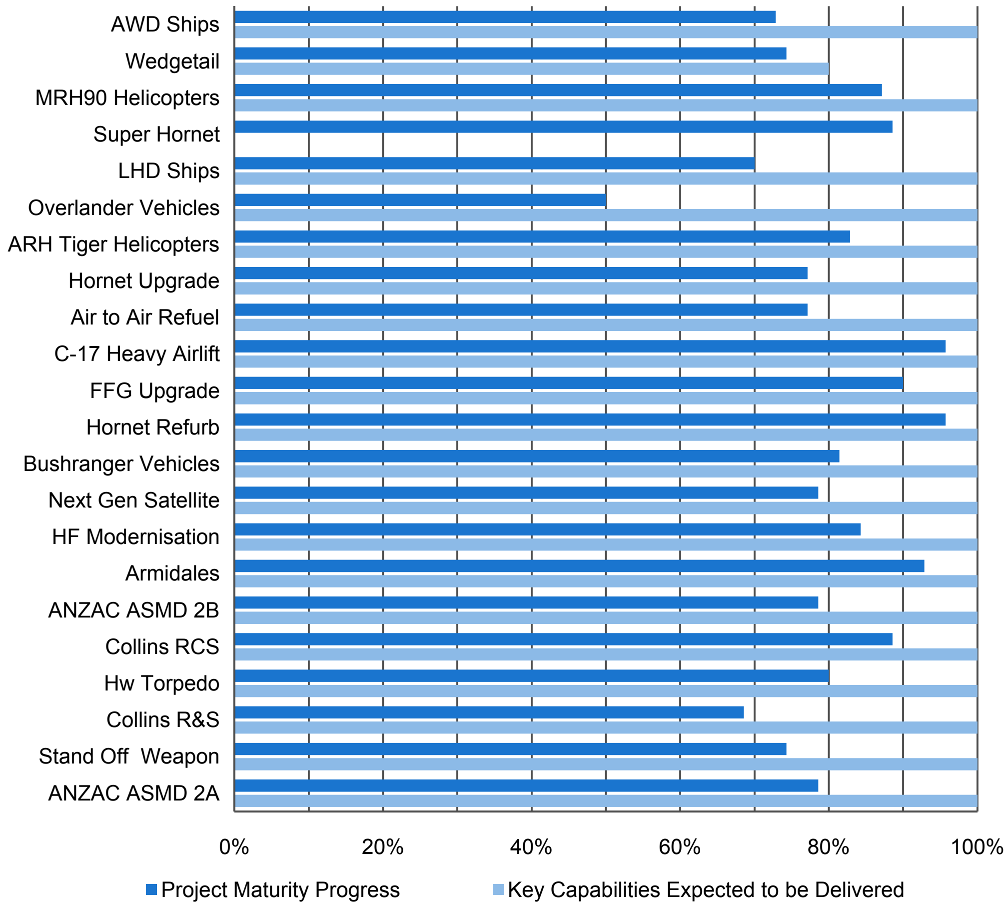
39 The project maturity score quantifies the maturity of a project by way of a score, based on the project managers' judgement at defined milestones in the capability development and acquisition phases. This score can then be compared against an ideal or benchmark score for that milestone to indicate the project's relative performance.

40 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 2009–10 MPR.

41 ANAO's examination of the DMO's key capability measures is set out at paragraphs 2.24 and 2.25.

Figure 3

Project Snapshot - Project Maturity Progress and Key Capabilities expected by DMO to be delivered (percentage)



Source: 2009–10 MPR and ANAO analysis.

Note: The DMO has advised that the Super Hornet project does not have endorsed key capability measures (Measures of Effectiveness).

Budgeted cost performance

Second Pass and 30 June 2010 approved budgeted cost

2.6 For the 22 Major Projects covered in the 2009–10 MPR, Figure 4 compares each project's Second Pass (main investment decision by the Government) approved budgeted cost and their approved budgeted cost at 30 June 2010.[42] The total approved budgeted costs for the 22 projects at 30 June 2010 was $40.8 billion, an increase of $7.8 billion compared to their Second Pass Approval budgeted cost. Real variations in project budgeted costs due to Government approved changes, transfers within the portfolio and other administrative decisions post Second Pass Approval, account for $3.8 billion of this increase. The balance of the increase is due to price variation and foreign exchange rate movements.[43]

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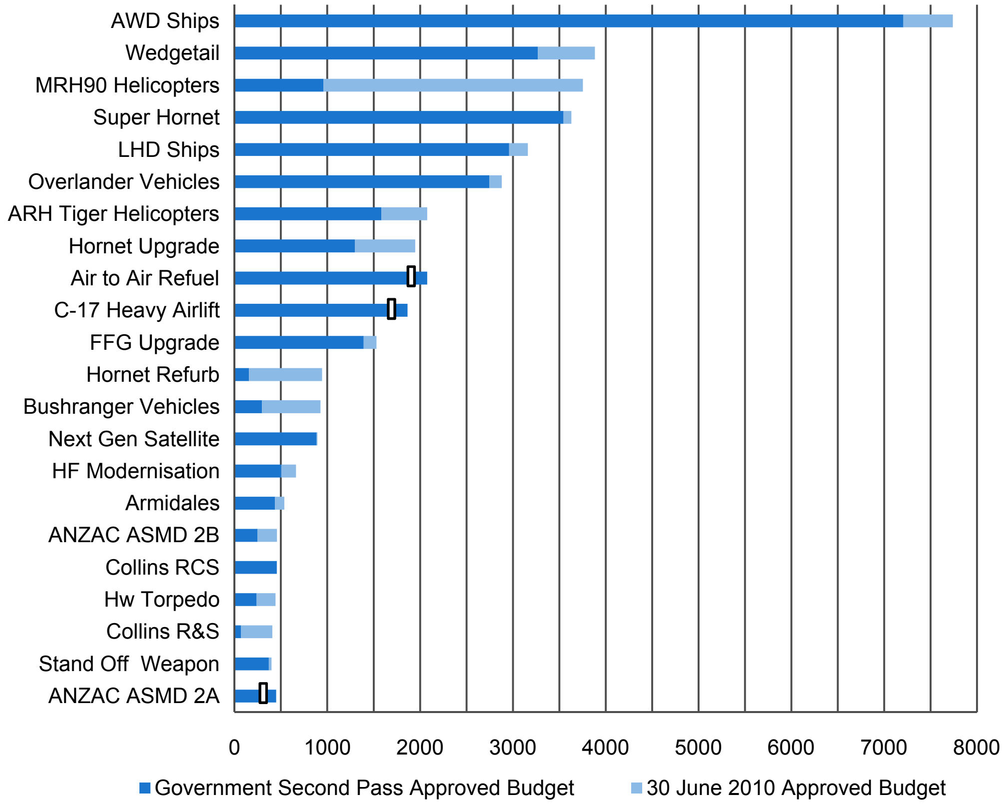
[42] Second Pass is the point at which the government approves a project proceeding to the acquisition phase. Responsibility, authority and accountability for management of the acquisition phase of the materiel life cycle are vested in the DMO's line management, the focal point of which is the designated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

[43] The MRH90 Helicopter project experienced a real budgeted cost increase of $2.6 billion (June 2006 price) post Second Pass Approval, reflecting a government decision to increase the quantity of aircraft from 12 to 46. In the case of the Wedgetail project, in addition to a real budgeted cost impact due to the inclusion of two additional aircraft after Second Pass Approval, a further real budgeted cost increase of $388 million was recorded under the project's budget approval history in July 2008. The DMO has advised that this real budgeted cost increase is now treated as price indexation.

Figure 4

Projects' Second Pass and 30 June 2010 Approved Budgeted Cost ($m)



Source: 2009–10 MPR.

Note: ▯ indicates that the budgeted cost for the project at 30 June 2010 (ANZAC ASMD 2A, C–17 Heavy Airlift and Air to Air Refuel) is less than original budgeted cost.

Project budgeted cost variance

2.7 Approved budgeted cost variations are classified by DMO into three main factors: price (material and labour) indexation, exchange rate variation and real variation. The first two factors, price indexation and exchange rate variation, are generally standard provisions in acquisition projects that extend over a number of years, and essentially represent budgeted cost variations that are outside the scope of project management to directly control.[44]

2.8 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.

2.9 In the case of the 22 projects in the 2009–10 MPR, all budgeted cost approval increases in 2009–10 were due to price indexation and exchange rate variations.

2.10 Of particular note in recent times 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. Throughout 2008–09, the Australian dollar was weaker against most foreign currencies. In the second half of 2009, the Australian dollar began strengthening against most foreign currencies, and reached a band around the US90 cents level for a considerable period of the 2009–10 financial year.

2.11 Figure 5 examines the three main factors contributing to budgeted cost variations in each of the last two years, and highlights the significant in-year impact of variations in the strength of the Australian dollar for the 22 projects in the 2009–10 MPR.

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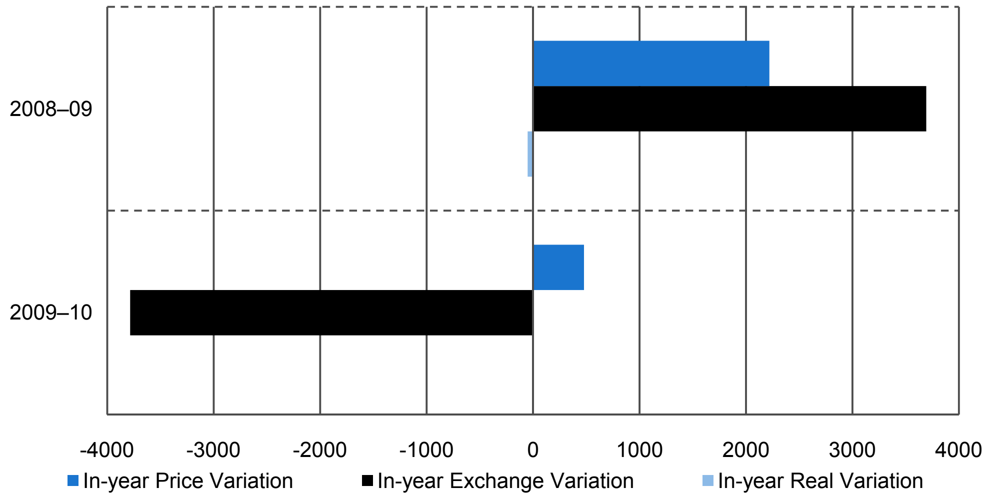
[44] Australian Government arrangements for foreign exchange variation involve 'no win/no loss' supplementation. As a matter of policy, unless specifically approved, individual agencies are not permitted to 'hedge' against foreign exchange risk.

Figure 5

In-year (2008–09 and 2009–10) Budgeted Cost Changes ($m)



Source: 2009–10 MPR and Project Cost Approval Histories.

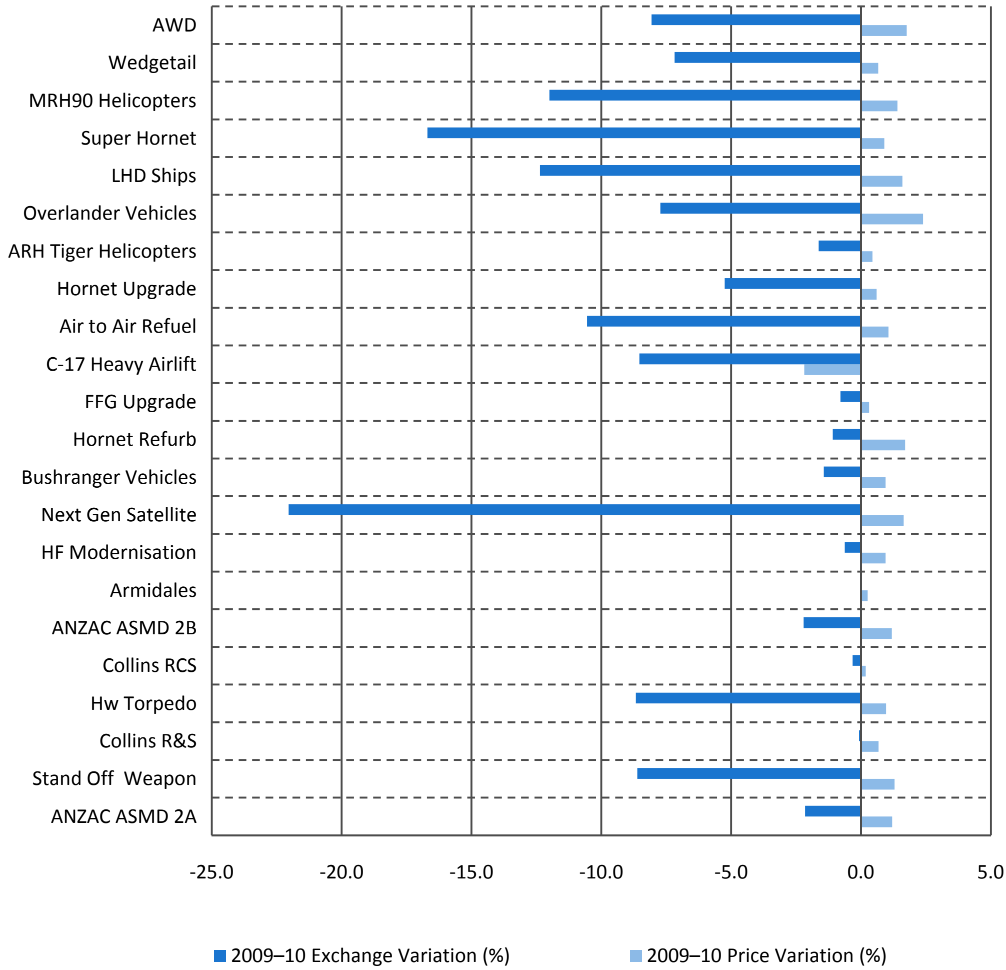
2.12 After a $3.7 billion (14 per cent) increase in project budgeted costs due to foreign exchange movements in 2008–09, the stronger Australian dollar in 2009–10 has led to a $3.8 billion (11 per cent) decrease in the budgeted cost of projects covered by the 2009–10 MPR (excluding other variations).

2.13 Overall, the 30 June 2010 approved budgeted cost of the 22 projects in the 2009–10 MPR decreased by $3.3 billion or 7.5 per cent, compared to their 30 June 2009 approved budget. The decrease was driven by foreign exchange variations, and offset slightly by a $0.5 billion increase due to price indexation. As reflected in Figure 6, projects that experienced a significant foreign exchange impact on their 2009–10 budgeted cost include:

- Next Gen Satellite ($248 million, or 22 per cent decrease in budgeted cost);
- Super Hornet ($720 million, or 17 per cent decrease in budgeted cost);
- MRH90 Helicopters ($504 million, or 12 per cent decrease in budgeted cost);
- LHD Ships ($438 million, or 12 per cent decrease in budgeted cost); and
- Air to Air Refuel ($220 million, or 11 per cent decrease in budgeted cost).

Figure 6

In-year (2009–10) Budgeted Cost Changes (percentage variation by factor)



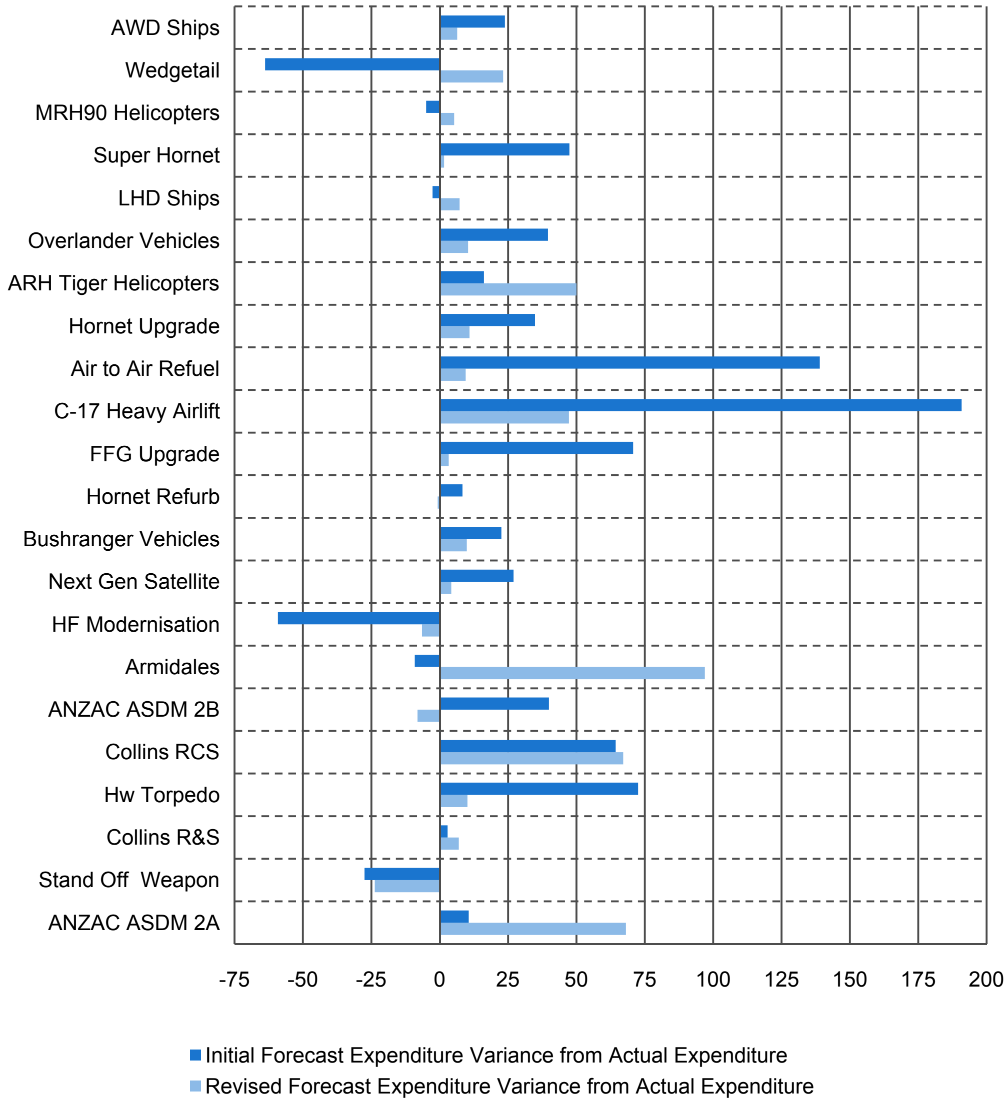
Sources: 2009–10 MPR and Project Cost Approval Histories.

Forecast and actual expenditure

2.14 Robust annual expenditure forecasts are an important element in helping the effective management of a portfolio of projects. Figure 7 presents the expenditure forecasting performance of each project, against the actual expenditure for the year 2009–10. In total, the actual expenditure for the 22 projects at 30 June 2010 was $4.3 billion against an initial forecast expenditure of $5.2 billion and half-year revised forecast of $4.6 billion. The main factors contributing to the variance included production/schedule delays and foreign exchange fluctuations. In the case of the Wedgetail project, earlier than forecast acquisition contract payments and in-service support contract expenditure impacted on the project's initial forecast expenditure.

Figure 7

In-year (2009–10) Projects' Forecast Expenditure Performance compared to Actual Expenditure (variance percentage)



Sources: 2009–10 MPR, Portfolio Budget Statements and ANAO analysis.

Schedule performance

Life to date schedule performance

2.15 The DMO has acknowledged that performance against the schedule is the biggest issue that the organisation faces in delivering projects to the ADF.[45] Schedule delays increase the overall cost of project delivery as both DMO and industry staffing and administrative resources are tied up for longer than planned. For Australia's front line forces, timely access to new and upgraded capabilities is delayed.

2.16 Figure 8 presents information on the projects' original and 30 June 2010 forecast for achieving FOC. The total delay for the Major Projects is expected to be 688 months as compared to the prediction when first approved. This slippage represents a 31 per cent increase on the expected schedule since the main investment decision.[46] Across the Major Projects, 13 projects have experienced a slippage in expected FOC achievement. However, one project, the C–17 Heavy Airlift, which is a military-off-the-shelf acquisition, is forecast to achieve FOC 11 months ahead of its original schedule.

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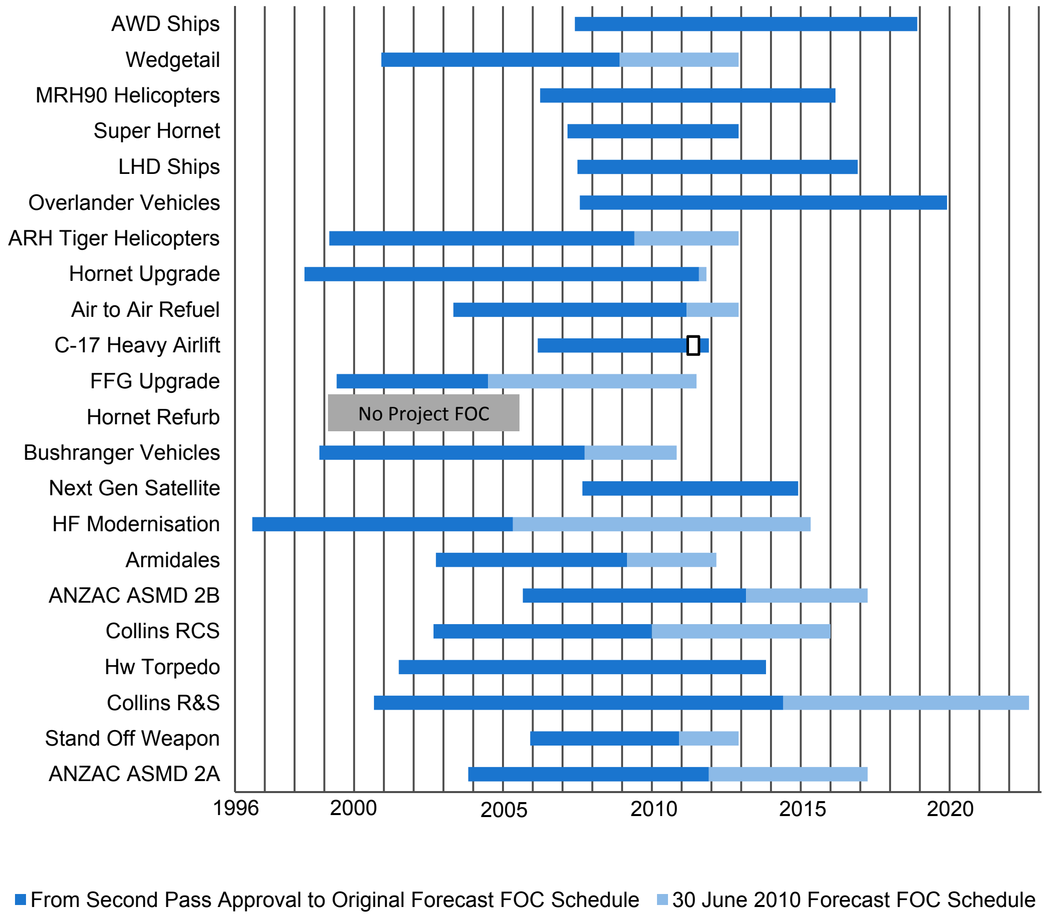
[45] Australian National Audit Office, *2008–09 Major Projects Report*, Part 2, p.119.

[46] 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 2009–10 PDSSs. These two valid approaches lead to a small difference in the calculated percentage by which the Major Projects' total schedule has slipped for the 2009–10 MPR (ANAO – 31 per cent; and DMO – 30 per cent).

Figure 8

Projects' Original and 30 June 2010 Forecast Schedule for FOC



Source: 2009–10 MPR.

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

Note 2: Bushranger Vehicles FOC date relates to production period 1. The FOC date for production period 3 is April 2012.

Note 3: HF Modernisation FOC date relates to the upgrade of mobile platforms.

Note 4: ▯ indicates C–17 Heavy Airlift is forecast to achieve FOC 11 months earlier than original schedule.

2.17 Assuming soundly-based schedule forecasts, the reasons for schedule slippages can include technical factors such as design problems, 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 covered in the 2009–10 MPR).

In–year schedule performance

2.18 In 2009–10 there was a total of 39 months slippage in the forecast achievement of FOC for the 15 projects that were included in last year's report. This represents a two per cent increase in the schedule timeframe for this group of projects.

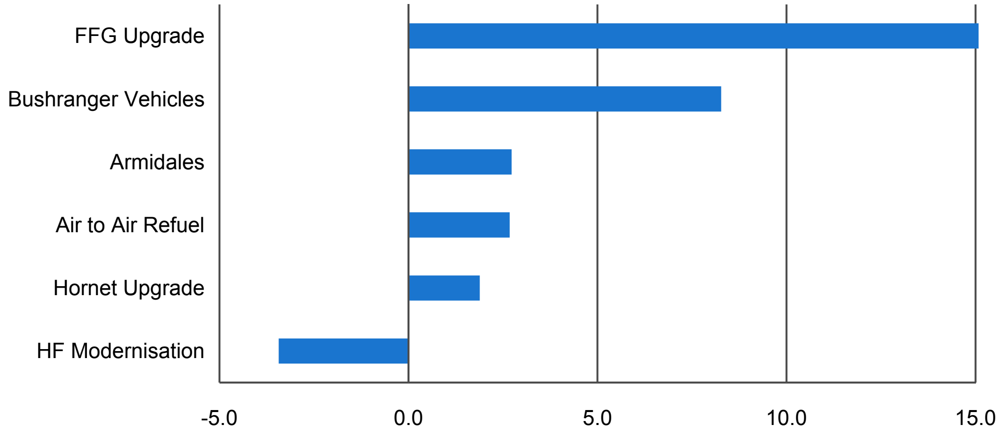
2.19 Figure 9 shows that the in-year schedule slippage involved the following projects:

- FFG Upgrade (operational test and evaluation extended to align with test assets and facilities availability);
- Bushranger Vehicles (component delivery delays);
- Armidales (outstanding defects - with 'workarounds' in place);
- Air to Air Refuel (increased scope and complexity of the aircraft conversion); and
- Hornet Upgrade (slower than planned aircraft delivery schedule).

2.20 In contrast, the HF Modernisation project's forecast FOC schedule decreased in-year because of greater schedule clarity on the mobile platforms' upgrades.

Figure 9

In-year (2009–10) schedule changes to achieving FOC (percentage increase/decrease in schedule)



Source: 2009–10 MPR.

Note: The ANAO review indicates that 13 of the 21 MPR projects with FOC dates did not record changes to the relevant FOC dates during the year. In the case of three new projects included in the 2009–10 MPR, the PDSSs do not require projects to outline their schedule status as 30 June 2009 and so do not enable the ANAO to establish whether in-year schedule changes had occurred in 2009–10.

Capability performance

2.21 Defence capability is defined as the ability to achieve a particular operational effect.[47] An operational effect is achieved by combining fundamental inputs to capability such as personnel, training, supplies, facilities and equipment platforms and systems (for example, ships, aircraft and electronic systems).

2.22 In acquiring Defence platforms and systems, a range of documentation (including 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 a ship, for example, this would include elements such as its range and speed, handling characteristics, level of self-protection, certification plans, supportability and the compliance with Navy regulations. A deal of this

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[47] Department of Defence, *Defence Capability Development Manual 2006*, p.4.

information is classified for national security reasons and so is not publicly available.

2.23 In the acquisition phase, the scope of each project is primarily defined through a Materiel Acquisition Agreement (MAA) between Defence's Capability Development Group (as the purchaser) and the DMO (as the supplier). MAAs usually incorporate a number of MOEs, which at a strategic level are designed to set out the key capability performance attributes of the system to be delivered by the DMO. [48] Where key attributes are not achieved, this could be expected to have a significant effect on a system's suitability for planned operational service.

2.24 In general, MOEs focus on the achievement of certain technical, regulatory or operational requirements. Budgetary and schedule requirements are less likely to be included as an MOE (and are instead covered in other areas of an MAA). Given this approach, MOEs generally reflect the expected overall technical status of the project when complete, and provide insight into a system's likely suitability for planned operational release.

2.25 There is considerable diversity across the projects in the number, level of specification and focus of MOEs. While MOEs need to capture the key capability result areas for the project, and a rudimentary template assists the DMO to do this, the ANAO notes that there is not a clear underlying consistency in the identification and articulation of MOEs in the MAAs. The development of more robust key performance indicators to address the current deficiencies with MOEs was highlighted by the DMO in its section of last year's report as an area for attention.[49] The DMO has since advised that MOEs are unlikely to be reported in their current form in 2010–11.

2.26 The level of confidence in delivering each MOE (using traffic light indicators) is assessed by DMO's project management, and reported monthly within DMO and Defence.[50]

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48 There are on average around 10 individual MOEs within each MAA for projects covered by the 2009–10 MPR. Over time, the number of MOEs for a project may vary, due to amendments to the capability to be delivered.

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

50 An issue identified by the DMO is support for project managers to guide assessments and reduce the level of subjectivity in assessments. See ANAO, *op cit*.

2.27 In this regard, as the MOE data concerns forecasting future achievements, it has been excluded from the scope of the ANAO's formal review.[51] However, the ANAO has been provided with data from the DMO reporting systems in order to examine the accuracy of the MOE data in the PDSSs.

2.28 Due to national security considerations, only the overall status from each project's assessment of the likelihood of delivering the required MOEs is contained in the 2009–10 MPR and earlier reports. Figures 10 and 11 present DMO's assessment of the percentage of MOEs that:

- it 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).

2.29 By way of illustration, Figure 11 shows that in relation to the FFG Upgrade, the project's own assessment as at 30 June 2010 is that it has a high level of confidence in delivering the requirements of half the MOEs contained in the project's MAA, while the project has assessed that the delivery of the remaining MOEs as under threat but this threat is considered manageable.

Capability performance to date of MPR projects

2.30 While a multi-year comparison of capability performance needs to be treated with caution due to year-to-year changes in the basis of the data[52], this third MPR provides the opportunity to start to examine broad trends in the DMO's assessment of the likelihood of projects delivering the required capabilities over time. This comparison can be done through examining this year's PDSSs and data reported by the DMO in its part of the MPRs for 2007–08 and 2008–09.[53]

2.31 Figure 10 examines the DMO's assessment about the likely delivery of the MOEs for the nine Major Projects in the first MPR (2007–08 MPR); 14 of the 15 Major Projects in the second MPR (2008–09 MPR); and the 21 Major Projects

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

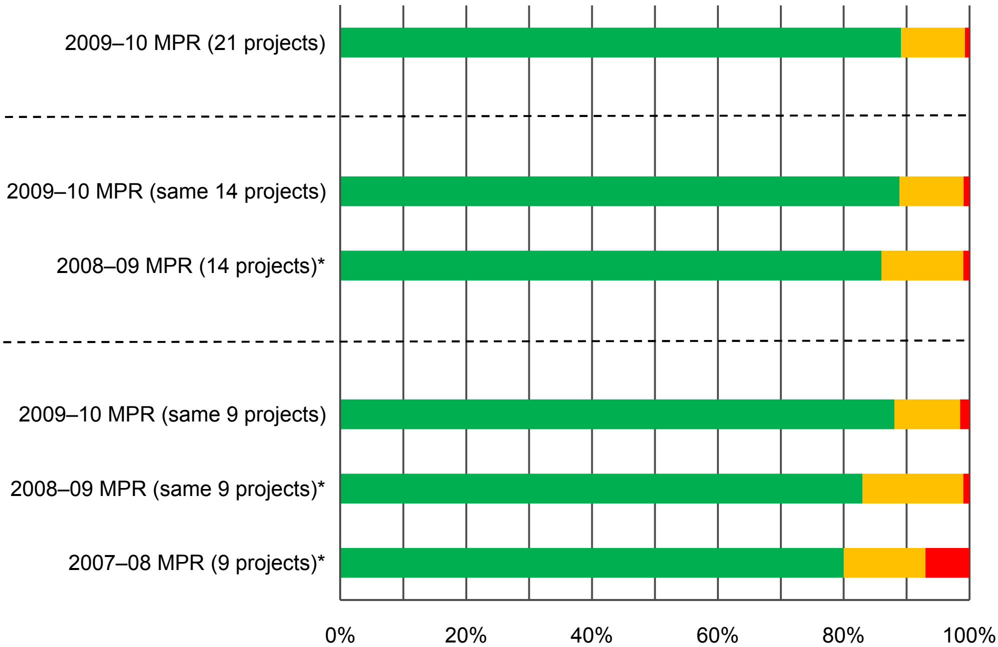
[52] The definitions of a project's MOEs can change from year-to-year. Therefore, any comparison of an individual or a group of projects' data across years should be treated with caution as this may not involve comparing 'like with like'.

[53] Previous years' MOE data was not included in the PDSS to enable ANAO to examine this data.

including MOEs in this year's PDSSs. The DMO's data suggests that increasingly, a greater proportion of key performance measures are considered likely to be met for the portfolio of projects covered by the MPR.

Figure 10

Projects' Measures of Effectiveness: DMO Level of Confidence in their Delivery in 2008, 2009 and 2010 (Percentages: Green, Amber and Red)



Sources: 2007–08 MPR, 2008–09 MPR and 2009–10 MPR.

Note 1: MOEs 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 can change from year-to-year. Therefore, any comparison of an individual or a group of projects' MOE data across years should be treated with caution as this may not involve comparing 'like with like'.

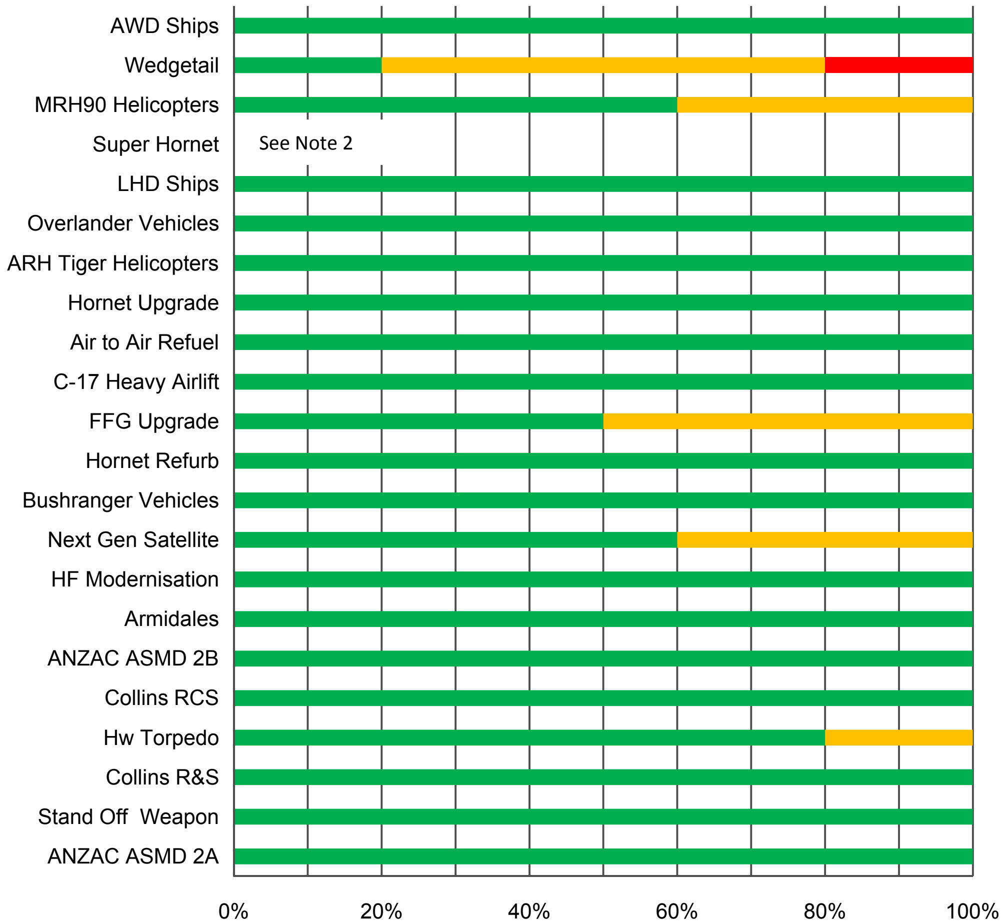
Note 3: * The ANAO did not examine the accuracy of the recording of this data in previous MPRs.

In-year capability performance

2.32 On the basis of DMO data, there are five Major Projects experiencing challenges in delivering elements of their system's planned capability, which is highlighted in Figure 11.

Figure 11

Projects' Measures of Effectiveness: DMO Level of Confidence in their Delivery as at June 2010 (Percentages: Green, Amber and Red)



Source: 2009–10 MPR.

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

Note 2: The DMO has advised that the Super Hornet project does not have endorsed MOEs because of its military-off-the-shelf nature.

Note 3: For some Major Projects, a number of their MOEs at 30 June 2010 concerned achieving budgeted cost, schedule or specific milestone dates. The DMO has advised that as these MOEs do not focus on key capability delivery, they have been excluded from the PDSS data used to compile the above figure.

2.33 The projects of note in regard to capability delivery issues include:

- Wedgetail - the performance of 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.
- FFG Upgrade - capability issues involve:
  - the electronic support system remains a medium risk to achieving Operational Release of the anti–ship missile defence capability;
  - the torpedo defence system is unlikely to achieve operational viability. As a result, a towed torpedo decoy arrangement has been fitted to a ship to address some of the limitations with the torpedo defence system; and
  - the design of sealing arrangement and hardware reliability issues affecting the upgraded mine and obstacle avoidance sonar capability are currently being addressed.
- MRH90 Helicopters - a number of aircraft systems issues are impacting on achieving the required level of aircrew training.
- Hw Torpedo - a lack of submarine availability, which is driven by the full cycle docking program, has impacted on the project's ability to test weapons' firing and conduct operational scenarios.
- Next Gen Satellite - pressures on the project relate to obtaining an orbital slot and the installation of support systems.

3. Governance over Acquisition Processes

Introduction

3.1 Defence Major Projects are large and complex. They are high cost and generally very technical procurements which, more often than not, are delivered over a long time 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 to them a robust governance framework. Such a framework has the capacity to enhance accountability and transparency, 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 Assurance Boards (GRABs); management of Projects of Concern; business systems; measures to improve the clarity of financial information in the MPR; the identification of projects' emergent risks; contingency budgets; the use of Earned Value Management Systems; 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 Assurance Boards

3.3 A recent governance initiative, GRAB reviews, was introduced from 1 July 2009 in response to recommendations from the 2008 Mortimer Review.[54] GRAB reviews are undertaken at specified points in a project's life cycle. The purpose of GRAB reviews is to provide a mechanism whereby, particularly in respect of critical gates, the Chief Executive Officer of the DMO (CEO DMO) is provided with assurance that all the identified risks for a project (cost, schedule, technical/capability) are manageable.

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

3.4 GRAB reviews normally comprise senior line management, relevant people with key skill sets from other parts of the DMO, and an external independent member. GRAB clearance, which results in the provision to the CEO DMO of a Letter of Certification, providing the assurance referred to in paragraph 3.3, is mandatory for Major Projects at three specified gates and optional at other gates, depending on the outcomes of the risk assessment. A project is not permitted to proceed to the next stage of its life cycle until it is cleared by the GRAB. The three mandatory reviews for which GRAB clearance is required to occur prior to: First Pass Approval; Second Pass Approval; and contract signature. The DMO has advised that some twenty projects have been subjected to GRAB reviews, including five in the 2009–10 MPR.[55]

3.5 The ANAO assessed the material considered in the GRAB reviews and the outcomes of each of the GRAB processes conducted in respect of the five MPR projects to gain assurance that the information presented was consistent, in all material respects, with the information in the 2009–10 MPR. In 2010–11 the ANAO will further assess the GRAB process for potential efficiencies in our review processes.

3.6 The ANAO has also requested information from the DMO on the measures that it is using to assess the success of this initiative, in particular the potential of the GRAB process to assist in the successful delivery of projects, within the agreed milestones.

Projects of Concern

3.7 The Projects of Concern list was established in 2008 to focus the attention of Defence and industry senior management on solving the issues required to remediate listed projects. Projects are placed on the list by 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 scheduling, cost or capability delivery.[56]

3.8 During 2009–10 fieldwork the ANAO observed that five MPR projects were Projects of Concern. The Minister for Defence Materiel determines if a

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55 Overlander, ANZAC Anti-Ship Missile Defence Phases 2A and 2B, High Frequency Modernisation and C-17 Heavy Airlift.

56 The Hon Stephen Smith, Minister for Defence and The Hon Jason Clare MP, Minister for Defence Materiel, Press Release, *Projects of concern – Update*, 15 October 2010.

project is one of concern following a recommendation by the CEO DMO and projects are removed from the Projects of Concern list once the Minister is satisfied that remediation activity has been completed successfully. The ANAO has been provided with access to the reporting framework for the five MPR projects listed as Projects of Concern, to gain assurance that the information presented was consistent with the information in the 2009–10 MPR.

Business systems

3.9 In the 2008–09 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 2009–10 review, the same observations apply across the 22 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.

3.10 During the 2009–10 assurance review, the ANAO assessed the DMO's progress in consolidating the number of different IT systems it uses. The JCPAA also inquired about this issue during a March 2010 public hearing on the 2007–08 MPR. The DMO has informed the ANAO that there are currently several interlinked projects to address this issue that are underway, and are at various stages of implementation. Phase 1, known as the 'As Is System Mapping Project', looked at identifying the number of business systems in use and mapped these business systems to users, locations, and the function within the DMO's business model (i.e. contract and procurement, finance, human resources, acquisition, risk management, industry engagement and change management). Phase 1 was concluded in 2006, having identified 192 business systems, excluding spreadsheets and databases.

3.11 The As Is System Mapping Project Phase 2 is reviewing the business systems with a view to recommending whether each system is to be upgraded, integrated or decommissioned. The DMO has informed the ANAO that the project was only partially complete due to the impact of resource constraints on progress in reviewing the business systems and implementing any recommendations arising for the completed reviews. Accordingly, the DMO is focusing on rationalisation of the business systems in the finance domain.

3.12 In 2010–11, DMO's business systems will again be the focus of the ANAO's review.

PDSS financial performance tables

3.13 In its report on the 2007–08 MPR, the JCPAA identified some shortcomings it considered were present in the financial information included in the MPR.[57] To address the JCPAA's concerns, the DMO and the ANAO have worked together to redevelop a number of the PDSS's Section 2 financial performance tables. The PDSS financial performance tables are now starting to develop a more holistic view of the most significant project costs.

3.14 In the 2009–10 MPR, in Section 2 of the PDSS, the DMO has 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 has been 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.

3.15 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 Project expenditures that the JCPAA requested.[58] Some examples of this increased level of clarity could include facilities, in-service support, maintenance and spare parts and other inputs to capability.

Emergent risks

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

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

[58] JCPAA, *op cit.*

3.17 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, and 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, with it not uncommon for previously unanticipated major risks to quickly emerge despite the risk management processes in place to identify and manage risks.

3.18 This first year of information on emergent risks is necessarily limited in providing an insight into emergent risks. The definition of what is an emergent risk for the purposes of the PDSS also requires further development. Emergent risks listed in the 2009–10 PDSSs cover new major risk entries as at 30 June 2010 that were not listed by the project as at 30 June 2009. A more difficult issue raised by the JCPAA is the identification of risks that have arisen which were not able to be anticipated by the DMO's risk management system. The feasibility of the DMO generating such data is an issue that the ANAO and the DMO will examine during the 2010–11 review.

3.19 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 budget

3.20 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.

3.21 As a result of the JCPAA's interest in the DMO providing a higher level disclosure of projects' contingency budgets in the MPR,[59] the ANAO examined the contingency log for each project reviewed in 2009–10.[60] 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;
- while the recording of contingency budget allocations within the contingency log is not required by DMO Finance Instructions, DMO does consider the practice to represent good management practice;[61]
- 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 have made provision for an anticipated price indexation gap between price indexation obligations built into current supplier contracts with industry[62], and the fixed 2.5 per cent per annum price indexation the DMO now receives through the budget and appropriation process. Prior to 1 July 2010, the DMO was supplemented for price indexation based on the non-farm Gross Domestic Product deflator.

3.22 The appropriate management of contingency to deal with any indexation gap is also highlighted in the *Defence Procurement Policy Manual,*

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

60 A contingency log is used to record the use of contingency budget.

61 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.

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

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."[63]

3.23 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.

3.24 Further information on contingency management has been provided by the DMO at Part 2, paragraphs 2.37 to 2.40 of this report.

Earned Value Management System

3.25 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. 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 2.41 to 2.46 of this report.

3.26 In the JCPAA's November 2009 report, the committee asked the DMO and the ANAO to investigate the possible inclusion of data from EVMS in the PDSSs.[64] As a result, during the course of the 2009–10 MPR review, the ANAO enquired about the extent to which the EVMS was being used in projects.

3.27 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.[65] In

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63 Defence Materiel Organisation, *Defence Procurement Policy Manual* (April 2010), Section 3, Chapter 3.3 Financial Policy and Advice in the Procurement Process, paragraph 15.

64 Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, pp.12–13.

65 Defence Materiel Organisation, *Defence Procurement Policy Manual* (April 2010), Section 3, Chapter 3.4 Earned Value Management.

this context, the ANAO noted that 14[66] of the 22[67] 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.

3.28 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).[68]

Skills development

3.29 A key challenge for both DMO and the Australian defence industry is to improve the project management, logistics, procurement and engineering services provided to the Australian Government, within the current and future workforce constraints. For the past several years, it has been one of DMO's goals to professionalise and up-skill their workforce[69], as well as to increase the quality and quantity of skilled personnel available to the defence industry.

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

3.31 Currently, over 1 200 DMO staff have either been certified or are enrolled in a certification program with a professional body. In contrast, prior to the start of the initiative, DMO had only 153 staff certified in areas of project management, engineering, and accounting.[70]

3.32 To assist with the up-skilling of participants within the Defence industry, the Skilling Australia's Defence Industry (SADI) program was

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66 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 and Collins R&S.

67 It should be noted that projects with Foreign Military Sales cases and MOU arrangements would not use EVMS, which would include Super Hornets, C–17 Heavy Airlift and Hw Torpedo.

68 HF Modernisation, Collins RCS, ARH Tiger Helicopters and FFG Upgrade.

69 Source: http://www.defence.gov.au/dmo/about/index.cfm [accessed 29 October 2010].

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

established by the Australian Government in 2005, with an allocation of $215 million to fund the program over 10 years. The SADI program provides funding support for training and skilling activities where that training is linked to a Defence capability.

3.33 The aim of the SADI program is to fill the current and future skill gaps and shortages that result from the demands of the Defence Capability Plan. The DMO advised that over 80 industry participants have been provided with funding support in trade, technical and some professional skill sets.

Part 2. DMO Major Projects Report

CEO DMO Foreword

I am pleased to present the third 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. This report covers 22 of the DMO's major projects. I am confident that the addition of seven new projects and the growing maturity of the reporting on the previously reported projects represent a positive step in terms of transparency.

The DMO acknowledges the key recommendations from the Joint Committee of Public Accounts and Audit (JCPAA) Report 416 - Review of the Major Projects Report 2007-08. Through both formal hearings of the Committee and in offline discussions with Committee members, the DMO has continued to work with the JCPAA to further enhance the overall value of the report.

I remain committed to ongoing investment in the DMO MPR. 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 portfolio perspective that it provides on major DMO project work. This broad view is important in setting the context for our performance on individual projects.

Chapter One of this report provides a strategic overview of the DMO's performance in 2009-10 and discusses key elements and drivers of performance and risk in our business. Chapter Two provides a detailed analysis on the performance and status (across schedule, cost and capability) of the 22 major projects included in the report. Part 3 of this report contains the individual Project Data Summary Sheets (PDSS) for each project. In this section, the report format has been enhanced to aid the reader and to more strongly focus attention on performance.

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

Delivering the MPR in a tight reporting timeframe requires considerable effort and coordination between the DMO and ANAO teams. The two teams have continued to develop the level of cooperation and strengthen the professional working relationship. 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's project office staff in the 22 projects and our directing team in bringing together the 2009-10 DMO MPR.

Dr Stephen J. Gumley AO

Chief Executive Officer

19 November 2010

Executive Summary

In 2009-10, the Defence Materiel Organisation (DMO) had a productive year and managed over $10.6b in actual expenditure across the Acquisition and Sustainment Programs. The Acquisition Program (comprising over 200 major projects and over 100 minor projects) expended $6.0b against an estimated revised budget plan of $5.4b, reflecting strong capital performance by DMO projects, with reductions in slippage against in year plans and the acceleration of some program activity into 2009-10. Improved schedule performance in a number of acquisition projects has not increased costs, but has caused actual expenditure to exceed planned expenditure.

The Sustainment Program (representing over 100 sustainment products) achieved the planned Strategic Reform Program (SRP) savings target of $263m in 2009-10.

The DMO's budget represents about 38% of the Defence budget and approximately 0.9% of Australia's Gross Domestic Product with approximately 61% (or $6.4b) spent on local Australian suppliers.

While this report focuses attention on 22 of the DMO's most significant acquisition projects (an increase of seven from the previous year's report), it is also important to note the DMO contribution to force protection measures for troops in the field. This is especially the case given the nature of current Australian Defence Force (ADF) operations in the Middle East. To meet these needs the DMO is actively engaged in advancing some major projects ahead of previously foreshadowed schedules.

Defence industry plays an essential role in supporting ADF capability through the provision and maintenance of military equipment and the delivery of a wide range of support services. Growing the local Defence industry capacity and competitiveness is a Government policy objective, as outlined in the 2010 Defence Industry Policy Statement – *Building Defence Capability*. The DMO supports this objective through a wide range of ongoing projects and programs which invest in skills development, and improved productivity.

The large portfolio of projects that the DMO manages is also one of the most complex and technically difficult in the country. Benchmarking undertaken by the Helmsman Institute in 2009, comparing DMO and industry project levels of complexity, indicates that the DMO projects are more complex than the average of other industries such as IT, construction, telecommunication, engineering and finance sector projects.

2009-10 Achievements

Within the last year, performance on the key measures of cost and capability has remained steady with delivery of some key capabilities. Schedule performance has improved in some projects but overall requires further effort to reduce slippage. By example, an overview of cost and schedule performance is shown in Table 1. Examples of some significant achievements include:

- C-17 Globemaster Heavy Airlift capability (including Aircrew Training System) delivered ahead of schedule and under budget. These aircraft are providing crucial and previously unavailable operational effect to the war fighter engaged in operations;
- Delivery of the prototype Mercedes Benz G-Wagon vehicles was achieved one year after the initial contract signing. ADF trial participants have provided extremely positive feedback on the vehicles capability;
- In March 2010, the first five of Australia's fleet of F/A-18F Super Hornets flew to their new home base at RAAF Amberley. These aircraft provide an important air strike capability; and
- Following resolution of a range of contractual issues, three Wedgetail Airborne Early Warning and Control (AEW&C) aircraft have been accepted in an 'initial' configuration capable of supporting training and peacetime national tasking.

The DMO has also instituted a number of organisation wide business improvements which are directly aimed at enhancing its core business of equipping and sustaining the ADF. Some examples of these include:

- **Gate Review Assurance Boards:** The Gate Review Assurance Board initiative is an assurance process that is able to provide high quality and reliable advice to Government and Defence as to the health and outlook of major projects. The reviews provide an internal mechanism for the early identification and resolution of problems across the various project lifecycle stages.
- **Introduction 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 milestones against which the materiel elements of the Fundamental Inputs to Capability (FIC) are delivered to the Capability Managers.

- The 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 element of a number of inputs necessary to realise a capability that can be operationally employed by the Capability Manager.
- **Strengthening the Projects of Concern Process:** Recognising that projects managed by the DMO are characterised by very high levels of complexity and present challenging conditions for successful delivery to Defence, there is, as a consequence, a small number of projects that requires more attention. In consultation with Government, the DMO has strengthened its Projects of Concern arrangements that provide for more intense management of identified projects.
- **Strengthening the DMO Risk Management Framework (RMF):** During 2009-10, the DMO undertook an identification of the systemic lessons revealed by external and internal audits over the previous five year period. Results of this process have informed the development of a revised Risk Management Framework. This has been designed to enable the linking of strategic, business, divisional and project level risks.

DMO Challenges

The key challenge for the DMO and Defence industry is to reduce schedule slippage. For the 22 projects in this report, the average schedule variance factor of 1.30 (or an average slippage of 30%) indicates that the DMO and Defence industry must continue to focus attention on improving all aspects of project scheduling. This slippage is largely driven by an initial underestimation by industry and/or by the DMO of the technical maturity 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 and USA demonstrate. The DMO continues to work in partnership with industry to address the underlying causes through various initiatives, some of which are highlighted in this report.

Key Priorities in 2010-11

The key priorities for the DMO in 2010-11 are:

- continuing support to ADF operations;
- achieving the Defence Strategic Reform Program targets for the DMO;
- working with key customers (Navy, Army and Air Force) to reduce the cost of ownership of major Defence fleets and systems;
- closer engagement with Capability Development Group to achieve approval of Defence Capability Plan projects;
- improving performance on procurement and sustainment; and
- delivering approved Defence Capability Plan projects.

Conclusion

The key aspects of this MPR are:

- the report has been expanded to cover an additional seven projects, now totalling 22;
- all projects are delivering within the approved budget;
- the analysis process has identified opportunities for the DMO to further improve schedule performance; and
- key measures of our project performance with respect to capability remained steady.

In future MPRs, the DMO together with the Australian National Audit Office (ANAO) will further analyse and explore the root cause for schedule slippage to further improve the current standards of project performance in direct support of the ADF.

Overview of the 22 Projects contained in the 2009-10 MPR

The following seven projects are additional to last year's MPR:

- LAND 121 Phase 3 – Overlander
- JP 2008 Phase 4 – Next Generation SATCOM Capability
- SEA 1448 Phase 2B – ANZAC Class Anti–Ship Missile Defence
- SEA 1429 Phase 2 – Replacement Heavyweight Torpedo
- SEA 1439 Phase 3 – Collins Class Submarine Reliability and Sustainability
- AIR 5418 Phase 1 – Follow-on Stand Off Weapon
- SEA 1448 Phase 2A – ANZAC Class Ship Anti–Ship Missile Defence

The following 15 projects were reported last year and are again included in this year's report.

- SEA 4000 Phase 3 – Air Warfare Destroyer Build
- AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft
- AIR 9000 Phase 2, 4, & 6 – Multi Role Helicopter
- AIR 5349 Phase 1 – Bridging Air Combat Capability
- JP 2048 Phase 4A/4B – Amphibious Deployment and Sustainment
- AIR 87 Phase 2 – Armed Reconnaissance Helicopter
- AIR 5376 Phase 2 – F/A-18 Hornet Upgrade
- AIR 5402 – Air to Air Refuelling Capability
- AIR 8000 Phase 3 – C-17 Globemaster III Heavy Airlifter
- SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade Implementation
- AIR 5376 Phase 3.2 – F/A 18 Hornet Upgrade Structural Refurbishment
- LAND 116 Phase 3 – Bushmaster Protected Mobility Vehicle
- JP 2043 Phase 3A – High Frequency Modernisation
- SEA 1444 Phase 1 – Armidale Class Patrol Boat
- SEA 1439 Phase 4A – Collins Replacement Combat System

Table 1 provides a 30 June 2010 status on key project performance metrics covering cost and schedule across the 22 projects in this year's MPR.

Table 1: DMO MPR Projects' Performance Overview of Cost and Schedule

Project	Second Pass Budget $m[71]	Price Indexation $m[72]	Foreign Exchange $m[73]	Scope Changes $m[74]	Transfers $m[75]	Budgetary Adjustments $m[76]	Net Variation %[77]	Current Budget $m	Original FOC	2008-09 DMO MPR FOC	Current FOC	Variation Factor[78]
AWD Ships	7,207.4	854.8	(322.1)	0.0	0.0	0.0	0.0%	7,740.1	Dec-18	Dec-18	Dec-18	1.0
Wedgetail	3,269.5	951.8[79]	(371.3)	225.6	(18.9)	(173.2)	-5.3%	3,883.5	Dec-08	Dec-12	Dec-12	1.5
MRH90 Helicopters	957.2	556.1	(116.8)	2,597.1	(239.0)	0.0	0.0%	3,754.6	Jul-14	Jul-14	Jul-14	1.0
Super Hornet	3,545.8	351.4	(234.8)	0.0	(33.3)	0.0	0.0%	3,629.1	Dec-12	Dec-12	Dec-12	1.0
LHD Ships	2,959.9	348.5	(157.0)	0.0	9.4	0.0	0.0%	3,160.8	Nov-16	Nov-16	Nov-16	1.0
Overlander Vehicles	2,745.3	313.2	(169.0)	(14.8)	4.5	0.0	0.0%	2,879.2	Dec-19	-	Dec-19	1.0
ARH Tiger Helicopters	1,584.0	414.9	168.4	0.0	(84.3)	(6.7)	-0.4%	2,076.3	Jun-09	Dec-12	Dec-12	1.3
Hornet Upgrade	1,300.0	314.3	79.2	221.5	35.0	(3.4)	-0.3%	1,946.6	Aug-11	Aug-11	Nov-11	1.0
Air to Air Refuel	2,076.6	473.9	(372.0)	0.0	(135.5)	(153.6)	-7.4%	1,889.4	Mar-11	3rd Qtr 12	Dec-12	1.2
C17 Heavy Airlift	1,864.4	103.4	(133.2)	0.0	0.0	0.0	0.0%	1,834.6	Dec-11	Jan-11	Jan-11	0.8
FFG Upgrade	1,392.5	213.4	77.1	0.0	(152.6)	(0.8)	-0.1%	1,529.6	Dec-05	Dec-09	Jul-11	1.9
Hornet Refurb	156.6	145.0	(30.6)	673.6	0.0	(1.1)	-0.7%	943.5	N/A	N/A	N/A	N/A
Bushranger Vehicles	295.0	118.9	(3.1)	515.4	0.0	0.0	0.0%	926.2	Apr-12	Apr-12	Apr-12	1.0
Next Gen Satellite	884.9	107.3	(98.1)	0.0	0.0	0.0	0.0%	894.1	Dec-14	-	Dec-14	1.0
HF Modernisation	505.0	139.6	12.6	11.0	(4.7)	(0.8)	-0.2%	662.7	May-05	Dec-16	May-15	2.1
Armidales	436.8	72.9	(11.0)	67.1	(29.8)	0.7	0.2%	536.7	Mar-09	Dec-11	Mar-12	1.5
ANZAC ASMD 2B	248.8	71.0	(10.0)	0.0	148.7	0.0	0.0%	458.5	Mar-13	-	Apr-17	1.5
Collins RCS	455.3	55.5	(51.1)	0.0	(0.9)	(0.8)	-0.2%	458.0	2010	2016	2016	1.7
Hw Torpedo	238.1	91.6	(102.3)	213.3	1.0	(0.2)	-0.1%	441.5	Nov-13	-	Nov-13	1.0
Collins R&S	72.0	66.8	(2.3)	310.3	(38.3)	(0.80	-1.1%	407.7	Jun-14	-	Sep-22	1.6
Stand Off Weapon	370.7	58.7	(29.8)	0.0	0.0	0.0	0.0%	399.6	Dec-10	-	Dec-12	1.4
ANZAC ASMD 2A	449.0	88.7	(0.7)	0.0	(159.8)	(0.1)	0.0%	377.1	Dec-11	-	Apr-17	1.7
Total	33,014.8	5,911.7	(1,877.9)	4,820.1	(698.5)	(340.8)	-0.7%	40,829.4	-	-	-	1.30

71 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.

72 The total of price indexation variations between Second Pass budget and the current budget.

73 The total of foreign exchange variations between Second Pass budget and the current budget.

74 The total value of all approved project scope changes between Second Pass budget and the current budget.

75 The total of all transfers to and from other Defence Groups (i.e. Defence Support Group) and DMO projects.

76 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.

77 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.

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

79 Of the $951.8m, $388.1m of this relates to a real cost increase for contract price indexation beyond the supplementation provided by Government.

1. DMO Strategic Performance in 2009-10

Introduction

1.1 The Defence Materiel Organisation (DMO) exists to equip and sustain Australia's Defence Force (ADF) to enable the ADF to defend Australia and its national interests. In fulfilling its purpose, the DMO manages some of Australia's most complex and expensive projects from both an acquisition and sustainment perspective.

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 forming the basis of the relationship.

1.3 The DMO is the prime Agency responsible for equipping and sustaining capital equipment assets for the ADF. This service is provided through the acquisition of capital equipment assets and the sustainment of those assets throughout their in-service life. The DMO's business imperatives are driven principally by the Defence policies and objectives set by Government and the operational requirements of the ADF.

1.4 In support of the Defence Mission, the DMO during 2009-10 had 329 acquisition projects (includes both major and minor projects) and 108 sustainment products under management, with its business ranging from relatively simple supplies such as tents and non-combat equipment to highly complex and expensive weapon systems.

1.5 The DMO operates in a diverse and complex business environment, working very closely with Australian and international Defence industry, to deliver some of the largest and most demanding projects (see figure 1.4) in Australia on time (schedule), on budget (cost) and to exacting standards of quality, quantity and safety (capability). The DMO achieves this through contributions of its workforce (comprising over 7,000 military and civilian staff in more than 40 locations around Australia and overseas) and with Defence industry to manage delivery of the materiel element of capability to the ADF.

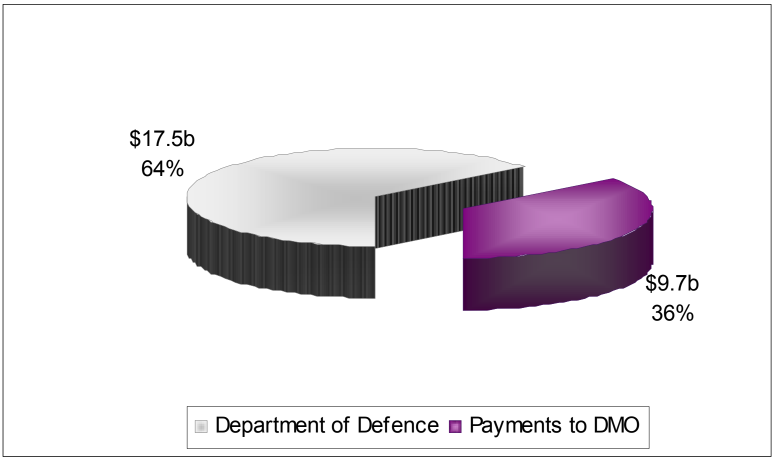
DMO REPORT

DMO Overview

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

1.7 Figure 1.1 shows that the total budget for the Department of Defence in 2009-10 was $27.2b. Of this, $9.7b[80] was budgeted for planned payments to the DMO under Purchaser Provider Arrangements to support the DMO's acquisition and sustainment activities. The figure demonstrates the significant investment made in DMO support to capability for the ADF, and when assessing the DMO budget as a whole ($10.7b in 2009-10), equates to 0.9% of Australia's Gross Domestic Product (GDP) in 2009-10[81].

Figure 1.1 – Payments to DMO as a Proportion of the Department of Defence Budget 2009-10[82]



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[80] Portfolio Additional Estimates Statements 2009-10, Defence Portfolio.

[81] Based on 2.0% GDP growth figures disclosed in the Treasurer's budget speech 2009-10.

[82] The DMO has three funding sources: Government (Appropriation Revenue), Defence (Goods and Services) and Other Revenue. Prior to 2009-10 the DMO received a 'service fee' from Defence, but under the Mortimer Review Reforms the service fee is now referred to as Workforce and Operating Costs and from 1 July 2009 is a direct appropriation from Government. In addition to the income received from Defence in Figure 1.1, in 2009-10 the DMO received a direct appropriation from Government of $899m for ordinary annual services.

1.8 The 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'[83],is generated by Fundamental Inputs to Capability (FIC) comprising:

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

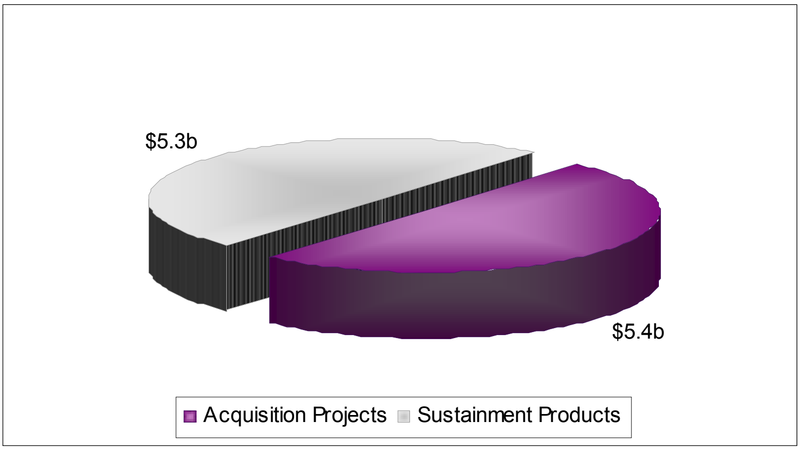
1.9 The DMO is primarily responsible for managing the procurement of the materiel system component of the capability, comprising mission systems, designated elements of training and non-infrastructure equipment for facilities that support the operation of ADF equipment, such as simulators, trainers and complex test equipment. To achieve all inputs to capability, Defence and the DMO adopt a collaborative approach.

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 when the equipment is no longer required.

1.11 In addition to acquisition projects, the DMO also managed 108 sustainment products during the financial year. As figure 1.2 demonstrates, the 2009-10 budget allocation between acquisition and sustainment is relatively evenly distributed, but this may change over time. 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.

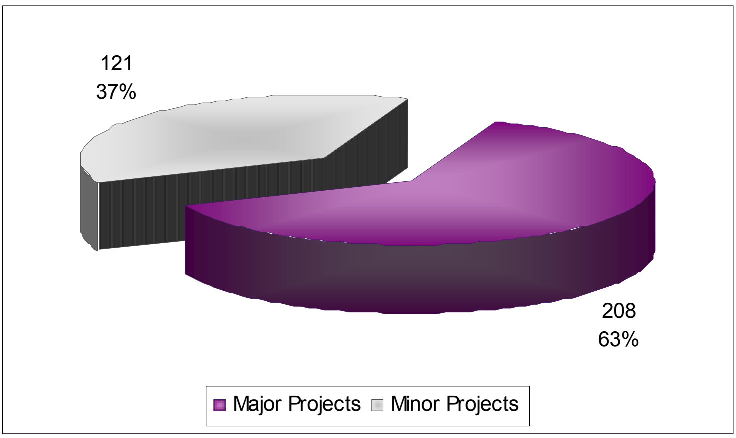
[83] Interim Defence Capability Development Manual

Figure 1.2 – Budget Allocation to Acquisition Projects and Sustainment Products 2009-10



1.12 Approximately two thirds of acquisition projects undertaken in the DMO are considered 'Major Projects' with the remainder classified as 'Minor Projects' (see figure 1.3 below). Major capital equipment 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 1.3 – Number of Major and Minor Acquisition Projects 2009-10



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

1.14 The 22 major DMO projects covered by this MPR are shown in table 1.1.

Table 1.1 – List of 2009-10 MPR Projects by Total Approved Budget[84] [85]

Project Name	Project Number	2009-10 In-Year Budget $m	Total Approved Project Budget $m
Air Warfare Destroyer	SEA 4000 Phase 3	$977.1	$7,740.1
Airborne Early Warning & Control Aircraft	AIR 5077 Phase 3	$330.4	$3,883.5
Multi Role Helicopter	AIR 9000 Phase 2, 4 & 6	$475.4	$3,754.6
Bridging Air Combat Capability	AIR 5349 Phase 1	$965.2	$3,629.1
Amphibious Deployment and Sustainment	JP 2048 Phase 4A & 4B	$677.6	$3,160.8
Overlander	LAND 121 Phase 3	$34.0	$2,879.2
Armed Reconnaissance Helicopter	AIR 87 Phase 2	$262.1	$2,076.3
F/A-18 Hornet Upgrade	AIR 5376 Phase 2	$130.8	$1,946.6
Air to Air Refuelling	AIR 5402	$194.7	$1,889.4
C-17 Globemaster III Heavy Airlifter	AIR 8000 Phase 3	$8.1	$1,834.6
Guided Missile Frigate Upgrade	SEA 1390 Phase 2.1	$46.6	$1,529.6
F/A-18 Hornet Structural Refurbishment	AIR 5376 Phase 3.2	$55.9	$943.5
Bushmaster Protected Mobility Vehicle	LAND 116 Phase 3	$102.3	$926.2
Next Generation SATCOM Capability	JP 2008 Phase 4	$103.4	$894.1

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

85 For the 2010-11 MPR Program, the AIR 6000 Phase 2A/B New Air Combat Capability (Joint Strike Fighter) project will be included as a 'New Project'. This project was not included in the 2009-10 MPR Program as it did not meet the JCPAA criteria for inclusion, as set out in the JCPAA Report 416 – *Review of the Major Projects Report 2007-08*, November 2009, p.18.

High Frequency Modernisation	JP 2043 Phase 3A	$38.9	$662.7
Armidale Class Patrol Boat	SEA 1444 Phase 1	$13.0	$536.7
ANZAC Anti Ship Missile Defence	SEA 1448 Phase 2B	$86.0	$458.5
Collins Replacement Combat System	SEA 1439 Phase 4A	$12.2	$458.0
Replacement Heavyweight Torpedo	SEA 1429 Phase 2	$21.7	$441.5
Collins Class Reliability and Sustainability	SEA 1439 Phase 3	$26.0	$407.7
Follow-on Stand Off Weapon	AIR 5418 Phase 1	$34.7	$399.6
ANZAC Anti Ship Missile Defence	SEA 1448 Phase 2A	$39.5	$377.1
	Total	**$4,635.6**	**$40,829.4**

DMO Strategic Risk Environment

1.15 The Defence White Paper 2009[86] 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 Australia's sovereignty and freedom for decades to come. This is driven by the complex and rapidly evolving nature of military technology and the very long lead times involved in developing defence systems which often take many years to acquire.

1.16 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'[87]. In other words, a change in circumstances may dictate acquiring more or different capabilities.

[86] DEFENDING AUSTRALIA IN THE ASIA PACIFIC CENTURY: FORCE 2030. DEFENCE WHITE PAPER 2009.

[87] DEFENDING AUSTRALIA IN THE ASIA PACIFIC CENTURY: FORCE 2030. DEFENCE WHITE PAPER 2009, PARAGRAPH 3.20, PAGE 28.

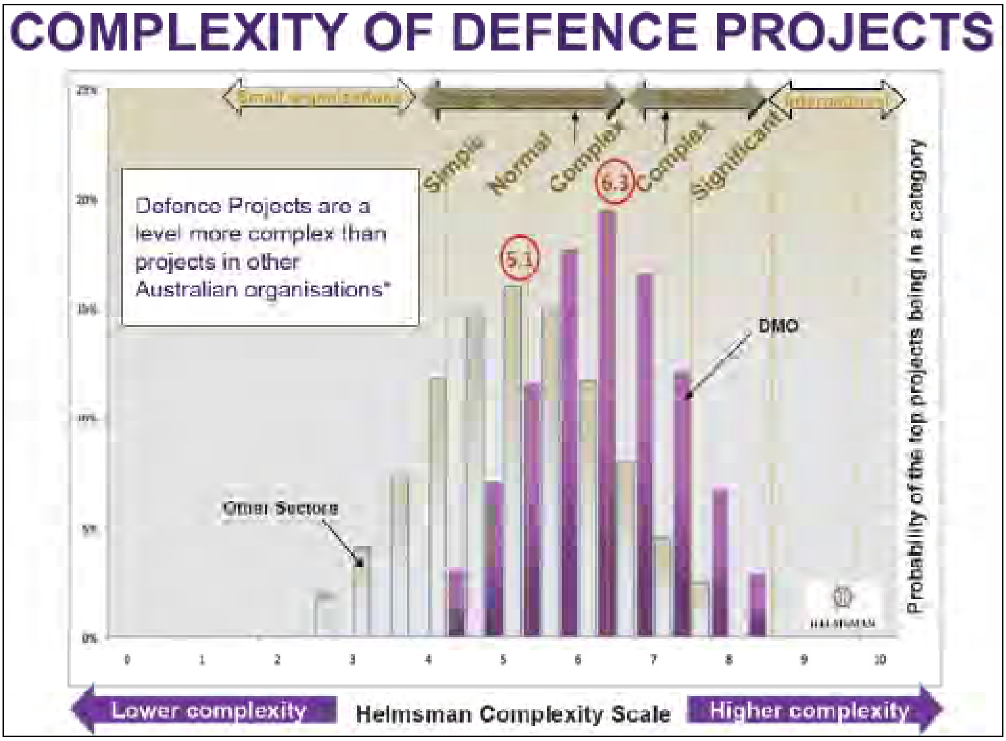
Project Complexity

1.17 The DMO cannot provide Defence with the cutting edge technologies needed to maintain the capability advantage if it does not accept risk. Risk is intrinsic in the delivery of the many highly technical projects that often require development of technologically advanced systems or modification of existing weapons systems to meet Australia's needs. Good governance then requires that the DMO, to the best of its capability, manages those risks and takes timely action to address risks emerging during projects.

1.18 The Helmsman Institute in 2009 undertook analysis on behalf of the DMO that looked at the complexity involved with Defence and DMO projects as compared to those undertaken in general industry. The results are shown in figure 1.4.

1.19 As this figure demonstrates, the Defence-DMO projects are more complex than projects managed by other Australian Organisations. To give the ADF the edge it needs the DMO will continue to acquire and manage complex projects but also work with industry to better identify and manage the inherent risks with these projects.

Figure 1.4 – Analysis of DMO Project Complexity Versus Industry

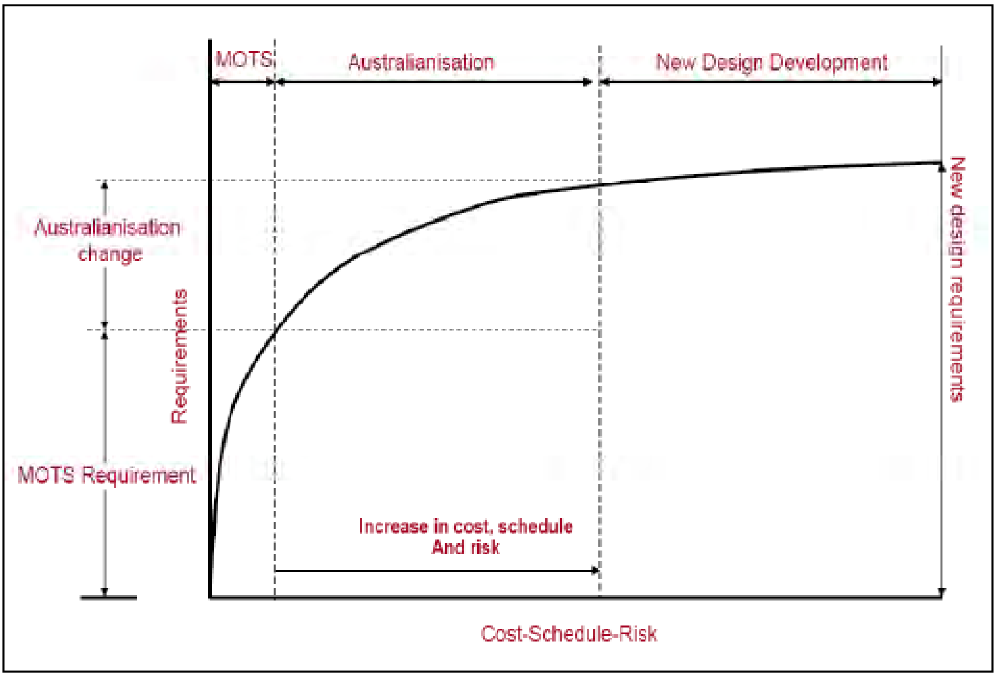


1.20 There are three main types of acquisition undertaken by the DMO. Military-Off-The-Shelf (MOTS) acquisitions are for hardware or software that already exists, is in-service with one or more other customers for an equivalent purpose and requires no, or minimal, change. Australianised MOTS is where the product is modified to meet particular Australian requirements. Developmental are those projects where the product does not currently exist Off-The-Shelf and such an option might be delivered through: developing a new product; integrating existing Off-The Shelf components to deliver a new product; or the participation in another nation's development program. Cost-schedule-risk parameters increase as the extent of Australianisation or development work required increases.

1.21 The Defence White Paper 2009 identifies that Military-Off-The-Shelf and Commercial-Off-The-Shelf solutions to defence capability requirements will be the benchmark against which a rigorous cost-benefit analysis of the 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.

1.22 Requirements that go beyond that of Off-The-Shelf equipment generate disproportionately large increases to the cost, schedule and technical risk of projects. Off-The-Shelf products generally enjoy relatively large production runs with mature quality assurance processes. This enables industry to spread the cost of development and set up costs across a wide product base. By contrast, developmental projects usually involve small production runs. Unlike those products that have been in use and therefore have proven performance, developmental projects involve a high degree of risk to cost and schedule to achieve the required level of capability. The impact on cost and schedule of small changes can be illustrated by Figure 1.5.

Figure 1.5 – Increased Technical Development over Cost-Schedule-Risk Profile



1.23 Given Australia's unique defence position, Off-The-Shelf solutions are not always practical, however, and at the very least, minor changes will almost certainly be necessary to ensure interoperability with other ADF assets and systems. In addition, changes to an Off-The-Shelf option are sometimes necessary to ensure compliance with ADF or broader Australian technical regulations. Modifications necessary to achieve specified capability or compliance can inject significant additional risk and cost into projects.

1.24 In the case of upgrading an existing platform, an off-the-shelf solution is sometimes impossible because no such upgrade package may exist. While the cost and risk of such an upgrade can be reduced by using Off-The-Shelf components, the integration of disparate sub-systems has often proven to be a high-risk exercise.

DMO Enterprise Risk Management Framework

1.25 The 2008-09 MPR identified that the implementation of the DMO Enterprise Risk Management Framework (ERMF) will be a challenging but necessary step for the DMO in its goal of improving project management.

1.26 The challenges identified by the ANAO included addressing:

- The significant gap between current risk management practices and those set out in the draft Enterprise Risk Management Framework; and
- Improving DMO's risk culture and establishing consistency in the level of support and leadership for risk management across the DMO.

1.27 Further, when highlighting the need for a cohesive IT system, the ANAO expected the adoption of the Enterprise Risk Management Framework at a whole-of-organisation level, including translation to the project level, to improve project management controls across the organisation.

1.28 During 2009-10, a revised DMO wide risk management framework was designed that enables better linking of the strategic, business, divisional and project level risks. An initial step taken this year was the identification of the lessons identified by external and internal audits undertaken in the DMO over the past five years.

1.29 The knowledge gained from the analysis of the findings, observations and recommendations formed the basis of understanding the first tranche of business level risks and their sources, and will inform a whole of DMO lessons identified methodology. This DMO-wide, risk based approach to the lessons identified methodology is designed to improve the standard of risk management across the DMO.

1.30 The following improvements in risk management within the DMO were undertaken in 2009-10:

- Addressed the recommendations in Ernst & Young's Internal Audit Report on the DMO Enterprise Risk Management Framework;
- Developed a Chief Executive Instruction (CEI) on Risk Management in the DMO; and
- Compiled controls for acquisition and sustainment activities into DMO risk management control.

Project Lessons Learned

1.31 The 2009-10 MPR has confirmed the Lessons Learned at the organisation level reported in last years report remain extant. Set out below is a summary of progress against the key area's 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, continues to undergo an update program to ensure it remains consistent with external policy process change and reflects improvement in practice. The update program includes development of CDD 'Lite' guidance intended for Requirements Development of minor projects, less complex major projects and rapid acquisitions where full application of the Guide is not warranted.

1.33 DMO is continuing to develop components of a Requirements Management System which supports sound requirements management across acquisition and sustainment activities. The Requirements Management System ensures that the requirements associated with capability systems and their components are traceable to one or more official sources and that these requirements continue to be managed rigorously throughout the materiel lifecycle. The status of the system comprising people, processes and tools is summarised as follows:

- Defence Materiel Instruction regarding the practice of Requirements Management has been issued.
- Requirements Management Guide; providing guidance on the practice of Requirements Management has been issued.

- A tailored Requirements Management Training course has been developed and is being piloted for commencement in 2011.

Introduction of Initial Materiel Release and Final Materiel Release Milestones

1.34 The provision of DMO support to 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.

1.35 As part of the Mortimer reforms, the MAA framework has been further strengthened by including the relevant Capability Manager as a signatory along with the DMO and Capability Development Group. The intent of this change is to gain the key stakeholder's formal acknowledgement of the baseline requirements against which the DMO's delivery of equipment will be measured. Consequently, the DMO is currently in the process of transitioning from using Initial Operational Capability (IOC) and Final Operational Capability (FOC) to using Initial Materiel Release (IMR) and Final Materiel Release (FMR). IMR and FMR represent the milestones against which the materiel elements of the FIC are delivered.

1.36 The DMO's materiel supplies are just one element of a number of fundamental inputs necessary to realise a capability that can be operationally employed by a Capability Manager. IMR and FMR will mark the DMO milestones for delivery and release to the Capability Managers of materiel supplies to support the Capability Manager's achievement of IOC and FOC. The IOC and FOC are Defence milestones that represent the estimated timeframe for when a capability system, comprising all FICs, will achieve full capability. Consequently, the shift to IMR and FMR will provide greater clarity of responsibilities between the DMO and Capability Managers.

1.37 IMR and FMR milestones have been included in the MAA template for use by all new DMO projects, and all existing DMO major projects will transition to this new MAA template by the end of 2011.

1.38 The terms used to describe key schedule milestones in an MAA are defined as follows:

- Initial Materiel Release (IMR): The milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of Initial Operational Release.
- 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.
- 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.
- 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 Materiel Release (FMR): The milestone that marks the completion and release of DMO acquisition project supplies to support the achievement of FOC.
- 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 achieved by the Capability Manager.

Resourcing

1.39 During 2009-10 the DMO finalised the Workforce Plan to support the Defence Capability Plan. As a result, the DMO now has projected future workforce requirements by project, skill set, work level and geographical location for all existing and known future acquisition and sustainment activities.

1.40 In parallel, the DMO has progressed the implementation of a strategic recruitment capability which incorporates: university partnering and sponsorships; improved DMO employment branding; and more innovative recruitment strategies. Entry level programs aimed at recruiting graduates, undergraduates and vocational employees also continue with a focus on critical job disciplines.

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

Off-The-Shelf Equipment

1.42 The Capability Development Handbook, issued in 2009-10, provides better definition of off-the-shelf equipment and guidance on the development of new major investment proposals for consideration by Government.

Contract Management

1.43 The Australian Standard Defence Contracting (ASDEFCON) framework of templates, guidance and training have been further developed to incorporate lessons and to reflect improved contract management processes. In particular, these enhance DMO's ability to satisfy Defence's Smart Sustainment objectives of maintaining required performance levels whilst reducing the total cost of ownership for capability systems. Major revisions include:

- Development and release of a new Standing Offer for goods and maintenance services template to streamline the contracting process for the procurement and maintenance of Off-The-Shelf components.
- Development of new ASDEFCON Performance Based Support Contracting provisions. During 2009-10, these new draft provisions have been used in several pilot contracts and have been the subject of consultation with the members of industry. This new template is being finalised for release in 2011.
- Development of a new ASDEFCON (Shortform Support) statement of work template (and release as an exposure draft) to streamline the

contracting process for support of less complex materiel systems. The new template is being finalised for release in 2011.

1.44 DMO has also worked with industry to scope out improvements to reduce the business costs of strategic procurement by streamlining data requirements in the ASDEFCON (Strategic Materiel) template. These improvements are to be piloted during 2011 in key acquisition projects.

Schedule Management

1.45 A program of improvements is being implemented in DMO to promote improved project planning and schedule management by both DMO and industry, as detailed in paragraphs 1.46 to 1.51.

Project Planning Framework

1.46 DMO is improving its project performance measuring and monitoring systems to enable earlier identification and treatment options to mitigate potential risks to schedule. To promote better planning, guidance on the development of project execution plans is being finalised. Furthermore, risk reduction activities (Offer Definition) will be conducted with preferred tenderers 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 will be adjusted to promote earlier visibility of schedule performance variances and to incentivise better schedule performance.

Introduction of Schedule Compliance Risk Assessment Method (SCRAM)

1.47 To foster and encourage schedule performance improvement across Defence and industry the DMO has led the development of a Schedule Management capability model and associated assessment methodology. Collectively, the process is known as the Schedule Compliance Risk Assessment Method (SCRAM).

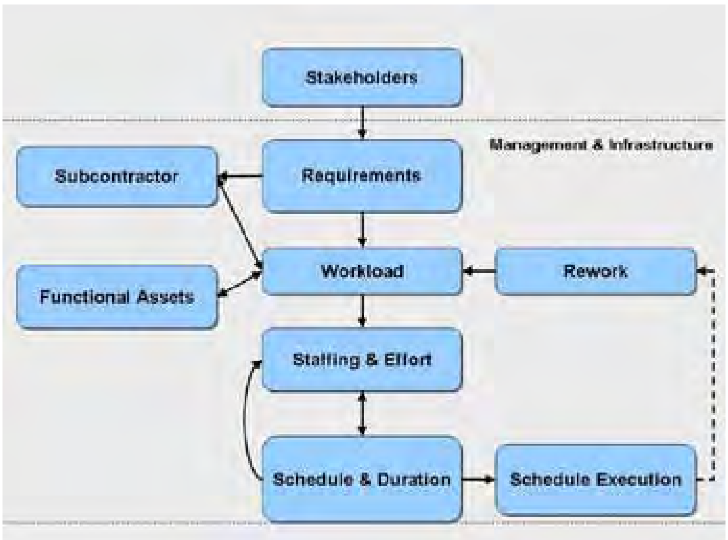
1.48 The SCRAM is an approach for identifying risks to compliance with program schedule, i.e. SCRAM can be used for the assessment and remediation of issues generating schedule risk. SCRAM can also be used:

- By organisations to construct a schedule that maximises the likelihood of schedule compliance.

- To ensure common risks are addressed before the project schedule is baselined at the commencement of a project.
- To monitor project status, performed either ad hoc or to support appropriate milestone reviews.
- To diagnose challenged projects, to assess the likelihood of schedule compliance, root cause of schedule slippage and recommend remediation of root causes.

1.49 SCRAM is based on an ISO 15504 (Assessment Framework Standard) compliant Process Reference and Assessment Models and is a model of Schedule Management best practice, structured using a 'cause and effect' architecture to facilitate the identification of root cause of schedule slippage, as shown in figure 1.6.

Figure 1.6 – SCRAM PR/AM Model Architecture



1.50 The audience for the model includes customer and contractor project managers, project schedulers, hardware and system/software engineers, SCRAM assessment team members, educators and anyone interested in achieving project schedule compliance.

1.51 To encourage industry wide use of Schedule Management best practices and to foster improvements to the DMO Process Reference and Assessment models through wider use and feedback from users, the model has been released by the DMO into the Public domain[88].

Governance

Implementation of Gate Review Assurance Boards

1.52 The Gate Review Assurance Board (GRAB) initiative is an assurance process intended to ensure that the DMO is able to provide high quality and reliable advice to Defence and Government as to the health and outlook of major projects. The reviews provide an internal mechanism for the early identification and resolution of problems across the various project lifecycle stages, with a heavy focus on the requirements definition stages of First Pass and Second Pass. Following on from the Mortimer Review, the GRAB commenced operation in July 2009 focusing on selected high value and high complexity projects.

1.53 The establishment of a GRAB (including independent external advisors) provides a forum for robust discussion, an expert assessment of project development and status, and the prospects of a project achieving the agreed outcome. For the more complex projects, the Board process involves a robust independent evaluation before the Board meeting. If a project fails to convince the Board of its maturity or readiness to progress to the next stage of its lifecycle, project progression is reviewed and the project is directed to address those risks and issues. Once the identified risks and issues have been addressed, the project is then provided the opportunity to once again present to the Board its case for progression to the next lifecycle stage.

1.54 The GRAB process is a proactive activity that has led to early identification, intervention and resolution of risks and issues across numerous projects in DMO. Given the success of this methodology, the GRAB process will be extended to all major projects.

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

Implementation of Project Manager Charters

1.55 The DMO is committed to enhancing its performance management system through establishment of a charter system that improves the accountability, responsibility and authority of individuals managing complex and demanding projects and products.

1.56 Charters clarify accountability, but importantly they are not just a 'one-way street'. In the same way that each charter describes the results the project or product manager must deliver, they also document the commitments the DMO makes to support them to acquire new equipment or sustain existing materiel systems. Consequently, the charters ensure that the DMO continues to focus on its reason for existence – supporting the ADF.

1.57 The CEO endorses a Project Charter that nominates the Project Manager who will be personally accountable to deliver the outputs specified in the MAA. The Charter forms the basis of that Project Manager's individual performance agreement, describing the results that are expected, support to be provided and high level guidance on achieving expected results.

1.58 Under the Charter, there is a DMO commitment to resourcing the manager to do the job in accordance with workforce plans and budgets. General Managers and Divisions are also committed to ensuring that delegations and authorities are specified and effective, and must assist the manager to obtain support from Defence or the DMO if this is agreed but not forthcoming.

Better Targeted Management Reporting

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

1.60 In 2009-10 the DMO began a program of reviewing both its internal and external project performance reports. The aim of the review is to have an integrated, targeted and simple set of performance management reports that meet user requirements to support timely and informed decisions about DMO projects. The reports will also improve information flow. The review, called the Report Simplification Program, includes several initiatives to ensure the DMO performance management reports are:

- <u>Targeted:</u> to suit the user's specific information needs.

- Timely: defined either by statutory requirements such as the annual reports, or by agreement such as the MAA agreements.
- Accurate: reflective of the current status.
- Consistent: across all management reports and at a specified point in time.
- Informative: to focus attention on key issues and avoid information overload through elimination of extraneous data.
- Efficient: capture data once and use as necessary.

1.61 In 2009-10, the DMO consulted with external stakeholders to identify their information requirements. Feedback was then used to revise the DMO's core suite of performance management reports.

1.62 Internal performance management reports are also being reviewed to determine their utility, accuracy, reliability and timeliness. Reports will be simplified and exception based to focus attention on issues that require line management attention. Managers will have access to reports which address key project performance issues relevant to their level of responsibility and accountability. Where necessary, managers will have the ability to access more detailed information on an 'as required' basis.

1.63 One of the key initiatives of the Report Simplification Program is to increase DMO project management insight into acquisition performance and set trigger points to identify when further analysis or action may be necessary. Clear guidance for DMO line management and project personnel helps them to make better use of information to ensure their projects meet required performance levels and outcomes.

Strengthening Projects of Concern Process

1.64 As stated previously, major projects in the DMO are characterised by very high levels of complexity and present highly challenging conditions for successful delivery to Defence. 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 activities require additional senior management attention to address significant risks or issues relating to schedule, cost or capability.

1.65 In consultation with the Government, the DMO has an intense management framework for these troubled projects, known as 'Projects of

Concern' (POC). Projects subject to the POC process are remediated through close engagement with industry, Defence and Government to deliver sound value for money outcomes to Defence. In some cases, however, if remediation cannot be achieved, there may be no alternative but for Government to cancel the project or its contract.

1.66 Since the POC framework was introduced in early 2008, the DMO has closely consulted with Government in order to proactively and transparently remediate projects against defined objectives. Remediation objectives are broad ranging, given the diverse nature of projects, and tailored to meet individual project needs. Typical remediation objectives include: resolving complex commercial and technical issues; improving stakeholder engagement; and improving internal project management practice.

1.67 In addition, 'lessons learned' through the POC process are applied to understand, pre-empt and remediate systemic issues in the delivery of all DMO projects.

1.68 On 15 October 2010, the Minister for Defence Materiel announced the following projects as POCs:

- JP 129 Ph2 – Tactical Unmanned Arial Vehicle;
- JP 2070 – Lightweight Torpedo Replacement;
- AIR 5333 – Vigilare;
- JP 2048 Ph1A – LCM 2000 Watercraft for Landing Platform Amphibious Ships;
- AIR 5276 Ph8B – Electronic Support Measures Upgrade for the AP-3C Orion Aircraft;
- CN 10 – Submarine Sustainment;
- AIR 5402 – Air to Air Refuelling (MPR project);
- JP 2043 Ph3A – High Frequency Modification (MPR project);
- AIR 5077 Ph3 – AEW&C Wedgetail (MPR project);
- LAND 121 Ph3 – Overlander (Medium-Heavy Capability only) (MPR project); and
- SEA 1448 Ph2B – ANZAC Ship Missile Defence (MPR project).

Other Business Improvements

Defence Industry Initiatives

1.69 In 2009–10, Defence industry initiatives continued to focus on maximising Australian industry's ability to competitively supply and support the ADF. The major initiatives are discussed below.

(a) Defence Industry Policy

A new Defence Industry Policy Statement was released by the Minister for Defence Materiel and Science on 25 June 2010.

The Defence Industry Policy Statement is underpinned by four key principles.

– Setting clear investment priorities: Australian defence industry investment priorities must be driven by endorsed strategic tasks (articulated in the Defence White Paper and Strategic Reform Program) for Defence and the ADF's capability needs that come from these tasks.

– A stronger Defence – industry relationship: Relations between Defence and industry must be based on clear communication between all parties and provide fair incentives for competition.

– Seeking opportunities for growth: Australian defence industry will be encouraged to identify and make the most of business opportunities within Australia and overseas.

– Building skills, innovation and productivity: Australian defence firms will have every opportunity to enhance their innovation, skilling and productivity. This is important for Australia's defence and will help to sustain viable defence industry enterprises into the future.

(b) Priority Industry Capabilities

The 2009 Defence White Paper outlined the Government's commitment to ensure that certain strategically important industry capabilities continue to be available from within Australia. In July 2009 the Government announced a set of twelve Priority Industry Capabilities (PICs). This list was confirmed in the 2010 Defence Industry Policy Statement, *Building Defence Capability*.

The PICs, are those capabilities that confer an essential strategic advantage by being available from within Australia and which, if not available, would significantly undermine defence self-reliance and the ADF's operational capability. The PICs are not 'companies': they represent strategic, high-priority Defence industry requirements. These requirements may change from time to time as Defence's needs change.

The following criteria are used to identify Priority Industry Capabilities.

– Operational military and security requirements: We must keep this capability within Australia for operational reasons.

– Discretion in capability development: We need to be able to pursue alternative capability options and avoid over-dependence on options offered by particular allies or partners.

– Critical information and technology sharing: Australian industry capability is necessary to demonstrate a level of technological capacity to our allies.

– Comparative trade advantage and leverage: Australian industry capability contributes significantly to increasing Australian leverage in international relationships by providing high value goods and services sought by allies and partners.

– Significant risk to international supply: Potential for an industry capability to be unavailable if there is no local alternative to allied or other international supply options.

– Regeneration: Difficulty and long timeframe of regenerating an industry capability if it were lost necessitates its continued availability in Australia.

– Effectiveness and efficiency: Significant effectiveness or efficiency margin over internationally-sourced options.

Government may be prepared to intervene in the marketplace to sustain Priority Industry Capabilities to meet strategic, military self-reliance and ADF capability outcomes. Defence will regularly monitor the health of the Priority Industry Capabilities to determine whether any intervention is required. This monitoring might include assessing the particular capabilities within certain Australian companies, as well as the capabilities resident in Australian scientific research and academic institutions.

As part of the annual Defence Planning Guidance process, Defence advises Government whether amendment to the Priority Industry Capabilities list is recommended. Amendments could be due to factors such as changes in strategic circumstances, changes in Defence demand, or changes in the structure of Australian Defence industry.

The DMO and Defence industry are inextricably linked as partners in the successful delivery of the materiel element of capability requested through the MAAs. It is therefore good business practice for the DMO to provide assistance to Defence industry to make sure it has the necessary capacity to deliver projects and meet the Australia's self sufficiency goals.

(c) 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 these requirements in the future.

A layered approach to communicating with Defence industry exists. At the highest level there are the Biannual Defence and Industry Conferences to explore key issues of Defence policy priorities. An ePortal provides comprehensive and authoritative information on opportunities for industry participation in other projects. Other activities include briefings, updates and engagements with industry associations.

(d) Additional Industry Skilling Initiatives

To address industry capability a number of programs exist such as the Defence Materials technology centre at Swinburne University of Technology in Melbourne which brings together various participants to develop technologies. In addition, the Industry Skilling Program Enhancement package seeks to expand the pool of skilled people. The Joint Defence and Industry Training task Force also seeks to increase the availability of skilled labour. The Skilling Australian Defence Industry program provides funding to companies and industry associations for training and skilling activities in trade, technical or professional skill sets where these are linked to a Defence Capability.

Base Date Dollar Budget Management

1.70 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).

1.71 In this, the third MPR, the Auditor-General has again qualified the DMO as certain 'base date' figures for expenditure and contract price have not been disclosed in the PDSS. This qualification relates solely to the non-disclosure of 'base date' information and does not indicate or infer any deficiencies in the adequacy of the DMO's management of project expenditure or non-compliance with Australian accounting requirements.

1.72 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 (FMOs), issued by the Minister for Finance and Deregulation. DMO compliance with accounting policies is confirmed by the ANAO providing an unqualified audit report for the DMO's 2009-10 financial statements.

1.73 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 and costly exercise, offering limited value for project management outcomes.

1.74 Notwithstanding the difficulties in providing base date dollar information, the DMO has expended considerable effort to report, where practicable, base date dollar amounts within the MPR. It is pleasing that the

DMO has been able to produce this data for those projects that reported base date dollar information in the 2008-09 MPR.

Strategic Reform Program

1.75 In the 2009 Defence White Paper, the Government directed the most complex and far reaching reforms of Defence business ever undertaken. Defence's Strategic Reform Program (SRP) highlights the importance of ensuring that maximum value for money is extracted from maintenance, support and inventory programs across Defence so that resources can be redirected to current and future capability.

1.76 The SRP is planning to deliver $20b savings over 10 years, with retention of agreed capability and no reduction in either safety or sustainability. The DMO's contribution to SRP is to be driven primarily from the Sustainment budget (through the Smart Sustainment reform program). The SRP agreed Smart Sustainment targets are $5.5b over 10 years (including $0.4b for explosive ordnance, clothing and fuel).

2. Summary of Major Project Performance in 2009-10

Introduction

2.1 This Major Projects Report (MPR) is the third 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 it offers the greatest potential for insight into project performance and management improvements.

2.2 Given the small numerical sample size of the major projects (22 projects from 208 or 11% 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 projects, especially Developmental and Australianised Military Off-the-Shelf projects, often have unique aspects relating to their ongoing procurement and development.

2.3 This chapter presents a performance overview of the 2009-10 DMO MPR, including detailed analysis of the three key variables of cost, schedule and DMO support to capability. The analysis commences initially at a higher level, discussing performance of all projects collectively and across the organisation, moving to more specific project analysis, before finally identifying the major challenges for 2010-11.

Performance Overview

Major Projects' Outcomes for 2009-10

2.4 Many of the projects contained in the MPR have achieved successful outcomes during the year, particularly with respect to achievement of key milestones and provision of DMO support to capability. The following list is a synopsis of some of the key successes achieved by the DMO during 2009-10.

- **Wedgetail**

  The first two Airborne Early Warning and Control aircraft were formally accepted into service at RAAF Base Williamtown on 5 May 2010, with a third aircraft accepted in June 2010. With Australia being the first customer of this highly developmental 'first-of-type' aircraft, the project has encountered a number of significant delays, primarily from technical difficulties. Notwithstanding, the acceptance of these three aircraft in an 'initial' configuration is a significant project milestone, with the aircraft now capable of supporting training and peacetime national tasking.[89]

- **Super Hornet**

  On 26 March 2010, the first five of 24 F/A-18F 'Rhino' Super Hornets landed at RAAF Base Amberley in Queensland following a journey from Naval Air Station Lemoore in the United States. A further six aircraft arrived in Australia on 6 July 2010, boosting 1SQN aircraft numbers to a total of 11 aircraft. The first Australian Super Hornet delivered by Boeing remains in the United States to facilitate ongoing advanced software development trials and is expected to arrive in Australia later this year. The project is consistently on schedule and on budget, exemplifying robust project management principles.[90]

- **C-17 Heavy Airlift**

  The successful rollout of the C-17 Heavy Airlift capability has continued during the financial year, with the delivery and commissioning of the C-17 Aircrew Training System (ATS) at RAAF Base Amberley on 18 November 2009. This has enabled the training burden to be removed from the C-17 aircraft fleet, as C-17 pilots can now undertake training in the simulator at Amberley instead of having to travel to the United States. The ATS also enhances aircraft availability, allowing for greater operational tasking and reducing the overall aircraft rate of effort, with commensurate savings in aircraft operating cost.[91]

- **Bushranger Vehicles**

  Whilst delays have prevented the achievement of FOC for Production Period One (PP1) and Production Period Two (PP2) vehicles, many of these vehicles are currently on active service in Afghanistan. During the year there have been many instances where these vehicles have encountered strikes from Improvised Explosive Devices (IEDs) and

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89 Air Force News, 13 May 2010

90 Air Force News, 22 July 2009 and 1 April 2010

91 DMO Bulletin, 13 May 2010

have been instrumental in saving the lives of Australian soldiers, with Chief of the Defence Force Air Chief Marshal Angus Houston stating in May 2010, that "Bushmaster did its job".[92]

Major Projects Challenges for 2010-11

2.5 The DMO will continue to face many challenges to successfully manage the increasing complexity of major acquisition projects to best meet the needs of the ADF in its primary role of defending Australia and its national interests.

2.6 The technical challenges of these projects are driven by the evolving nature of modern war fighting equipment and an increased reliance on interoperability, not only with existing and emerging ADF equipment and systems, but also in operation with our allies. Most importantly, the challenges of integration will continue to grow as the complexity and interoperability within and across weapons systems increase.

2.7 The Project Data Summary Sheets (PDSS) (refer Part 3) identify several challenges facing the major projects in coming years. The main challenges include:

- **Employing and maintaining an appropriately skilled workforce**. This is particularly important for projects where the skills required are in high demand by other Australian industries. This strategic risk is being addressed through the DMO's Industry Capability programs;
- The acquisition of new equipment presents **multiple integration challenges for projects**, and existing platforms, including: electronic systems, training and support systems (AWD Ships, LHD Ships, Wedgetail, MRH90 Helicopters, Air to Air Refuelling, HF Modernisation, Stand Off Weapon, and ANZAC ASMD 2B);
- **Contractor overestimation** of the technical maturity of the equipment and an **underestimation** of the level of effort required to deliver new equipment including: integration, training packages, publications, spare parts and certification processes (Wedgetail, ARH Tiger Helicopters, Air to Air Refuel and Bushranger Vehicles);

92 ABC News website, 17 May 2010

- The **availability of in-service equipment**, due to operational requirements, may limit the ability of projects to install and test new equipment in accordance with the original planned project schedule (HF Modernisation, Collins RCS, Hw Torpedo and Collins R&S);
- The **maturity of the maintenance and supply networks** for new equipment to support the transition to in-service use by ADF units (Super Hornet, ARH Tiger Helicopters, C-17 Heavy Airlift and Anzac ASMD 2A);
- **Managing the expectations of our customers** on changes to existing designs based on contemporary expectations and requirements that may affect project cost and schedule. Some of these changes may reflect recent operational experience (AWD Ships, Overlander Vehicles, Collins RCS and Stand Off Weapon);
- The necessity to comply with increasingly demanding certification and regulatory requirements including emerging requirements (LHD Ships, Air to Air Refuel, Armidales, Hw Torpedo and Stand Off Weapon); and
- 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 (LHD Ships, Hornet Upgrade and FFG Upgrade).

2.8 Table 2.1 provides a summary of cost and schedule performance for the 22 projects and table 2.2 summaries the key characteristics of each project in terms of maturity and type. This 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 Cost and Schedule Status

Project	Second Pass Budget $m[93]	Price Indexation $m[94]	Foreign Exchange $m[95]	Scope Changes $m[96]	Transfers $m[97]	Budgetary Adjustments $m[98]	Net Variation %[99]	Current Budget $m
AWD Ships	7,207.4	854.8	(322.1)	0.0	0.0	0.0	0.0%	7,740.1
Wedgetail	3,269.5	951.8[101]	(371.3)	225.6	(18.9)	(173.2)	-5.3%	3,883.5
MRH90 Helicopters	957.2	556.1	(116.8)	2,597.1	(239.0)	0.0	0.0%	3,754.6
Super Hornet	3,545.8	351.4	(234.8)	0.0	(33.3)	0.0	0.0%	3,629.1
LHD Ships	2,959.9	348.5	(157.0)	0.0	9.4	0.0	0.0%	3,160.8
Overlander Vehicles	2,745.3	313.2	(169.0)	(14.8)	4.5	0.0	0.0%	2,879.2
ARH Tiger Helicopters	1,584.0	414.9	168.4	0.0	(84.3)	(6.7)	-0.4%	2,076.3
Hornet Upgrade	1,300.0	314.3	79.2	221.5	35.0	(3.4)	-0.3%	1,946.6
Air to Air Refuel	2,076.6	473.9	(372.0)	0.0	(135.5)	(153.6)	-7.4%	1,889.4
C17 Heavy Airlift	1,864.4	103.4	(133.2)	0.0	0.0	0.0	0.0%	1,834.6
FFG Upgrade	1,392.5	213.4	77.1	0.0	(152.6)	(0.8)	-0.1%	1,529.6
Hornet Refurb	156.6	145.0	(30.6)	673.6	0.0	(1.1)	-0.7%	943.5
Bushranger Vehicles	295.0	118.9	(3.1)	515.4	0.0	0.0	0.0%	926.2
Next Gen Satellite	884.9	107.3	(98.1)	0.0	0.0	0.0	0.0%	894.1
HF Modernisation	505.0	139.6	12.6	11.0	(4.7)	(0.8)	-0.2%	662.7
Armidales	436.8	72.9	(11.0)	67.1	(29.8)	0.7	0.2%	536.7
ANZAC ASMD 2B	248.8	71.0	(10.0)	0.0	148.7	0.0	0.0%	458.5
Collins RCS	455.3	55.5	(51.1)	0.0	(0.9)	(0.8)	-0.2%	458.0
Hw Torpedo	238.1	91.6	(102.3)	213.3	1.0	(0.2)	-0.1%	441.5
Collins R&S	72.0	66.8	(2.3)	310.3	(38.3)	(0.80	-1.1%	407.7
Stand Off Weapon	370.7	58.7	(29.8)	0.0	0.0	0.0	0.0%	399.6
ANZAC ASMD 2A	449.0	88.7	(0.7)	0.0	(159.8)	(0.1)	0.0%	377.1
Total	33,014.8	5,911.7	(1,877.9)	4,820.1	(698.5)	(340.8)	-0.7%	40,829.4

Original FOC	2008-09 DMO MPR FOC	Current FOC	Variation Factor[100]
Dec-18	Dec-18	Dec-18	1.0
Dec-08	Dec-12	Dec-12	1.5
Jul-14	Jul-14	Jul-14	1.0
Dec-12	Dec-12	Dec-12	1.0
Nov-16	Nov-16	Nov-16	1.0
Dec-19	-	Dec-19	1.0
Jun-09	Dec-12	Dec-12	1.3
Aug-11	Aug-11	Nov-11	1.0
Mar-11	3rd Qtr 12	Dec-12	1.2
Dec-11	Jan-11	Jan-11	0.8
Dec-05	Dec-09	Jul-11	1.9
N/A	N/A	N/A	N/A
Apr-12	Apr-12	Apr-12	1.0
Dec-14	-	Dec-14	1.0
May-05	Dec-16	May-15	2.1
Mar-09	Dec-11	Mar-12	1.5
Mar-13	-	Apr-17	1.5
2010	2016	2016	1.7
Nov-13	-	Nov-13	1.0
Jun-14	-	Sep-22	1.6
Dec-10	-	Dec-12	1.4
Dec-11	-	Apr-17	1.7
-	-	-	1.30

93 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.

94 The total of price indexation variations between Second Pass budget and the current budget.

95 The total of foreign exchange variations between Second Pass budget and the current budget.

96 The total value of all approved project scope changes between Second Pass budget and the current budget.

97 The total of all transfers to and from other Defence Groups (i.e. Defence Support Group) and DMO projects.

98 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.

99 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.

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

101 Of the $951.8m, $388.1m of this relates to a real cost increase for contract price indexation beyond the supplementation provided by Government.

Table 2.2 Project Characteristics

Project	Service Customer[102]	Type of Capability[103]	Type[104]	ACAT[105]	Kinnaird[106]	Maturity Stage[107]	Prime System Integrator[108]
AWD Ships	Navy	New	Australianised MOTS	I	Post	Critical Design Review	AWD Alliance
Wedge tail	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	Acceptance Testing	US Government
LHD Ships	Joint	New	Australianised MOTS	I	Post	Preliminary Design Review	BAE Systems Australia
Overlander Vehicles	Army	Replacement	Australianised MOTS	I	Post	Second Pass	DMO
ARH Tiger Helicopters	Army	New	Australianised MOTS	II	Pre	Acceptance Testing	Australian Aerospace
Hornet Upgrade	Air Force	Upgrade	Australianised MOTS	II	Pre	System Integration & Test	DMO
Air to Air Refuel	Air Force	New	Developmental	II	Pre	System Integration & Test	Airbus Military
C17 Heavy Airlift	Air Force	New	MOTS	III	Post	Acceptance Into Service	US Government
FFG Upgrade	Navy	Upgrade	Developmental	II	Pre	Service Release	Thales
Hornet Refurb	Air Force	Upgrade	N/A	II	Pre	Acceptance Into Service	DMO
Bushranger Vehicles	Army	New	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
Armidales	Navy	Replacement	Australianised MOTS	III	Pre	Acceptance Into Service	Defence Maritime Services
ANZAC ASMD 2B	Navy	Upgrade	Australianised MOTS	I	Post	System Integration & Test	ANZAC Alliance
Collins RCS	Navy	Upgrade	Australianised MOTS	IV	Pre	System Integration & Test	DMO
Hw Torpedo	Navy	Replacement	MOTS	III	Pre	Acceptance Testing	US Government
Collins R&S	Navy	Replacement	Australianised MOTS	III	Pre	Preliminary Design Review	ASC
Stand Off Weapon	Air Force	New	Australianised MOTS	II	Post	System Integration & Test	US Government
ANZAC ASMD 2A	Navy	Upgrade	Australianised MOTS	II	Pre	System Integration & Test	ANZAC Alliance

102 The ADF customer who will be the Capability Manager when equipment/ systems enter service.

103 '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.

104 '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.

105 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.

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

107 Provides an indication of maturity of a project based on the benchmark stage of a project.

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

Cost performance

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

2.10 Table 2.3 provides analysis of budget variances between 2008-09 and 2009-10, measured against original project approval, for the 22 projects in this report by budget variation attribution. In 2009-10 the most significant impact to project budgets was from foreign exchange rate variations with a net reduction in project approval value of $3.9b. No scope changes were approved during 2009-10.

Table 2.3 - Major Attributes for Budget Variations

Variance Attribute	Total budget variation (by attribute) to 30 June 2009 $m	Net budget variation within 2009-10 $m	Total budget variation (by attribute) to 30 June 2010 $m
Price Indexation	5,378.2	533.5	5,911.7
Foreign Exchange	2,020.1	-3,898.0	-1,877.9
Scope Changes	4,820.1	0.0	4,820.1
Transfers	-698.5	0.0	-698.5
Budgetary Adjustments	-340.8	0.0	-340.8

2.11 These attributions are defined as follows:

- **Price Indexation**

  Price indexation adjustment relates to supplementation to the total project budget to offset for inflationary effects outside the control of the DMO. 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 2009-10 the 'Specialist Military Equipment Weighted Average' or SMEWA). Actual labour and materiel indices within each contract may differ to this deflator.

- **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. Consistent with Government policy it is 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 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.

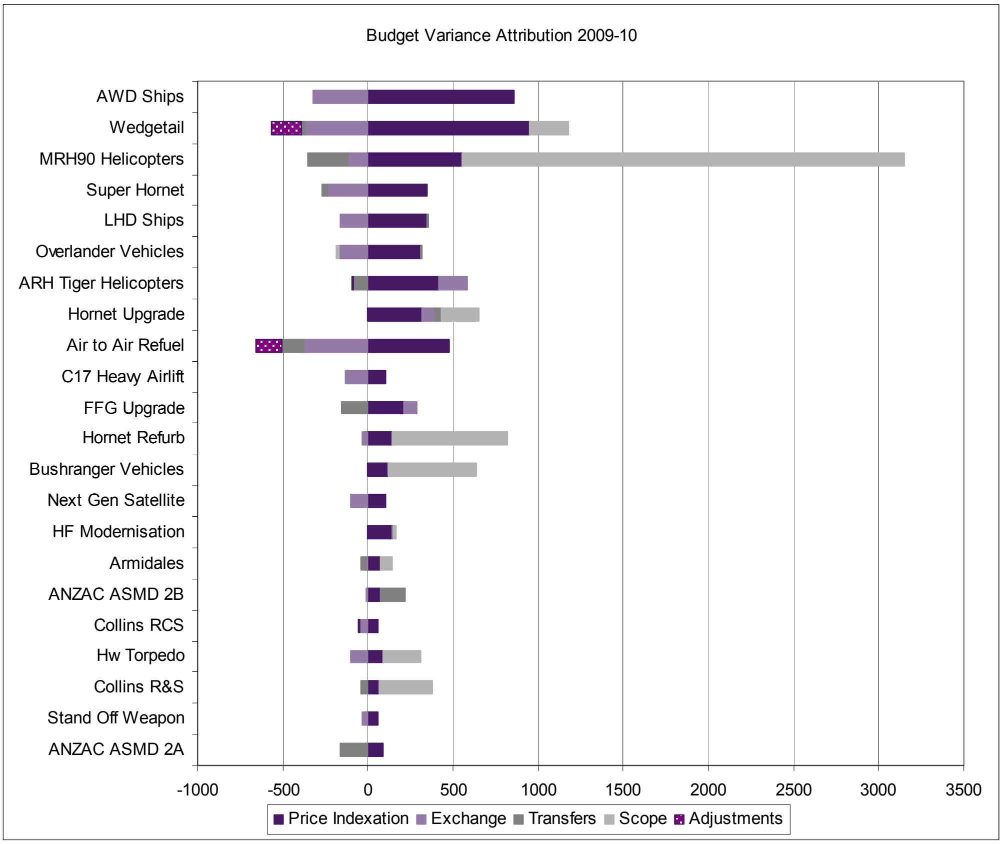
- **Budgetary Adjustments**

  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 adjustments made to fund initiatives such as the Skilling of Australia's Defence Industry (SADI), as well as other adjustments not factored into the original budget plan.

2.12 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.

2.13 2009-10 was a favourable year for the Australian dollar averaging 0.8805 USD compared to 0.7424 USD in 2008-09. Similarly, the Australian dollar also strengthened against the Euro moving from an average of 0.5393 Euro in 2008-09 to 0.6450 Euro in 2009-10. These variations account for most of the exchange rate variations in table 2.3.

Figure 2.1 - Budget Variation Attribution by Project as at 30 June 2010 (in $m)



2.14 Figure 2.1 presents a summary of the project budget variations to date by variance attribute (i.e. price indexation; foreign exchange; and real variations) for the life of the project. Significant real variations fall within three main groupings:

- **Scope changes:** Projects with the largest budget 'real variation' from scope changes approved by Government are:
  – MRH90 Helicopters – 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;

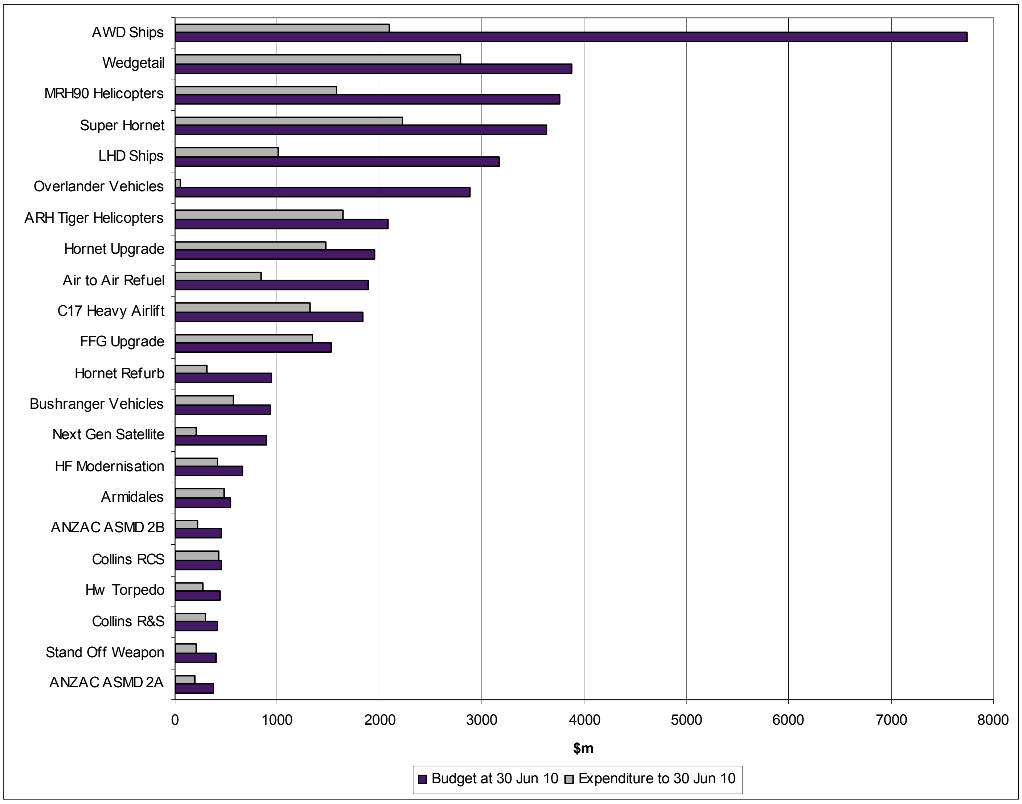
- Collins R&S increased to reflect the full scope associated with the implementation of a reliable and sustainable platform;
- Hw Torpedo increased in scope to allow for acquisition of Torpedoes from the US through an Armament Co-operative Project;
- Wedgetail increased from four to six aircraft;
- Hornet Upgrade scope increased to include an upgrade to the aircraft's electronic warfare self protection suite;
- Hornet Refurbishment – The cost variance for this project is driven by scope for the delivery of additional centre barrel replacement kits that were not included in the original scope. Further scope changes are expected to be approved in 2010-11 reflecting further engineering and scientific analysis indicating that fewer aircraft will now require centre barrel replacements than previously envisaged. Savings will be returned to Defence;
- Bushranger Vehicles – vehicle numbers have increased from an initial 370 to 737 vehicles and trailers to equip the Enhanced Land Force, and acquire vehicles for the Overlander project. The project has also introduced modifications to vehicles from operational experience to provide additional protection to personnel; and
- Armidale Class Patrol Boat numbers increased from 12 to 14.

- **Transfers:** Significant transfers of the DMO budget were made from the MRH90 Helicopters and Air to Air Refuel projects to the Defence Support Group (DSG) to fund the acquisition of facilities. There has 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:** Both Air to Air Refuel and Wedgetail show budget adjustment reductions of over $150m each. This is primarily due to changes in the currency mix and indexation parameters to those applied at original budget approval.

2.15 Figure 2.2 provides a comparison of expenditure as at 30 June 2010 compared to the total approved budget at that date. No project has exceeded its total approved budget. While this provides an indicator of project maturity, 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.

2.16 For example, the AWD Ship project, while at an early stage of the project development, has spent nearly 25% of its budget. This is due to the large degree of infrastructure development and non-recurring engineering costs required before the contractor could commence building the ships. Examples of such infrastructure costs include the need to build dry dock and other support facilities. The project has recently commenced the block production phase of the AWD Ships. Each AWD Ship will be built in a series of 31 modules at three shipyards. It is expected that from June 2011 the first of the completed blocks will be shipped to Adelaide for assembly into the completed warships. Provisional acceptance into service of the first AWD Ship is planned to occur in December 2014. Consequently, the level of expenditure will increase in line with the increase in building effort.

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



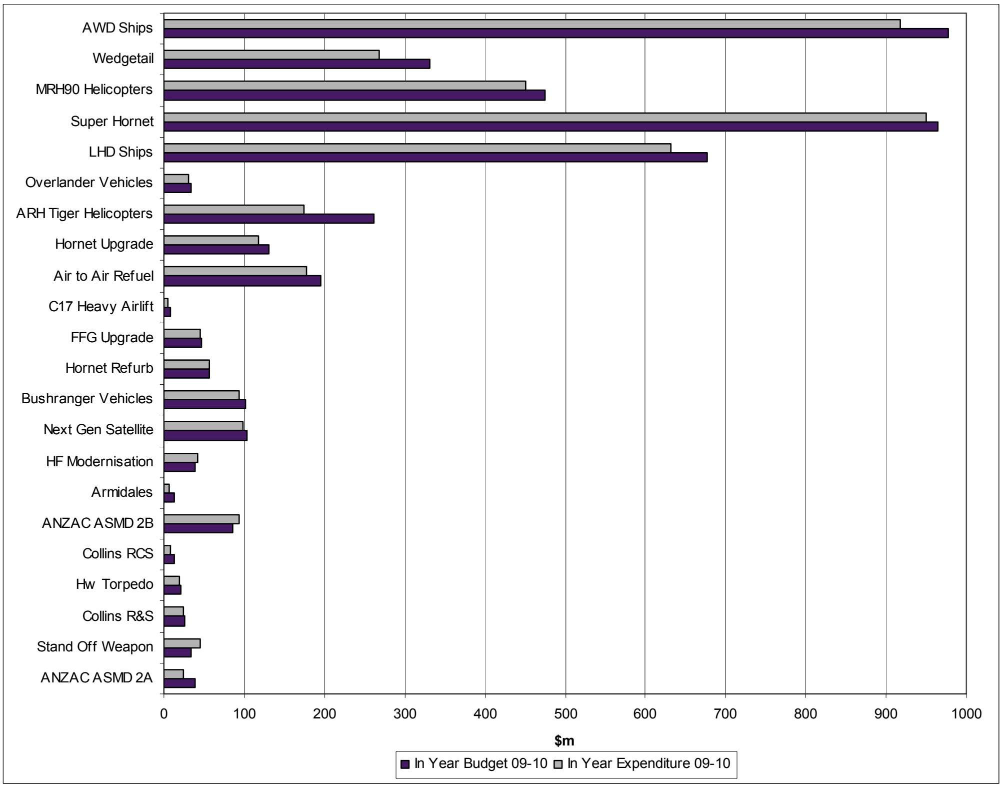
2.17 The profile of expenditure against total approved budget is determined by several factors including the level of development and the type of acquisition. For example, a MOTS project acquired on a Foreign Military Sales (FMS) basis will generally have a linear expenditure pattern as FMS cases usually 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.

2.18 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 disproportionately low level of expenditure against their total budget. This could be the result of contractual performance issues culminating in the withholding of payments to the contractor. 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, thereby resulting in a significant reduction in expenditure against the project's approved budget).

2.19 Many factors drive expenditure against total budget and it is not practical to draw conclusions across projects: each project needs to be assessed on an individual basis. As with other data in the MPR, the depth of this analysis is expected to increase over time.

2.20 Analysis of actual expenditure against the planned expenditure for the 2009-10 financial year in figure 2.3 shows an average variance of 11% less than plan. Reasons for the variation included delays in deliveries, withholding payments, reduced costs and lack of available platforms for modification.

Figure 2.3 – Comparison of In-Year Budget and Expenditure 2009-10 (in $m)



Schedule Performance

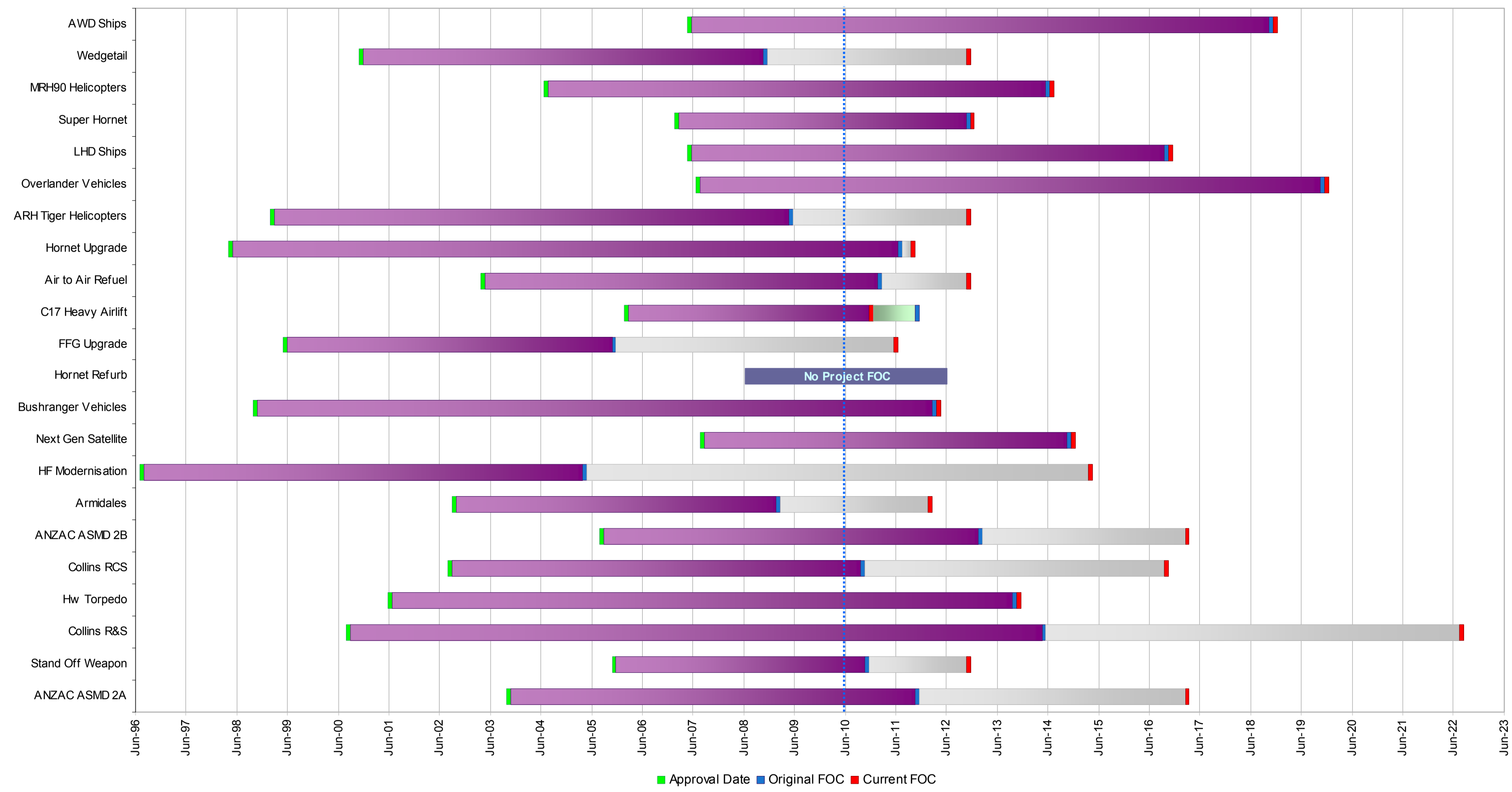
2.21 Figure 2.4 shows the project schedule for the life of each of the major projects within this year's MPR. The project schedule commences from original project approval date (i.e. second pass Government approval or equivalent) through to original planned FOC for the totality of the project, and where slippage/gain has occurred, to the forecast FOC as at 30 June 2010.

2.22 As figure 2.4 indicates, the DMO major projects are at various stages of maturity and have differing elapsed times depending on the start date, scope and complexity of each project. C-17 Heavy Airlift is scheduled for completion (FOC) in the 2010-11 financial year with Armidales, FFG Upgrade, Hornet Upgrade and Bushranger Vehicles expected to be finalised during 2011–12. These projects will be considered for removal from the MPR for 2011-12. There is a cluster of acquisition projects scheduled to be finalised during 2012–13, which will result in these projects shifting into the sustainment phase of the capability life cycle at that time.

2.23 The seven projects with the most significant schedule variation (those with a schedule slippage of 50% or greater) are detailed below:

- FFG Upgrade – The technical complexity of the large scale integration and platform modification resulted in schedule delays to meet a major improvement to capability;
- HF Modernisation – Contractor underestimation of complexity and effort required in delivering the final system has caused schedule slippage. However, it should be noted that the core system was accepted in October 2004. Since April 2009, the contractor has achieved progress ahead of the revised schedule and has met the remaining contractual milestones;
- Collins R&S and Collins RCS – Schedule delays are primarily related to platform unavailability due to operational requirements and changes to the submarine Full Cycle Docking (FCD) schedule (a result of unscheduled maintenance arisings), control of which rests outside the DMO;
- ANZAC ASMD 2A and 2B – Schedule slippage has been primarily driven by the Government approved scope change to acquire a 'phased array radar' based solution (which offered a significant capability advantage) over the 'Very Short Range Air Defence System' originally selected; and
- Wedgetail – Schedule delays are primarily driven by contractor underestimation of the technical challenges associated with integration of the phased array radar into an operational system (which has never been previously undertaken). The contractor also underestimated the complexity of integrating other mission critical systems.

Figure 2.4 – Schedule Second Pass to Current FOC Estimate



2.24 Both table 2.4 and figure 2.5 depict schedule performance of each project in terms of forecast variance of FOC from original plan by way of a variance factor. The schedule variance factor is a ratio of the period between achieved or forecast FOC at Second Pass Approval to the originally planned period between these events. Schedule variance factors:

- of less than one means the project delivered or is forecast to deliver ahead of the original planned schedule;
- of one means the project has delivered or is forecast to achieve the original planned schedule; and
- of greater than one means the project has delivered or is forecast to be behind the original planned schedule.

2.25 Twelve of the 21[109] projects in the MPR show a schedule slippage between original and current FOC estimates, whilst eight are tracking on schedule and one project (C-17 Heavy Airlift) has achieved ahead of schedule, with FOC expected to be almost a year earlier than originally planned. It is pleasing to note that the HF Modernisation project was able to regain some of the schedule slippage encountered in previous years. Overall in 2009-10, the average schedule performance factor for all projects is 30% slippage (variance factor 1.30), which comprises the 29.5% (variance factor 1.295) across the 14 'Repeat Projects', and 31.5% (variance factor 1.315) across the seven 'New Projects'[110]. The schedule slippage reported in the 2008-09 MPR, based on the 14 project sample, was 28% (variance factor 1.28).

2.26 Detailed information regarding the cause and extent of slippage for each project is contained within the PDSS in Part 3. However, a synopsis outlining causes for schedule delays is provided in table 2.4.

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[109] Hornet Refurb project does not have a FOC and is therefore not included in the FOC analysis.

[110] For this analysis, the DMO notes the ANAO has calculated a schedule slippage of 31% against DMO's 30%. The data used by both agencies is correct, but ANAO has chosen to use the 'Lead/Main' FOC date for schedule calculation, whereas the DMO uses the final FOC date.

Table 2.4 – Schedule Slippage Attribution

Driver of Schedule Slippage	Project	Schedule Variance Factor
Platform unavailability due to operational Requirements	Collins RCS	1.73
	Collins R&S	1.60
Underestimation by Industry and/or Defence of the complexity of these highly developmental and large scale integration projects	Wedgetail	1.50
	ARH Tiger Helicopters	1.34
	Air to Air Refuelling	1.22
	FFG Upgrade	1.86
	ANZAC ASMD 2B	1.54
	ANZAC ASMD 2A	1.66
	HF Modernisation	2.14
	Stand Off Weapon	1.40
	Hornet Upgrade	1.02
Need to fix latent defects	Armidales	1.47

2.27 The previously mentioned linkage between the three main types of acquisition (MOTS, Australianised MOTS and Developmental) is reinforced in figure 2.5, ie. the higher the degree of modification and development, the higher the risk associated with the project. Detailed information regarding the cause and extent of slippage for each project is contained within the PDSSs in Part 3. However, it is important to note that irrespective of whether a project reports a slippage in scheduled FOC date, in many cases significant capability has already been delivered and is in use by the ADF. The Armidale Class Patrol Boat project is an example where, although FOC has yet to be achieved, capability has been used effectively in protecting our northern waters, while a rectification program continues to address remaining latent defects.

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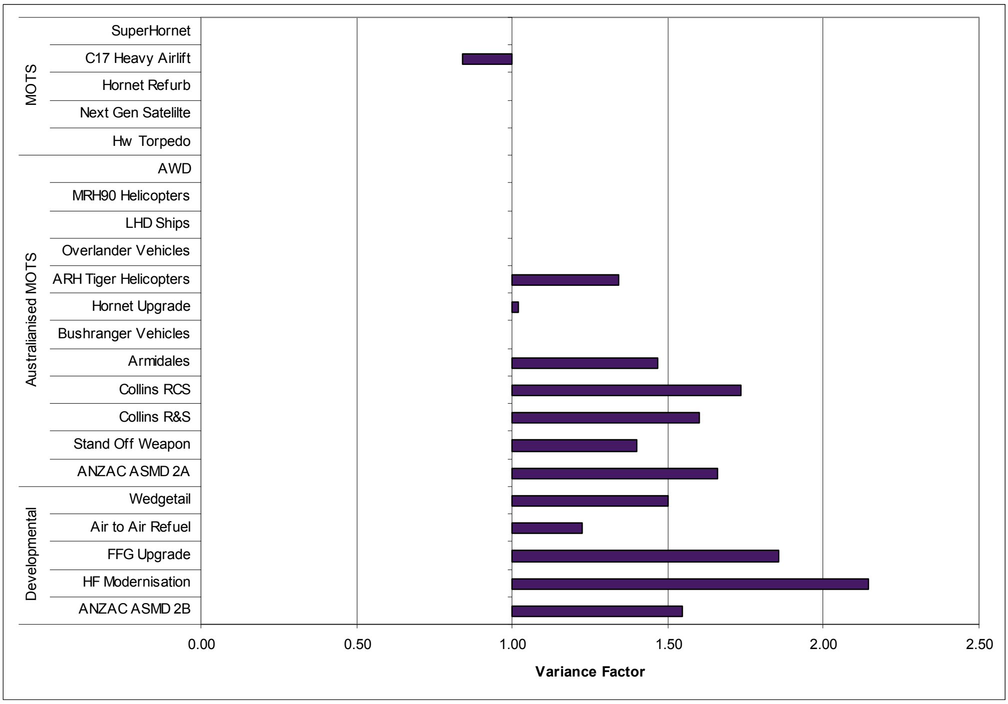
Figure 2.5 – Schedule Variation Factors from Second Pass Approval (by project type)



2.28 Figure 2.5 also illustrates those projects with nil variance, those with schedule gain and those incurring schedule slippage.

- **Nil Variance** – Nine projects show no variation to schedule. These are either less complex acquisition arrangements (i.e. MOTS) and/or projects in the early stages of the project life cycle.
- **Schedule Gain** – C-17 Heavy Airlift is ahead of schedule by almost one year. This positive outcome is due primarily to the nature of the project (i.e. rapid acquisition and MOTS). The strong performance of all MOTS projects against schedule is consistent with the lower risk and complexity associated with these projects.
- **Schedule Slippage –** All developmental projects and over half of the Australianised MOTS projects have incurred slippage to the schedule approved at Second Pass. By contrast, none of the five MOTS projects has experienced schedule slippage. This slippage is attributable to the higher levels of complexity and risk for these developmental and Australianised MOTS projects. As this report has shown, the higher the

technical challenge, the higher the inherent risk to 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, thereby having a negative impact on schedule. Similarly, Australianisation can also encounter unforeseen technical difficulties and have an unanticipated impact on existing features of the baseline MOTS product. The rectification of such issues often requires extensive, time consuming remediation work.

Capability Performance

2.29 Measures of Effectiveness (MOE) are tied directly to the capability to be delivered by the project and represent the key capability performance attributes of a project, which if not satisfied would have a significant effect on the eventual suitability for operational service. The MOEs for each project are identified in the project approval documentation that details the capital equipment assets to be delivered, including the Operational Concept Document and the Function and Performance Specification.

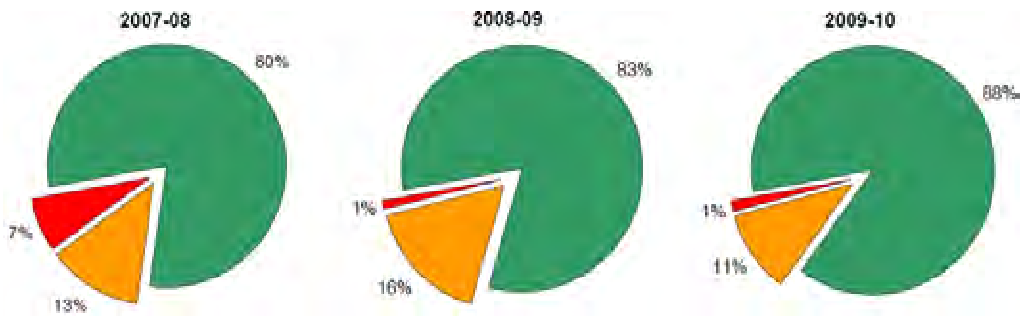
2.30 The DMO MPR does not identify the individual MOEs for projects for security classification reasons; however, each PDSS has a percentage breakdown on how the project is tracking against its particular suite of MOEs.

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

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

2.32 The number of MOEs that are reported as at 30 June each year alters depending upon the number of MOEs agreed in project documentation. For example, across the original nine projects in the 2007-08 MPR, there were 55 MOEs reported as at 30 June 2008. Two years later, as at 30 June 2010, the same nine projects reported against a total of 67 MOEs. Consequently, this fluctuation in the number of MOEs across years has to be considered when analysing the DMO achievement against the percentage of green, amber and red MOEs[111].

Figure 2.6 – Analysis of MOEs for the 9 MPR Projects Covered in the 2007-08 Report (Over the Period 2007-08 to 2009-10)

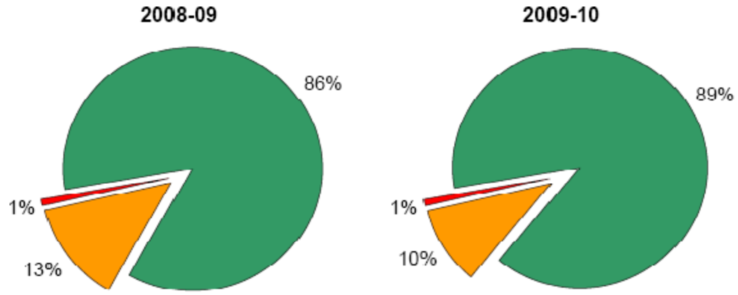


2.33 Figure 2.6 identifies the change in MOE status of the first nine projects covered in the 2007-08 DMO MPR, which is analysed below:

- **Green** – Across the three years, the percentage of green MOEs continues to increase;
- **Amber** – The percentage of amber MOE indicators has remained relatively consistent (average of 13% across the three years); and
- **Red** – Pleasingly, the percentage of red MOEs for these nine projects has reduced from 7% to 1%.

111 Comparison of an individual or a group of projects' MOE data across years needs to be treated from the perspective that identification of, and assessment over, MOE data can differ from project to project.

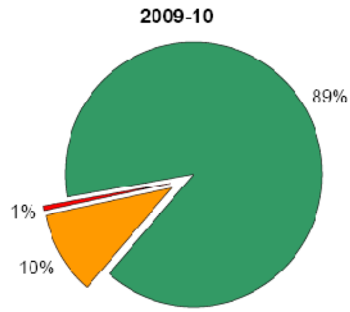
Figure 2.7 – Analysis of MOEs for 14 of the 15 MPR Projects Covered in the 2008-09 Report (Over the Period 2008-09 to 2009-10)



2.34 Figure 2.7 identifies the change in MOE status of the 14 projects covered in the 2008-09 DMO MPR (Super Hornet does not have a defined set of MOEs) and is analysed below:

- **Green** – A similar trend is shown to the nine MPR projects in the 2007-08 data set, whereby the percentage of green MOEs has increased over the two year period;
- **Amber** – The decrease in amber MOEs is driven primarily by favourable DMO project management practices that have assisted to address MOEs that were under some threat to a situation where they will now be met; and
- **Red** – The percentage of red MOEs remains static at 1%. However, the number of MOEs decreased and therefore the retention of the 1% red MOE measurement is again a positive outcome for DMO's project management.

Figure 2.8 – Analysis of MOEs for 21 of the 22 MPR Projects Covered in the 2009-10 Report (Over the Period 2009-10)[112]



2.35 For the 2009-10 DMO MPR, there are 138 individual capability MOEs across 21 projects (Super Hornet does not have a defined set of MOEs) with a breakdown of 123 green, 14 amber and one red (as shown in figure 2.8). A red or amber MOE indicates the current status of the capability as at 30 June 2010 and is not indicative of the project's ability to deliver the intended scope.

- **Green** – The trend identified in previous MPRs is also reflected for 2009-10 with a high percentage (89%) of green MOEs reported;
- **Amber** – The amber MOEs (10%) are reported across six projects. Details include:
  - Wedgetail – relates to the projects ability to conduct operations in its intended operational environment;
  - MRH90 Helicopters – relates to the achievement of certification, training and support requirements;
  - FFG Upgrade – relates to issues with electronic support and defensive systems causing delays to operational release;
  - Next Gen Satellite – relates to pressures associated with the installation of support systems and activation of the orbital slot;
  - Hw Torpedo – submarine availability due to operational requirements has impacted the project's ability to conduct weapons testing and other operational scenarios; and

112 For the 2009-10 MPR, non-capability related MOEs (those that report on cost and schedule measures) have been excised to compile the above figure.

- **Red** – The one red MOE (1%) relates to the Wedgetail project. Although Wedgetail has improved from last year (decrease by one red MOE), some concern still remains over the project's ability to conduct operations in its intended operational environment.

2.36 The delivery of capital equipment assets for the ADF remains the prime focus for the DMO, and senior management continues to apply intensive effort and sponsor business improvements to address any deficiencies in MOE achievements.

Contingency Management

2.37 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 should they occur without the cumbersome 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.

2.38 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.

2.39 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 Assurance Board process and is scrutinised by central agencies as part of the project approval process.

2.40 To 30 June 2010, of the total contingency allocated across the 22 projects, approximately $1b (or 2.5% of the total approved project budget of $40.8b) has been expended to retire project risks. The areas where risk is retired using project contingency budgets include:

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

Earned-Value Management

2.41 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 be used as a means by which progress payments may be quantified.

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

2.43 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).

2.44 Although the use of EVM is commonly used for contracts valued at $20 million or more, for major capital acquisition projects the majority will utilise milestone payment options, as this is a more appropriate way of ensuring the delivery of goods and services as specified in the contract.

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

2.46 A total of 14 of the 22 MPR Projects are either currently using EVM as a payment or contract management method, or have previously used it as a payment or contract management tool. These projects include:

- MRH 90 Helicopters
- Air to Air Refuel
- FFG Upgrade
- Anzac ASMD 2A
- Anzac ASMD 2B
- Wedgetail
- ARH Tiger Helicopters
- HF Modernisation
- AWD Ships
- LHD Ships
- Overlander Vehicles
- Next Gen Satellite
- Collins RCS
- Collins R&S

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

Independent Review Report by the Auditor-General

Auditor-General for Australia

Australian National Audit Office

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 22 Project Data Summary Sheets (PDSSs) as at 30 June 2010, 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 2009–10 PDSS Guidelines, as endorsed by the Joint Committee of Public Accounts and Audit. The 22 projects are:

- 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
- Amphibious Deployment and Sustainment - JP 2048 Phase 4A/4B
- Overlander - LAND 121 Phase 3
- Armed Reconnaissance Helicopter - AIR 87 Phase 2
- F/A-18 Hornet Upgrade - AIR 5376 Phase 2
- Air to Air Refuelling Capability - AIR 5402
- C-17 Globemaster III Heavy Airlifter - AIR 8000 Phase 3
- Guided Missile Frigate Upgrade Implementation - SEA 1390 Phase 2.1
- F/A-18 Hornet 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
- Armidale Class Patrol Boat - SEA 1444 Phase 1
- 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
- Follow-On Stand Off Weapon - AIR 5418 Phase 1
- ANZAC Anti-Ship Missile Defence - SEA 1448 Phase 2A

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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) Table 1.2 (Major Challenges), Table 4.1 (Major Project Risks), and Table 4.2 (Major Project Issues);

(b) Table 3.5 (Measures of Effectiveness); and

(c) 'Forecasts' of future dates regarding a project's expected achievement of delivery schedules and capability where included in Sections 1, 3 and 4 of each PDSS.

The above information has been scoped out of the review because by their nature, the identification of Major Project Risks and Issues and the achievement of future outcomes (Measures of Effectiveness) and future dates relate to events and depend 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.

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 22 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 without disclosing information of a classified nature.

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 22 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 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 PDSS information is accurate and complete;

- interviews with persons responsible for the preparation of the PDSSs and those responsible for the management of the 22 projects;
- taking account of industry contractor comments on draft PDSS information; and
- an examination of the statements and management representations by the CEO DMO and senior DMO managers, and confirmations from the three ADF Service Chiefs concerning the overall accuracy and completeness of the PDSSs, including the status of initial and final operational capability.

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 figures for expenditure and contract price have not been disclosed in Tables 2.2 and 2.3, and consequently DMO has not reported Project Expenditure History and Contract Details (Prices at Signature and at 30 June 2010) in base date dollars, as required by the Guidelines, for the projects referred to in Attachment A to this review report.

This matter was subject to a similar qualification in 2008-09.

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
19 November 2010

Attachment A

Projects referred to in the Basis for Qualified Conclusion

Project Expenditure History (Table 2.2) – Base Date figures not reported for:

- Air Warfare Destroyer Build - SEA 4000 Phase 3
- Bridging Air Combat Capability - AIR 5349 Phase 1
- Overlander - LAND 121 Phase 3
- 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
- Guided Missile Frigate Upgrade Implementation - SEA 1390 Phase 2.1
- F/A-18 Hornet 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
- Armidale Class Patrol Boat - SEA 1444 Phase 1
- 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
- Follow-On Stand Off Weapon - AIR 5418 Phase 1
- ANZAC Anti-Ship Missile Defence - SEA 1448 Phase 2A

Project Expenditure History (Table 2.2) – 'Other' FY to Jun 10 – Base Date figures not reported for:

- Airborne Early Warning and Control Aircraft - AIR 5077 Phase 3

Contract Details (Table 2.3) Price at Signature and Price at 30 June 2010 – Base Date figures not reported for:

- Collins Class Submarine Reliability and Sustainability - SEA1939 Phase 3

Contract Details (Table 2.3) Price at 30 June 2010 – Current Price reported instead of Base Date Price for:

- F/A-18 Hornet Upgrade - AIR 5376 Phase 2
  - For the Boeing and Raytheon contracts.
- F/A-18 Hornet Structural Refurbishment - AIR 5376 Phase 3.2
  - For the L3 MAS, Boeing and BAE &L3MAS contracts.
- Collins Replacement Combat System - SEA 1439 Phase 4A

Statement by the CEO DMO

The attached Project Data Summary Sheets (PDSS) for the 22 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).

ANAO Qualification – Base Date Dollars

I note the ANAO qualification in the Major Projects Report (MPR) with respect to 'base date' dollars. This qualification relates solely to the non-disclosure of 'base date' information and does not indicate or infer any deficiencies in the adequacy of the DMO's management of project expenditure or non-compliance with Australian accounting requirements. As further confirmation of the quality of DMO's financial management, the ANAO has again provided an unqualified audit report for the 2009-10 DMO financial statements.

The standard project management and performance reporting requirements for DMO projects do not require the use of 'base date' dollars to either manage or report. However, several projects converted financial data, particularly contract expenditure, into base date dollars for disclosure in the MPR but this was a time consuming and costly exercise, offering limited value for project management outcomes.

The DMO looks forward to discussing options for reporting project financial performance with the Auditor-General to develop an alternative approach for consideration by the JCPAA in early 2011 to resolve this matter.

Project Status as at 30 June 2010

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 2010. 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:

- Major Challenges in Section 1.2, Section 3.5 Measures of Effectiveness, Section 4.1 (Major Project Risks) and Section 4.2 (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 2010

In stating this opinion, I acknowledge the following material events occurring Post 30 June 2010:

AIR 9000 Phase 2, 4 & 6 Multi Role Helicopter

- In July 2010, the flying suspension on MRH90 helicopters was lifted following an engine failure in April 2010. The schedule for this project remains unchanged from that already disclosed in the PDSS.

AIR 5402 Air to Air Refuelling Capability

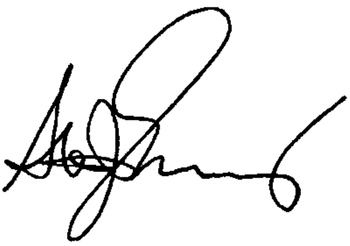
- On 15 October 2010, the Minister for Defence Materiel announced that the AIR 5402 Air to Air Refuelling project was on the Projects of Concern List due to concerns about ongoing schedule slippage.
- Delays with completion of certification and qualification testing and concerns with the performance of the new boom refuelling system have further delayed acceptance of the first-of-type KC-30A and achievement of IOC by around 3-6 months.

AIR 5077 Phase 3 Airborne Early Warning and Control aircraft

- Defence assesses that there is a 6-9 month risk to the planned December 2010 delivery of the first aircraft in a 'final' configuration, capable of supporting all operational tasking short of high-end war fighting.

SEA 4000 Phase 3 Air Warfare Destroyer

- One of the shipyards sub-contracted to ASC is experiencing problems with build quality on some of their initial blocks under construction. The final impact of the delay of block delivery on the ship delivery schedule is currently being analysed by the Air Warfare Destroyer Alliance.



Dr Stephen J. Gumley AO

Chief Executive Officer

19 November 2010

Project Data Summary Sheets

DMO REPORT

PROJECT DATA SUMMARY SHEET[113]

AIR WARFARE DESTROYER BUILD

SEA 4000 Phase 3

This project was first reported in the 2008-09 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Navy	New	ACAT I	Jun 07	AWD Alliance

30 June 2010	Name
Deputy CEO DMO	Mr Warren King
Program Manager	**Mr Andrew Cawley**
Deputy Program Manager	Mr Michael Aitchison
Deputy Program Manager	**Commodore Steve Tiffen**

History	Name	Start	End
Program Manager	**Mr Andrew Cawley**	**Aug 09**	**Current**
	Mr Warren King	Oct 07	**Aug 09**

1.2 Project Context

Project	Explanation
Description	The **$7,740** million Sea 4000 Phase 3 Air Warfare Destroyer Project will acquire three *Hobart* Class Air Warfare capable 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.
Background	Following the adoption by Government of the 2000 Defence White Paper, the Program began with an initial phase which assessed requirements and alternatives for an air warfare destroyer. 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

113 Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

	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 US 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 **Royal Australian** Navy **(RAN)** of the third AWD, HMAS *Sydney.* At Second Pass, the Government approved Defence's proposal to close Sea 4000 Program Phase 2, Design, and Phase 3.1, Aegis acquisition activities, and combine the remaining Phase 2 and Phase 3.1 scope and funding with Sea 4000 Program Phase 3. **Since July 2009 the following major events and activities have occurred:** • **The Alliance awarded contracts for the production of blocks to Forgacs in Newcastle (NSW) and BAE Systems Australia in Williamstown (Victoria).** • **The AWD system Critical Design Review was successfully completed on schedule in February 2010.** • **ASC's new shipyard was opened by the Prime Minister on 21 January 2010.The Government of South Australia's Common User Facility was opened by the Premier on 15 February 2010. The on time completion of these facilities represents an important step forward for the project by providing new state of the art facilities.** • **Following the successful completion of pilot production activities at the shipyards, full block production of the Air Warfare Destroyers was underway on 4 March 2010 at all three shipyards.**
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. **The contract is aimed at delivering a highly successful outcome in a complex project and it incorporates terms and conditions designed to protect the Commonwealth's essential interests.** The key features of the AWD Alliance and the operations of the Alliance based contract arrangement include: • The Alliance Industry Participants (Raytheon Australia and ASC AWD Shipbuilder) are jointly and severally responsible for the delivery of the three ships and their support systems. Each party remains individually responsible for compliance with all statutory requirements. • The Alliance is neither a legal body, nor a joint venture. • 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 Industry Participants are expected to use their commercial expertise and business acumen in achieving the aims of the Program. • 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 apply in the event the ship is delivered later than specified dates. • To the greatest extent possible, the Alliance accommodates emerging issues to achieve a "best for Program" outcome which considers the interests of all parties. • Risk is managed through the allocation of management reserve. • Procurements are executed by the Participant best placed to do so; where this is one of the Industry Participants it is done in accordance with their processes and procedures. • 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: • Ensuring that the Alliance participants and their sub contractors have access to appropriately skilled and experienced labour for effective management of the project, building and testing the ships. • 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 properly sustained through life. • **Ensuring that Navantia's production drawings are able to meet the requirements of the three shipyards in Australia while minimising the impact on production for the shipyards.** • **Managing expectations about changes to the existing platform design in order to avoid design changes which are not essential. Design changes can have significant cost and schedule implications.**

Current Status	**Cost Performance** **Program expenditure in Financial Year 2009-10 was less than budgeted due to a combination of factors. Foreign Military Sales expenditure was high due to improved schedule performance. However, lower than planned expenditure by the Industry Partners together with savings made in Foreign Currency gains resulted in an overall under expenditure.** **Schedule Performance** Progress towards achievement of planned in service dates for the three ships and their support system is as scheduled. **Full production started on schedule at ASC and Forgacs. The commencement of BAE production was delayed as a result of delays in contract award. Full block production was underway at all shipyards on 4 March 2010.** The three ships are contracted for delivery in December 2014, March 2016 and June 2017 respectively. **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 contracted and RAN's 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 Approvals

Approval	Original Planned	Achieved	Variance
First Pass	NA	May 05	NA
Second Pass	Jul 07	Jun 07	(1)

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
AWD Alliance (ASC AWD Shipbuilder Pty Ltd and Raytheon Australia Pty Ltd)	3 AWDs and support systems	Variable with Pain/Gain Share	Alliance	Oct 07
Navantia	Platform Design	Fixed with indices escalation	Alliance based	Oct 07
US Government	3 Aegis Combat Systems	FMS	FMS	Oct 05 [1]

Note [1]: The original FMS contract was signed as part of SEA 4000 Phase 1 for initial engineering services. Subsequent scope changes, including the acquisition of the Aegis Combat System, were transferred to SEA 4000 Phase 3 in July 2007.

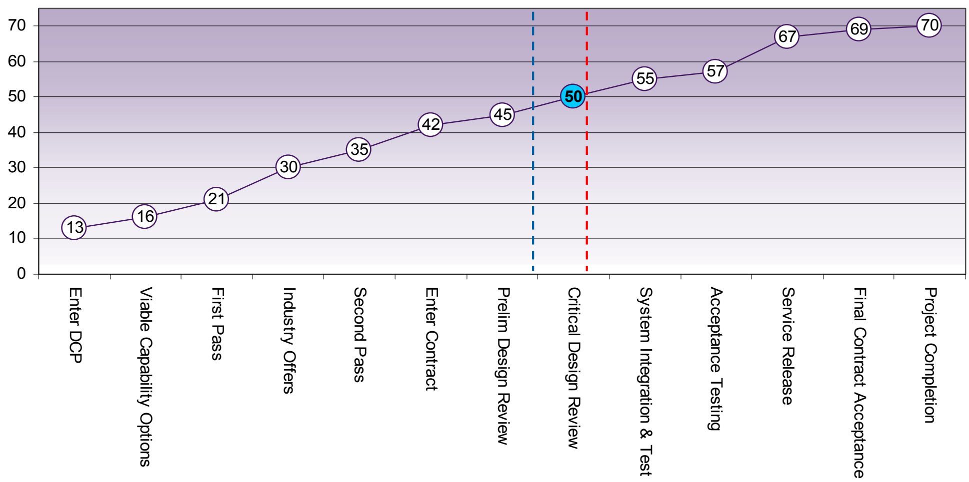
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: Critical Design Review	Benchmark	7	7	7	8	7	7	7	50
	Current Project	7	7	8	8	7	7	7	51
	Explanation	Requirement score was increased to 8 following the successful completion of the Support System Detailed Design Review in June.							

Project Stage	Total Benchmark Score	Total Current Score
Critical Design Review	**50**	**51**



2008-09 DMO MPR Status - - - - -

2009-10 DMO MPR Status - - - - -

DMO REPORT

Section 2 – Financial Performance –

2.1 Project Budget History

Date	Description	Base Date $m		Current $m	Contractor	Notes
Jun 07	Original Approved	7,207.4		7,207.4		
		7,207.4		7,207.4		
Jun 10	Price Indexation			**854.8**		
Jun 10	Exchange Variation			**(322.1)**		
Jun 10	**Total Budget**	**7,207.4**		**7,740.1**		

2.2 Project Expenditure History

Date	Description	Base Date $m		Current $m	Contractor	Notes
Prior to Jun 09			**441.6**		**AWD Alliance**	
			188.2		**Navantia**	
			469.1		**US Government**	
			76.3		**Other**	**1**
				1,175.4		
FY to end Jun 10			**545.0**		**AWD Alliance**	
			75.8		**Navantia**	
			268.4		**US Government**	
			29.1		**Other**	**1**
				918.2		
Jun 10	**Total Expenditure**			**2,093.6**		
Jun 10	**Remaining Budget**			**5,646.5**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
AWD Alliance	Oct 07	4,323.1	3	**4,382.4**	3	Air Warfare Destroyer	
Navantia	Oct 07	373.6	N/A	**370.1**	N/A	Platform System Design and Services	
US Government	**Oct 05**	**842.7**	3	**1,234.5**	3	Aegis Weapon System	**2,** 3

Major equipment received and quantities to 30 Jun 10

All major design reviews completed. Full block production underway at all three shipyards

Notes

Note 1: **Other expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts.**

Note 2: **The value of the base date at signature has decreased by $416.6m from the figure of $1,259.3m disclosed in the 2008-09 DMO MPR. The previous years figure was derived by adding together the value of the original FMS case (related SEA 4000 Phase 1 and 2), three amendments and the Alliance Funded component related to this FMS case. Upon further investigation, the methodology applied was incorrect resulting in an overstatement. Consequently, the methodology has been revised to now reflect the contracted base date value of only the Phase 3 component.**

Note 3:	**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 2010 excludes a current Alliance liability of $168.5m.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The End of Year Position was $918 million. This was a good result and reflects a stable position against forecasts from early 2010. The variance against the original 2009 Budget Estimate of $977 million was due to a slow start in block production, avoidance of Alliance management reserve expenditure (good) and a $43 million Forex gain.**
			Overseas Industry	
		(11.6)	Local Industry	
			Brought Forward	
		(43.0)	Cost Savings	
			FOREX Variation	
		(4.3)	CoA Processes	
977.1	**918.2**	**(58.9)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Function	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]**
Variance Explanations	Note[1]: The PDR was conducted as scheduled in Dec 08 and resulting actions completed as scheduled by Feb 09. **Note[2]: The CDR was conducted as scheduled in Dec 09 and resulting actions completed as scheduled by Feb 10.**				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Integration	**Ship 1 Complete Hull Integration[1]**	**Dec 12**	**Dec 12**	**Dec 12**	**0**
	Ship 1 Start Combat System Light Off[2]	**Dec 13**	**Dec 13**	**Dec 13**	**0**
	Ship 2 Complete Hull Integration	**Mar 14**	**Mar 14**	**Mar 14**	**0**
	Ship 2 Start Combat System Light Off	**Mar 15**	**Mar 15**	**Mar 15**	**0**
	Ship 3 Complete Hull Integration	**Jun 15**	**Jun 15**	**Jun 15**	**0**
	Ship 3 Start Combat System Light Off	**Jun 16**	**Jun 16**	**Jun 16**	**0**
Acceptance	Ship 1 – Commencement of Category 5 Trials	Aug 14	Aug 14	Aug 14	0
	Ship 1 – Provisional Acceptance	Dec 14	Dec 14	Dec 14	0
	Ship 2 – Commencement of Category 5 Trials	Nov 15	Nov 15	Nov 15	0
	Ship 2 – Provisional Acceptance	Mar 16	Mar 16	Mar 16	0
	Ship 3 – Commencement of Category 5 Trials	Feb 17	Feb 17	Feb 17	0
	Ship 3 - Provisional Acceptance	Jun 17	Jun 17	Jun 17	0
Variance Explanations	**Note[1]: Complete Hull Integration is achieved when the last erection joint is structurally inspected and accepted.** **Note[2]: Start Combat System Light Off verifies the readiness of the first set of installed combat system equipment and authorises the commencement of CAT 4 testing.**				

3.3 Progress toward Initial Operational Capability

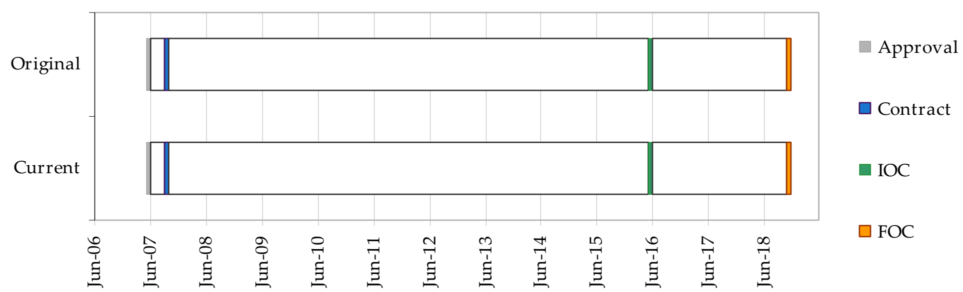
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Jun 16	Jun 16	0	N/A

3.4 Progress toward Final Operational Capability

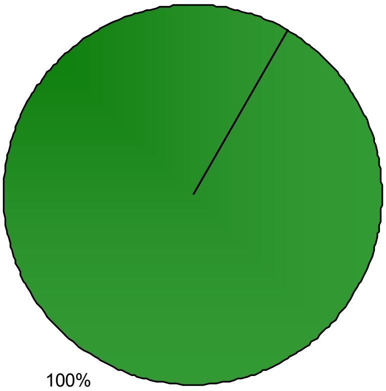
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Dec 18	Dec 18	0	N/A

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Jun 07	Jun 16	Dec 18



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	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 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	Remedial Action
Change: 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.**
Infrastructure: there are significant risks in the development of a green field shipyard: • Physical infrastructure. • IT Systems and tools. • Working practices and procedures.	**The construction of the shipyard has been completed and this risk has been re-assessed as a low risk.**
Design Maturity: the design of the AWD is based on the Navantia Platform System with an Australianised Aegis Combat System.	**Critical Design Review was conducted in December 2009 – this risk is no longer a major risk. The major risk associated with the Aegis is the integration.**
Integration of the Australianised Aegis Combat System. There is risk in achieving the integration of the **Combat Systems** solutions. The key issues driving this risk are: • The current version of the Aegis Weapon System has not been	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

previously integrated in the platform. • The selection of Electronic Warfare and Communications Systems solutions was timed to take advantages of technology developments. • Equipment selections may impact on the topside design. **Note: As the program moves into the build and integration phase the integration risk is being managed as a separate risk rather than part of the Design Maturity risk.**	Systems procurement strategies were developed with a wide range of stakeholder engagement. These strategies are aimed at ensuring that the customer will be satisfied with the selected solution and that the solution will have minimal impact on the platform design. **Electronic Warfare source selection has now been announced.** Other Communications equipment selections are undertaken in conjunction with quick look topside design studies, this will minimise the risk of impact to topside design.
Emergent Risks (risk not previously identified but have emerged during 2009-10)	
Description	Remedial Action
Production Efficiency may be compromised by skilled labour shortages, delays in deliveries of materials to the shipyards, and poor quality data from the designer.	**Action has been taken to improve efficiencies in the shipyards by embedding resident teams from both the Alliance and Navantia with access to the overseas design authority. Formal review processes have been implemented to manage work flow.**
Certification requirements 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 may result in poor quality product, delays or changed requirements.	**The performance of some subcontractors has required active management and intervention, with resultant improvements. Embedding Alliance staff in block subcontractors premises will provide management oversight and the ability to address and resolve issues quickly.**
The Indexation Gap between ABTIA and Platform System Design contract escalation obligations and the fixed of indexation creates cost risk for the AWD Program.	**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. The Program is working with Defence Support Group to proactively manage the delivery of support facilities.**

4.2 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.	**The Project Certification Plan has now been finalised and agreed with the RAN. This issue has been retired.**
The release of design information from the US Navy may not be sufficient to satisfy regulatory requirements.	**The Program is working with the US Navy to ensure that the Program needs are understood and addressed within the bounds of release-ability issues. Mitigation plans are being developed to address the situations where information will not be released.**
Design changes are required to meet emerging requirements.	**The Program is working through the three Star Project Management Steering Group to manage the introduction of change to the program and its impact on cost and schedule.**

The division of technical assistance required from the US Navy for the FMS case between the Alliance and the Program office needs definition.	**A working agreement is in place between the Alliance and the Program office which addresses the use of technical assistance.**

4.3 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category of Systemic Lessons
Phase 3 commenced with the formation of the Alliance, a new organisational structure. Alliance based contracting offers significant advantages over traditional contracting methods but it must be recognised that it takes time and effort to develop the culture necessary to achieve improved outcomes. Visible high level management commitment is required from all parties. 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 was originally located in both Canberra and Adelaide with separations in functions and personnel. With the formation of the Alliance, the separate locations became an issue to the effective operation of the Program Office. The establishment of a single location in Adelaide involved considerable effort and a resultant loss in knowledge of staff who did not relocate. In hindsight, 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**

PROJECT DATA SUMMARY SHEET[114]

AIRBORNE EARLY WARNING AND CONTROL AIRCRAFT
AIR 5077 Phase 3
Also known as **'Project Wedgetail'**

This project was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Air Force	New	ACAT I	Dec 00	Boeing (US)

30 June 2010	Name
General Manager	Mr Warren King
Division Head	AVM Chris Deeble
Branch Head	Mr Bill Spencer
Project Director	AVM Chris Deeble

History	Name	Start	End
Project Manager	AVM Chris Deeble	Jul 06	Current
	Mr Kim Gillis	Apr 06	Jun 06
	AVM (Retired) Norm Gray	Jul 04	Mar 06
	AVM Norm Gray	Jan 01	Jun 04
	Mr John Popham	Jan 99	Dec 00
	GPCAPT Paul Ekin-Smyth	Dec 97	Dec 98

1.2 Project Context

Project	Explanation
Description	The **$3,883 million** Air 5077 Phase 3 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.

[114] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131

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 AEWC 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.**
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 Royal Australian Air Force (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 has been established, which will include a radar collaborative research and development program. A contract for the collaborative program was signed on 21 June, and is expected to be completed by the end of 2011.** **Further technical challenges in the development of the Electronic Support Measures (ESM), Electronic Warfare Self Protection (EWSP) and ground support**

	systems are also expected and resolution of these will drive the schedule to final acceptance. Overall technical and schedule risk remains high.
Current Status	**This was a Project of Concern in 2009-10.** **Cost Performance** The project remains within current approved budget. **As a result of the commercial settlement, the Commonwealth received compensation from Boeing for project delays and radar performance shortfalls. The Commonwealth then released all payments previously withheld and resumed payments in accordance with the revised payment schedule.** **Schedule Performance** **As a result of the commercial settlement, Boeing made two aircraft available to the Air Force in November 2009 for familiarisation activities. Boeing continues to complete its obligations under the contract required for the Commonwealth to formally accept the first two aircraft in an 'initial' configuration capable of supporting training and peacetime national tasking. Initial Acceptance of the first two aircraft occurred in April 2010. A third aircraft was accepted in the initial configuration in June 2010.** **Boeing plans to deliver the first aircraft in a 'final' configuration, capable of supporting all operational tasking short of high-end war fighting, in December 2010, in which case the total delay to this milestone against the original contract baseline would be 49 months. However, Defence assesses that there is 4-6 months risk to this date.** **Capability Performance** **An Integrated Mission Test was conducted in early December 2009 to determine the level of integrated system stability in a representative operating environment. While there has been some improvement in radar subsystem stability, integrated system stability remains mediocre. However, this is expected to improve steadily over time as the software is refined.** **A significant amount of acceptance testing activity is still to be completed with an immature ESM sub system. The Progress towards Final Acceptance will be challenging with a number of future test blocks still to be completed covering both the ESM and other systems that failed to pass earlier testing.**

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	Dec 97	N/A
Second Pass	N/A	Dec 00	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
The Boeing Company	Provision of an AEW&C capability comprising four aircraft and associated supplies and support.	Variable	DEFPUR 101	Dec 00
US Government	**AEW&C Hardware and US Air Force (USAF) support**	**FMS**	**FMS**	**Jul 01**

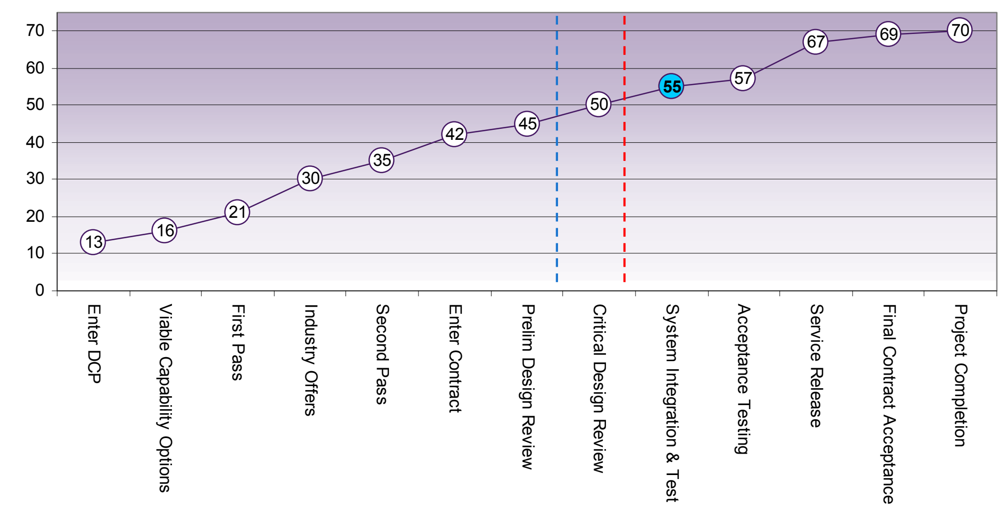
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage:	Benchmark	7	8	8	8	8	8	8	55
System Integration and Test	Current Project	**7**	**7**	**7**	**8**	**8**	**6**	**9**	**52**
	Explanation	• **Cost: While major risks in subsystem and integrated system performance remain to be retired, overall estimate at completion is forecast to be within current contingency.** • **Requirement: System Integration testing has yet to be completed.** • **Commercial:** The Commonwealth assesses that, **despite striking a revised schedule baseline under the Settlement Deed, there is 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 two aircraft.**							

Project Stage	Total Benchmark Score	Total Current Score
System Integration and Test	**55**	**52**



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Dec 97	Original Approved	2,170.4		2,170.4		1
Jul 98	Real Variation – Transfers	(170.4)	(170.4)			2
Nov 99	Real Variation – Transfers	807.9	807.9			3
Apr 01	Real Variation – Budgetary Adjustments	(166.0)	(166.0)			4
Mar 02	Real Variation – Transfers	(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 – Transfers	(14.0)	(14.0)			8
Jun 05	Real Variation – Transfers	(1.0)	(1.0)			8
Aug 05	Real Variation – Budgetary Adjustments	(4.8)	(4.8)			9
		671.0		**671.0**		
Jun 10	Price Indexation			**1068.4**		10
Jun 10	Exchange Variation			**(26.3)**		
Jun 10	**Total Budget**	**2,841.4**		**3,883.5**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09		**1908.8**	**2,321.7**		**Boeing**	
			89.5		**US Government**	
			116.7		**Other**	**11**
				2,527.9		
FY to Jun 10		**188.0**	**207.5**		**Boeing**	
			3.8		**US Government**	
			56.9		**Other**	**12**
				268.2		
Jun 10	Total Expenditure			**2,796.0**		
Jun 10	Remaining Budget			**1,087.5**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
Boeing	Dec 00	2,257.7	4	**2,606.0**	6	Boeing 737-700 IGW Aircraft	
US Government	**Jul 01**	**97.9**	**N/A**	**139.5**	**N/A**	**AEWC Hardware and USAF Support**	

Major equipment received and quantities to 30 Jun 10	
Initial Acceptance of three aircraft capable of supporting training and peacetime national tasking. Engineering and maintenance arrangements established.	
Notes	
Note 1:	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
Note 2:	Transfer to Project Olympus.
Note 3:	Merger of Project Olympus, which had been established separately to acquire classified elements of the AEW&C capability.
Note 4:	Variation for overfunding of indexation and foreign exchange at time of approval.
Note 5:	Transfer to supplement Overseas Allowances.
Note 6:	Increased scope, approved by Government in April 2004, for the acquisition of the 5th and 6th aircraft.
Note 7:	Administrative Savings harvest.
Note 8:	Transfer to Facilities.
Note 9:	Skilling of Defence Industry harvest.
Note 10:	**$388.1m of this amount is relates to a real cost increase for contract price indexation variations beyond the supplementation provided by Government.**
Note 11:	**Out of the $116.7m expenditure up to Jun 09 the majority of expenditure is associated with Independent Verification and Validation Services of $38.5m, In Service Support Contract $23.3m and project management costs of $14.3m. In Service Support Contract Expense element is $11.3m to date.**
Note 12:	**Out of the $56.9m expenditure for this FY it is associated with: Facilities $27.3m, In Service Support Contract $14.4m, Independent Verification and Validation Services of $6.8m and minor project expenditure.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(1.1)	FMS	**The variance factor in relation to the Overseas Industry reflects scheduled milestones against the Boeing contract for this FY slipping into FY10/11 and lower than expected actual costs incurred against the In Service Support Contract (ISSC) as Defence Resource Management Program (DRMP) funds were utilised and the Initial Support Period (ISP) part funded element has been slipped into FY10/11. Infrastructure costs associated with AEW&C Tindal & Williamtown Facilities have been brought forward and the funds transferred to Defence Support Group (DSG) in FY09/10.**
		(84.5)	Overseas Industry	
		0.0	Local Industry	
		27.3	Brought Forward	
		0.0	Cost Savings	
		0.0	FOREX Variation	
		(3.9)	Commonwealth Delays	
330.4	**268.2**	**(62.2)**	Total Variance	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Preliminary Design	Airborne Mission System	Jul 02		Jun 02	(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)
Variance Explanations	Variances to Design Reviews were due to various minor causes.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Integration	Airborne Mission System	Mar 06	**Jun 10**	**Aug 10**	**54**
	Operational Mission Simulator	Mar 06	**Dec 10**	**Jan 11**	**59**
	Operational Flight Trainer	Dec 05	Dec 05	Dec 05	0
	Mission Support System	Jul 06	Oct 08	**Jul 10**	**48**
	AEW&C Support Facility	Dec 06	**Dec 10**	**Jan 11**	**49**
Acceptance	Airborne Mission System	Nov 06	**Oct 10**	**Mar 11**	**52**
	Operational Mission Simulator	May 06	**Mar 11**	**Apr 11**	**59**
	Operational Flight Trainer	Mar 06	Nov 08	Feb 09	35
	Mission Support System	Aug 06	**Sep 10**	**Oct 10**	**50**
	AEW&C Support Facility	Mar 07	**Mar 11**	**Jul 11**	**52**
Variance Explanations	Operational Flight Trainer Acceptance Test and Evaluation – Disagreement between Boeing and Commonwealth over specification requirements. **Mission Support System – System Integration Test and Evaluation, previously reported as completed in May 09, has been resumed as a result of deficiencies subsequently revealed during integrated mission testing.** All other items – Problems associated with sub-system integration; mission computing, radar and electronic support measures maturity and stability; and supplier hardware availability. **Note: The Current Planned dates reflect the revised schedule agreed as part of the Settlement Deed, whereas the Forecast dates and associated Variances reflect Defence's assessment of when completion is likely to be achieved.**				

3.3 Progress toward Initial Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Dec 07	Dec 11	48	Delays to system delivery due to problems associated with sub-system integration, supplier hardware availability, radar and electronic support measures maturity, and aircraft modification.

Wedgetail

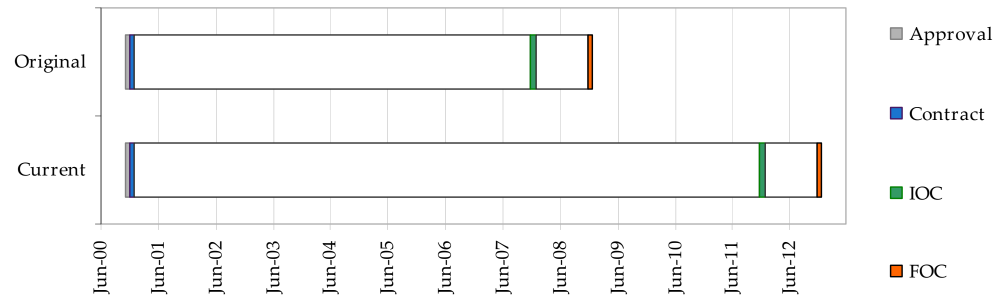
DMO REPORT

3.4 Progress toward Final Operational Capability

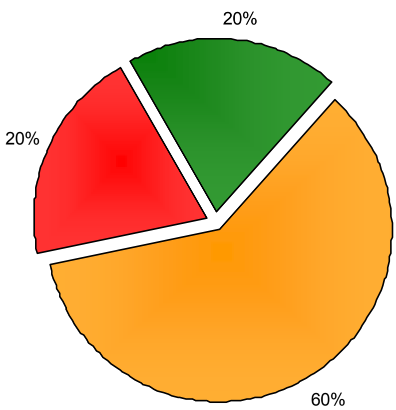
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Dec 08	Dec 12	48	As per explanation for table 3.3.

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Dec 00	Dec 11	Dec 12



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	Green: **Training requirements and the ability to deploy the system are expected to be met in full.**
	Amber: **Performance deficiencies in some elements of the mission system pose risk to the achievement of full operational capability but are expected to be remediated by Boeing before final delivery.**
	Red: **Performance deficiencies in critical elements of the mission system currently pose risk to achievement of full operational capability. Most deficiencies are expected to be remediated by Boeing before final delivery, but some radar deficiencies will remain at final delivery.**

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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.**
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
Nil	**Nil**

4.2 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 in the Settlement Deed,** schedule delays continue to be encountered. 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.**	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.

DMO REPORT

4.3 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 5 – Lessons Learned

5.1 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**

PROJECT DATA SUMMARY SHEET[115]

MULTI ROLE HELICOPTER

AIR 9000 Phase 2, 4 and 6

This project was first reported in the 2008-09 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Navy Australian Army	Replacement	ACAT II	Aug 04	Australian Aerospace

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	MAJGEN Tony Fraser
Branch Head	BRIG Charles Crocombe
Project Director	COL Andrew Mathewson

History	Name	Start	End
Project Manager	COL Andrew Mathewson	Jan 08	Current
	Mr Mark Remmers	Jul 01	Jan 08

1.2 Project Context

Project	Explanation
Description	The **$3,755** million Multi-Role Helicopter (MRH) Program is a key component of the Australian Defence Force (ADF) Helicopter Strategic Master Plan, AIR 9000, 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 Army, Phase 4 will replace Army's Black Hawk helicopters in the Air Mobile and Special Operations roles, and Phase 6 will replace Navy's Sea King helicopters in the Maritime Support Helicopter role. All three phases are grouped under the Air 9000 MRH Program.

[115] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

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 **Royal Australian Navy'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** 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, and 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 incorporates 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. Training Aids to support the (mature) sustainment training capability such as Full Flight and Mission Simulator and Ground Training Devices will be procured under separate contracting arrangements. A contract for the design, development and delivery of two MRH90 Full Flight and Mission Simulators was signed with CAE Australia in December 2007. Sustainment of the Full Flight and Mission Simulators will be under the existing ADF-CAE Australia simulator sustainment contract. Further ground-based training devices will be subject to supply and support under a separate procurement process **to be developed during 2010**. A training service contract will also be let to provide Air 9000 mature stage training using the Full Flight and Mission Simulator and Ground Training Devices procured by Air 9000.
Uniqueness	The MRH90 aircraft is based upon the German Army variant of the NH90 Troop Transport Helicopter. The MRH90 is a four-bladed, twin engine, primarily composite structure, military utility 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 certification of the MRH90 and its systems is based on prior certification programs run for other NH90 variants, primarily the German Army variant. The MRH Program includes four prime contracts with two prime contractors. Acquisition, Sustainment and Program Agreement contracts are with Australian Aerospace, and **the** Full Flight Mission Simulator Acquisition contract is with CAE Australia. Future contracts for Ground Training Devices and Sustainment Training have not yet been put in place. The management of this number of inter-related contracts provides a high level of project complexity. The MRH Program is providing an MRH90 capability to two main users - Army and Navy. The capability delivery complexity this introduces has been mitigated through an agreement between Chief of Army and Chief of Navy for the Director of Aviation Capability

	Implementation – Army to manage transition into service for both Army and 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	Insufficient Flying Rate of Effort. Since In-Service Date (ISD) (December 2007), the **reliability of some** MRH90 systems has been sub-optimal. Flying rate of effort has been significantly reduced as a result of varying aircraft systems' unserviceability. **The low rate of effort has impacted the training of MRH90 aircrew and some of the planned test and system validation activities.** Key contractual and capability milestones have been impacted by the reduced Flying Rate of Effort. **Aircraft System Maturity. Aircraft system immaturity has affected the certification schedule of the MRH90. Aircraft are being delivered in progressive capability configurations as systems are matured and options introduced in the Phase 4/6 contract change, are certified for use in the aircraft. Several aircraft components, including the cabin floor panels and windscreens will require product improvement to meet the contracted capability outcomes.** **Engine failure. A failure of an engine on an in-service MRH90 occurred in flight on 20 April 2010. MRH90 flying operations were temporarily suspended pending the outcome of an investigation into the cause of the failure. This suspension in flying has interrupted testing and aircrew training activities. The suspension remained in place at 30 Jun 10; however, the Industry and Defence investigation was nearing completion with an expectation that flying operations would recommence shortly into the new financial year.** **Aircrew Information Set. The current version of the NH90 common Aircrew Information Set has been assessed as unsuitable for Australian operations. The MRH Project Office is exploring options with Industry for the development and provision of a dedicated Australian Flight Manual and Flight Crew Checklist. These dedicated documents are intended to be interim documents only as the DMO will continue to work with Industry to bring the common Flight Manual and Flight Crew Checklist to a standard suitable for Australian operations. A key aim of the MRH System is to maintain commonality with the general NH90 program as far as is practicable.**
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** Major **contract** milestones remain on schedule **and the project remains on schedule to deliver the final aircraft in mid-2014. However, as discussed above, the lower than expected flying rate has delayed some testing and aircrew training activities which has led to** the Navy Initial Operational Capability (IOC) and the Army IOC **milestones being** delayed by approximately **12-18** months **to June 2011 and October 2012 respectively.** To date, **eleven MRH90** helicopters have been accepted by the DMO and are operating with Army's 5th Aviation Regiment in Townsville. These first **eleven** 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 **2010**. **Capability Performance**
	Following achievement of ISD (and acceptance of the first five aircraft) with agreed partial achievement of the contracted MRH capabilities, there has been significant work by both Industry and the MRH Program Office 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.

	Aircraft system reliability and support system issues have contributed to a poor flying rate **since ISD**. This poor flying rate has delayed aircraft system development and training. These issues **are generally common with the entire NH90 fleet and** are being addressed, and are unlikely to affect the Final Operational Capability.

1.3 Project Approvals

Approval		Original Planned	Achieved	Variance
First Pass	Phase 2	NA	NA	N/A
	Phase 4/6	NA	Apr 06	N/A
Second Pass	Phase 2	NA	Aug 04	N/A
	Phase 4/6	NA	Apr 06	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
Australian Aerospace	Supplies to be delivered under the Acquisition contract are as follows: • 46 MRH90 aircraft; • Electronic Warfare Self Protection Support System; • Ground based Mission planning and Management System; • MRH Software Support Centre; • an integrated MRH Instrumentation System; • a training system.	VARIABLE	ASDEFCON (Strategic)	Phase 2 Jun 05 Phase 4/6 Jun 06
CAE Australia	**Supplies to be delivered are:** • **Two Full Flight and Mission Simulators with associated facilities**	**VARIABLE**	**ASDEFCON (Complex)**	**Dec 07**

1.5 Other Current Project Phases or Sub-Projects

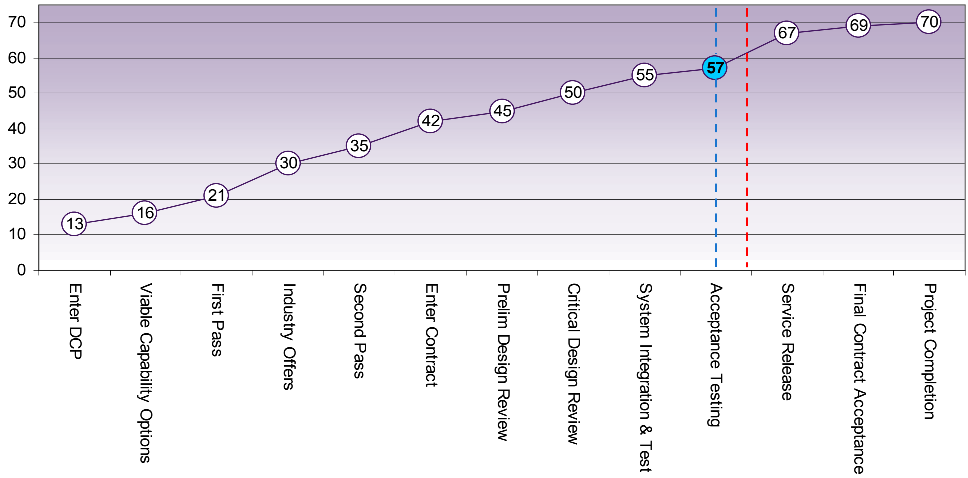
Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes: Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: Acceptance Testing	Benchmark	8	8	8	8	9	8	8	57
	Current Project	10	8	**9**	8	**9**	8	**9**	**61**
	Explanation	• **Schedule: This attribute measures where in the project life cycle the project is with respect to delivering the ISD capability. The difference between the benchmark and current project score is due to the achievement of MRH90 ISD and because** the first **eleven** MRH aircraft and support systems **have been** accepted into service. • **Requirement: This attribute measures how well a requirement is being realised. The difference between the benchmark and current project score is due to 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. • **Operations and Support:** This attribute measures how prepared the project is to deliver an operating system. The difference between the benchmark and current project score is because the MRH System has commenced progressive transition from the acquisition environment to the in-service support and operational organisations.

Project Stage	Total Benchmark Score	Total Current Score
Acceptance Testing	57	**61**



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Apr 04	Original Approved	3.3		3.3		1
Aug 04	**Government Second Pass Approval**	953.9	953.9			
Jun 06	Real Variation – Scope	2,565.6	2,565.6			2
Oct 06	Real Variation – Transfers	(219.0)	(219.0)			3
Oct 08	Real Variation – Transfers	(20.0)	(20.0)			4
Oct 08	Real Variation – Scope	31.5	31.5			5
		3,312.0		3,312.0		
Jun 10	Price Indexation			**556.1**		
Jun 10	Exchange Variation			**(116.8)**		
Jun 10	**Total Budget**	**3,315.3**		**3,754.6**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09		921.2	**1020.8**		**Australian Aerospace**	
		22.9	**25.7**		**CAE Australia**	
			78.8		**Other**	**6**
				1125.2		
FY to Jun **10**		**335.9**	**394.5**		**Australian Aerospace**	
		41.5	**39.1**		**CAE Australia**	
			17.8		**Other**	**6**
				451.4		
Jun 10	**Total Expenditure**			**1576.6**		
Jun 10	**Remaining Budget**			**2178.0**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
Australian Aerospace	Jun 05	846.3	12	**2,495.1**	46	MRH90 Aircraft	**7**
			1		1	Electronic Warfare Self Protection Support System	
			0		1	MRH Software Support System	
			0		1	MRH Instrumented System	**8**
			2		22	Ground Mission Management **Centre**	**9**
CAE Australia	**Dec 07**	**186.2**	**2**	**187.2**	**2**	**Full Flight and Mission Simulator**	

Major equipment received and quantities to 30 Jun 10	
Eleven aircraft have been accepted by the Commonwealth. Engineering and maintenance arrangements established.	
Notes	
Note 1:	This project's original DMO budget amount is that prior to achieving Second Pass Government Approval.
Note 2:	Incorporation of AIR 9000 Phase 4 (Black Hawk Upgrade/Replacement) and AIR 9000 Phase 6 (Maritime Support Helicopter).
Note 3:	The funding related to facilities elements of the project that will be managed by DSG.
Note 4:	Transfer to DSG for Facilities Infrastructure.
Note 5:	RCI funding for Full Flight and Mission Simulator Facilities.
Note 6:	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.
Note 7:	**$2,495.1m includes the total current contract price (Base date exchange rates) including the Aircraft and all Sub-Systems listed in the table at section 2.3.**
Note 8:	**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.**
Note 9:	**Numbers have increased from 2 Deployable Ground Mission Management Systems (GMMS) to 4 Fixed GMMS, 7 Deployable GMMS, 1 Reduced, 9 Light and 2 interim GMMS.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The total variance is primarily due to the non achievement of two milestones associated with the acceptance of MRH aircraft #12 and #13. These aircraft were not accepted due to the suspension of flying operations following the engine failure in Apr 10. Acceptance of these aircraft will occur only following resumption of flying operations. The remaining variance is due to foreign exchange gains on payments made within the financial year**
			Overseas Industry	
		(19.1)	Local Industry	
			Brought Forward	
			Cost Savings	
		(4.9)	FOREX Variation	
			Commonwealth Delays	
475.4	**451.4**	**(24.0)**	**Total Variance**	

DMO REPORT

MRH90 Helicopters

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Requirements	MRH aircraft - Phase 2	Aug 05	Oct 05	Sep 05	1
	MRH aircraft - Phase 4/6	Apr 07	Apr 07	May 07	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**
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**
Variance Explanations	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. **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)
Test Readiness Review	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**
	Full Flight and Mission Simulators	**Jun 11**	**Feb12**	**May 12**	**10**
Acceptance	Type Acceptance Review Special Flight Permit 1	Oct 07		Dec 07	2
	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 10**	**24**
	Full Flight and Mission Simulators	**Mar 13**	**Oct 13**	**Jan 14**	**10**
	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 10**	**4**
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 #11 (Most recent)	**Nov 09**	**Dec 09**	**Mar 10**	**4**
	MRH aircraft #12 (Next aircraft)	Dec 09	**Feb 10**	**Jul 10**	**7**
	MRH aircraft #46 (Final aircraft)	Jul 14	Jul 14	Jul 14	0
Variance Explanations	The first Airworthiness Board (for a Special Flight Permit) was conducted in **November 2007** and granted in December **2007**. 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.** **Acceptance of aircraft broadly remains on schedule, although some aircraft have been accepted several months behind schedule. Acceptance of MRH#11 was delayed due to: delays to previous aircraft, the 2009/2010 Christmas and New Year stand down periods, and the use of this aircraft to perform aeromedical equipment compatibility testing before acceptance. Acceptance activities on future aircraft (MRH#12) are currently pending resolution of an engine failure incident that occurred on an in-service aircraft on 20 April 2010. This is expected to be resolved in July 2010.** **MRH Instrumentation System. 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.** **Delays experienced through the FFMS design phase have flowed into development and production activities.**				

3.3 Progress toward Initial Operational Capability

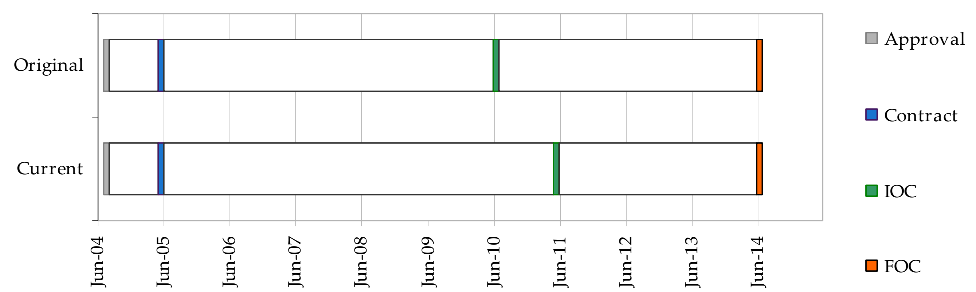
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC (Navy)	Jul 10	**Jun 11**	**11**	**A delay to IOC – Navy is due to the low achieved Rate of Effort and its effect on aircrew training.**
IOC (Army)	Apr 11	**Oct 12**	**18**	**A delay to IOC – Army is due to the low achieved Rate of Effort and its effect on aircrew training.**

3.4 Progress toward Final Operational Capability

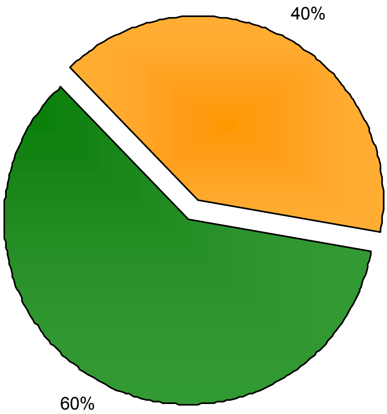
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC (Navy)	Dec 12	Dec 12	0	N/A
FOC (Army)	Jul 14	Jul 14	0	N/A

Schedule Status as at 30 Jun 10

Approval		IOC		FOC	
Phase 2	Aug 04	IOC (Navy)	**Jun 11**	FOC (Navy)	Dec 12
Phase 4/6	Apr 06	IOC (Army)	**Oct 12**	FOC (Army)	Jul 14



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	**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 inability to generate an adequate level of flying Rate of Effort, due in part to reliability issues with some aircraft systems and the inadequacy of the aircrew publications, is having an adverse effect on the training of sufficient numbers of MRH90 aircrew. This has led to a delay in the initial operational capability milestones.** **Red:** **N/A**

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the schedule to achieve Australian Military Type Certificate and Service Release in 2009 will be adversely affected the inability to generate the required aircraft rate of effort.	**This risk was realised and is now an issue. This issue is listed in Section 4.2 Major Project Issues.**
There is a chance that the schedule to achieve Australian Military Type Certificate and Service Release in 2009 will be adversely affected by failing to achieve a sufficiently mature MRH System.	**This risk was realised and is now an issue. This issue is listed in Section 4.2 Major Project 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.**

Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
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.**
There is a chance that IOR 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, and 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 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.**

4.2 Major Project Issues

Description	Remedial Action
The schedule to achieve Australian Military Type Certificate and Service Release in 2010 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 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.**
Insufficient breakdown spares to support MRH90 operations.	**This issue has been retired**
Interactive Electronic Technical Publications inadequate to support maintenance activities and flight operations.	**This issue has been retired**

4.3 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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**

PROJECT DATA SUMMARY SHEET[116]

BRIDGING AIR COMBAT CAPABILITY

AIR 5349 Phase 1

This project was first reported in the 2008-09 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Air Force	Replacement	ACAT II	Mar 07	US Government

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Axel Augustin
Project Director	GPCAPT Graham Edwards

History	Name	Start	End
Project Manager	Mr Simon Barnes	Mar 08	Current
	Mr Stephen MacDonald	Feb 07	Feb 08

1.2 Project Context

Project	Explanation
Description	The **$3,629 million** Project Air 5349 Phase 1 will acquire 24 Boeing F/A-18F Super Hornets, associated weapons, support, and training systems to establish a bridging air combat capability.
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, a joint sitting of the Expenditure Review Committee and National Security Committee of Cabinet approved the acquisition and sustainment of 24 F/A-18F Super Hornet aircraft and associated weapons, support, and training systems.

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116 Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

	Under Project Air 5349 Ph 1, 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 US. 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. Weapons for the Super Hornet aircraft are being acquired under a separate project phase, Air 5349 Phase 2. Integration of weapons onto aircraft is within the scope for Phase 1.
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 Initial Operational Capability date is significantly shorter than for other major aerospace acquisitions. The majority of acquisition activity is being undertaken through a US FMS Sales Case.
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.**
Current Status	**Cost Performance** The project remains within its current approved budget. **Schedule Performance** The project remains on schedule in order to meet Initial Operational Capability (IOC) by December 2010 and Final Operational Capability (FOC) by December 2012 noting the challenges discussed above. **Air 5349 Phase 1 achieved a number of significant milestones in this reporting period including the initial delivery of five aircraft (one month ahead of schedule with one additional aircraft) and achievement of the In Service Date. The necessary Engineering and Maintenance arrangements to support aircraft operations within Australia from April 2010 have also been established.** **Capability Performance** **The initial Super Hornet Airworthiness Board was successfully held 12 Feb 10. Subsequently, a Special Flight Permit (SFP) was issued by Chief of Air Force on 25 Feb 10 for Super Hornet operations. The first five Super Hornet aircraft were delivered to Amberley 26 Mar 10 and initial flying operations have commenced within Australia.**

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	Mar 07	Mar 07	0
Second Pass	Mar 07	Mar 07	0

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
US Government	Procurement of F/A-18F Super Hornet Aircraft, Training and Support Systems	FMS	FMS	May 07

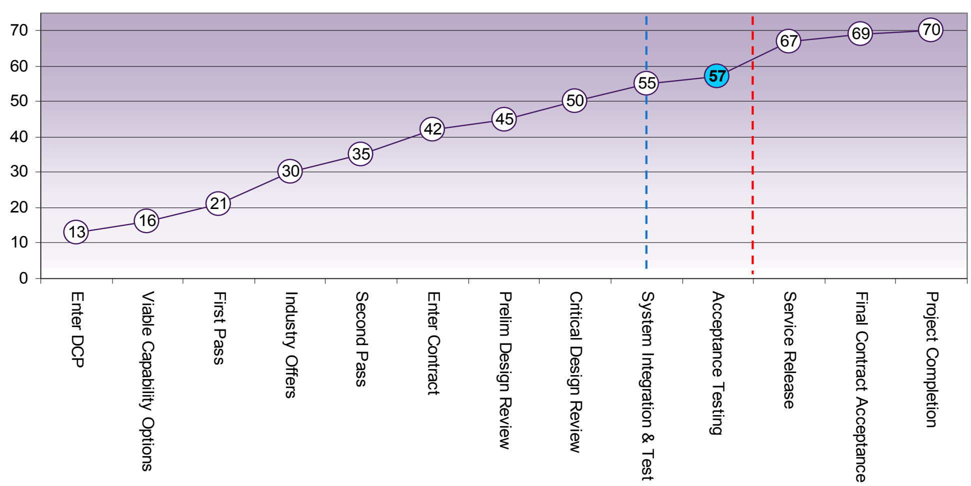
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
Air 5349 Phase 2	Phase 2 will acquire within-visual-range air-to-air missiles, a new variant of a beyond-visual-range air-to air missile, and medium-range air-to-surface missiles for the Australian Super Hornet. New infra-red flares are also being acquired for the Australian Super Hornet.

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage: **Acceptance Testing**	Benchmark	**8**	**8**	**8**	**8**	**9**	**8**	**8**	**57**
	Current Project	**10**	**8**	**9**	**9**	**9**	**8**	**9**	**62**
	Explanation	• **Schedule: In Service Date has been achieved.** • **Requirement: The requirement has completed "Design" and is currently being "Tested".** • **Technical Understanding: AIR5349 Ph 1 technical solution and support aspects are understood and have been transferred to operate and support the Aircraft.** • **Operations and Support: AIR5349 Ph 1 has commenced transitioning of the operating system.**							

Project Stage	Total Benchmark Score	Total Current Score
Acceptance Testing	**57**	**62**



2008-09 DMO MPR Status - - - - | 2009-10 DMO MPR Status - - - -

DMO REPORT

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Mar 07	Original Approved	3,545.8		3,545.8		
Jul 08	Real Variation – Transfers	(33.3)	(33.3)			1
		(33.3)		(33.3)		
Jun 10	Price Indexation			**351.4**		
Jun 10	Exchange Variation			**(234.8)**		
Jun 10	**Total Budget**	**3,512.5**		**3,629.1**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			**1,213.9**		**US Government**	
			61.5		**Other**	**2**
				1,275.4		
FY to Jun 10			**924.5**		**US Government**	
			25.7		**Other**	**2**
				950.2		
Jun 10	**Total Expenditure**			**2,225.6**		
Jun 10	**Remaining Budget**			**1,403.5**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
US Government	May 07	2,850.3	24	**2,850.5**	24	F/A-18F Super Hornet Aircraft	**3**

Major equipment received and quantities to 30 Jun 10

Five aircraft have been delivered. Engineering and maintenance arrangements established.

Notes

Note 1: Guidance transfer to DSG Facilities element.

Note 2: Other expenditure comprises: operating expenditure, contractors, contingency, other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.

Note 3: In late June 2010, Modification 2 to the FMS Case was released by the US Government reflecting a reduction of $US 225m to the FMS Case as a result of savings achieved by the US Navy in negotiating the aircraft price with The Boeing Company.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(8.0)	FMS	**Variance is as a result of foreign exchange gains on four quarterly FMS payments made through 2009/10, offset by a higher than expected June 2010 quarterly FMS payment required to align with US FMS policy. Further variability was due to delays associated with an FMS purchase for aircraft bomb racks and other Project activity not occurring as programmed.**
			Overseas Industry	
			Local Industry	
		56.8	Brought Forward	
			Cost Savings	
		(58.8)	FOREX Variation	
		(5.0)	Commonwealth Delays	
965.2	**950.2**	**(15.0)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Software Design	Aircraft Software	Feb 08		Feb 08	0
System Requirements	Aircraft	N/A		N/A	N/A
	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
Preliminary Design	Aircraft	N/A		N/A	N/A
	Automated Maintenance Environment	Nov 08		Nov 08	0
	Electronic Warfare Data Library	Oct 08		Dec 08	2
	Tactical Operation Flight Trainers	Note 1			
	Low Cost Trainers	Note 1			
	Integrated Visual Environment Maintenance Trainers	Note 1			
Critical Design	Aircraft	Jul 08		Sep 08	2
	Automated Maintenance Environment	Feb 09		Mar 09	1
	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
Variance Explanations	• No Aircraft Systems Requirement Review or Preliminary Design Review for the project as the aircraft is a MOTS design. • The Aircraft Critical Design Review was delayed due to the Instrument landing System integration requiring re-design. • 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 • The Critical Design Review for the Automated Maintenance Environment slipped by one week. • 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. Note 1: Preliminary and Critical Design Reviews were combined to meet delivery targets.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Integration	Instrument Landing System Antennae Qualification	Jul 08		May 09	10
	Instrument Landing System - Aircraft Integration Test	Jan 09 – Mar 09		May 09 – June 09	3
	Aircraft Software Integration	Mar 09 – Jul 09		Mar 09 – Dec 09	5
	Electronic Warfare Data Library	Mar 09		**May 10**	14
	Automated Maintenance Environment	Aug 09		Aug 09	0

Acceptance	**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 – Nov 10**	**8 - Note 1**
	Electronic Warfare Data Library	May 09		**Jun 10**	**13 - Note 2**
	Automated Maintenance Environment	Aug 09		Aug 09	0
	Tactical Operation Flight Trainers #1 (On-Site Test)	**Mar 10**		**May 10**	**2 - Note 3**
	Low Cost Trainers	**Feb 10**		**May 10**	**3 - Note 4**
	Visual Environment Maintenance Trainers	**Sept 09**		**Oct 09**	**1 - Note 5**
	Computer Based Training Classrooms	**Nov 09**		**Dec 09**	**0**
Variance Explanations	• Instrument Landing System antennae qualification and integration tests delayed due to a test failures of the antennas and the need to redesign. • Airframe Integration Test – Slip due to failure of Instrument Landing System antennae, • Software Integration – classified. • 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. • Note 1 – Post-production test and evaluation affected by the delays in the instrumented landing system qualification and aircraft software integration. **The eight month delay relates to the first aircraft which will remain in the US for Contractor rectification testing with the avionics issue and Weapon risk mitigation activity.** • **Note 2 – 13 month delay due to System Integration failures and delays with USN development** • **Note 3 - two month variance due to delays in the US Government data release approval process and approval required for US export of equipment.** • **Note 4 – three month delay due to late delivery of Low Cost Trainer facility at Amberley.** • **Note 5 - one month variance due to delays in the US Government data release approval process and approval required for US export of equipment.**				

3.3 Progress toward Initial Operational Capability

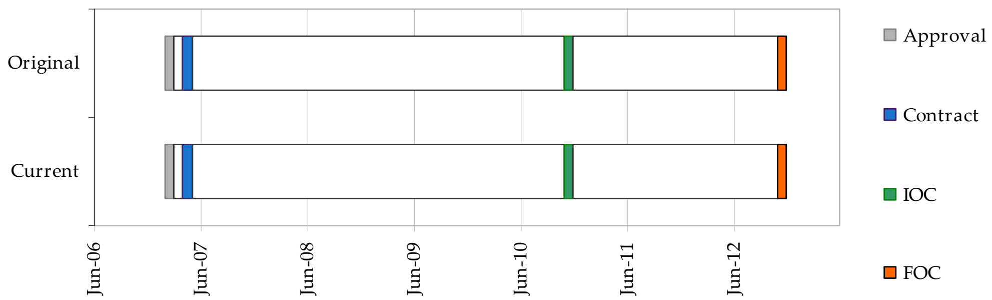
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Dec 10	Dec 10	0	N/A

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Dec 12	Dec 12	0	N/A

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Mar 07	Dec 10	Dec 12



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
AIR5349 Phase 1 does not have endorsed MOEs due to the project being an Australian Government directed solution to acquire the F/A-18F Super Hornets as a military-off-the-shelf aircraft acquisition under the auspices of an accelerated FMS case with the US Government.	Green: **N/A**
	Amber: **N/A**
	Red: **N/A**

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a possibility that the schedule will be affected by the availability of an immature support system, delays in the aircraft software, and facilities at Amberley.	**This risk has been retired following the first ferry and achievement of In-Service Date in March 2010.**
There is a possibility that the training devices will be accepted and certified late due to the lateness in the finalisation of the aircraft software testing leading to a delay to the commencement of Australian-based aircrew and maintenance training.	**This risk has been retired following delivery of training devices in April/May 2010.**
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.	Liaise with the facilities contractor through DSG to better align the facilities completion sequence with the needed dates. **This risk was realised in July 2009 and was managed as a Major Issue. The issue was subsequently downgraded to a Medium Issue as installation of the training devices commenced in April 2010 – the facilities contractor approved early access to the building prior to building acceptance to allow installation and testing of devices to remain on schedule.**

There is a risk that the FOC date of December 2012, will be affected by the requirement for an additional civilian-compatible en-route navigation and non-precision approach aid capability in the aircraft not being satisfied resulting in a reduction in operational flexibility.	The US Navy has planned to integrate a GPS-based area navigation and approach capability into the Super Hornet software set in the 2012 timeframe. Current plans to maintain commonality with US Navy configuration will satisfy the issue. **This risk is now considered a medium risk with ongoing contractor management.**
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
There is a possibility that Initial Operating Capability 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.	**Additional funds and resources have been allocated for root cause analysis and rectification. Increased management oversight and commitment by senior executives of the relevant organisations to rectify the issues has been established.**

4.2 Major Project Issues

Description	Remedial Action
The Instrument Landing System antennae initially failed vibration qualification testing.	**This issue has been retired following successful completion of vibration qualification testing in November 2009.**

4.3 Linked Projects

Project	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 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category of Systemic Lessons
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**

PROJECT DATA SUMMARY SHEET[117]

AMPHIBIOUS DEPLOYMENT AND SUSTAINMENT

JP 2048 Phase 4A/4B

This project was first reported in the 2008-09 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Joint Services	New Capability	ACAT I	Jun 07	BAE Systems Australia

30 June 2010	Name
General Manager	Mr Warren King
Program Manager	Mr Phillip Brown

History	Name	Start	End
Project Manager	**CAPT (RAN) Craig Bourke**	**Jan 10**	**Current**
	CAPT (RAN) Michael Houghton	**Feb 08**	**Jan 10**

1.2 Project Context

Project	Explanation
Description	The **$3,160** million JP 2048 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. These 27,000 tonne LHDs will together be able to land a force of over 2,000 personnel by helicopter and watercraft, along with all their weapons, ammunition, vehicles and stores.
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.

[117] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

	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. Tenix Defence was acquired by BAE in June 2008. Intellectual Property issues **present at the time of takeover** have been resolved between the Commonwealth, BAE and Navantia. **That said**, 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 has caused some Preliminary and Detailed Design Reviews to be deferred slightly. As part of Preliminary Design Reviews, a number of technical issues **had** arisen. Resolution of these matters **were** addressed **in the lead up to and** during the Detailed Design Reviews, with agreed resolution on a case by case basis. None of the issues raised to date are anticipated to impact on the full capability. 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.

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. **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 Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	Aug 05	N/A
Second Pass	Mar 07	Jun 07	3

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
BAE Systems Australia Defence (formerly Tenix Defence)	Design, production, testing, supply and acceptance into naval service of two amphibious LHD and associated supplies and Integrated Logistic Support.	**Firm**	ASDEFCON	Oct 07

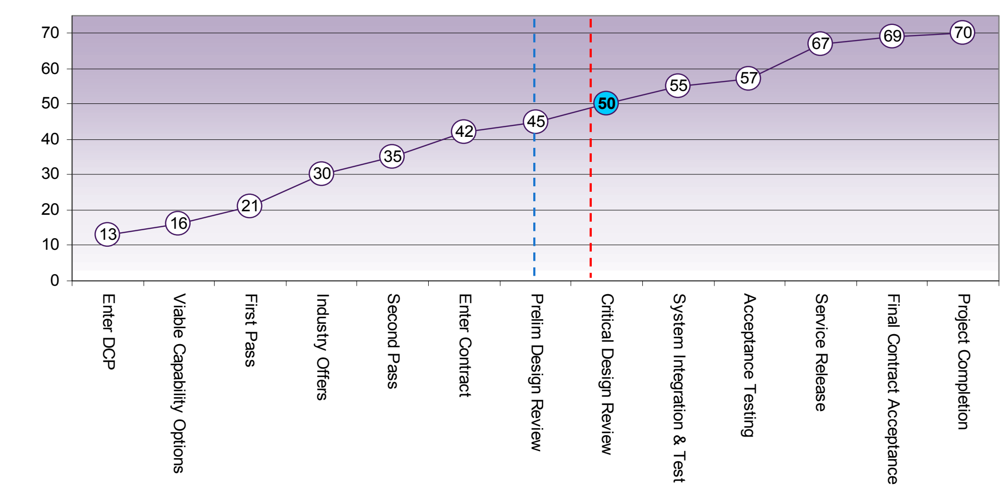
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
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.

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage:	Benchmark	**7**	**7**	**8**	**7**	**7**	7	7	**50**
Critical Design Review	Current Project	**8**	7	**7**	6	7	**8**	6	**49**
	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.** • **Requirement –** Generally the requirement is being realised, however there are some areas where further assessment and stakeholder **engagement** is required. • **Technical Understanding – The completion of the Detailed Design Reviews provided additional clarity and definition to the integration complexity. As a result a Close Out Review was implemented and conducted in June 2010 to clarify technical detail with whole of ship integration.** • **Commercial – Contractor is performing and delivering as contracted.** • **Operations and Support –** Procurement of training and spares yet to be contracted.							

Project Stage	Total Benchmark Score	Total Current Score
Critical Design Review	**50**	**49**



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Nov 03	Original Approved	3.1		3.1		1
Aug 04	Real Variation – Budgetary Adjustments	(0.1)	(0.1)			2
Sep 04	Real Variation – Scope	4.8	4.8			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	9.4	9.4			5
		2,964.5		2,964.5		
Jun 10	Price Indexation			**350.0**		
Jun 10	Exchange Variation			**(156.8)**		
Jun 10	**Total Budget**	**2,967.6**		**3,160.8**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09		302.7	**340.4**		**BAE Systems**	
			39.5		**Other**	**6**
				379.9		
FY to Jun 10		**565.5**	**611.7**		**BAE Systems**	
			19.7		**Other**	
				631.5		
Jun 10	**Total Expenditure**			**1,011.4**		
Jun 10	**Remaining Budget**			**2,149.4**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
BAE Systems	Oct 07	2,268.1	2	**2,271.2**	2	LHD ships and integrated support systems	**7**

Major equipment received and quantities to 30 Jun 10

Detailed Design Review achieved. Construction of main hull sections underway.

Notes

Note 1:	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
Note 2:	Administration savings harvest.
Note 3:	To fund a risk reduction activity for the Project to obtain design data and develop designs to meet Australian essential requirements.
Note 4:	First Pass approval.
Note 5:	Transfer of funding for technical studies from DSTO.
Note 6:	**Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract.**
Note 7:	**Contract Price at Revision 17.**

2.4 Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The LHD Project underachievement is attributed to over supplementation in foreign exchange in 2009-10. Although a couple of low value milestones were late, early achievement of the Milestone for build sequence 6 with receipt of the invoice in Jun 10 resulted in the project achieving close to budget.**
			Overseas Industry	
			Local Industry	
		10.6	Brought Forward	
			Cost Savings	
		(56.6)	FOREX Variation	
			Commonwealth Delays	
677.5	**631.5**	**(46.0)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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
	Navigation	Oct 08	Oct 08	Dec 08	2
	Platform System	Nov 08	Nov 08	Nov 08	0
	Combat System	Dec 08	Apr 09	Apr 09	4
	Whole of Ship	Jan 09	May 09	May 09	4
	Support system	Mar 09	May 09	May 09	2
Detailed Design	Communication	May 09	Sep 09	Sep 09	4
	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
	Whole of ship	Jul 09	**Dec 09**	**Dec 09**	**5**
	Support system	Aug 09	Dec 09	Dec 09	4
Variance Explanations	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. The construction of main hull sections commenced this year as planned. Construction of the superstructure, where many of the integration issues reside, is not planned to commence until June 2010 and the deferred Design Reviews are unlikely to affect the construction schedule and final delivery date.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Integration	LHD Ships #1 and 2	Mar 15	Mar 15	Mar 15	0
Acceptance	LHD Ship#1 Project Acceptance	Jan 14	Jan 14	Jan 14	0
	LHD Ship#2 Project Acceptance	Aug 15	Aug 15	Aug 15	0
	LHD Final Acceptance	Sep 15	Sep 15	Sep 15	0
Variance Explanations	N/A				

3.3 Progress toward Initial Operational Capability

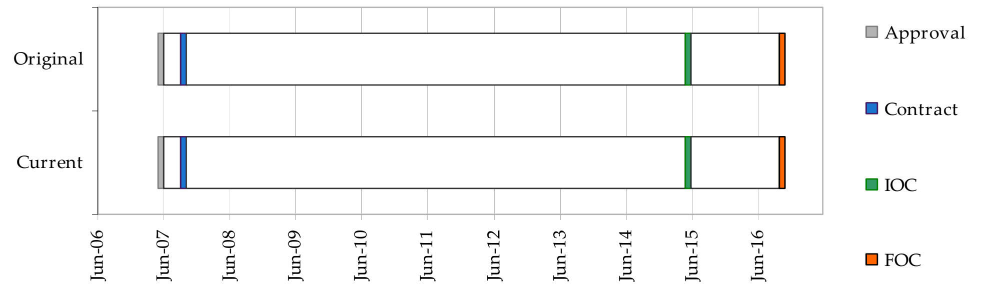
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
LHD#1 IOC	Jun 15	Jun 15	0	N/A
LHD#2 IOC	Nov 16	Nov 16	0	N/A

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Nov 16	Nov 16	0	N/A

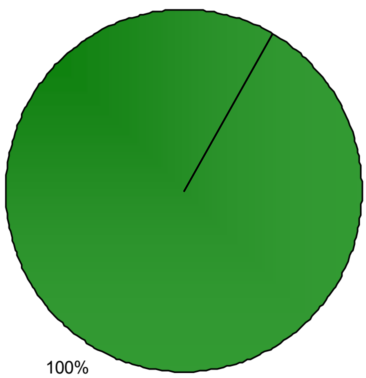
Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Jun 2007	Jun 2015	Nov 2016



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)



Green: **Project 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

DMO REPORT

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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.	• 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.	• **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 chance that the delivery of the two LHDs may be affected by damage to the electric propulsion pods during installation and sea trials.	• 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.**

Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	**Remedial Action**
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.	• **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.	• **Develop a common acceptance plan with Navy that achieves a concurrent Contract Acceptance and Navy Acceptance.** • **Manage Stakeholder expectations.**

4.2 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.

4.3 Linked Projects

Project	Description of Project	Description of Dependency
JP 2048 Phase 3	Watercraft system acquisition to be used in conjunction with the Ph 4A/4B LHD Mission System. These watercraft will replace the capability inherent in the current generation of watercraft systems.	Amphibious watercraft required to be integrated with the LHD platform and be able to transport personnel & equipment from LHDs to shore without utilising fixed port facilities, or prepared landing areas.
Land 75	Battlefield Command Support System Project.	The Battlefield Command Support System will provide Army with interoperability with the new Battle Management System and the LHD will be required to support this.
Sea 1442	Maritime Communications Modernisation.	The project was established to modernise and integrate the communications infrastructure in the Royal Australian Navy Fleet, and establish the framework for the future modernisation of additional elements of the fleet such as the LHD.
JP 2089 Phase 2	Tactical Information Exchange Domain (Data Links).	The project is intended to implement Tactical Information Exchange solutions on various platforms including Link 16 and Variable Messaging Format in the **ANZACs and** LHDs.
JP 2072	**Battlespace Communications System (Land)**	**This is a project to enhance communications for ADF land elements through the development of a holistic battlespace communications architecture for the land environment. It covers the spectrum of Combat Net Radio (CNR) through to trunk communications and local area networks, with the aim of eventually providing seamless connectivity across all tactical systems to ensure support to command support systems. Depending on the solution chosen for JP 2072, the LHD could form part of this communications network.**
Land 121	**Project OVERLANDER**	**This is a multi-phased project that will provide the Field Vehicles, Modules and Trailers (FVM&T) and the associated support items that the ADF requires beyond the life-of-type of the current assets in order to meet ADF mobility requirements. Where these vehicles are to be embarked on the LHD issues related to wheel/deck load, communications and exhaust emissions need to be considered.**

Section 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	

DMO REPORT

PROJECT DATA SUMMARY SHEET[118]

OVERLANDER VEHICLES

LAND 121 Phase 3

This project was first reported in the 2009-10 DMO MPR

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Australian Army	Replacement	ACAT I	Aug 07	Various

30 June 2010	Name
General Manager	Ms Shireane McKinnie (acting)
Division Head	MAJGEN Grant Cavenagh
Branch Head	Ms Michelle Kelly (Acting)
Project Director (MHC)	Mr Drew McMeekin
Project Director (LLC)	Mr Robert Lumley

History	Name	Start	End
Project Manager MHC (Medium Heavy Capability)	MsJacquie Menzies (MHC)	Nov 09	Current
	Mr Simon Densten (MHC)	Feb 10	May 10
	Mr Robert Hudson (MHC)	Apr 09	Oct 09
	Mr Kevin Meddings	Aug 08	Mar 09
	Mr Hamish McIntosh	Aug 07	Jul 08
Project Manager LLC & LLT (Light/Lightweight Capability Trailer Capability))	Mr Robert Hudson (LLC)	May 10	Current
	Mr Geoff Fallon (Acting) (LLC)	Mar 10	May 10
	Mr Robert Hudson (LLC)	Nov 09	Feb 10
	Ms Jacquie Menzies (LLC)	Feb 07	Oct 09
	Mr Jonathon McGuigan (LLT)	Dec 08	Current

[118] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

DMO REPORT

1.2 Project Context

Project	Explanation
Description	The $2,879.2 million LAND 121 (Overlander) Phase 3 project will replace the current fleet of Australian Defence Force (ADF) field vehicles and trailers. These vehicles will enhance the ground mobility of the ADF through the provision of Field Vehicles, Modules and Trailers (FVM&T). A total of up to 3,895 vehicles, 2,888 trailers and 4,976 modules will be acquired, including; • Light/Lightweight (LLC): 1,200 unprotected vehicles, 315 modules, 973 trailers and six prototype trailers (currently in contract). • Medium/Heavy (MHC): The current formal Basis of Provisioning (BOP) seeks to acquire up to a total of 2,695 Vehicles (1,506 protected vehicles and 1,189 unprotected vehicles), 4,661 modules (1,785 modules and 2,876 flatracks) and 1,915 trailers.
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, 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 (supports contracts have a term of 15 years, with two 7-year options for extension). Support services covered by the support contracts include: Configuration Management, Engineering Support, Maintenance Support, Supply Support, and Quality Management. Overlander represents the Army's largest capital program and will be of significant interest to Government and Industry. Although the Australian Regular Army (ARA) is the principal operator and beneficiary of the capability, the Royal Australian Air Force (RAAF) will also benefit from the new ground mobility. The ADF's existing FVM&T fleets has assets of some 7,300 vehicles and 3,700 trailers acquired progressively between 1959 and 1994. By 2008, 98% of the current assets had exceeded 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 is expected to reduce whole of life costs and rationalise vehicle types and numbers. A contract was signed with Mercedes Benz Australia Pacific 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 (plus six prototypes trailers) as part of the total Phase 3 requirement of approximately 2,888 trailers. In October 2007, BAE Systems was announced as the preferred tenderer to proceed to Offer Definition Refinement Process (ODRP) for the Medium Heavy Capability (MHC) requirement. ODRP identified an increased level of technical, cost and schedule risk and gave rise to significant concerns with BAES' capacity to deliver against their tendered offer. Combined with probity concerns arising from additional vehicle and module requirements, the program determined to exercise its discretion under the conditions of tender and invite all initial tenderers back into the evaluation process, and initiate a tender resubmission process. The MHC resubmissions tender process comprises of three stages. The first stage released an amended Conditions of Tender in December 2008, and comprised vehicle Comparative Evaluation Testing (CET) against a key requirement matrix and a limited desktop analysis to inform the down selection of tenderers to proceed to Stages 2. In February 2010 MAN Military Vehicles Systems 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 closes August 2010 and tender evaluations are planned to be completed by the end of 2010. Contract negotiations with the preferred tenderer are planned to begin

	early 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 to have in place a robust Support System that will achieve stated availability requirements at a reduced life cycle cost (LCC).
Major Challenges	Challenges for LLC include the integration of the new generation Command, Control, Communication, Computer and Intelligence (C4I) systems into production vehicles and modules. Challenges for MHC vehicles during the acquisition process include evolving protection requirement changes resulting from operational lessons; and affordability of capability within a capped budget project.
Current Status	This was a Project of Concern in 2009-10 (Medium Heavy Capability only). **Cost Performance** As at 30 June 2010 the LLC project achieved expenditure in accordance with the forecast plan. **Schedule Performance** The LLC project is on schedule to deliver against its MAA milestone date of December 2011 for First Delivery to Units, which is defined as the delivery and acceptance of a Land 121 Phase 3 Production Vehicle to a Land Command Unit. In LLC, eleven prototypes were delivered in early February 2010. Introduction into Service Date (ISD) for the MHC vehicles and remaining trailers will be subject to contract negotiations. As at 30 June 2010, the planned date for entry into the MHC contract is November 2011. **Capability Performance** The first production batch of G-Wagons for LLC remains on schedule. The need to retrofit C4I onto selected vehicles is being actively addressed through engagement with the Contractor. There are no current capability issues for the LLC trailers. The BOP affordability will have an effect on the final MHC component, with DMO looking to constrain cost by maximising off-the-shelf solutions for Vehicles and Modules.

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	Jun 04	N/A
Second Pass	Jun 07	Aug 07	2

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
Mercedes Benz Australia Pacific Pty Ltd	Provision of Light/Lightweight vehicles	Variable	ASDEFCON	Oct 08
Mercedes Benz Australia Pacific Pty Ltd	Provision of Support for Light/Lightweight vehicles	Variable	ASDEFCON	Oct 08
Haulmark Trailers (Australia) Pty Ltd	Provision of Light/Lightweight Trailers	Variable	ASDEFCON	Apr 10
Haulmark Trailers (Australia) Pty Ltd	Provision of Support for Light/Lightweight Trailers	Variable	ASDEFCON	Apr 10

DMO REPORT

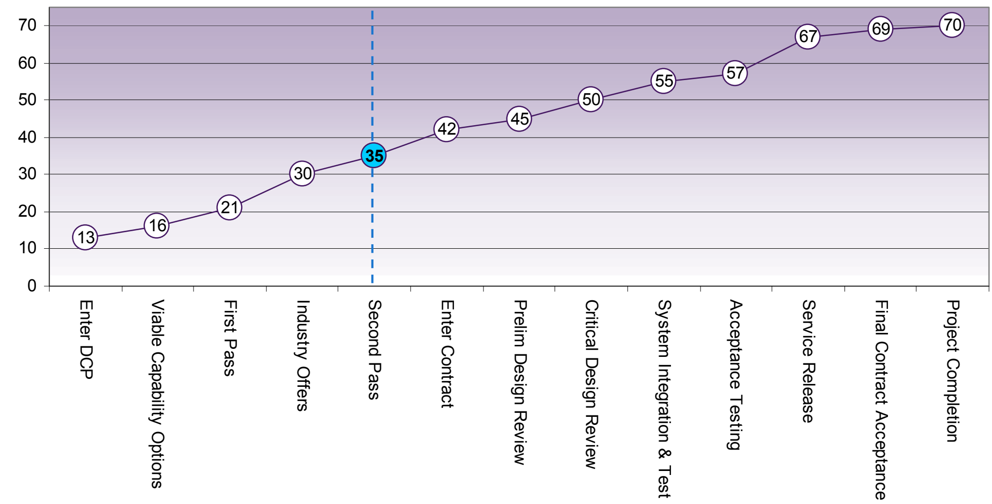
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
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 June 2011 with the final product delivery by 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 four vehicle types, one of which (the utility vehicle) will have three modes of employment. The vehicles will also be acquired with matched trailers and two module types, which will be fitted to the utility variant; a Cargo Module, and a Canine Module.
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). Phase 5A is to achieve the quantity of vehicles the ADF requires to undertake collective tactical training for the LAND 121 land mobility capability.

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: 2nd Pass	Benchmark	5	5	5	5	5	5	5	35
	Current Project	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 while MHC vehicles and trailers are not yet in negotiation or contract. MHC planned contract signature date is November 2011. • **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.							

Project Stage	Total Benchmark Score	Total Current Score
2nd Pass	35	35



2009-10 DMO MPR Status

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Aug 07	Original Approved	2,745.3		2, 745.3		
Jan 09	Real Variation – Scope	(14.8)	(14.8)			1
Jan 09	Real Variation – Transfers	4.5	4.5			2
		(10.3)		(10.3)		
Jun 10	Price Indexation			313.2		
Jun 10	Exchange Variation			(169.0)		
Jun 10	**Total Budget**	**2,735.0**		**2,879.2**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09						
			6.3		Mercedes-Benz Australia/Pacific Pty Ltd	
			2.8		Haulmark (Aust) Pty Ltd	3
			6.3		Other	4
				15.4		
FY to Jun 10			15.7		Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	
			0.5		Mercedes-Benz Australia/Pacific Pty Ltd (Support)	
			1.6		Haulmark (Aust) Pty Ltd	
			13.0		Other	5
				30.8		
Jun 10	**Total Expenditure**			**46.2**		
Jun 10	**Remaining Budget**			**2,833.0**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
Mercedes Benz Australia Pacific Pty Ltd	Oct 08	321.8	1515	335.5	1515	LLC: 1200 Vehicles and 315 Modules	
Mercedes Benz Australia Pacific Pty Ltd	Oct 08	45.1	N/A	45.1	N/A	LLC: Support Contract for vehicles and modules	6
Haulmark Trailers (Australia) Pty Ltd	Apr 10	42.0	979	42.0	979	LLT: 6 Prototypes and 973 Production Trailers	
Haulmark Trailers (Australia) Pty Ltd	Apr 10	22.2	N/A	22.2	N/A	LLT: Support Contract for Trailers	7

Major equipment received and quantities to 30 Jun 10
Half the Critical Design Reviews completed for the LLC, with eleven prototypes delivered. MHC not in contract.

Notes	
Note 1:	Return for ELF Facilities funding incorrectly transferred to DMO.
Note 2:	From Land 121 Ph3A on closure.
Note 3:	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.
Note 4:	Other expenditure comprises: contractors and consultants $4.2m, other operating expenditure $1.5m, other capital expenditure $0.6m not attributable to the aforementioned contracts.
Note 5:	Other expenditure comprises: operating expenditure of $8.2m including project office expenses, project management expenses and external service providers, and capital expenditure of $4.8m for project office costs and other costs not attributable to the aforementioned contracts.
Note 6:	Project to provide interim support and first 3 years of in service support – Project Commitment $17.5m.
Note 7:	Project to provide first 3 years of in service support – Project Commitment estimate $6.192m.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	Financial Year 2009-10 end of year expenditure achievement was less than the Additional Estimate plan due to a planned support contract mobilisation payment not required, the reschedule of the delivery of Integrated Logistic Support spares to later financial years, improved foreign exchange rates and the revised effective date of the Light Trailer acquisition contract.
			Overseas Industry	
		(1.0)	Local Industry	
			Brought Forward	
		(0.6)	Cost Savings	
			FOREX Variation	
		(1.6)	Commonwealth Delays	
34.0	30.8	(3.2)	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Preliminary Design	LLC: Trucks (Lightweight Carryall Station Wagon, 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
	LLT: Light & Lightweight Trailers	Oct 10		Oct 10	0
Critical Design	LLC: Trucks (Lightweight Carryall Station Wagon, Lightweight Carryall Soft Top, Light Dual Cab, Light Cab Chassis and Carryall Hard Top)	Aug 09		Sep 09	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		Aug 10	11
	LLC: Modules (Cargo Cab Chassis, Canine Dual Cab)	Sep 09		Dec 09	3
	LLC: Module (Light Ambulance, Cab Chassis)	July 10		Jul 11	12
	LLC: Module (Light PCRS Cab Chassis)	July 10		Aug 11	13
	LLT: Light & Lightweight Trailers	Mar 11		Mar 11	0
Variance Explanations	LLC Critical Design Review with a variance between the originally planned and achieved date is due to a change in specification by the Commonwealth. 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)
Test Readiness Review	LLC: Light Lightweight Contract (all except Surveilance & Reconnaissance and Carryall hardtop)	Oct 09		Dec 09	2
	LLC: Light Lightweight Contract Truck, Light, Surveillance and Reconnaissance vehicle only	Aug 10		Apr 11	8
	LLC: Light Lightweight Contract Truck, Lightweight, Carryall hard Top	Oct 09		Jul 10	9
	LLC: Light Lightweight Contract Group 1 Modules	Jan 10		May 10	4
	LLC: Light Lightweight Contract Group 2 Modules	Oct 10		Nov 11	13
	LLC: Light Lightweight Contract Group 3 Modules	Jan 10		Nov 10	10
	LLT: Light & Lightweight Trailers	Jul 11		Jul 11	0
Functional Configuration Audit	LLC: Light Lightweight Contract (all except Surveillance, Reconnaissance)	Aug 10		Sep 10	1
	LLC: Light Lightweight Contract (Surveillance and Reconnaissance only)	Feb 11		Sep 11	7
	LLC: Light Lightweight Contract Group 1 Modules (L-M-CCC; L-M-CDC; L-M-CANDC)	Jun 10		Jan 11	6
	LLC: Light Lightweight Contract Group 2 Modules (L-V-SUR; L-M-AMB; L-M-PCRS)	Apr 11		Aug 11	4
	LLC: Light Lightweight Contract Group 3 Modules (L-M-CPM; L-M-CP)	Aug 10		Jan 11	5
Acceptance Verification and Validation	LLT: Light & Lightweight Trailers	Jul-Oct 11		Jul-Oct 11	0
Variance Explanations	Test Readiness Reviews with a variance between the originally planned and achieved/forecast date is due to changes in system specifications by the Commonwealth. 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 duration and number of test and evaluation reviews will be determined by the level of MOTS compatability in the offered solutions. A schedule baseline will be established once contract negotiations have been conducted.				

3.3 Progress toward Initial Operational Capability

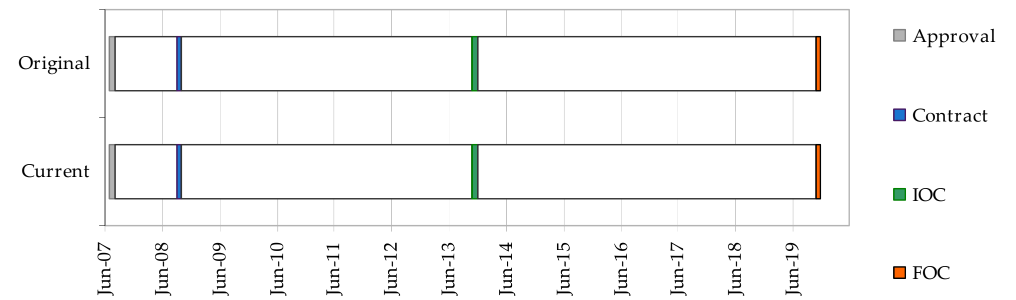
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Dec 13	Dec 13	0	

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Dec 19	Dec 19	0	

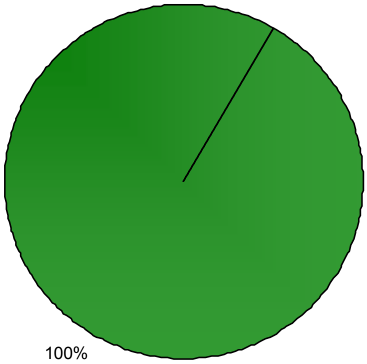
Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Aug 07	Dec 13	Dec 19



DMO REPORT

3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	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:
	Red:

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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. This includes: • A capped budget arrangement • MHC tender outcomes • 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	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 number of factors have the potential to impact on the TC cost, schedule and capability requirements. This includes: • Introduction into service (IIS) costs may increase • Contractor's management of spares may be compromised by delays in MILIS training. • Trailer may not meet air drop capability requirements. • Schedule delays due to prototypes not achieving Design Acceptance. • Test facilities may not be available to conduct complete range of trailer validation and verification testing.	The project is ensuring ongoing monitoring risk environments and performing ongoing liaison with all stakeholders to reduce risk likelihood, and in the event that risks do occur, that the impact is minimised and manageable.
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 2009-10)	
Description	Remedial Action
Nil	Nil

4.2 Major Project Issues

Description	Remedial Action
The MHC Initial Operational Capability (IOC - 2013 as per MAA) has been affected by the MHC resubmission activity process leading to an impact on schedule.	The remedial action is that the PH 3 MHC PO is seeking to hasten its evaluation/negotiation activities which may 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.

4.3 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 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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

DMO REPORT

PROJECT DATA SUMMARY SHEET[119]

ARMED RECONNAISSANCE HELICOPTER

AIR 87 Phase 2

This project was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Australian Army	New	ACAT II	Mar 99	Australian Aerospace

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	MAJGEN Tony Fraser
Branch Head	BRIG Charles Crocombe
Project Director	Mr Bruce Whiting

History	Name	Start	End
Project Manager	Mr Bruce Whiting	Dec 08	Current
	COL Anthony McWatters	Jan 07	Dec 08
	Mr Graeme Toms (acting)	Aug 06	Dec 06
	COL Gary Michajlow	Jan 06	Aug 06
	COL Malcolm Motum	Jan 00	Dec 05

1.2 Project Context

Project	Explanation
Description	The **$2,076** million Air 87 Phase 2 Tiger Armed Reconnaissance Helicopter (ARH) 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.

119 Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

Background	The Project received Government approval in March 1999 to replace the Army's aerial reconnaissance and fire support capability, which is currently based on the 1960s technology Bell Kiowa and Iroquois helicopters. Defence's acquisition strategy specified substantial Australian Industry Involvement in the project, and in February 2002 Australian Aerospace was awarded a fixed price Acquisition contract and firm price Through Life Support contract. 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 (Delegation General Pour l'Armament). 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 for the project remains ensuring the Prime Contractor (Australian Aerospace) delivers the remaining capabilities in accordance with the rebaselined Acquisition Contract 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 which are 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. **The Commonwealth and Australian Aerospace continue to address the appropriateness of the modelling basis of the total approved Repairable Item, and Support and Test Equipment Provisioning Lists.**
Current Status	**Cost Performance** The Project is still expected to deliver the required capability within the approved budget. **Schedule Performance** **The first delivery of an operational capability to Army, the Initial Operational Test and Evaluation Readiness Milestone, was achieved in September 2009 some 27 months later than originally planned. The second critical Initial Release Milestone was also achieved to plan in March 2010.** **To date the project has delivered all minor milestones required to support the achievement of the two critical milestones although a number of minor milestones have been replanned to reflect agreements reached between the parties or approved postponement claims.** **As at 30 June 2010, 17 ARH have been Accepted by the Commonwealth; six are undergoing retrofit to the Initial Operational Test and Evaluation Readiness configuration; four are being used for training, one of which is also being used to support the remaining Type Acceptance test activities; and seven 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.** **The rebaselined schedule had all 22 ARH (in the Initial Operational Test and Evaluation configuration) planned to be accepted by September 2010 with the Final Acceptance of supplies under the Acquisition Contract planned for June 2011. The 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration milestone date was agreed between the parties to move to December 2010 in order to support the implementation of an enhanced anti-collision lighting solution on the ARH fleet.** **On 25 February 2010, Australian Aerospace advised the Project Authority that it would not be able to deliver all 22 ARH by December 2010 as currently contracted and that a potential six month delay was likely. The Project Authority is agreeing a number of initiatives with Australian Aerospace to minimise the operational impact to Army's introduction into service plans under Plan Peregrine.** **Thirteen ARH are planned to be accepted in the Initial Operational Test and Evaluation configuration by September 2010 with the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration planned for acceptance by 30 June 2011.**

	Capability Performance 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 September** 2011. The Full Flight and Mission Simulator has been upgraded to the final aircraft configuration with accreditation completed in July 2009 before being returned to training. The Cockpit Procedures Trainer for Darwin **was accepted in January 2010. The Cockpit Procedures Trainer at Oakey was upgraded to the Initial Operational Test and Evaluation configuration and returned to service in September 2009.** **Operational Evaluation of the delivered ARH capability is being progressed by Army following the achievement of the Initial Operational Test and Evaluation Milestone in September 2009. In April 2010, the Chief of Army declared Operational Capability 1, an initial troop level capability, had been achieved. Operational Evaluation for the next Operational Capability 2 milestone, a deployable squadron, is now being progressed.** **As at 30 June 2010 the ARH fleet had flown in excess of 5990 hours, fired 19 Hellfire missiles, 475 rockets and over 7000 rounds of the 30mm cannon.**

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	N/A	Mar 99	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
Australian Aerospace	Deliver the ARH System comprising of : 22 ARH; Training System; Support Systems.	Variable	SMART 2000	Dec 01

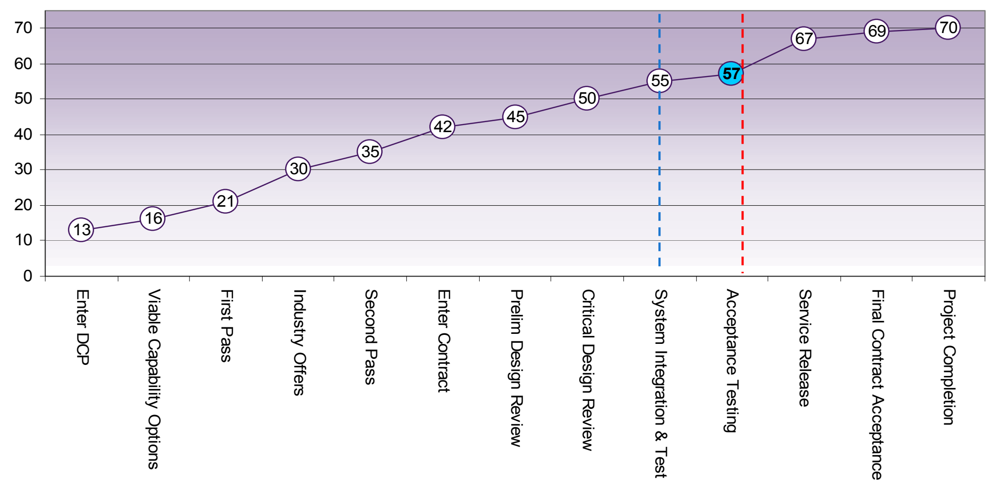
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: **Acceptance Testing**	Benchmark	**8**	8	8	8	**9**	8	8	**57**
	Current Project	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 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.							

Project Stage:	Total Benchmark Score	Total Current Score
Acceptance Testing	**57**	**58**



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Mar 99	Original Approved	1,584.0		1,584.0		
Oct 02	Real Variation – Transfers	(18.2)	(18.2)			1
Dec 03	Real Variation – Transfers	(59.1)	(59.1)			2
Aug 04	Real Variation – Budgetary Adjustments	(2.2)	(2.2)			3
Sep 04	Real Variation – Transfers	(3.0)	(3.0)			4
Jun 05	Real Variation – Transfers	(4.0)	(4.0)			5
Aug 05	Real Variation – Budgetary Adjustments	(4.5)	(4.5)			6
		(91.0)		(91.0)		
Jun 10	Price Indexation			**414.9**		
Jun 10	Exchange Variation			**168.4**		
Jun 10	**Total Budget**	**1,493.0**		**2,076.3**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			**1,348.6**		**Australian Aerospace**	**8**
			113.3		**Other**	**7**
				1,461.9		
FY to Jun 10	I		**157.9**		**Australian Aerospace**	**8**
			16.8		**Other**	**7**
				174.7		
Jun 10	**Total Expenditure**			**1,636.6**		
Jun 10	**Remaining Budget**			**439.7**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
Australian Aerospace	Dec 01	1,139.9	22	**1,461.7**	22	Tiger Armed Reconnaissance Helicopter	

Major equipment received and quantities to 30 Jun 10
Seventeen aircraft have been accepted by the Commonwealth. Engineering and maintenance arrangements established.

Notes	
Note 1:	Transfer to DSG **Oakey** Redevelopment Project to develop ARH specific infrastructure.
Note 2:	Transfer to DSG 1 Aviation Relocation Project (Darwin) to develop ARH specific infrastructure.
Note 3:	Administrative **Savings** harvest.
Note 4:	Transfer to **DSTO** to fund studies in support of ARH.
Note 5:	Transfer to DSG to fund Air 87 facilities constructed as part of the Darwin 1 Aviation Relocation Project.
Note 6:	Skilling **Australia's** Defence Industry harvest.
Note 7:	**Other expenditure comprises: operating expenditure, contractors, consultants, FMS, research and development costs and other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.**
Note 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.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(3.2)	FMS	**FMS case for the Air Warrior Aircrew Ensemble scope decreased and original forecast overstated. The major variance for the year is the delivery of Spares and Support & Test Equipment which is currently approx $60m underspent against forecast. The ARH training systems and modification program will also underspend due to redefinition of the scope of work.**
			Overseas Industry	
		(58.9)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(25.3)	Commonwealth Delays	
262.1	174.7	(87.4)	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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
	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
	Aircrew Training Devices	Mar 03		Oct 04	19
Critical Design	ARH Tiger	Mar 03		Jul 04	16
	Aircrew Training Devices	Sep 03		Jun 05	21

Variance Explanations

ARH System

Reliance on the certification of the French Tiger variant was critical to the Australian design review and acceptance program. The DMOs ability to leverage from the French program was adversely impacted because the French program had not achieved design approval outcomes in the timeframe expected.

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 (Delegation General Pour l'Armament).

Certification of the ARH is based on the French acquisition agency as a competent certification agency and the ADF Technical Airworthiness Authority subsequently recognised the French acquisition agency as such for certification of common Tiger systems in the ARH. In doing so, the French acquisition agency certification of the French Tiger variant became an integral part of the ADF certification plan. Delays experienced in the Franco-German program directly impacted on the design development and Australian Military Type Certificate achievement.

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.

Aircrew Training Devices

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)
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**	**Apr 11**	**38**

Variance Explanations	
	The revised Current Planned date for ARH #22 (22nd Aircraft Accepted in the Initial Operational Test and Evaluation configuration) acceptance of December 2010 was agreed between the parties in order to support the implementation of an enhanced anti-collision lighting solution on the ARH fleet. The Contractor is managing the delivery of the remaining Acquisition Contract capability Milestones **through its** Integrated Master Schedule. **ARH** All 22 ARH are systematically being upgraded through a retrofit program in order to bring them up to the contracted specification at no additional cost to the Commonwealth. The retrofit program is complex requiring aircraft components to be removed and cycled through an upgrade program with the Original Equipment Manufacturer before being re-fitted to an aircraft. Currently the acceptance of the 22nd ARH is **contracted for December 2010 although 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 December 2010 as contracted. The April 2011 Forecast Date (Early Finish Date) for the final production aircraft (ARH #22) is in line with Australian Aerospace's Integrated Master Schedule of 31 May 2010.** **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 are currently forecasting an Early Finish Date of June 2011 for the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration milestone (ARH005 from retrofit).** **Aircrew Training Devices** The Full Flight and Mission Simulator Contractor In-Plant Test and Evaluation achievement date reported in the 2007/08 reported that Contractor In-Plant Test and Evaluation was initially conducted in France in late 2005 however, testing only verified approximately 20% of the contacted requirement. Further testing was completed in October 2007 following the device's shipment from France and installation at Oakey with the Commonwealth accepting the device as fit for transition training in December 2007. The Full Flight and Mission Simulator has been upgraded to the final aircraft configuration and **completed** its accreditation and recurrent fidelity checks in accordance with the agreed rebaselined Acquisition Contract milestone schedule.

	The Cockpit Procedures Trainer at Oakey has been upgraded and completed its accreditation and recurrent fidelity checks in accordance with the agreed rebaselined Acquisition Contract milestone schedule. **The Cockpit Procedures Trainer at Darwin completed accreditation and acceptance two months ahead of the agreed rebaselined Acquisition Contract milestone schedule.**

3.3 Progress toward Initial Operational Capability

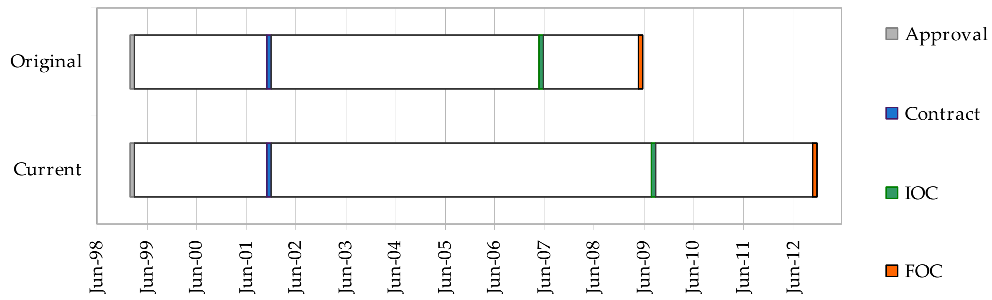
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Jun 07	**Sep 09**	27	The full contracted requirements for IOC were not achieved in June 2007 primarily due to delays in training. The contract dispute resolution has focussed the Contractor on providing the aircraft, support systems and trained personnel that, in concert with Army's collective training and test and evaluation programs, generate an operational capability as soon as possible. Rebaseline of the Acquisition Contract and the integrated planning currently underway are seeking to recover schedule and implement milestones that best align with Army's plans for introduction into service under Plan Peregrine and operational release of capability. The contract changes required to execute this were agreed in February 2009 and project document amendments completed in June 2009 with the Prime Contractor. The forecast date for IOC achievement was based on the critical new milestone, Initial Operational Test and Evaluation Readiness, that enabled Army to commence operational evaluation in a collective training environment from October 2009. **The Initial Operational Test and Evaluation Readiness Milestone was achieved in September 2009.**

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Jun 09	Dec 12	42	As per Table 3.3, contract changes were negotiated with the Prime Contractor which required a corresponding update to the approved MAA for the project. Whilst the final aircraft **accepted in the Initial Operational Test and Evaluation is now not** expected to be delivered by June 2011, the FOC will not be achieved until Decemeber 2012. The date for FOC is not a contracted requirement but rather the date at which Operational Release is planned to be achieved under Army's Plan Peregrine. 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 MAA in August 2009.

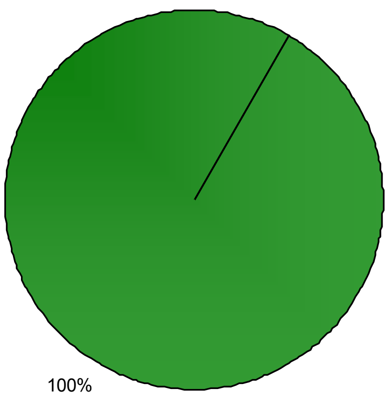
Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Mar 99	Sep 09	Dec 12



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)



Green:

The Project is currently meeting capability requirements as expressed in the endorsed Capability Summary and contracted ARH Specification and in accordance with the requirements of the relevant Operational and Technical Regulatory Authorities.

Amber:

Red:

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	Remedial Action
A major risk to the project is schedule slippage in the process of entering the aircraft into service and achieving full systems certification by Initial Operational Test and Evaluation Readiness in September 2009.	**Risk retired following achievement of the Milestone with subsequent risk being revised for other future critical Milestones.**
Skilled personnel, particularly in engineering and Test and Evaluation, are at a critical level.	Risk remains active, however is now assessed as medium.
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
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.**

4.2 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.
Development of gap training requirements caused by an evolving system configuration.	Issue closed, now incorporated in the issue above.
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.**
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.

Australian Aerospace informally advised the Project Authority that it would not be able to deliver all 22 ARH by December 2010 as currently contracted and that a potential six month delay was likely.	**Project Authority is agreeing a number of initiatives with Australian Aerospace to minimise the operational impact to Army's introduction into service plans under Plan Peregrine.**

4.3 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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**
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**
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**

PROJECT DATA SUMMARY SHEET[120]

F/A-18 HORNET UPGRADE

AIR 5376 Phase 2

This project (Phase 2.2 only) was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Air Force	Upgrade	ACAT II	May 98	US Government

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	AVM Colin Thorne
Branch Head	**AIRCDRE Axel Augustin**
Project Director	**WGCDR Damien Keddie (acting)**

History	Name	Start	End
Project Manager	GPCAPT Ian Nesbitt	Dec 07	Current
	GPCAPT Nigel Fort	Dec 05	Dec 07
	GPCAPT William Malkin	Dec 03	Dec 05
	GPCAPT Axel Augustin	Jan 01	Dec 03
	GPCAPT Roy McPhail	Jan 00	Jan 01
	GPCAPT Clive Rossiter	N/A	Jan 00

1.2 Project Context

Project	Explanation
Description	The **$1,946** million 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.

120 Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

Background	In October 1981 Australian Government selected the F/A-18 to fill the Royal Australian Air Force's (RAAF) multi-role fighter requirement. F/A-18 fleet deliveries commenced in May 1985 with the 75th delivered in May 1990. Since then the need to address equipment obsolescence and improve the F/A-18 capabilities, in line with operational requirements, 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 main 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 Hornet Aircrew Training System (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 sub phase included provision of new fire-control radar, and an Electronic Protection Collaborative Development Program with the US Navy to developing Electronic Protection techniques for the new fire-control radar. Air 5376 Phase 2.2 is an Avionics upgrade, providing 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 is an Electronic Warfare upgrade, providing additional aircraft self protection by: • Replacement of the Radar Warning Receiver with an updated Raytheon Radar Warning Receiver for all RAAF F/A-18 aircraft; • 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; and • Tactical Readiness Trainers.
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 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	The major challenge associated with Air 5376 Phase 2.2 was the development of colour displays under a collaborative initiative with the Canadian Forces. This activity was the pacing item in respect to schedule and the Canadian Forces were responsible for the colour display program until the completion of the design phase. There are 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 have not previously been integrated and installed in other F/A-18 Hornet fleets. The primary strategy to alleviate the software risks is an iterative development and testing regime, which draws on US Navy subject matter experts and the project resident team at the US Navy software development and testing facility. This strategy enables the early identification of any integration issues. 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.	
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.
		Schedule Performance
		Interim Electronic Warfare was delivered on schedule.
		Capability Performance
		Capability Development Group and Air Force have accepted the Interim Electronic Warfare Capability, proving the operational support concept for the Radar Warning Receiver.
	HACTS	**Cost Performance**
		The project has delivered contracted capability within budget.
		Schedule Performance
		HACTS was delivered on schedule.
		Capability Performance
		Ongoing upgrades are required to HACTS to introduce emerging Hornet capabilities being introduced by other Hornet and Weapon upgrades.

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	N/A	May 98	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
The Boeing Company(Prime)	Design and Integration	Firm / Fixed	DEFPUR101	**Dec 01**
US Government (ATPLZY)	**Radar Sets and Support**	**FMS**	**FMS**	**Oct 99**
US Government (ATPLDG)	**Procurement of Radar Warning Receivers, associated Logistic Support , engineering and technical support**	**FMS**	**FMS**	**Dec 06**
Elta Systems Ltd	Procurement of Electronic Counter Measures Jammer	Fixed	ASDEFCON	May 08
Raytheon Australia	Procurement of Aircrew Training Simulators	Fixed	ASDEFCON	May 04

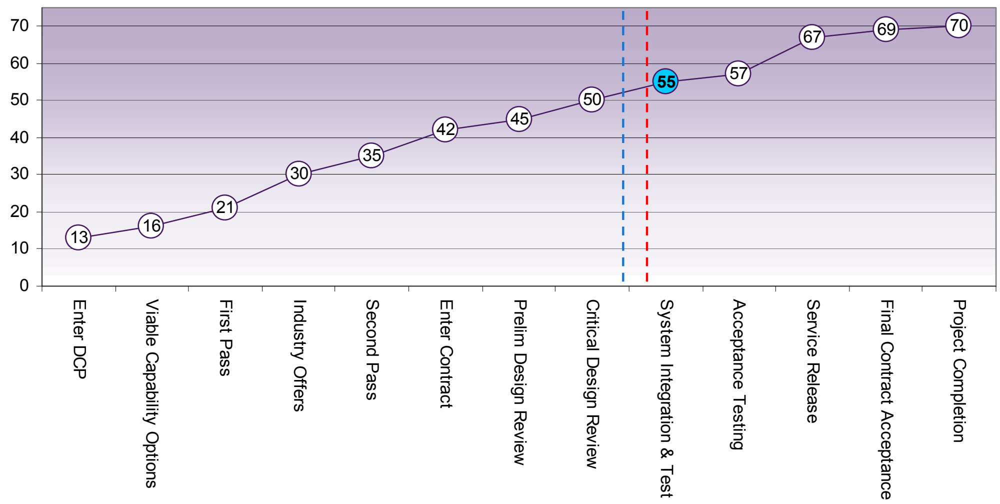
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	All sub phases are addressed in this report.

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage for the confederated Phase 2 program. System Integration & Test	Benchmark	**7**	**8**	**8**	**8**	**8**	**8**	**8**	**55**
	Current Project	**8**	**7**	**8**	**7**	**8**	**8**	**8**	**54**
	Explanation	• **Schedule: Ahead of schedule for benchmark stage.** • **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.**							

Project Stage	Total Benchmark Score	Total Current Score
System Integration & Test	**55**	**54**



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

DMO REPORT

Hornet Upgrade

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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 10	Price Indexation			314.3		
Jun 10	Exchange Variation			79.2		
Jun 10	**Total Budget**	**1,553.1**		**1,946.6**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			274.8		The Boeing Company	
			281.5		US Government (AT-P-LZY)	
			95.2		US Government (AT-P-LDG)	
			28.2		ELTA Systems Ltd	
			55.9		Raytheon	
			617.8		Other	11
				1,353.4		
FY to Jun 10			16.0		The Boeing Company	
			0.0		US Government (ATPLZY)	
			21.2		US Government (ATPLDG)	
			27.5		ELTA Systems Ltd	
			1.3		Raytheon	
			51.9		Other	12
				117.9		
Jun 10	**Total Expenditure**			1,471.2		
Jun 10	**Remaining Budget**			475.4		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
The Boeing Company	**Dec 01**	**50.4**	Various	**309.2**	**Various**	**Aircraft & Pylon modification kits**	**13**
US Government (ATPLZY)	**Oct 99**	**350.3**	71	**333.8**	71	**APG73 Radars**	
US Government (ATPLDG)	**Dec 06**	**206.8**	66	**235.5**	73	**Radar Warning Receivers**	
ELTA Systems Ltd	May 08	89.8	32	**89.8**	32	**ECM Jammer Pods**	
Raytheon	May 04	53.6	3/0	**71.0**	3/3	**Tactical Readiness Trainers & Tactical Operational Flight Trainers**	**13**

Major equipment received and quantities to 30 Jun 10

Ph2 Hornet Aircrew Training System - completed. Ph2.1 Air Defence Upgrade - completed. Ph2.2 Avionics Upgrade - completed. Ph2.3 Electronic Warfare Upgrade - interim capability delivered.

Notes

Note 1:	Transfer from other phases of AIR 5376.
Note 2:	Transfer from AIR 5376 Phase 1 Hornet Air Crew Training System.
Note 3:	White Paper considerations.
Note 4:	Transfer to Facilities.
Note 5:	Scope increase for Hornet Air Crew Training System.
Note 6:	Administrative Savings Harvest.
Note 7:	Transfer to Facilities.
Note 8:	Decrease for Radio Frequency Jammer.
Note 9:	Skilling Australia's Defence Industry harvest.
Note 10:	Scope increase to include Hornet Electronic Warfare Self Protection Suite upgrade being conducted under Phase 2.3.
Note 11:	**Other expenditure comprises: operating expenditure, contractors, consultants, contingency, 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 20 FMS cases with the US Government to support various stages of the project. Other expenditure includes an amount of $81.8m on aircraft software upgrade FMS cases and an additional $123.8m 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 $48.8m has been spent on fleet modifications by Boeing Defence Australia and BAE Systems Australia.**
Note 12:	**Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top 5 contracts and minor contract expenditure. In particular a total of $11.7m has been spent on aircraft software upgrade FMS cases, $8.3m on Counter Measures Dispenser Set and pylon modification kits from SAAB AB and $6.9m for fleet modification activities undertaken by Boeing Defence Australia.**
Note 13:	**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.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The year-end budget variance is attributable to delays with milestone deliveries and technical issues with overseas suppliers ($6.7m) and favourable exchange rates ($6.2m).**
		(6.7)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		(6.2)	FOREX Variation	
			Commonwealth Delays	
130.8	**117.9**	**(12.9)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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
Variance Explanations	N/A				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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)
	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)
	HACTS (Site Acceptance Test)	Jun 06	Jun 06	Jun 06	0
Variance Explanations	Modification of Validation and Verification aircraft completed earlier than anticipated.				

3.3 Progress toward Initial Operational Capability

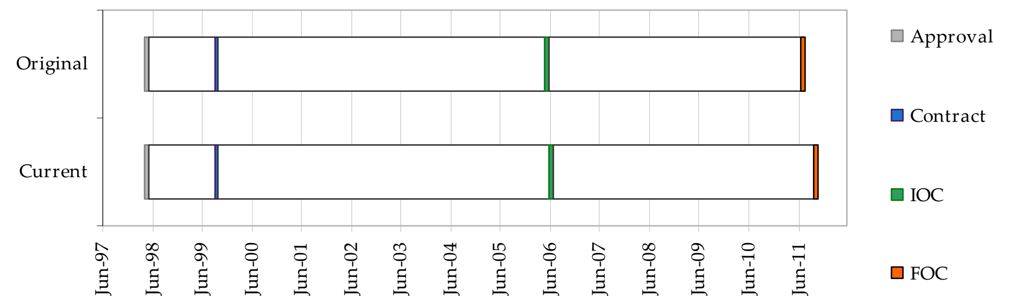
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
Phase 2.1 IOC	N/A	N/A	N/A	N/A
Phase 2.2 IOC	Apr 07	Apr 07	0	N/A
Phase 2.3 IOC	Nov 09	**Aug 10**	**9**	**Delays due to the development and service release of the Australian built software and certification issues with the countermeasures dispensers.**
HACTS IOC	**Jun 06**	**Jul 06**	**1**	Delays in the development and issue of Site Acceptance Report.

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
Phase 2.1 FOC	N/A	N/A	N/A	N/A
Phase 2.2 FOC	Dec 07	Dec 07	0	N/A
Phase 2.3 FOC	Aug 11	**Nov 11**	**3**	**The delivery schedule for the required number of modified aircraft currently fails to meet the FOC milestone.**
HACTS FOC	Mar07	Mar07	0	N/A

Schedule Status as at 30 Jun 10

Approval	IOC		FOC	
May 98	Phase 2.1 IOC	N/A	Phase 2.1 FOC	N/A
	Phase 2.2 IOC	Apr 07	Phase 2.2 FOC	Dec 07
	Phase 2.3 IOC	**Aug 10**	Phase 2.3 FOC	**Nov 11**
	HACTS IOC	**Jul 06**	HACTS FOC	Mar 07

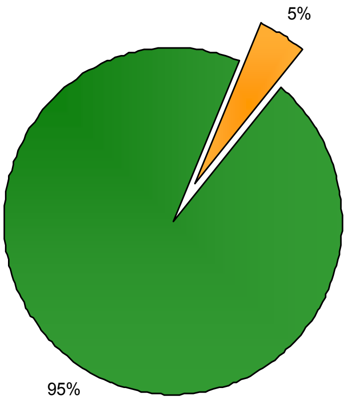


DMO REPORT

Hornet Upgrade

3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)



Green:

Upgraded radar and avionics suite is performing to capability requirement.

Amber:

The Initial Operating Capability (IOC) milestone is delayed due to engineering issues with the Pylon Modification kit and the countermeasures dispensers. HUG PH2 Project Office is currently working with the Contractor to identify options to minimise the delay. In addition, delays have occurred with the HACTS upgrade as a result of the change in procurement strategy which is now FMS orientated. Delivery of the HACTS upgrade to support EW is unlikely before 2013. HUG PH 2 will continue to explore alternate training options pending the completion of the HACTS upgrade.

Red:

N/A

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)		
	Description	Remedial Action
Phase 2.1	There are no outstanding risks associated with this sub phase as it is technically complete.	N/A
Phase 2.2	There are no outstanding risks associated with this sub phase as it is technically complete.	N/A
Phase 2.3	There is a chance that the upgraded F/A-18 A/B Electronic Warfare system will be affected by the inability to adequately test the Electronic Warfare threat libraries leading to an impact on safety.	**The Phase 2.3 project developed a Memorandum Of Understanding with Airborne Self Protection Systems Program Office to purchase a new simulator and the identification of lower level activities. Remedial action was successful. Consequently, this risk is to be retired.**
	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 Electronic Counter Measures (ECM) jammer pod leading to an impact on schedule and performance.	**Flight testing commenced on schedule with a modified F–111 variant. However, late delivery of the F/A-18 variant has delayed some elements of the integration testing. This is now being managed as an issue.**
HACTS	There is a chance that Australian Unique Software Loads will not be compatible with HACTS leading to an impact on performance project cost and schedule.	HACTS Program Office is developing mitigation strategies with Key Stakeholders to address the risk and enable future loading of Australian Unique Software Loads.
	There is a chance that HACTS capability will not be optimised and/or rectified leading to an impact on performance.	HACTS Program Office and Prime contractor are developing a Common Identification Document to capture all Air Combat Group Issues and activities of concern. This document will enable all parties to communicate and prioritise treatment of any known **issues**.

Emergent Risks (risk not previously identified but has emerged during 2009-10)		
	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.**	**The Austblock 8 developers (Integrated Avionics System Support Facility) have been liaising with the USN regarding data deliverables, and prioritised the deliverables based on the Austblock 8 schedule.**
Phase 2.3	**The EL/L-8222 Electronic Counter Measures (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 in place by the Final Operating Capability Milestone.**	**Returning pods to Israel for servicing is not a feasible long term or large scale option due to long transport delays and security issues. The development of a Contract Change Proposal to the Acquisition contract to include minimal support arrangements has been instigated and is being progressed as a high priority. The critical action is to expedite the progression of the EL/L-8222 In-service contract.**

4.2 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.**	**Austblock 7 flight testing has commenced. Senior management intervention has been initiated to minimise the delay.**
	The contracted production rate of aircraft modifications will not meet the FOC milestone.	**The production contract contains mechanisms to improve the production delivery schedule. HUG Ph2 Project Office is working with the Contractor to identify options to recover the schedule.**
	The HACTS will not be upgraded to support the Phase 2.3 configuration to meet the FOC milestone.	**The Project Office will negotiate with Air Combat Group (ACG) stakeholders on potential levels of simulation or alternate training options that could be provided pending HACTS modification.**
	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 FOC 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 the need to recertify the design due to design assumption concerns	**The HUG Ph2 Project Office is working with SAAB to identify a partial interim solution to meet the capability requirements of the Air Force. A long-term solution may require modification to the existing design. If a design modification is required, it will be subject to independent assessment.**
HACTS	The HACTS is unable to host the latest version of the Australian unique aircraft software load.	Continue to investigate issue through HACTS Original Equipment Manufacturer.

4.3 Linked Projects

Project	Description of Project	Description of Dependency
JP 2030	JP 2030 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 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category of DMO 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**

PROJECT DATA SUMMARY SHEET[121]

AIR TO AIR REFUELLING CAPABILITY

AIR 5402

This project was first reported in the 2008-09 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Air Force	New	ACAT II	May 03	Airbus Military

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	AVM Colin Thorne
Branch Head	**AIRCDRE Robert Lawson**
Project Director	Mr Ewan Ward

History	Name	Start	End
Project Manager	Mr Ewan Ward	Sep 04	Current
	Ms Heather Eylward	Oct 01	Sep 04

1.2 Project Context

Project	Explanation
Description	The **$1,889** million Air 5402 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 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, F-111, Hawk Lead-In Fighter, Wedgetail Airborne Early Warning and Control, C-17 Globemaster III, and Joint Strike Fighter. 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.

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[121] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

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 Advanced 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 will be 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 customer's specification, in particular, the first of type military, refuelling systems and support systems for subsequent customer acceptance by end 2010.** **Airbus Military has, however, met many significant challenges during the reporting period including: achievement of civil certification which encompassed all civil and military modifications excluding operation of the military systems; completion of the first aircraft's certification flight test of the pod, hose and drogue refuelling system; completion of developmental testing of the aerial refuelling pod and boom systems; demonstration of the first of type A330 MRTT to MRTT refuelling via the newly developed Boom system and simultaneous refuelling of two F/A-18 Hornets via the hose and drogue system; completion of the second aircraft's initial conversion at the Brisbane Aircraft Conversion Centre (ACC) in October 2009, its ferry back to Madrid and completion of its final conversion, and its current participation in the test program to augment military certification testing for subsequent customer**

	acceptance by end 2010; induction and substantial progress towards completion of conversion of the third aircraft for customer acceptance at the ACC in the end of 2010. **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 refurbishment to operational fleet status; completing the process for the first article aircraft and the associated support system to meet the criteria of the acceptance milestone in Madrid; and completion of conversion of the third aircraft at the Australian Conversion Centre for customer acceptance.**
Current Status	**On 15 October 2010, the Minister for Defence Materiel announced that this project is on the Project of Concern list.** **Cost Performance** The project remains within the approved Budget. **Schedule Performance** **Dates for Acceptance of Aircraft and Simulation Devices have been re-baselined under an agreed plan for completion of the project. Airbus Military expect to complete certification test and evaluation on the first aircraft in Madrid, Spain by end July 2010. Initial conversion of the second aircraft in Brisbane, Australia, was completed in October 2009 and ferried to Spain for final conversion, and to support test and evaluation activities in Madrid. Contractual acceptance of the first aircraft is forecast for October 2010, approximately 22 months behind the original contract baseline schedule. The third aircraft was inducted into the ACC for conversion in October 2009 and is forecast for acceptance in November 2010, approximately 20 months behind the original contract baseline schedule.** **Capability Performance** **To meet the Defence strategic goals, the project is working closely with the contractor to ensure the delivery of essential capability and to complete delivery and acceptance of two aircraft by end 2010. 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 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 Operational Capability (IOC). Some expected non-compliances to the contracted capability include, radio modes access (access to the modes is available, however a change is in development for more efficient access in times of high workload), minor fuel system design issues, and Mission Planning System (MPS). MPS, although improving, is lagging the remainder of the Military Avionics System. A delivery plan for MPS capability has been agreed to meet RAAF requirements for acceptance and IOC. A change in US export policy will impact Electronic Warfare Self Protection capability at IOC but should be resolved by FOC.**

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	N/A	May 03	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
Airbus Military (formerly EADS CASA)	Provision of a new generation air to air refuelling capability comprising five A330 MRTT aircraft and associated supplies and support.	Fixed	ASDEFCON	Dec 04

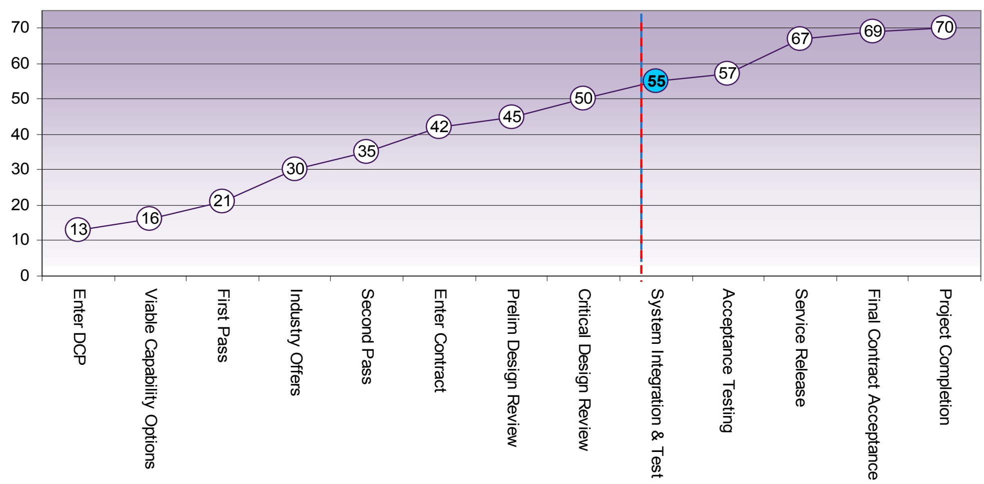
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage: System Integration and Test	Benchmark	7	8	8	8	8	8	8	55
	Current Project	6	8	8	9	8	7	8	54
	Explanation	The Project is reaching the end of the extensive System Integration and Test Phase as the lead customer of the A330 MRTT capability. The contractor has experienced delays in progression through this phase. Technical Understanding of system and support needs is higher than what would be expected at this stage. Commercial risk is being managed.							

Project Stage	Total Benchmark Score	Total Current Score
System Integration and Test	55	54



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

DMO REPORT

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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 10	Price Indexation			**473.9**		
Jun 10	Exchange Variation			**(372.0)**		
Jun 10	**Total Budget**	**1,787.5**		**1,889.4**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09		850.3	**851.0**		**Airbus Military**	
			23.4		**Other**	
				874.4		
FY to Jun 10		**128.9**	**161.1**		**Airbus Military**	
			16.7		**Other**	**5**
				177.8		
Jun 10	**Total Expenditure**			**1,052.2**		
Jun 10	**Remaining Budget**			**837.2**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
Airbus Military	Dec 04	1,413.4	5	**1,591.4**	5	Airbus A330 MRTT & Simulator (1 only)	

Major equipment received and quantities to 30 Jun 10

Certification Test and Evaluation of first aircraft expected July 2010. Initial conversion of second aircraft completed October 2009 and ferried to Spain for final conversion and to support test and evaluation activities. Third aircraft introduced for initial conversion in October 2009.

Notes

Note 1:	Defence Capability direction re currency mix at approval and Government decisions.
Note 2:	Administrative Savings harvest.
Note 3:	Skilling Australia's Defence Industry harvest.
Note 4:	Transfer to DSG for delivery of MRTT infrastructure at RAAF Amberley and at other RAAF bases.
Note 5:	**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.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The underachievement is due to slippage of milestone payments and approval of Contract Change Proposals (CCPs), and associated payments, and savings from lower than expected costs for reimbursement to Air Force for tanker lease costs.**
		(26.1)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		9.2	FOREX Variation	
			Commonwealth Delays	
194.7	**177.8**	**(16.9)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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
	Simulation Devices	Mar 07	Jan 08	Jan 09	22
	Simulation Devices Facility	Apr 07	Nov 07	Jan 09	21
Final Design	MRTT Aircraft	N/A	Sep 06	Jul 07	10
Variance Explanations	The MRTT Aircraft Critical Design Review 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 Critical Design Review Milestone was achieved in June 2006; with a follow-on milestone (designated as the Final Design Review). 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 Critical Design Review 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 Final Design Review proved problematic. These were progressively completed over the following 12 months. Delays to completion of the MRTT Aircraft design process had a knock-on impact to completion of the Simulation Devices Critical Design Review. Completion of the Critical Design Review for the Simulation Devices Facility was delayed due to redesign to accommodate increased security requirements.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Integration	MRTT Aircraft	Aug 08	Dec 08	**Jun 10**	**22**
	Simulation Devices	Feb 09	Dec 09	Dec 10	22
Acceptance	MRTT Aircraft	Dec 08	**Oct 10**	**Oct 10**	**22**
	Simulation Devices and Simulation Devices Facility	May 09	**Dec 11**	**Dec 11**	**31**
	Full Mission Simulator Final Accreditation	Feb 10	**May 12**	**May 12**	**27**
Variance Explanations	System Integration Test & Evaluation is ongoing for the first-of-type MRTT Aircraft. Originally planned as a single-phase activity, the test program was split into two phases to accommodate changes to the Remote Aerial Refuelling Operator console (as described above). 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. **In particular, a further slip of 4 months to the MRTT aircraft acceptance milestone has been as a result of unexpected and continued delays in the development and certification ground and flight testing program.** Acceptance Test & Evaluation of the first MRTT Aircraft will be conducted as part of the Customer Acceptance Process following completion of all system integration testing and aircraft preparation for delivery. **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**.				

3.3 Progress toward Initial Operational Capability

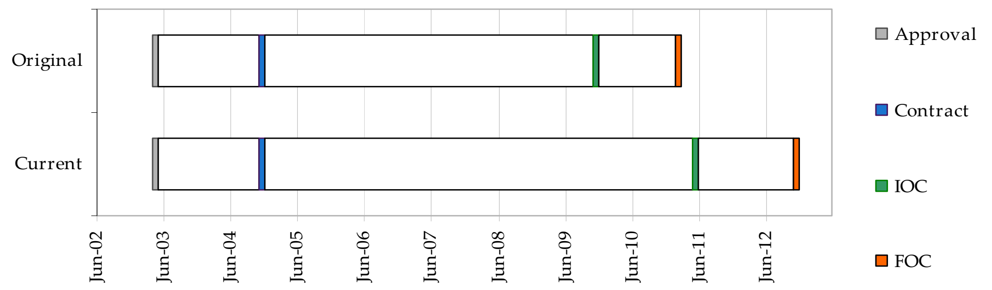
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
MRTT	Dec 09	**Jun 11**	**18**	Delay to achievement of IOC is due to delays to the development, certification and qualification of the first-of-type aircraft. **A further six month delay has been as a result of unexpected additional developmental and certification testing**. Delays have required alternative arrangements for provision of aerial refuelling services to meet Air Force operational and training commitments.

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
MRTT	Mar 11	**Dec 12**	**21**	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. Delays will impact the introduction into service of the new MRTT capability and delay achievement of the expected operational readiness.

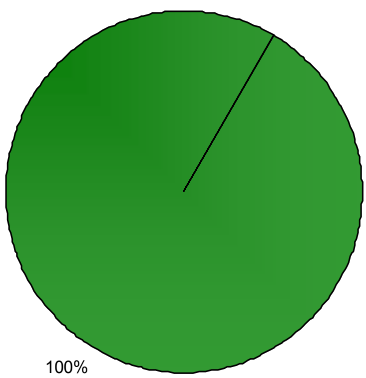
Schedule Status as at 30 Jun 10

Approval	IOC	FOC
May 03	**Jun 11**	**Dec 12**



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)



Green: **The project is currently meeting capability requirements, as expressed in the Materiel Acquisition Agreement. These include, but are not limited to:**

- **Safely and effectively refuelling aircraft equipped with AAR aircraft 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:

N/A

Red:

N/A

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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.
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 development with Subject Matter Experts to ensure contracted requirements are met.
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 United States Air Force 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 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.
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.
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.
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
N/A	N/A

4.2 Major Project Issues

Description	Remedial Action
Human Machine Interface (HMI) Program	**The HMI program requires 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 is conducting workshops with Defence to complete the Cockpit Acceptance test procedures and in parallel working with INTA, to resolve the HMI issues associated with the Flight Warning System (FWS) as identified in the INTA HMI report. Additionally, Airbus Military will release the updated Quick Reference Handbook and Blue Books to reflect agreed changes to the FWS for Qualification and acceptance.**
Non-Compliance Process for Acceptance.	**Defence and Airbus Military have agreed the broad approach for managing non-conformances during Acceptance. Defence and Airbus Military are finalising more detailed procedures to ensure appropriate level delegate review and approval of non-conformances and their associated resolution plans.**

Acceptance of the first of type A330-MRTT to meet Defence strategic requirements.	**Defence is working closely with Airbus Military to ensure the delivery and acceptance of two A330-MRTT Aircraft and its associated logistics support by the end of 2010. 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 Final Operational Capability (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.**
Difficulty in developing a reliable schedule.	Continue to contribute to development of a joint project schedule and foster commitment by both parties to it. A detailed schedule analysis at each project Management Review. **A joint project schedule has been completed and is being used to manage schedule performance.** **This issue has been retired.**
Conversion of the second aircraft at the Australian Conversion Centre at Brisbane Airport is behind schedule.	Significant additional resources have been injected by EADS CASA (from Madrid) and by Qantas to complete the remaining modification at the Australian Conversion Centre more quickly. Up to three shifts have been implemented to increase the tempo of the work required to be completed. Processes have been refined to improve work flow. Additional facilities have been provided to support the extra staff at the Australian Conversion Centre. **Conversion of the second aircraft at the Australian Conversion Centre was completed in October 2009 with the aircraft returning to Madrid, Spain, to participate in the Flight Test program.** **This issue has been retired.**
Hardware and software of major refuelling components are still in development by the subcontractor.	EADS CASA 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 EADS CASA and the sub-contractor to meet their contractual obligations. **This issue remains open.**
Conduct of initial training is impacted by (the planned) lag between completion of testing of the first (prototype) aircraft and completion of development and accreditation of training devices.	Identify and implement workarounds including the use of engineering test benches. Increase skill levels of personnel selected for initial course. **To account for the gap, Introductory training has been extended under CCP-59.** **This issue has been retired.**
The maturity of the Mission Planning System has lagged the remainder of the Military Mission System.	Clarification and agreement on a finite set of requirements with EADS CASA. Agree staged release to minimise impact on ground and flight test schedule. Determine requirements necessary for initial introduction into service (currently in progress). **Final requirements and a schedule for delivery have been agreed.** **This issue has been retired.**

4.3 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 5 – Lessons Learned

5.1 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**

PROJECT DATA SUMMARY SHEET[122]

C-17 GLOBEMASTER III HEAVY AIRLIFTER

AIR 8000 Phase 3

This project was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Air Force	New Capability	**ACAT III**	Mar 06	US Government

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	AVM Colin Thorne
Branch Head	**AIRCDRE Rob Lawson**
Project Director	GPCAPT Andrew Doyle

History	Name	Start	End
Project Manager	WGCDR Warren Bishop	Jan 09	Current
	GPCAPT Andrew Doyle	Jul 07	Jan 09
	GPCAPT Axel Augustin	Jan 06	Jul 07

1.2 Project Context

Project	Explanation
Description	The **$1,835** million Air 8000 Phase 3 Project is to provide the 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.

[122] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

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.
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. Role Expansion activities are progressing on schedule with Air Drop and Aero Medical Evacuation trials conducted successfully. **Capability Performance** Significant project activity remains to deliver outstanding long lead-time logistics support provisions, role equipment, **a Cargo Compartment** training device, **Ground Support Equipment** and facilities required to completely attain the Heavy Air Lift capability. Full Operating 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 have been set up in Australia, anticipated to be by 2011.

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	Mar 06	N/A
Second Pass	N/A	Mar 06	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
US Government	Procurement of C-17 Globemaster III Aircraft, Training and Support Systems.	FMS	FMS	May 06

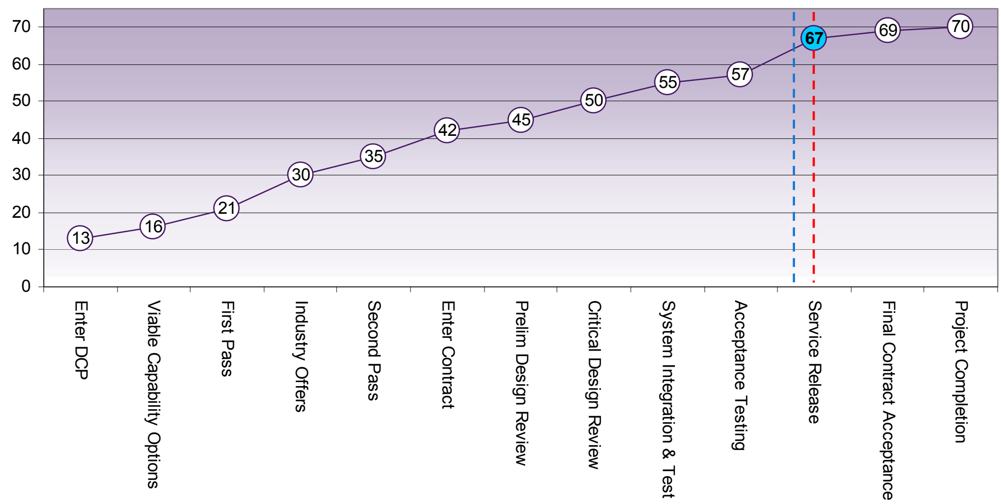
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: Acceptance Into Service	Benchmark	9	10	10	10	10	9	9	67
	Current Project	10	9	**10**	**10**	10	9	9	**67**
	Explanation	• **Schedule: Project activities have been achieved on schedule. Remaining MAA activities are progressing on or ahead of schedule.** • **Cost: Year-end variance is primarily associated with the procurement of C-17 aircraft products being reprogrammed to comply with US Government FMS case mandatory requirements.**							

Project Stage	Total Benchmark Score	Total Current Score
Acceptance into Service	67	**67**



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Mar 06	Original Approved	1,864.4		1,864.4		
	Real Variation	0		0		
Jun 10	Price Indexation			**103.4**		
Jun 10	Exchange Variation			**(133.2)**		
Jun 10	**Total Budget**	**1,864.4**		**1,834.6**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			**1,266.5**		US Government	
			41.0		**Other**	**1**
				1,307.5		
FY to Jun 10			**0**		US Government	
			5.5		**Other**	**1**
				5.5		
Jun 10	**Total Expenditure**			**1,313.0**		
Jun 10	**Remaining Budget**			**521.6**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
US Government	May 06	1,568.3	4	**1,543.1**	4	C-17 Globemaster III Aircraft	2

Major equipment received and quantities to 30 Jun 10
Four aircraft accepted. Weapon System Trainer, Virtual Load Cargo Model and other engineering and maintenance arrangements established.

Notes
Note 1: Other expenditure comprises: operating expenditure, contractors and other capital expenditure not attributable to the aforementioned top 5 contracts and minor contract expenditure.
Note 2: Original contract value based on accelerated schedule with some scope items not included in initial version of FMS Case. Six case amendments have been made to date to capture these residual scope items.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The projects in-year expenditure is substantially lower than previous years and lower than forecast at project outset due to delivery of C-17 aircraft ahead of contracted schedule and at lower-than-anticipated prices. The variance of -$2.6m is primarily attributable to lower than anticipated project procurement and operating costs.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(2.6)	Commonwealth Delays	
8.1	**5.5**	**(2.6)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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
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
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
Variance Explanations	Note 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.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Integration	C-17 Globemaster III Aircraft	(2)	N/A	N/A	N/A
	Simulated Avionics	(3)	Jul 08	**Jan 10**	**(Note 2)**
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	(Note 1)
	C-17 Globemaster III Aircraft A41-209		Mar 08	Jan 08	(Note 1)
	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
Variance Explanations	Note 1: 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). **Note 2: 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.**				

3.3 Progress toward Initial Operational Capability

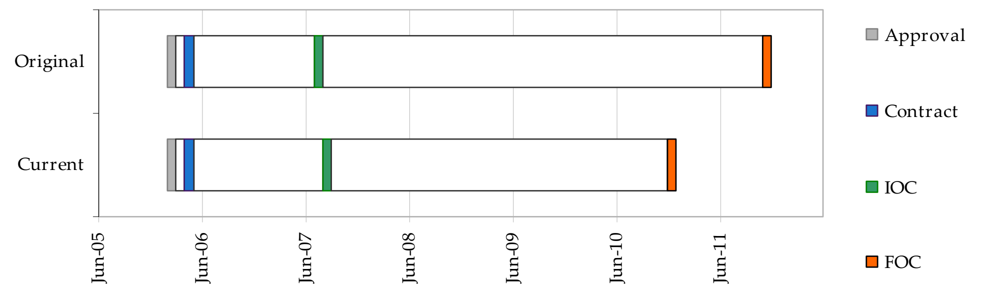
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Aug 07	Sep 07	1	Variance is minimal at approximately ten days. Nil operational implication.

3.4 Progress toward Final Operational Capability

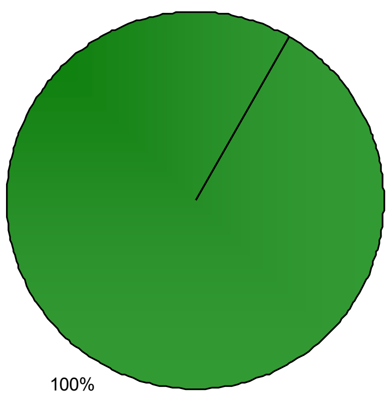
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Dec 11	Jan 11	(11)	FOC is achieved when the C-17 Globemaster **permanent** facilities and FOC related milestones are completed. The majority of these milestones are forecast to be **delivered** earlier than originally planned. **The previously noted FOC milestone, the Maintenance Training Device, was commissioned in March 2010, ahead of the forecast completion date of January 2011.** Therefore, FOC is predicted to be achieved by January 2011, **with the delivery of remaining permanent facilities**, ahead of schedule.

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Mar 06	Sep 07	Jan 11



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	Green: **The project is meeting capability requirements as prescribed in the Capability Definition Documents (CDDs).**
	Amber: **N/A**
	Red: **N/A**

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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 2009-10)	
Description	Remedial Action
Due to the complex nature of the Cargo Compartment Trainer (CCT) and building integration, and the additional requirements for new build CCTs, there is a risk that the CCT facility will not be completed and available for required C-17 loadmaster training to meet MAA obligations.	**This risk will be managed by obtaining and reviewing detailed planning and scheduling information, maintaining close liaison and regular meetings with US Government FMS agencies responsible for delivering the Australian CCT capability.**

4.2 Major Project Issues

Description	Remedial Action
N/A	N/A

4.3 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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**

DMO REPORT

PROJECT DATA SUMMARY SHEET[123]

GUIDED MISSILE FRIGATE UPGRADE IMPLEMENTATION

SEA 1390 Phase 2.1

This project was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Navy	Upgrade	ACAT II	Jun 99	Thales Australia

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	**RADM Peter Marshall**
Branch Head	CDRE Mick Uzzell
Project Director	Mr Mal Adams

History	Name	Start	End
Project Manager	Mr Mal Adams	Sep 03	Current
	CAPT Mal Adams	Jan 02	Aug 03
	CAPT Peter Law	Apr 98	Jan 02
	CAPT John Walton	Jul 96	Jun 98

123 Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

DMO REPORT

1.2 Project Context

Project	Explanation
Description	The **$1,529.6** million Sea 1390 Phase 2 Guided Missile Frigate (FFG) Upgrade 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 US Navy *Oliver Hazard Perry* FFG-7 class Guided Missile Frigates. Each FFG is receiving an improved Anti-Ship Missile Defence 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.
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. Provisional Acceptance of HMA Ships Sydney, Melbourne and the Team Trainer, located at HMAS WATSON were achieved in December 2006, October 2007 and November 2007 respectively. HMAS Darwin achieved Provisional Acceptance in August 2008. **HMA Ships Sydney and Darwin were contractually accepted by the Commonwealth in November 2008, HMAS Melbourne in December 2008 and HMAS Newcastle in September 2009. HMAS Newcastle achieved Provisional Acceptance in May 2009 and achieved Acceptance in September 2009. The Team Trainer achieved Acceptance in September 2009 and the Warfare System Support Centre (WSSC) achieved Acceptance in December 2009. An 'incremental' approach for both Initial Operational Release (IOR) and Operational Release (OR) was agreed by the Defence Materiel Organisation (DMO) and Navy as the most pragmatic means to bring the class into operational employment. This process was addressed in three phases.** **Significant progress resulted in the achievement of contractual acceptance of all four FFGs and facilitated the decision by the Chief of Navy to approve IOR of this capability and begin planning for its operational employment. All four FFGs were offered for IOR in November 2009 and Chief of Navy 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 is inducting the FFGs into a formal program of Naval Operational Test and Evaluation 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 scheduled for third quarter 2010. 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. **The ships are currently being operated by the RAN with HMAS Newcastle deployed to Canada and then to participate in the biannual international exercise RIMPAC 2010 in Hawaii in July 2010. HMAS Melbourne is programmed to deploy operationally in the third quarter of 2010.**
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 Chief of Navy 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 which is the formal Naval Operational Test and Evaluation (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.**
Current Status	This was a Project of Concern in 2009-10. **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 (CAPO 605178NQ) 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.

	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 IOR with the Torpedo Defence System and LeScut decoy excluded.** Contractual acceptance of HMAS Sydney and Darwin and upgraded software was achieved in November 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. 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 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. **Phase 3 was achieved in January 2010 and IOR by Navy for the FFG Class has been achieved with one caveat. Final Contractual Acceptance from the Prime Contractor was substantially achieved in June 2010.The Contractor's remaining obligations under the Contract, which are *necessary to ensure all data and supporting material is provided and due diligence activities are completed, is* to be performed by 28 February 2011 as specified in a Contract Close Out Deed.**

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	N/A	Jun 99	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
Thales Australia (formerly Australian Defence Industry Ltd)	Procurement of upgrades to its FFGs; associated Supplies; provision of a Warfare Systems Support Centre; improvements to the RAN's Operator Trainer and Team Trainer; and logistic support infrastructure and relevant facilities.	Variable	DEFPUR 101	Jun 99

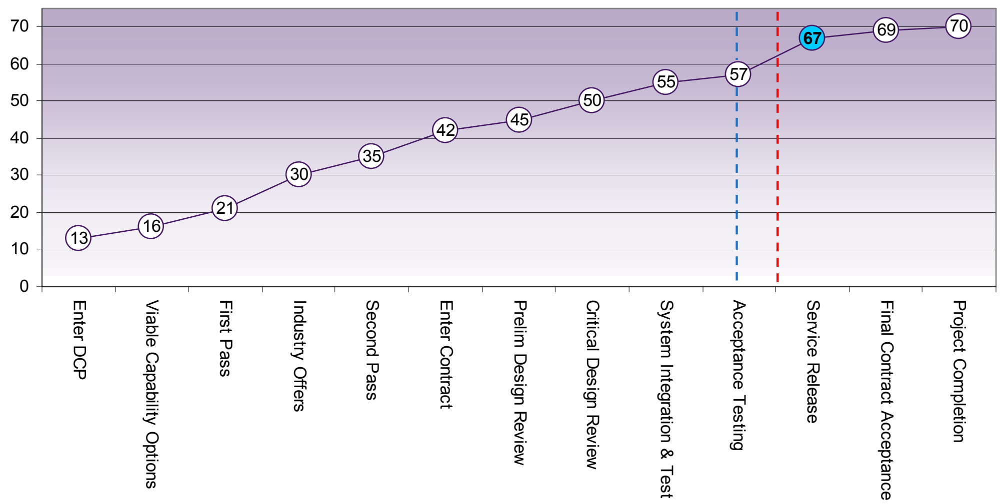
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
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.

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage: **Service Release**	Benchmark	**9**	**10**	**10**	**10**	**10**	**9**	**9**	**67**
	Current Project	**9**	**8**	**9**	**9**	**9**	**10**	**9**	**63**
	Explanation	**The project Contract Final Acceptance milestone was substantially met in June 2010 although the project maturity score only reflects Acceptance into Service. The variance in the maturity score is attributed to the Navy decision and timing of formal Naval Operational Test and Evaluation of the delivered FFG capabilities. 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.**							

Project Stage	Total Benchmark Score	Total Current Score
Service Release	**67**	**63**



2008-09 DMO MPR Status - - - - -

2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Dec 97	Original Approved	1,266.0		1,266.0		1
Nov 98	Real Variation – Budgetary Adjustment	(0.1)	(0.1)			2
Jul 99	Real Variation – Transfer	(152.6)	(152.6)			3
Aug 04	Real Variation – Budgetary Adjustment	(0.7)	(0.7)			4
		(153.4)		(153.4)		
Jun 10	Price Indexation			**228.1**		
Jun 10	Exchange Variation			**188.9**		
Jun 10	**Total Budget**	**1,112.6**		**1,529.6**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			**1216.9**		**Thales Australia**	
			80.1		**Other**	**5**
				1,297.0		
FY to Jun 10			**31.3**		**Thales Australia**	
			13.8		**Other**	**6**
				45.1		
Jun 10	**Total Expenditure**			**1342.1**		
Jun 10	**Remaining Budget**			**187.5**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
Thales Australia	Jun 99	898.6	6	**1,042.6**	4	Upgraded ships and concurrent refit.	**7**

Major equipment received and quantities to 30 Jun 10
Four ships have been accepted. Engineering and maintenance arrangements established.

Notes	
Note 1:	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
Note 2:	Overseas travel not required.
Note 3:	Transfer to Project SEA 1428 PH 2A for the procurement of Evolved Sea Sparrow missiles on behalf of SEA 1390 PH 2.
Note 4:	Administrative Savings harvest.
Note 5:	**Other expenditure comprises: operating expenditure, contingencies, other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure.**
Note 6:	**2009-10 Other payments include significant procurements: USA Foreign Military Sales technical verification & validation trials and ship crew training services ($2.9m); External service providers ($3.8m); initial spares procured outside the Prime Contract ($1.4m); and procurement of an Electronic Support System test set ($4.2m).**
Note 7:	**Other items of equipment under this contract include associated support facilities, training devices and spares, as noted in Section 1.2 of the PDSS. Furthermore, 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.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Post Portfolio Additional Estimates 2009-10, a reprogramming request was processed reducing the 2009-10 funding allocation by $8.963m to $46.6m from $55.5m and increasing the 2010-11 budget allocation by $8.963m.** **Variance attributable to Local Industry delays as the final Contract Milestone 71 was substantially met and only partially paid with the remainder payable in 2010-11 when all remaining obligations under the Contract have been completed.**
			Overseas Industry	
		(1.5)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
46.6	**45.1**	**(1.5)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Requirements	Completion of all Software Specification Reviews	Aug 00	Aug 00	May 01	9
Preliminary Design	Completion of all Preliminary Design Reviews	Oct 00	Oct 00	May 01	7
Critical Design	Completion of all Critical Design Reviews (Critical)	Apr 01	Nov 06	Apr 07	72
Variance Explanations	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)
System Integration	HMAS *Sydney*	Dec 02	Sep 05	Sep 05	33
	HMAS *Melbourne*	Jul 03	Feb 07	Jun 07	47
	HMAS *Darwin*	Feb 04	Feb 08	May 08	51
	HMAS *Newcastle*	Jul 04	Feb 09	Feb 09	55
Provisional Acceptance	HMAS *Sydney*	May 03	Dec 06	Dec 06	43
	HMAS *Melbourne*	Jan 04	Oct 07	Oct 07	45
	HMAS *Darwin*	Jul 04	Aug 08	Aug 08	49
	HMAS *Newcastle*	Jan 05	Jun 09	May 09	52
	Team Trainer	Apr 02	Feb 07	Nov 07	67
	Warfare Systems Support Centre	Apr 04	Nov 08	Nov 08	55
Acceptance	HMAS *Sydney*	Apr 04	Nov 08	Nov 08	55
	HMAS *Melbourne*	Sep 04	Nov 08	Dec 08	51
	HMAS *Darwin*	Mar 05	Nov 08	Nov 08	44
	HMAS *Newcastle*	Sep 05	Dec 09	**Sep 09**	**48**
	Team Trainer	Sep 06	Dec 09	**Sep 09**	**36**
	Warfare Systems Support Centre	Sep 06	Dec 09	Dec 09	39

Variance Explanations	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 Initial Operational Capability

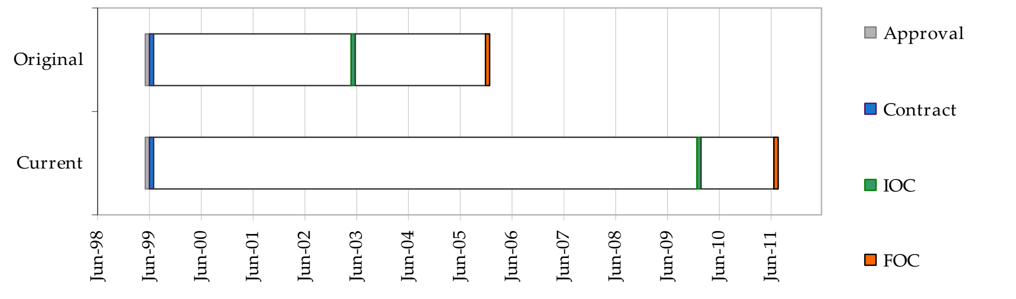
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
HMAS *Sydney*	May 03	**Jan 10**	**79**	A three phased 'incremental' approach IOR and OR has been agreed by the DMO and Navy as the most pragmatic means by which to bring the FFG class to full operational employment. **The first three FFGs were at IOR Phase 1 in April 2009 and have been endorsed to IOR Phase 3, along with HMAS Newcastle in January 2010.** **IOR for the complete upgrade capability was approved by Chief of Navy 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.** **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**	

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanations/ Implications
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 Naval Operational Test and Evaluation managed by Navy, with the allocated period now extended to June 2011 (with endorsement by Chief of Navy anticipated in July 2011) to align with the availability of the required test assets and facilities at the Pacific Missile Range Facility (PMRF) in Hawaii.** **Navy has identified a period in June 2011 for Anti Ship Missile Defence (ASMD) Operational Evaluation firings in conjunction with Project SEA 1390 Ph4 B and the SM-2 Stage 2 (Mid-Course Guidance) Acceptance Test Firings to be conducted by the DMO in Hawaii.** **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.**
HMAS *Melbourne*	Dec 04	**Jul 11**	**79**	
HMAS *Darwin*	Jun 05	**Jul 11**	**73**	
HMAS *Newcastle*	Dec 05	**Jul 11**	**67**	

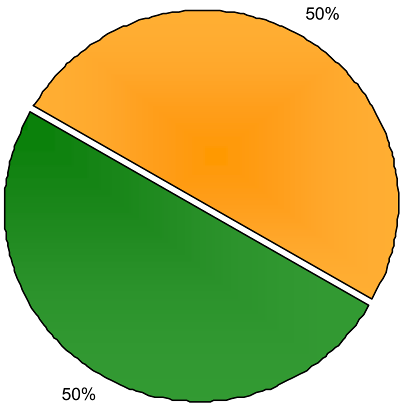
Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Jun 99	**Jan 10**	**Jul 11**



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)



Green: **The project is currently meeting the following capability requirements as expressed in the Materiel Acquisition Agreement. The following capabilities are either equal to or exceed those of the pre-upgrade FFG.**

- **Communication of tactical information;**
- **Hull mounted sonar;**
- **Acoustic and electromagnetic signature; and**
- **Operational Availability.**

Amber: **Electronic Support remains a medium risk to achieving OR of the Anti Ship Missile Defence (ASMD) capability. It will be further assessed during the formal Naval Operational Test and Evaluation period due to complete in July 2011.**

The Torpedo Defence System (TDS) will not undergo Navy Operational Test and Evaluation due to assessed high risk to achieving operational viability. A towed torpedo decoy system has been fitted to HMAS MELBOURNE to address some of the limitations with the TDS.

The design of sealing arrangements and hardware reliability issues affecting the Upgraded Mine and Obstacle Avoidance Sonar (MOAS) capability are currently being addressed. Sea trials have indicated a much enhanced level of detection, display and tracking performance.

Red:

N/A

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	**Remedial Action**
There is a chance that FFG capability support will be affected by an inability to establish effective software support and configuration management arrangements for upgraded systems software leading to an impact on supportability and performance.	**Now no longer a Major Risk.**
There is a chance that FFG Upgraded systems will be affected by inadequate/deficient Reliability Availability and Maintainability (RAM) data leading to an impact on supportability and performance.	**Now no longer a Major Risk.**
There is a chance that Operational Support will be affected by a sub-optimal Warfare Systems Support Centre facility configuration leading to an impact on supportability and performance.	**Now no longer a Major Risk.**
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	**Remedial Action**
Nil	Nil

4.2 Major Project Issues

Description	Remedial Action
For Operational Release, the Electronic Support System (C-Pearl) performance may not be met.	**The Electronic Support System has been endorsed by Chief of Navy as ready for IOR. It will be further assessed during the formal Naval Operational Test and Evaluation period in June 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.	**IOR 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.** **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.**
For Operational Release, the Hull Mounted Sonar (Spherion) performance may not be met.	**Now is no longer a major issue.**

4.3 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 depends on the capability to be sufficiently mature for the inclusion of this additional capability. The initial in-service date for the Guided Missile Frigate Standard Missile 2 lead ship **will be considered by Chief of Navy in the third quarter 2010. Successful Home All Way (HAW) firings were completed on the Australian Station in 2009 and at the Pacific Missile Range Facility, Hawaii, in July 2010 during RIMPAC 2010 biannual international exercise. The software baseline for phase 1, HAW, was fielded in May 2010.**

Section 5 – Lessons Learned

5.1 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	**Contract Management**

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.	
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**

PROJECT DATA SUMMARY SHEET[124]

F/A-18 HORNET UPGRADE STRUCTURAL REFURBISHMENT

AIR 5376 Phase 3.2

This project was first reported in the 2008-09 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2^{nd} Pass Approval	Prime Contractor
Royal Australian Air Force	Upgrade	ACAT II	Oct 03	Various

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Roy McPhail
Project Director	**WGCDR Damien Keddie**

History	Name	Start	End
Project Manager	**SQNLDR Nicholas Moyle**	**Jan 10**	**Current**
	WGCDR Damien Keddie	Dec 07	Dec 09
	WGCDR Ian Nesbitt	Jan 05	Nov 07
	WGCDR John Adams	Jan 04	Dec 04
	WGCDR Steve Drury	Jan 02	Dec 03

1.2 Project Context

Project	Explanation
Description	The **$943** million 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 program**s**, 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:

[124] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

	• 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.
Background	The F/A-18 Hornet was designed to reach a structural fatigue life of 6,000 hours based on a 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.
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 an Initial Operational Capability (IOC) or Final Operational Capability (FOC).
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.
Current Status	**Cost Performance** **24** aircraft have been modified to SRP1D configuration and **ten** aircraft 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 tenth and final aircraft delivered in June 2010.** **Capability Performance** Modified aircraft meet the project technical specification and have been accepted back into service.

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	N/A	Oct 03	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
L-3 Communications MAS (Canada) Inc.	Aircraft modification production (2 SRP1D aircraft and 10 SRP2 aircraft)	Fixed Price / Time & Materials	ASDEFCON (C388529)	Dec 05
Boeing Australia Limited	Aircraft modification production (14 SRP1D aircraft)	Time & Materials	DEFPUR Hybrid (C338545)	Oct 06
L-3 Communications MAS (Canada) Inc.	Design and Integration, prototype installation, modification kits parts Aircraft modification production (1 SRP1D aircraft)	Fixed Price / Time & Materials	ASDEFCON (C338408)	Feb 04
BAE Systems Australia/ L-3 Communications MAS (Canada) Inc. *(Consortium)*	Aircraft modification production (22 SRP1D aircraft)	Fixed Price / Time & Materials	ASDEFCON (C388618)	Apr 09
US Government	Modification Parts	FMS	FMS (AT-P-LBZ)	Aug 04

Note: The signature dates and scope details in Table 1.4 above differ to the disclosures made in the 2008-09 Major Projects Report. The reason for this is that the prior year disclosures were at contractor level, whereas the current year disclosures are specific to each of the aforementioned top 5 contracts. The signature dates represent the date of the project's first financial commitment on each of the top 5 contracts.

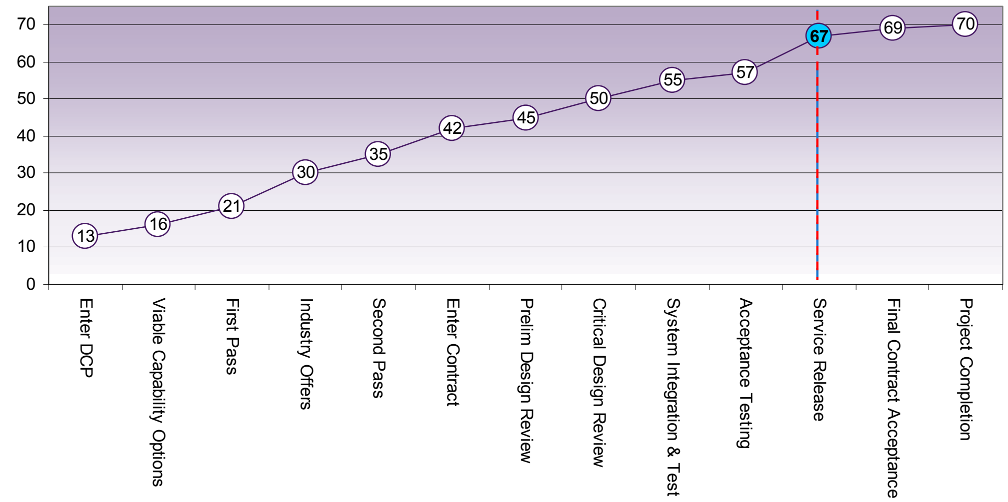
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
F/A-18 Hornet Upgrade AIR 5376 Phase 3.1	This is a complimentary structural modification project that provides continued airworthiness from 64% to 78% of the intended structural fatigue life.

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: Acceptance Into Service	Benchmark	9	10	10	10	10	9	9	67
	Current Project	10	9	10	10	10	8	10	67
	Explanation	• **Schedule:** Project is ahead of schedule for benchmark stage. • **Cost:** Cost risk retired, higher score cannot be achieved until project closure is completed. • **Commercial:** Contractor is delivering as scheduled and contracted. • **Operations and Support:** Operating system not applicable to this refurbishment project.							

Project Stage	Total Benchmark Score	Total Current Score
Acceptance into Service	67	67



2008-09 DMO MPR Status	2009-10 DMO MPR Status

DMO REPORT

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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 10	Price Indexation			**145.0**		
Jun 10	Exchange Variation			**(30.6)**		
Jun 10	**Total Budget**	**829.1**		**943.5**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			**118.4**		**L-3 MAS (C338529)**	
			24.7		**Boeing Australia Limited (C338545)**	
			23.4		**L-3 MAS (C338408)**	
			1.1		**BAE Systems Australia & l-3 MAS (C388618)**	
			33.6		**US Government**	
			50.9		**Other**	**3**
				252.2		
FY to Jun 10			**40.5**		**L-3 MAS (C338529)**	
			6.4		**BAE Systems Australia & l-3 MAS (C388618)**	
			4.1		**US Government (AT-P-LBZ)**	
			5.3		**Other**	**4**
				56.3		
Jun 10	**Total Expenditure**			**308.5**		
Jun 10	**Remaining Budget**			**635.0**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (Current Price) $m (Note 10)	Quantities at Jun 10	Equipment	Notes
L-3 MAS (C338529)	**Dec 05**	**17.0**	1	**170.7**	12	Centre barrel replacement , modifications & 2 SRP1D aircraft	5, 11
Boeing Australia Limited (C338545)	**Oct 06**	**7.6**	6	24.9	14	SRP1/1D aircraft	6
L-3 MAS (C338408)	**Feb 04**	**3.3**	0	25.5	1	SRP1D suite of modifications and one prototype Aircraft	7, 11
BAE & L-3 MAS (C388618)	Apr 09	**30.4**	21	30.8	22	SRP1/1D aircraft	8, 11
US Government (AT-P-LBZ)	Aug 04	**12.6**	11	52.3	30	Centre barrels and modification kits	9, 10
Major equipment received and quantities to 30 Jun 10							
Total of 34 aircraft have been modified and accepted.							
Notes							
Note 1:	Administrative Savings harvest.						
Note 2:	Skilling Australia's Defence Industry harvest.						
Note 3:	**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 ($7.2m); and the movement of Aircraft between Williamtown and Mirabel Canada to undergo the Centre Barrel Replacement Program ($4.3m). Remaining expenditure is attributable to contractor and legal costs and general operating expenditure**						
Note 4:	**Other expenditure comprises the procurement of aircraft Fuel Cells and Nacelle Ramps to support the Project ($1.5m) and the movement of aircraft between Williamtown and Mirabel Canada to undergo Centre Barrel Replacement Program ($1.4m). Remaining expenditure is attributable to contractor and legal costs and general operating expenditure.**						
Note 5:	**Contract C338529 is the prime contract with L-3 MAS for the delivery of 10 centre barrel replacement modified aircraft and 2 SRP1D aircraft. C338529 is managed by the AIR 5376 Phase 3 project team. Signature date is based on signature date of the original contract.**						
Note 6:	**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 TFSPO Hornet Production team. Signature date is based on contract signature date.**						
Note 7:	**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 AIR 5376 project team. Signature date is based on the signature date of CCP8 to C338408 at which the referred scope of work was contracted.**						
Note 8:	**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.**						

Note 9:	**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.**
Note 10:	**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.**
Note 11:	**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.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		4.1	FMS	**FMS overspend relates to higher than expected in-year case activity for Centre Barrel parts. Milestones on the SRP2 program achieved the best case bringing forward spend into 2009-10. Commonwealth delays relate to re-baselining of the production aircraft schedule, reduced SRP2 shipping costs and reduced in-year spend on contract closure activities.**
			Overseas Industry	
			Local Industry	
		0.7	Brought Forward	
			Cost Savings	
		1.0	FOREX Variation	
		(5.4)	Commonwealth Delays	
55.9	**56.3**	**0.4**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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
Variance Explanations	Note[(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)
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
Acceptance	N/A	N/A	N/A	N/A	N/A
Variance Explanations	The first SRP2 prototype aircraft was delayed by two months due to emergent issues discovered during prototype rebuild.				

3.3 Progress toward Initial Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	N/A	N/A	N/A	Refer to Table 1.2 Project Uniqueness.

3.4 Progress toward Final Operational Capability

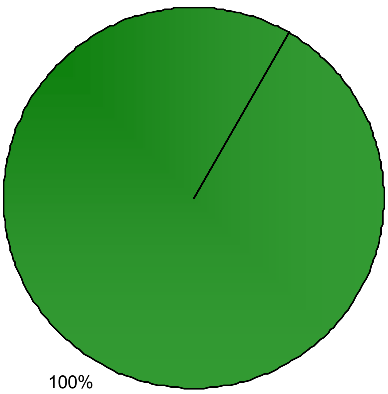
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	N/A	N/A	N/A	Refer to Table 1.2 Project Uniqueness.

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Oct 03	**N/A**	**N/A**
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 an Initial Operational Capability or Final Operational Capability.		

3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)



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 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	**Remedial Action**
Long-term Hornet aircraft availability may be affected by Ageing Aircraft issues, leading to an impact on performance.	Develop a business case to detail requirements of a further structural refurbishment program to address Ageing Aircraft issues.
Project Office output schedule, cost and performance adversely affected by loss of critical staff (see Note).	Develop Project staff transition plan for input into TFSPO staff transition plan.
Note: This risk was recorded in Project risk logs as at 30 June 2009 but was not included in the 2008-09 Major Projects Report.	
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	**Remedial Action**
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.**

4.2 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.**

4.3 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 5 – Lessons Learned

5.1 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.	**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 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 must be programmed to accommodate such uncertainties.	**Requirements Management**

PROJECT DATA SUMMARY SHEET[125]

BUSHMASTER PROTECTED MOBILITY VEHICLE

LAND 116 Phase 3

This project was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Australian Army and Royal Australian Air Force	Replacement	ACAT III	Nov 98	Thales Australia

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	**MAJGEN Grant Cavenagh**
Branch Head	BRIG Mike Phelps
Program Director	**Ms Sarah Myers**

History	Name	Start	End
Project Manager	**Mr James Palmer**	**Jan 10**	**Current**
	Mrs Norrell Swanson	Jul 07	**Jan 10**
	Mr Jon Hill	Oct 05	Jul 07
	LTCOL Louise Abell	Jan 03	Oct 05
	LTCOL Mark Egglar	Jul 00	Dec 02
	Mr Kevin Heath	Oct 99	Jul 00
	LTCOL Mike Phelps	May 98	Oct 99
	LTCOL WD Feakes	1993	May 98

1.2 Project Context

Project	Explanation
Description	The **$926 million** Land 116 Phase 3 project is to deliver 737 vehicles in seven variants; troop, command, mortar, assault pioneer, direct fire weapon, air defence and ambulance as

[125] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

	well as up to 184 trailers. 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.
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. 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	**A major challenge for the project has been the acquisition and installation of the Signal Onboard Two-Wire Audio System internet protocol (SOTASip) communications harness, a replacement for the current obsolescent in-service harness. This is primarily due to the contractor experiencing difficulties in meeting the Commonwealth's specified requirements. Resolution of outstanding issues is expected late 2010. To date, delays are impacting on the project achieving Final Operational Capability for PP1 (Ambulance Variant only) and PP2 vehicles.** **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.**

Current Status	**Cost Performance** **The project remains within approved budget. Some SOTASip payments to the contractor have been rescheduled as a result of delays.** **Schedule Performance** **All PP1 and PP2 vehicle deliveries are now complete; however FOC has not been achieved due to delays in introducing the SOTASip communications harness into service. The project has delivered 136 PP3 vehicles at 30 June 2010.** **Capability Performance** All variants are meeting their required specifications. The specifications for the Air Defence variant have been finalised, **and the contractor is now producing a prototype.** **The project is currently working with Thales in relation to the development of an External Composite Armour solution for approximately 160 PP3 vehicles.** **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 Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	N/A	Nov 98	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
Australian Defence Industries (now Thales Australia)	Provision of Bushmaster vehicles.	Variable	DEFPUR 101	Jun 99
Thales Australia	**SOTASip Communications System**	**Fixed**	**ASDEFCON Vol 2**	**Feb 09**

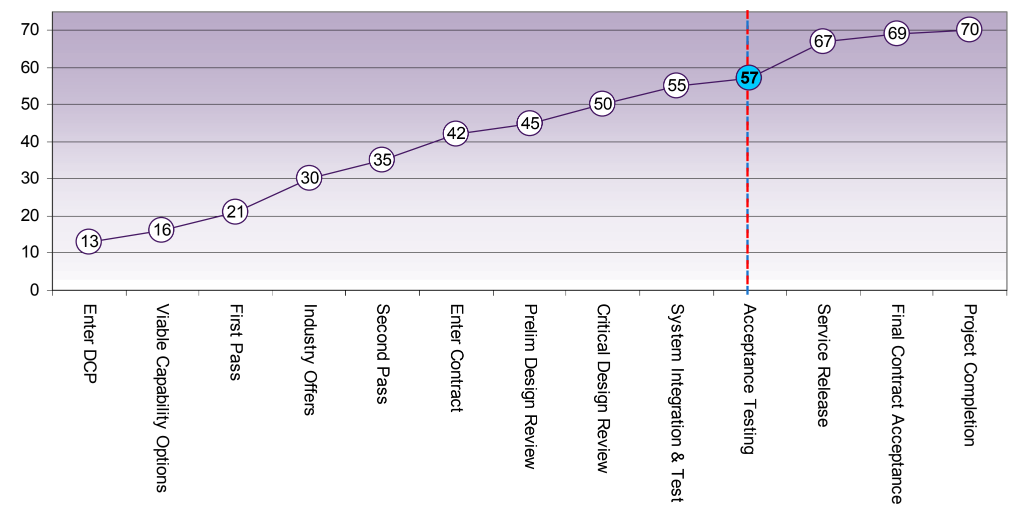
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes: Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: Acceptance Testing	Benchmark	8	8	8	8	9	8	8	57
	Current Project	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.							

Project Stage	Total Benchmark Score	Total Current Score
Acceptance Testing	57	57



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m	Contractor	Notes
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 10	Price Indexation		**118.9**		
Jun 10	Exchange Variation		**(3.1)**		
Jun 10	**Total Budget**	**810.4**	**926.2**		

2.2 Project Expenditure History

Date	Description	$m	Current $m	Contractor	Notes
Prior to Jun 09		**400.1**		**Thales Australia (Prime Contract)**	
		6.7		**Thales Australia (SOTASip)**	
		68.5		**Other**	**3**
			475.3		
FY to June 10		**75.2**		**Thales Australia (Prime Contract)**	
		0.8		**Thales Australia (SOTASip)**	
		17		**Other**	**3**
			93		
Jun 10	**Total Expenditure**		**568.3**		
Jun 10	**Remaining Budget**		**357.9**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
Thales Australia	June 99	170.0	370	**619.5**	737	Bushmaster Protected Mobility Vehicles	4
Thales Australia (SOTASip)	Feb 09	35.8	737	35.8	737	Communication System	

Major equipment received and quantities to 30 Jun 10

Total of 300 vehicles acquired in Production Period 1. Total of 144 vehicles acquired in Production Period 2. Currently 136 from a total of 293 vehicles have been acquired in Production Period 3. Engineering and maintenance arrangements established.

Notes

Note 1: Additional Protected Mobility Vehicles for Enhanced Land Force requirements.

Note 2: Additional Protected Mobility Vehicles for Overlander requirements.

Note 3: Other expenditure comprises: ILS deliverables, facilities, PSPs, project management and operating expenses. The major ILS deliverables this FY were Automatic Fire Suppression Kits ($4.534m), Power packs ($2.438m) and Upper Control Arms ($2.330m) all from Thales Australia.

Note 4: The date of the original tender and therefore the base dollar date of the original contract was Oct 95.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The year to date variance of -$9.2m is due to the rescheduling of SOTASip payments linked to the Detailed Design Review and the Functional Configuration Audit for SOTASip Communication System. LND116 is forecasting this variance to be partially recovered by September 2010 when the SOTASip Detailed Design Review is achieved and completely by October 2010 when the SOTASip Functional Configuration Audit milestone is achieved.**
			Overseas Industry	
		(9.2)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
102.2	**93.0**	**(9.2)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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**		**Aug 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
	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**	**0**
Variance Explanations	Initial testing of the first variant revealed a number of deficiencies against the specification that required rectification and design changes prior to acceptance and production. This had a consequential effect on the system and design review progress for the subsequent variants. As a result additional testing was required which impacted on completing critical design review and contractor test and evaluation.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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**	**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
	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**	**0**
Variance Explanations	Additional reviews and testing requirements impacted the ability of Thales to conduct Production Acceptance Testing and Evaluation in the original timeframe. The situation was also impacted by the priority to support vehicles deployed on operations. Technical issues that resulted in design changes impacted on the ability to finalise Production and Acceptance Testing and Evaluation.				

3.3 Progress toward Initial Operational Capability

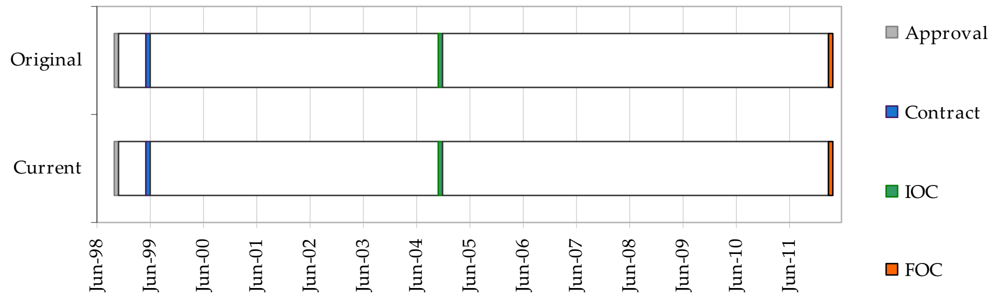
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC - PP1	N/A	Dec 04	N/A	IOC was achieved in December 2004 when full rate production delivery commenced for PP1 vehicles.
ISD - PP1	Jul 07	Mar 08	8	The original In Service Date for the PP1 vehicles was July 2007. All variants met In Service Date with the exception of the 12 Ambulance variants which were delivered in March 2008 due to their technical complexity.
IOC/ISD - 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.
IOC/ISD - PP3	Oct 11	Oct 11	0	N/A

3.4 Progress toward Final Operational Capability

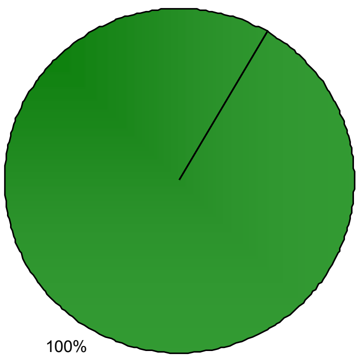
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC - PP1	Oct 07	**Nov 10**	**37**	**Delays in the acquisition and installation of communications harness equipment (SOTASip) have resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles are to be retrofitted before issue to Army.**
FOC - PP2	Apr 09	**Nov 10**	**19**	
FOC - PP3	Apr 12	Apr 12	0	N/A

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Nov 98	**Oct 11**	**Apr 12**



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	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 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	Remedial Action
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 Protected Mobility Vehicle mission profile will be affected by the requirement for sustained towing of a trailer leading to an impact on schedule, performance and safety.	Contractor to conduct a trials program to evaluate the likelihood of design changes to Protected Mobility Vehicle.

There is a chance that the Protected Mobility Air Defence Variant development will be affected by complex requirements in the specifications leading to an impact on performance, cost and schedule.	**This risk has been reassessed by the project and is now rated as a moderate risk.**
There is a chance that the specifications of the Protected Mobility Air Defence Variant will be affected by changes to current Ground Base Air Defence doctrine during design and development leading to an impact on schedule and performance.	Stakeholders will be engaged on a regular basis to ensure the impact of any proposed changes to doctrine are fully considered before implementation.
There is a chance that the delivery of the Protected Mobility Vehicle to the Commonwealth will be affected by overseas sales leading to an impact on schedule.	Thales has provided an undertaking to consult with the Commonwealth where any potential schedule conflict arises from other customer enquiries.
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
Nil	Nil

4.2 Major Project Issues

Description	Remedial Action
Issue of vehicles to Army has been postponed as result of delays in the design approval for the SOTASip communications harness.	**The Commonwealth has adopted a collaborative approach with Thales to resolve arising issues. Thales has commenced integration of the system in advance of the Functional Configuration Audit at their own risk which will reduce schedule delays.**
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.	**The Commonwealth is working closely with Thales to assist in the development of a solution that meets the specified requirements. If a capability solution cannot be provided then the Commonwealth may revisit the market to source a compliant solution. Cost estimates have included contingency for the expected increase in cost of light armour material.**
The issue of Protected Mobility Vehicles (PMVs) to the Army has been affected by the unavailability of Government Furnished Material (VIC 3 and headsets) leading to an impact on cost and schedule.	**An alternative communications harness (SOTASip) and headsets are currently being procured through Thales, and will be installed to all vehicles.**
The construction of project direct funded facilities has been affected by construction delays leading to an impact on cost and schedule.	DSG as the agency responsible for all facilities construction, is providing the project with regular updates on the status of the project funded facilities they are managing. As a result, progress has been made particularly in relation to facilities located at Townsville and Bandiana.
Substantial delays in the processing and implementation of Engineering Change Proposals by the original equipment manufacturer are impacting on schedule and supportability.	**Regular working group meetings between the Commonwealth and Thales are being conducted to prioritise and progress outstanding Engineering Change Proposals.**

4.3 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 5 – Lessons Learned

5.1 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**

PROJECT DATA SUMMARY SHEET[126]

NEXT GENERATION SATCOM CAPABILITY

JP 2008 Phase 4

This project was first reported in the 2009-10 DMO MPR

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Joint Services	New Capability	ACAT II	Sep 07	US Government

30 June 2010	Name
General Manager	Ms Shireane McKinnie (acting)
Division Head	Mr Michael Aylward
Branch Head	Mr Ivan Zlabur
Project Director	Mr Greg McKinnon

History	Name	Start	End
Project Manager	Mr Greg McKinnon	Jul 06	Current

1.2 Project Context

Project	Explanation
Description	The $894 million 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.
Background	In 2007 the Australian Government considered a range of options to deliver a wideband satellite communications capability for the ADF. One of the options considered was the Wideband Global Satellite (WGS) partnership with the US Government. 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). Partnering with the US Government on the WGS program was approved as providing the

[126] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

	best value for money option to meet the capability requirement. 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. The first WGS satellite (WGS 1), 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 the Australian Eastern and Western Seaboard. This will be achieved through the delivery of ground stations at Geraldton in Western Australia and HMAS Harman in the ACT. These ground stations are first of type for Australia. 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. This will ensure that adequate numbers of ADF personnel can effectively operate the WGS system as part of the integrated US Wideband Satellite Communications Operations Centres (WSOC). The user community is very enthusiastic and motivated to use the WGS system as it is the only military delivered service supporting the ADF's Middle East Area of Operations (MEAO). As additional satellites are launched and the indigenous anchoring capability is rolled out, the use of the system will expand through the use of a range of ADF platforms that will become operational over the coming years.
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 will be 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, DMO 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 1 Star 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.
Current Status	**Cost Performance** Current indications, based on recent real-time progress and achievement data from the US Government, show that the Project will be completed within the approved budget. **Schedule Performance** No change is anticipated to the Project Completion Date. The milestones achieved so far include. WGS Service Initial Operational Capability (IOC); Interim Anchor Capability IOC (backhaul); and establish WGS Training for ADF personnel. Interim Anchor Capability FOC (Backhaul & Aust IA Station(s)) is fifteen months behind schedule. **Capability Performance** The first two satellites are now operational and both have exceeded their operational requirements. Australia used 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 increase levels of capability. The mature offshore anchoring capability was set to work October 2009.

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	NA	Sep 07	NA
Second Pass	NA	Sep 07	NA

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
US Government	MOU to deliver service across WGS constellation.	Firm Fixed	MOU Agreement	Nov 07
The Bridge Networks	Interim anchoring provides access to the WGS capabilities flights from Australia	Firm Fixed	ASDEFCON (Complex)	Nov 08

1.5 Other Current Project Phases or Sub-Projects

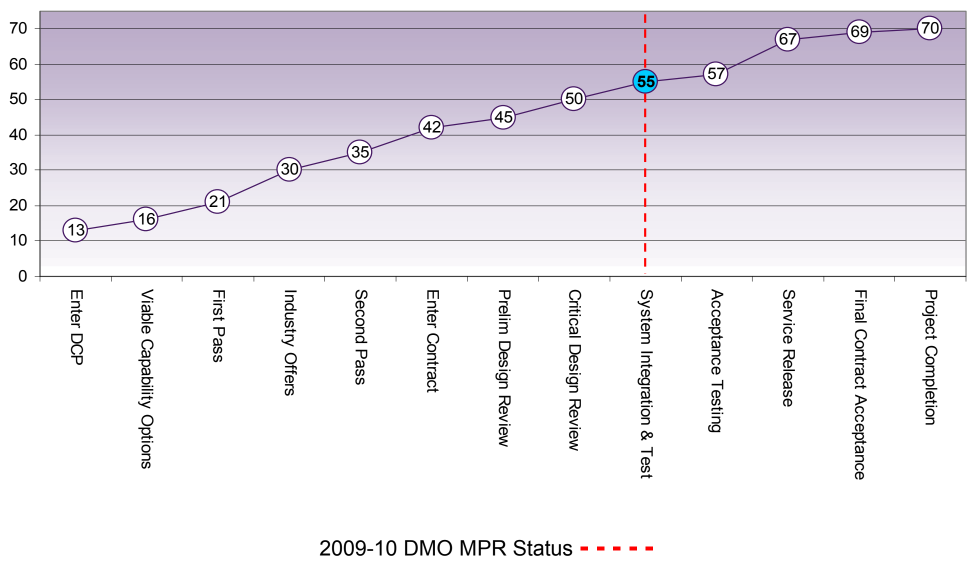
Phase or Sub-Project	Description
P 2008 Phase 3F	This project will provide the mature Australian Western Seaboard anchoring capability for the WGS constellation.
JP2008 Phase 5B	Yet to be approved, will provide the mature Australian Eastern Seaboard anchoring capability for the WGS constellation.

1.6 Project Maturity Score and Benchmark

Maturity Score		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: System Integration and Test	Benchmark	7	8	8	8	8	8	8	55
	Current Project	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 2010. • **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 two 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.							

Note: Schedule through Operations and Support are grouped under the heading "Attributes".

Project Stage	Total Benchmark Score	Total Current Score
System Integration and Test	55	55



Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m		Current $m	Contractor	Notes
Sep 07	Original Approved	884.9		884.9		
	Real Variation	0		0		
Jun 10	Price Indexation			107.3		
Jun 10	Exchange Variation			(98.1)		
Jun 10	**Total Budget**	**884.9**		**894.1**		

2.2 Project Expenditure History

Date	Description	Base Date $m		Current $m	Contractor	Notes
Prior to Jun 09			105.3		WGS MOU	
			1.6		Bridge Network	
			6.8		Other	1
				113.7		
FY to Jun 10			90.6		WGS MOU	
			4.4		Bridge Network	
			4.2		Other	1
				99.2		
Jun 10	**Total Expenditure**			**212.9**		
Jun 10	**Remaining Budget**			**681.2**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
US Government	Nov 07	866.2	1	866.2	1	WGS 6	2
The Bridge Network	Nov 08	11.2	2	11.7	2	Ground Station	3

Major equipment received and quantities to 30 Jun 10
Two satellites successfully launched and in operation.

Notes	
Note 1:	Other expenditure comprises: operating expenditure, contingencies, other capital expenditure not attributable to the aforementioned top two contracts and minor contract expenditure.
Note 2:	The MOU will provide access to a constellation of six satellites, however, Australian ownership is limited to WGS 6.
Note 3:	The quantity of two Ground Stations comprises single separate ground stations on the eastern and western seaboard.

DMO REPORT

2.4 Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(4.2)	Overseas Industry	$2.217m has been slipped to FY 10/11 due to contractor delays with the Interim Anchoring program and $1.964m is delays relating in purchase order slippage for Offshore Anchoring and the Integration Facility
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
103.4	99.2	(4.2)	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Design	WGS 6 and WGS Constellation	N/A	N/A	N/A	
Mission System Review	Interim Anchoring Mission System Review	Dec 08		Nov 09	11
Variance Explanations	The MOU construct does not provide the Commonwealth 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. The Interim Anchoring Mission System Review (MSR) delay is 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)
US Government Acceptance	WGS 6	Nov 13		Nov 13	
Test Readiness Review	IAS – East TRR	Jul 09		Mar 10	8
	IAS – West TRR	Jul 09		Mar 10	8
Acceptance	IAS - East Acceptance	Sep 09		Aug 10	11
	IAS – West Acceptance	Sep 09		Sep 10	12
Variance Explanations	Test Readiness Review (TRR) and Acceptance milestones for the Interim Anchoring System (IAS) have slipped primarily due to the more extensive and demanding level of engineering process and breadth of WGS certification testing required to approve the system to be used on the WGS constellation.				

3.3 Progress toward Initial Operational Capability

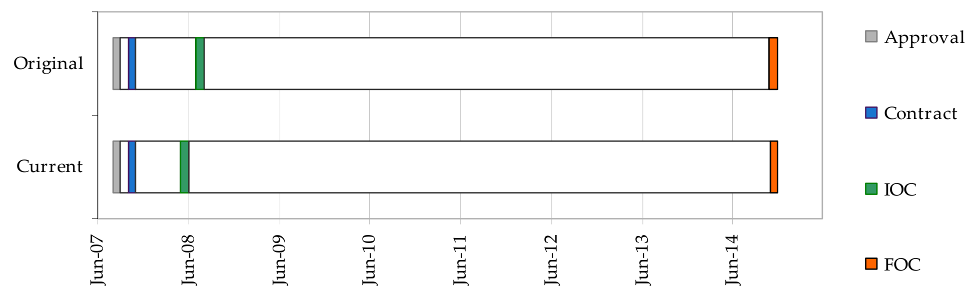
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
WGS Service IOC	Aug 08	Jun 08	(2)	Achieved ahead of schedule upon activation of WGS1
Offshore Anchoring	Nov 08	Jun 08	(5)	Achieved through the use of US infrastructure

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
WGS Service FOC	Dec 14	Dec 14	0	Achieved upon US Government operational acceptance of WGS 6. It is to be noted the US Acquisition Baseline (IOC) for WGS 6 is June – December 2013. December 2014 relates to the full operational transition of all JP2008 Phase 4 project elements.
Interim Anchoring System	Jul 09	Oct 10	15	The level of engineering process and breadth of WGS certification testing to satisfy the WGS certification requirements have proven to be more extensive and demanding on both the Project Office and The Bridge Network than originally anticipated. 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.

Schedule Status as at 30 Jun 10

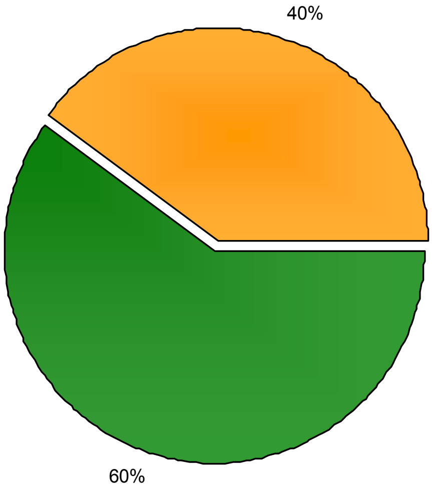
Approval	IOC	FOC
Sep 07	Jun 08	Dec 14



Next Gen Satellite

DMO REPORT

3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	Green: Cost, schedule and 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: The required US Government support to deliver, integrate and support security accreditation of the situational awareness tools at the DNOC remains a challenge. Systems on track to be installed. However, information security requirements are still being determined. The required US Government support to coordinate and activate the WGS's orbital slot is under pressure. The Project office has developed an activation plan which has been agreed in principle by the US Government.
	Red:

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	Remedial Action
Activation of Satellite orbital slots	In principle agreement with the US Government has been achieved to enact a strategy based on a project developed activation paper.
Obtaining US Government Security Accreditation of the Situational Awareness Tool integration may be more onerous than originally envisaged.	US Government to report on its determination via a formal security assessment, which will impact the architecture of the planning and monitoring environment for Australia.
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 2009-10)	
Description	Remedial Action
Nil	Nil

4.2 Major Project Issues

Description	Remedial Action
Failure of Interim Anchoring System (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.

4.3 Linked Projects

Project	Description of Project	Description of Dependency
Nil	Nil	Nil

Section 5 – Lessons Learned

5.1 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

PROJECT DATA SUMMARY SHEET[127]

HIGH FREQUENCY MODERNISATION

JP 2043 Phase 3A

This project was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Joint Services	Upgrade	ACAT II	Aug 96	Boeing Defence Australia

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	**Mr Michael Aylward**
Branch Head	Ms Myra Sefton
Project Director	Mr Andrew Schmidt

History	Name	Start	End
Project Manager	Mr Andrew Schmidt	Jul 04	Current
	Mr John Gordon	Aug 97	Jul 04
	Mr Alan Wilson	Nov 95	Aug 97
	Captain Ian Noble	May 93	Nov 95

1.2 Project Context

Project	Explanation
Description	The **$663** million JP2043 Phase 3A project provides for the procurement of a Modernised High Frequency Communications System for Defence long-range communications. The Fixed Network component comprises four High Frequency stations, one station in each of the Riverina (New South Wales), Townsville (Queensland), Darwin (Northern Territory) and North West Cape (Western Australia) 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 top-level capabilities of the modernised network. The Fixed Network capability will be provided in two major stages. The first stage (the Core

[127] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

	System) replaced the existing Navy and Air Force High Frequency networks and is now supporting ADF operations. The second stage of the Fixed Network capability (the Final System) will provide increased automation and enhanced functionality and is still undergoing development.
Background	Defence Communications Corporate Plan of May 1991 directed that existing ADF High Frequency 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 High Frequency 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 High Frequency 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 High Frequency communication network and its follow-on support, and High Frequency upgrades to an initial range of Mobiles; and • Phase 3B (cancelled 1999) – an implementation Phase involving High Frequency upgrades to selected remaining Mobiles. The Phase 3A Prime Contract was signed in December 1997 with Boeing Australia (now Boeing Defence Australia). It is variable price, initially comprising 40 per cent milestone payments and 60 per cent earned value payments. This was subsequently amended to milestone payments only, after substantial delays to progress were experienced by the Contractor. A Network Operation Support Contract with Boeing Australia was executed at the same time as the Prime Contract, to take effect from Final Acceptance of Prime Contract deliverables. 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 High Frequency Upgrade Kits for follow-on Chinook installations, plus two Generic High Frequency 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 Mobiles within 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 High Frequency — 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 The Australian National Audit Office carried out a performance audit of the project in 2007. Audit Report No. 34 2006–2007 was tabled in Parliament in May 2007.

Uniqueness	The High Frequency 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, provision was made in the contract for the use of, what was at the time, relatively new methodology of Integrated Product Development Teams which included Contractor and Commonwealth personnel. These were included for project insight and to reduce risk particularly in the important areas of requirements clarification, systems engineering and acceptance, test and evaluation. While not as effective as originally expected the use of these teams did achieve moderate success. The System being provided is designed to be one of the most advanced of its type in the world. It incorporates capabilities leading those in similar High Frequency communications systems in the United States and the United Kingdom.
Major Challenges	The project has suffered implementation delays but that part of the new communication system which replaced the legacy systems previously operated by the Navy and Air Force **(the Core System) commenced** operational **service in** 2004. **This Core System was upgraded to the fixed network Final System, which commenced operational service in October 2009.** The project is now focused on the Mobiles upgrades. The capacity to utilise the additional functionality provided by the Final System immediately following Final Acceptance will be limited by the status of the Mobiles Upgrade program. Platform availability will be an issue for all Mobiles upgrades. The upgrade schedules need to be coordinated with the maintenance schedules and operational requirements of the platforms. Other risk factors related to Mobiles upgrades include the task of integrating High Frequency upgrade equipment with existing communications systems of varying levels of maturity and sophistication, and of accommodating the new equipment within the spaces available. Development of radio specific software drivers to provide operational compatibility with the modernised High frequency System will also be required.
Current Status	This was a Project of Concern in 2009-10 **Cost Performance** The project is tracking within its approved budget. Some payments to the contractor **had** been withheld as a result of failure to meet contracted schedule milestones. **Since April 2009 the contractor has achieved all major contracted milestones and has received payment against this achievement.** **Schedule Performance**
	The Core System was accepted in October 2004 and achieved Initial Operational Release (IOR) in November 2004, replacing all Defence legacy High Frequency Systems (with the last legacy site closed in November 2005). The delivery schedule for the Final System, including the single upgraded Chinook, was rebaselined following the execution of a Deed of Settlement and Release in February 2004 and a Deed of Agreement in May 2005. Boeing Defence Australia experienced delay in the delivery of the Final System capability and failed to meet a significant delivery milestone in October 2007. Subsequently the Commonwealth agreed to negotiate with Boeing Defence Australia on the basis of granting schedule relief in return for receiving appropriate compensation. Negotiations commenced in February 2008 and ended in June 2008 with the parties failing to reach agreement on an acceptable overall compensation package. Following technical and schedule reviews that occurred between July and September 2008, the Commonwealth and Boeing Defence Australia agreed to recommence negotiations in October 2008. Negotiations were conducted at the senior executive level and resulted in a Deed of Settlement, Release and Amendment being signed in April 2009. This Deed provided for agreement to a revised schedule to contract completion as well as resolution of various contractual issues.

	Since signature of the Deed of Settlement, Release and Amendment in April 2009, Boeing Defence Australia has achieved progress ahead of the revised schedule and has met all remaining major contractual milestones. Successful completion of Introduction Into Service activities in October 2009 moved operations from the Core System level of capability to the Final System level of capability, and provided the second Network Management Facility at HMAS Harman ACT. The Network Management Facility at Russell ACT has subsequently been upgraded to Final System standard and provides a backup capability. Achievement of this milestone triggered the commencement of the Network Operation Support Contract, transferring operations and maintenance of the system from the acquisition contract to the sustainment contract. **Previous** delays have impacted on the upgrade schedule for the Mobiles not yet in **contract as the Mobiles upgrades will be based on products and design material developed under the Prime Contract with Boeing Defence Australia.** These delays, together with platform availability problems, mean that the Mobiles program may extend to 2016.
	Capability Performance **The Final System** is now providing a reliable service in support of operational ADF platforms, **generally** meeting or exceeding the specified availability. Compared to the replaced Navy and Air Force High Frequency **Communication** Systems, the **Final** System provides: ▪ greater automation; ▪ improved frequency management; ▪ joint communications planning tools; ▪ improved area of coverage; ▪ **automated non-secure phone patches;** ▪ secure phone patches; ▪ centralised management & control; ▪ reduced operations and maintenance staff; ▪ **automated distress voice monitoring;** ▪ **automated email;** ▪ **automated fax; and** ▪ **auto-replicating dual Network Management and Urgent Voice Monitoring facilities.** Operators and maintenance personnel report a good degree of satisfaction with the **Final** System. **With the roll out of a later software build, several minor performance issues raised during the introduction into service activities have now been remedied and the system stability has improved significantly.** **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 to the Mobiles Upgrade programs. Issues that need to be addressed include remaining Life of Type of in-scope platforms and the current need for either a full or partial modernised high frequency communications capability upgrade.**

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	N/A	Aug 96	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
Boeing Defence Australia	Deliver a Modernised High Frequency Communications System.	Variable	DEFPUR 101 v46	Dec 97

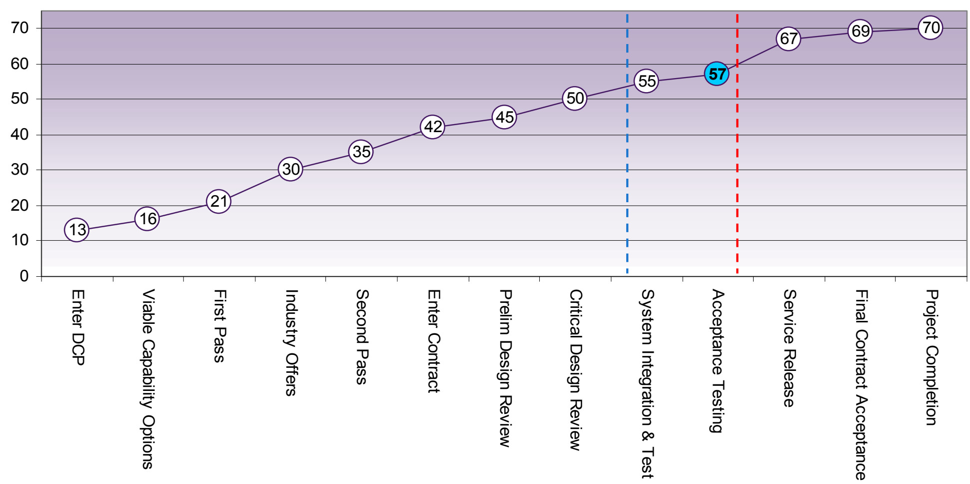
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage: **Acceptance Testing**	Benchmark	**8**	8	8	8	**9**	8	8	**57**
	Current Project	**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.**							

Project Stage	Total Benchmark Score	Total Current Score
Acceptance Testing	**57**	**59**



2008-09 DMO MPR Status - - - - -　　2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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
		5.5		5.5		
Jun 10	Price Indexation			**139.6**		
Jun 10	Exchange Variation			**12.6**		
Jun 10	**Total Budget**	**510.5**		**662.7**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			**315.4**		**Boeing Defence Australia**	
			57.1		**Other**	**8**
				372.5		
FY to Jun 10			**36.0**		**Boeing Defence Australia**	
			5.6		**Other**	**9**
				41.6		
Jun 10	**Total Expenditure**			**414.1**		
Jun 10	**Remaining Budget**			**248.6**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
Boeing Defence Australia	Dec 97	309.6	1	**315.7**	1	High Frequency Communications Network	

Major equipment received and quantities to 30 Jun 10	
Final System level of capability achieved.	
Notes	
Note 1:	Transfer from other phases of JP 2043
Note 2:	Scope change to include Wideband High Frequency Direction Finding capability
Note 3:	Transfer for installation at Robertson.
Note 4:	Transfer to DSG as contribution to construction of Defence Network Operations Centre and infrastructure support.
Note 5:	Transfer to facilities.
Note 6:	Administrative Savings harvest.
Note 7:	Skilling Australia's defence Industry harvest.

Note 8:	**Other expenditure comprises: $16.5m for Government Furnished Materials for use by the contractor; $6.9m attributable to expenditure in DEFMIS; and operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.**
Note 9:	**Other expenditure comprises: $0.9m for null steering capability; $1.55m for Government Furnished Equipment for use by contractors; and operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Variance is due to indices and price variation being higher that estimated.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		2.7	FOREX Variation	
			Commonwealth Delays	
38.9	**41.6**	**2.7**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Requirements	Core System	Apr 98		Jun 98	2
	Final Systems (Fixed Network)	Jul 99		Jun 04	59
	Mobile Generic (In Contract)	Jul 99		Mar 05	68
Preliminary Design	Core System	Nov 98		Jan 00	14
	Final Systems (Fixed Network)	Jul 00		Aug 05	61
	Mobile Generic (In Contract)	Feb 00		Jul 05	65
Critical Design	Core System	Nov 99		Dec 00	13
	Final Systems (Fixed Network)	Dec 01		Nov 06	59
	Mobile Generic (In Contract)	Dec 02		Nov 06	47
Variance Explanations	System Requirements Review delayed due to requirements instability. The June 1999 Deed of Agreement acknowledges 'requirements instability'. Preliminary Design Review: Requirements instability & scope changes. 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)
System Integration	Final System (Fixed Network)	Sep 03		May 08	56
Acceptance	Core System	Mar 01		Jun 04	39
	DMO Acceptance – Core System	Nov 01		Oct 04	35
	Final System (Fixed Network)	Feb 04		**Apr 10**	**74**
	DMO Acceptance – Final System	May 04		**Apr 10**	**71**
	Generic Mobiles	Dec 03		Dec 09	72
Variance Explanations	Core System: Contractor delays with software development and system instability. Final Systems and Mobiles: Contractor delays with software development, resource shortages and technical reviews.				

3.3 Progress toward Initial Operational Capability

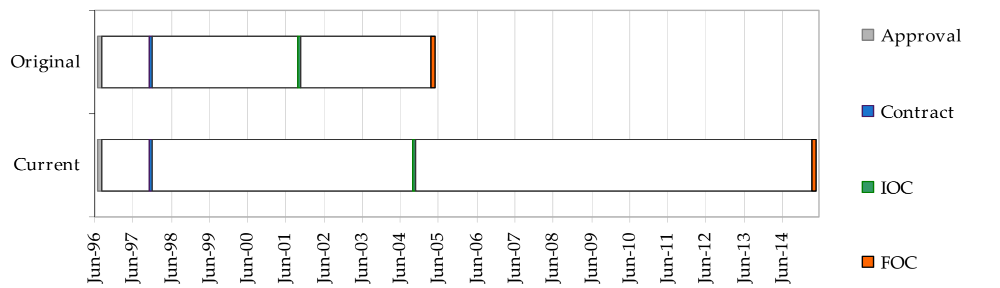
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC – Core System	**Nov 01**	**Nov 04**	**36**	**Delays due to Contractor delays with software development and system instability.** **Core System supported operations until IOC of Final System. No formal Operational 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.

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	May 05	**May 15**	**120**	Delays in IOC lead to consequent delays in FOC. Responsibility for Operational Release **of the Final System has passed** to Navy Systems Command following Final Acceptance **in April 2010.** **This date is based upon the last of the 87 Mobiles upgrades obtaining FOC.** Deferral of operational capability.

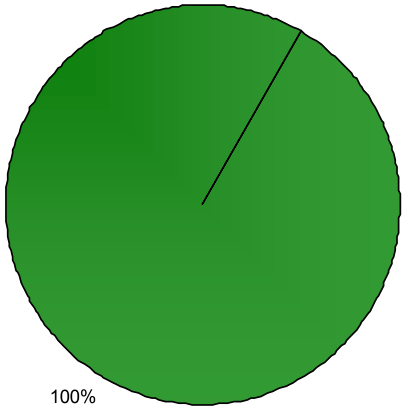
Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Aug 96	**Nov 04**	**May 15**



DMO REPORT

3.5 Measures of Effectiveness

<table>
<tr><th colspan="2">Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)</th></tr>
<tr><td rowspan="3"></td><td><u>Green:</u>
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.</td></tr>
<tr><td><u>Amber:</u>
N/A</td></tr>
<tr><td><u>Red:</u>
N/A</td></tr>
</table>

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	Remedial Action
Delayed Radio Study for Mobiles may impact on Mobiles Upgrade program.	**Risk retired. Boeing Defence Australia agreed to complete this work under a Contract Change Proposal signed February 2010. Work will be finalised by October 2010 negating any further delays to the Mobiles Upgrade program due to the Radio Study.**
There is a risk that the Fixed Network will be affected by failure to meet contractual Grade of Service and Speed of Service requirements leading to an impact on performance and schedule.	**Risk retired. Integration and test program including performance modelling has been completed with most requirements being met. Limited relief against a small number of lower level requirements in the detailed specification was provided following agreement by stakeholders.**
There is a risk that the Fixed Network will be affected by inadequate software design documentation leading to an impact on cost, performance and supportability.	**Risk retired. An independent audit was conducted on the software design documentation; the findings were that the documentation is adequate for the project's needs.**
Delayed implementation of Support Services Contract may impact on support for Mobile **Upgrade** program.	Risk is **now** assessed as low due to progress on **relevant Mobile Upgrade work through other contracting mechanisms.**

Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
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 assessed as medium. The Land Platforms may require an interim fit to be installed until the approved replacement cryptographic equipment is available. This could affect both cost and schedule for the Mobiles Land platforms upgrades.**
There is a chance that the proposed Mobile Upgrades scope change is not approved by Government as planned during third quarter 2010, potentially delaying the Mobiles Upgrade program.	**Risk is assessed as medium. Mobiles Upgrade program is proceeding at risk, based on the direction provided to DMO at the Project Management Stakeholder Group meeting held in August 2009. Flexibility to adjust the program is being retained pending Government Approval.**

4.2 Major Project Issues

Description	Remedial Action
Fixed Network software development had not achieved the agreed schedule.	**Issue retired. All software development has been completed.**
Contractor delays will delay completion of Mobile Upgrades beyond current project completion date.	**Issue retired. Addressed with Capability Development Group in context of schedule review for contract deliverables and the impact on other project deliverables. Capability Development Group agreed an amendment to the Materiel Acquisition Agreement for JP2043 following the signing of the Deed of Settlement, Release and Amendment in April 2009. The Contractor has subsequently achieved progress ahead of the amended Materiel Acquisition Agreement.**
As a consequence of delays to Final System Acceptance, the Project has had to provide fixed network operators for the operational Core system following post-out of Navy fixed network operators as of January 2009 (in accordance with Navy's long-term plans). The Contractor is to supply fixed network operators when the Network Operation and Support Contract commences late 2009.	**Issue retired. From January 2009 the Project contracted directly with recruitment agencies to fill this gap until the Contractor was required to provide the operators from commencement of the Network Operation and Support Contract in October 2009. The Deed of Settlement, Release and Amendment of April 2009 identified the Contractor as responsible for the cost of these fixed network operators.**

4.3 Linked Projects

Project	Description of Project	Description of Dependency
JP 2069	**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 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Categories of DMO 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**

PROJECT DATA SUMMARY SHEET[128]

ARMIDALE CLASS PATROL BOAT

SEA 1444 Phase 1

This project was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Navy	Replacement	ACAT III	Oct 02	DMS

30 June 2010	Name
General Manager	**Ms Shireane McKinnie (acting)**
Division Head	**RADM Peter Marshall**
Branch Head	**Mr Alan Evans**
Project Director	Mr Frank Kresse

History	Name	Start	End
Project Manager	Mr Frank Kresse	2009	Current
	Mr Darren Toohey	2008	2009
	Mr Peter Davey	2000	2007

1.2 Project Context

Project	Explanation
Description	The **$537** million Sea 1444 Phase 1 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.**
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

[128] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

DMO REPORT

Armidales

	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 Final Operational Capability (FOC) for the class early 2012. HMA Ships MARYBOROUGH, CHILDERS and ARMIDALE have completed their rectification work as scheduled.** **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 have been successfully trialled and will now be fitted across the Class. **Sea-boat davit hydraulics.** Initial test results on the sea-boat davits indicated that hydraulic piping modifications and upgrades to the hydraulic power packs have been successful in delivering a system that meets the contracted performance. **Trials on the fully modified vessel to prove that the system delivers an acceptable capability should be completed late 2010.** **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 being investigated by the prime contractor. This does not impact the safety of the STP or sewage system in relation to the production of H_2S or other toxic gases.**

Current Status	**Cost Performance** Project remains within budget. **Schedule Performance** Progress continues towards achievement of FOC, which remains dependent on rectification of outstanding build defects. **Capability Performance** **All vessels continue to meet the Navy's operational requirements. The Patrol Boat Systems Program Office continues to close extant 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 March 2012.**

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	Jun 01	N/A
Second Pass	N/A	Oct 02	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
DMS	Acquisition of 14 patrol boats and 15 years of support with a 5 year extension option.	Variable	SMART 2000/ ASDEFCON	Dec 03
BAE	**Acquisition and Installation of PRISM III Radar Detection System capability onto the ACPB**	**Fixed**	**SMART 2000/ ASDEFCON**	**Sep 04**

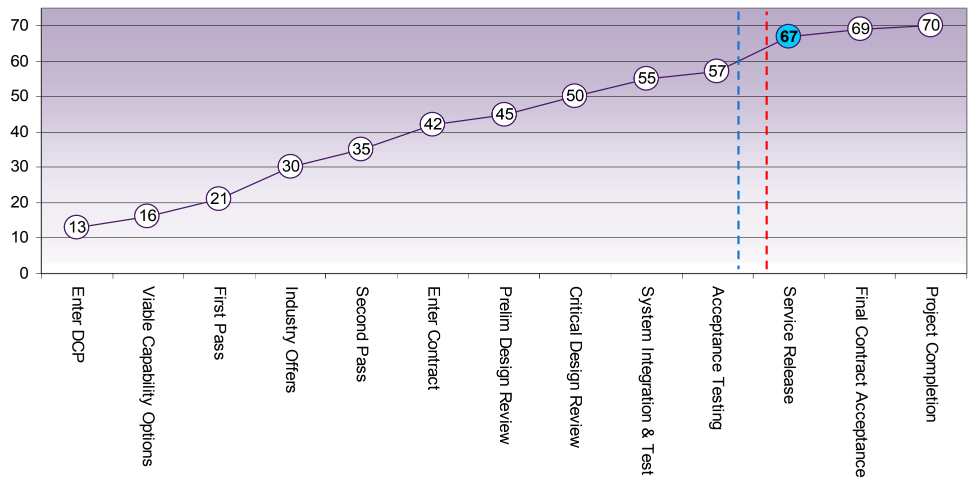
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage: Acceptance Into Service	Benchmark	9	10	10	10	10	9	9	67
	Current Project	10	9	**10**	**10**	**9**	8	9	**65**
	Explanation	• **Schedule: The platform is in service and is meeting all operational commitments.** • **Cost: Not all project costs have been determined and the project is not closed financially.** • **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.**							

Project Stage	Total Benchmark Score	Total Current Score
Acceptance Into Service	67	**65**



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

DMO REPORT

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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 10	Price Indexation			**72.9**		
Jun 10	Exchange Variation			**(11.0)**		
Jun 10	**Total Budget**	**474.8**		**536.7**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			**409.9**		**DMS**	
			14.8		**BAE**	
			47.6		**Other**	**8**
				472.3		
FY to Jun 10			**3.1**		**DMS**	
			0.5		**BAE**	
			3.0		**Other**	**11**
				6.6		
Jun 10	**Total Expenditure**			**478.9**		
Jun 10	**Remaining Budget**			**57.8**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
DMS	Dec 03	316.6	12	**391.6**	14	Armidale Class Patrol Boats	9
BAE	**Sep 04**	**13.0**	**12**	**16.2**	**14**	**PRISM III Systems**	**10**

Major equipment received and quantities to 30 Jun 10
All 14 boats have been accepted. Engineering and maintenance arrangements established.

Notes	
Note 1:	Real adjustment due to incorrect currency mix used at time of approval.
Note 2:	Administrative Savings harvest.
Note 3:	Transfer to Joint Materiel Agency for supply of medical allowance list.
Note 4:	Joint Ammunition Logistic Organisation for Typhoon (gun) 22mm rounds.
Note 5:	Increased scope for the number of Patrol Boats from 12 to 14.
Note 6:	Skilling Australia's Defence Industry harvest and transfer to DSG for office fit out in Darwin.
Note 7:	Transfer to DSG for upgrades of wharf facilities at Darwin and Cairns.
Note 8:	**Other expenditure comprises: Legal Services $1.1m, Purchase of Rafael Typhoon Cannons**

	$5.3m, Purchase of Cryptographic equipment $2.4m, Consultant Activities for achieving FOC $1.0m and other operating and capital expenditure not attributable to the aforementioned top 2 contracts.
Note 9:	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.
Note 10:	**The variation in price is as a result of the PRISM III acquisition and installations on the additional 2 vessels.**
Note 11:	**Other expenditure comprises: Legal services $0.2m, Site Project Management Services for 3 Rectification Periods $0.2m, Engineering Consultants and Technical Service Providers $0.7m, $1.4m Fuel Settlement Deed and $0.5m of other operating capital expenditure not attributable to the aforementioned top 2 contracts.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**A cost saving of $0.1m has been identified against DMS Contract Change Proposal Production Costs. The remaining variation of $6.3m relates to the retirement of risk payments associated with:** • **the Through Life Support pre-payment; and** • **excess store consumption.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
		(6.4)	Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
13.0	**6.6**	**(6.4)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Preliminary Design	ACPB	Feb 04		Feb 04	0
Critical Design	ACPB	May 04		Apr 04	(1)
Variance Explanations	N/A				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Acceptance	ACPB 01	May 05		Jun 05	1
	ACPB 02	Oct 05		Nov 05	1
	ACPB 03	Nov 05		Dec 05	1
	ACPB 04	Mar 06		Apr 06	1
	ACPB 05	Mar 06		Apr 06	1
	ACPB 06	Jun 06		Jun 06	0
	ACPB 07	Jul 06		Jul 06	0
	ACPB 08	Oct 06		Oct 06	0
	ACPB 09	Nov 06		Nov 06	0
	ACPB 10	Mar 07		Apr 07	1
	ACPB 11	Mar 07		May 07	2
	ACPB 12	Jun 07		Jul 07	1
	ACPB 13	Sep 07		Sep 07	0
	ACPB 14	Nov 07		Nov 07	0
Variance Explanations	Boats 1-5 delayed due to contractor labour shortages - permissible delays. 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 Initial Operational Capability

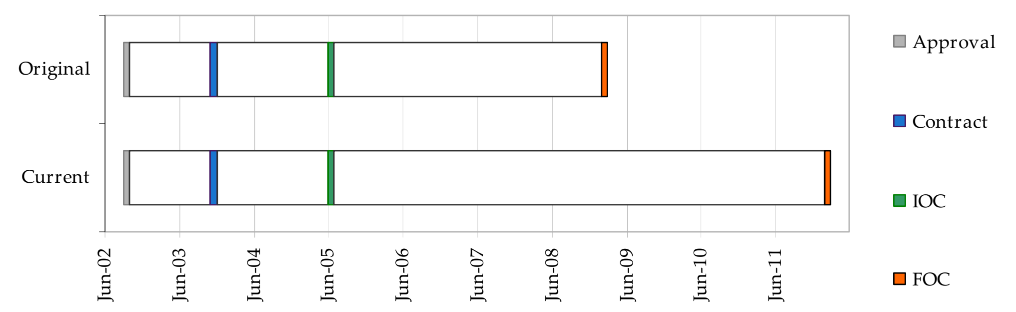
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
ACPB 01	N/A	Jul 05	N/A	The IOC date for each boat was not specified by Navy until after boat acceptance had been achieved.
ACPB 02	N/A	Jan 06	N/A	
ACPB 03	N/A	Feb 06	N/A	
ACPB 04	N/A	May 06	N/A	
ACPB 05	N/A	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	

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Mar 09	**Mar 12**	**36**	**Delay in achieving FOC due to outstanding latent defects that must be rectified to satisfy Navy Operational Release requirements. Operational Release 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 early 2012. HMA Ships MARYBOROUGH, CHILDERS and ARMIDALE have completed their rectification work as scheduled.**

Schedule Status as at 30 Jun 10

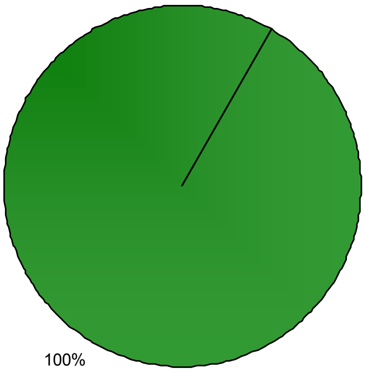
Approval	IOC	FOC
Oct 02	See Table 3.3	Mar 12



DMO REPORT

Armidales

3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	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 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (risk identified by standard project risk management processes)	
Description	Remedial Action
Navy standards are different to commercial standards resulting in a risk to customer acceptance.	**This risk has been retired.**
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.**
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
There is a chance that the Final Operational Capability (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 Final Operational Capability (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.**

4.2 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 and ARMIDALE 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 have also been trialled on two vessels and results indicate that the modifications have been successful in reducing the amount of returned fuel and in preventing the shearing of excess fuel which contributed to the cloudy fuel issue. These purifier sets will now be fitted across the Class as equipment delivery and suitable maintenance periods allow. 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.**
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 and ARMIDALE . 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 first three 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 and initial test results indicate that the modified system is able to meet the contracted ship specification. Further testing is to take place to confirm that the system delivers an acceptable capability, including a determination as to whether the modifications produce a system that is inherently safe to operate. Modifications will be rolled out across the Class once the system is accepted by Navy.**
Integrated Logistic Support – 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 ISS contract with Defence.	**The contractor, supported by Defence, has developed a recovery plan and the following remediation strategies are being implemented:** • **The appointment of a National Training Manager and two Training Developers to review training procedures and course curriculum.** • **More rigid compliance with Australian Qualifications Training Framework standards.** • **Ongoing Quality Assurance audits of the ACPB training system** • **More flexible training approaches will be developed, and** • **Better use of RAN Instructors**

DMO REPORT

4.3 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 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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**

PROJECT DATA SUMMARY SHEET[129]

ANZAC ANTI SHIP MISSILE DEFENCE

SEA 1448 Phase 2B

This project was first reported in the 2009-10 DMO MPR

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractors
Royal Australian Navy	Upgrade	ACAT I	Sep 05	ANZAC Alliance & CEA Technologies

30 June 2010	Name
General Manager	Ms Shireane McKinnie (acting)
Division Head	RADM Peter Marshall, RAN
Branch Head	CDRE Mick Uzzell, RAN
Project Director	CAPT Rob Elliott, RAN

History	Name	Start	End
Project Manager	CAPT Rob Elliott, RAN	Feb 08	Current
	Mr Grant Boore	Oct 06	Feb 08
	Mr Chris Eggleton	Feb 03	Oct 06

1.2 Project Context

Project	Explanation
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, with an approved budget of $459 million 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.

[129] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

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 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. Consequently, Defence has successfully conducted a number of risk reduction maturity demonstrations of the CEA phased array radar systems CEAFAR and CEAMOUNT since 2004. 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,* commenced its upgrade in January 2010 and is expected to complete its sea testing in July 2011. CEA Technologies have been under contract to the Commonwealth since December 2005 delivering a continuum of work, including; initial risk reduction and system architecture studies, prototype system build and test, and production and testing of the first ship system that is being installed in HMAS *Perth* during 2010. The ANZAC Alliance has similarly been under contract with the Commonwealth since mid 2005 for systems engineering and design effort, leading to the installation and overall system testing of the lead ship HMAS *Perth* in July 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 ADF will be the first to operate a warship with the Australian designed and manufactured CEA Technologies low power active phased array radar 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.

Current Status	This was a Project of Concern in 2009-10. **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. **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 18 months. **Capability Performance** Under the revised acquisition strategy, a series of risk reduction demonstrations have been carried out with the CEA phased array radar system since July 2008. These demonstrations have provided sufficient evidence to Defence to demonstrate that the capability being provided by the radar should meet the directed requirements. On-going demonstration of the overall upgraded ASMD capability at land-based test sites using the operational software also continues to successfully demonstrate the capability being delivered.

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	Nov 03	Nov 03	0
Second Pass	Sep 05	Sep 05	0

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
ANZAC Ship Integrated Material Support Program Alliance (ASIPA)	Supplies to be delivered under this contract include: • Overall design, production, testing and installation of all ASMD sub-systems into lead ship only leading to acceptance into Naval Service. • Procurement of 17 x Kelvin Hughes SharpEye navigation radar systems.	Variable	Alliance	Jul 05
CEA Technologies	Supplies to be delivered under this contract include: • Design, production testing and installation of lead ship CEA phased array radar system. • Procurement of phased array radar acquisition obsolescence components and build of sub-systems to ensure retention of strategic industry workforce.	Variable	ASDEFCON	Dec 08

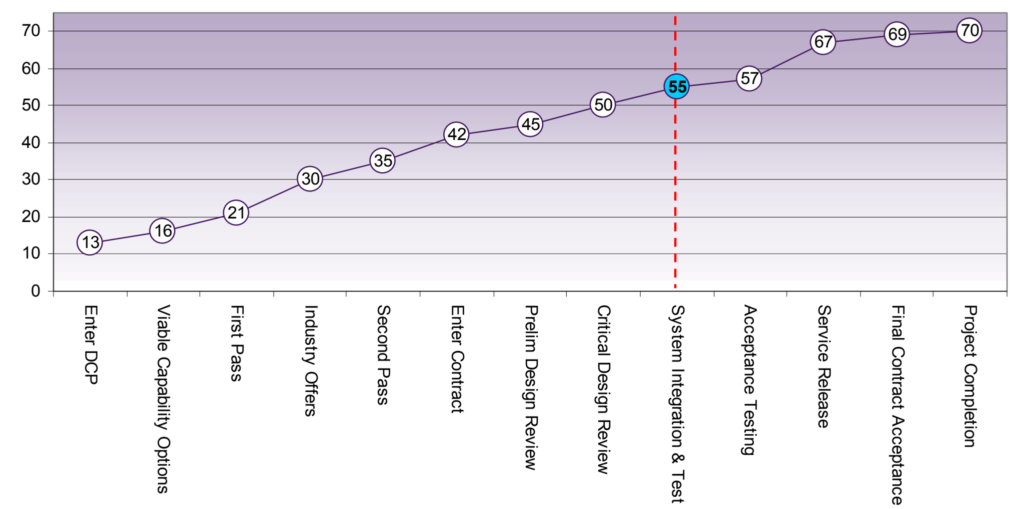
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
Phase 2A	Phase 2A of the ASMD Project 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.

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage: System Integration and Test	Benchmark	8	7	8	8	8	8	8	55
	Current Project	7	8	8	8	8	8	8	55
	Explanation	• **Schedule:** There have been minor schedule delays associated with the update to the new acquisition strategy being reflected in the contracts with the phased array radar. All contracts are now in place, but will require completion of the lead ship (May 2011) test activities before the benchmark score can be assessed as achieved. • **Cost:** With the approval of the new acquisition strategy (single ship installation only and test before further ships approved) the costs remain within the approved budget.							

Project Stage	Total Benchmark Score	Total Current Score
System Integration and Test	55	55



2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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			71.0		
Jun 10	Exchange Variation			(10.0)		
Jun 10	**Total Budget**	**397.5**		**458.5**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			15.3		BAE Systems Australia	
			24.8		SAAB Systems Pty Ltd	
			69.0		CEA Technologies (P3 Contract)	3
			13.9		CEA Technologies (PAR Production)	4
			5.9		ICWI Membership	
			2.4		Other	5
				131.3		
FY to Jun 10			18.6		BAE Systems Australia	
			19.7		SAAB Systems Pty Ltd	
			0.7		CEA Technologies (P3 Contract)	3
			50.5		CEA Technologies (PAR Production)	4
			2.8		ICWI Membership	
			1.3		Other	5
				93.6		
Jun 10	**Total Expenditure**			**224.9**		
Jun 10	**Remaining Budget**			**233.6**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
BAE Systems Australia	Jul 05	2.1	-	60.8	2	Ship 1 and land based test system	
SAAB Systems Pty Ltd	Jul 05	3.1	-	72.6	2	Ship 1 and land based test system.	
CEA Technologies P3 Contract	Dec 05	8.9	2	70.0	2	Phased array radar systems for Ship 1 and land based test system	3
CEA Technologies PAR Production Contract	Dec 08	16.0	1	109.6	2	Phased array radar systems for Ship 1 and land based test system	4
Interrupted Continuous Wave Illumination (ICWI) Membership	Nov 08	20.9	-	20.9	-	Technical documentation and Intellectual Property for use with the Evolved Seasparrow Missile	

Major equipment received and quantities to 30 Jun 10
Most Critical/Detailed (PAR) Design Reviews have been completed.

Notes	
Note 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.
Note 2:	Transfer to DSTO (Maritime Operations Division) for phased array radar risk mitigation activities in line with original Government approval in September 2005.
Note 3:	(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.
Note 4:	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.
Note 5:	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.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	The year end overspend results from the approval of a contract change proposal which resulted in CEA ramping up procurement of Ships 2-8 components above what was included in their 09-10 Additional Estimates (AE) budget. Since late December 2009, funds were progressively released to CEA for ships 2-8 phased array radar components to ensure acquisition obsolescence management. Phase 2B has now exceeded the 09-10 AE's budget but under achieve the DMO CFO approved November 2009 Programming Variation Certificate (PVC) by $15m. The PVC was approved to effect the Government decisions of July 2009 where the Government approved a Ship 1 program as well as delegating funding approval for the purchase of forward components for Ships 2-8 to the DMO CEO.
			Overseas Industry	
		7.6	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
86.0	93.6	7.6	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Requirements	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Requirements Review)	Mar 06	-	May 06	2
	Mk3E Combat Management System – Stage 2 (Requirements Review)	N/A	-	Aug 09	N/A
	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
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	-	Aug 08	N/A
Critical/Detailed (PAR) Design	Mk3E Combat Management System (Phased Array Radar integration) - Stage 1 Critical Design Review – Part 2	Dec 07	-	Aug 08	8
	Mk3E Combat Management System - Stage 2 Critical Design Review	N/A	Nov 10	Nov 10	0
	ASMD Shore Facilities (HMAS *Stirling*)	N/A	-	Dec 08	N/A
	Phased Array Radar	Oct 07	-	Oct 07	0
Variance Explanations	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.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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
Acceptance (Initial Operational Capability – IOC)	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Navigation Radar System)	Dec 09	Jun 11	Jun 11	18
Variance Explanations	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 Initial Operational Capability

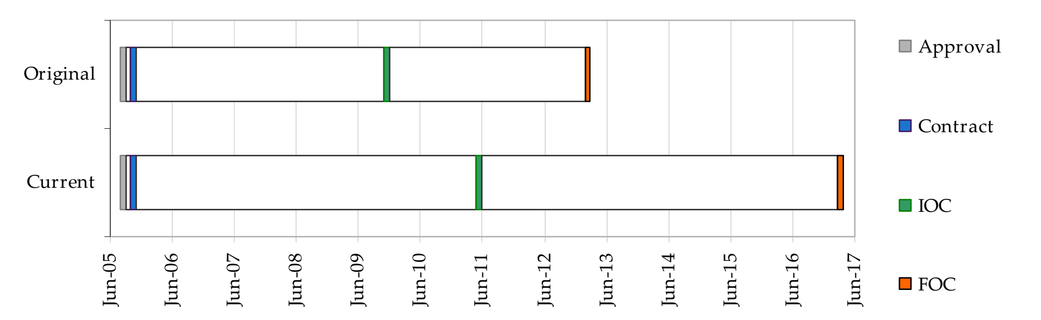
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Dec 09	Jun 11	18	Variance is directly linked to the change of acquisition strategy - movement from an eight ship program to a single ship program.

3.4 Progress toward Final Operational Capability

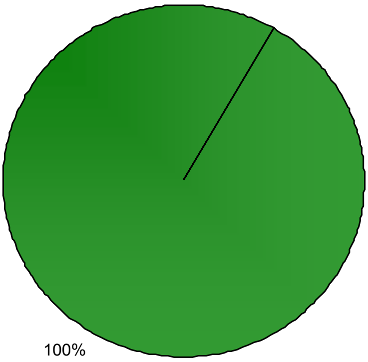
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Mar 13	Apr 17	49	Variance is directly linked to the change of acquisition strategy - movement from an eight ship program to a single ship program.

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Sep 05	Jun 11	Apr 17



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	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 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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.
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 2009-10)	
Description	Remedial Action
Nil	Nil

4.2 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.	Noting the developmental nature of the phased array radar, a significant level of float was placed in the schedule for this important acceptance testing. This, together with the flexibility in the production (installation) phase of the Project into the lead ship has resulted in no impact to the overall lead ship production schedule.

4.3 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 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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

PROJECT DATA SUMMARY SHEET[130]

COLLINS REPLACEMENT COMBAT SYSTEM

SEA 1439 Phase 4A

This project was first reported in the 2007-08 DMO MPR

2009-10 Updates are reported in **bold purple** formatted text

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Navy	Upgrade	**ACAT IV**	Sep 02	Various

30 June 2010	Name
General Manager	**Mr Warren King**
Division Head	**AVM Chris Deeble**
Branch Head	**CDRE Bronko Ogrizek**
Project Director	**CMDR Stephen O'Hearn**

History	Name	Start	End
Project Manager	**Mr Eric McCandless**	**May 10**	**Present**
	CMDR Stephen O'Hearn	Feb 07	**May 10**
	CMDR Robert Elliott	Feb 05	Jan 07
	Mr Bob Clark	Sep 02	Feb 05

1.2 Project Context

Project	Explanation
Description	The **$458** million 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 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 HMAS STIRLING (WA) and a reference laboratory in the US at the Naval Undersea Warfare Centre. The project required the development of system commonality between the RAN and US Navy.

[130] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

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 Defence Materiel Organisation (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 US Navy 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 Replacement Combat System and made the following announcement: "The Government has decided that a comprehensive arrangement with the US Navy 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 US Navy 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, 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 US Navy 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.

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**. **Capability Performance** **The RCS baseline (CS04) installed in HMA WALLER and FARNCOMB was approved for Initial Operational Release by Chief of Navy in May 2008 and September 2009 respectively. Chief of Navy subsequently approved Operational Release of that baseline in December 2009. The capability delivered in WALLER and FARNCOMB is consistent with that identified in the project; however, some sonar trials have yet to be completed. Towed Array Sonar Trials are scheduled for commencement in June 2010, as part of HMAS DECHAINEUX CAT 5 trials.** **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 HMAS SHEEAN is progressing consistent with the FOC schedule. The project schedule is dependent on boat Full Cycle Dockings, consequently the completion date may vary. Initial Operational Release of the CS05 baseline as installed in DECHAINEUX is scheduled for December 2010.** Initial Operational Release (IOR) marks the point at which the RAN is satisfied that the capability is fit for purpose and when management passes from DMO to the RAN. Following IOR the capability enters a period of Navy Operational Test and Evaluation to determine the performance boundaries and if the capability is suitable for Operational Release. **Operational Release is the milestone which represents the In-Service date at which Chief of Navy is satisfied that the equipment is in all respects ready for operational service.**

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	Apr 02	Sep 02	5

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
Sonartech Atlas	Augmented Sonar Processing for the RCS	Variable	ASDEFCON Strategic	Jun 03
	Supply of a Sonar Data Recording System and Ancillaries for the RCS	Variable	ASDEFCON Strategic	Mar 04
	Supply of seven Self Noise Monitoring Systems and 25 Sonar X-Display Consoles	Firm Price	ASDEFCON Complex	Aug 04
Raytheon Australia	Modification kits, products and sub-systems as part of the Replacement Combat System	Variable	ASDEFCON Strategic	Aug 03
	For Systems Level Integration and Support Services associated with the RCS	Firm Price (approx 1/3) Time & Materials (2/3)	ASDEFCON Complex	Aug 05
	Build to Specification of four Navigation Subsystem Structures	Firm Price	ASDEFCON Complex	Jul 07

Thales Underwater Systems	Products to modify the existing Sonar System to remove full dependency on Tactical Data Handling System and inclusion of the existing Sonar System interface capability with supporting shore facilities simulation and training infrastructure, and adaptation of the existing Sonar System for inclusion of Submarine Acoustic Transitory Event Processing Systems and Sonar Open Architecture Interface.	Variable	ASDEFCON Strategic	Oct 03
Logicalis (now Cerulean)	Supply of a Network Infrastructure for the Sonar System, as part of the RCS	Firm Price (price variation to ad hoc labour rates)	ASDEFCON Complex	May 04
Operational Solutions Management	Supply of Sonar Simulation Controller software	Firm Price	ASDEFCON Complex	Nov 04
Acacia	Supply of the Submarine Mission Data System Analysis Tool	Fixed	ASDEFCON Complex	Feb 08
ASC	Design and implementation of platform modifications for RCS	Fixed	ASDEFCON Services	Jul 04
US Government	Acquisition of the US Tactical Control Command Subsystem	Fixed	FMS	Jun 03
	Collins Towed Array Processor	Fixed	FMS	Feb 05
	HARPOON Tactical Support	Fixed	FMS	Nov 01
	Acquisition of the United States Tactical Control Command Subsystem	Fixed	Armaments Cooperative Project	Jun 06

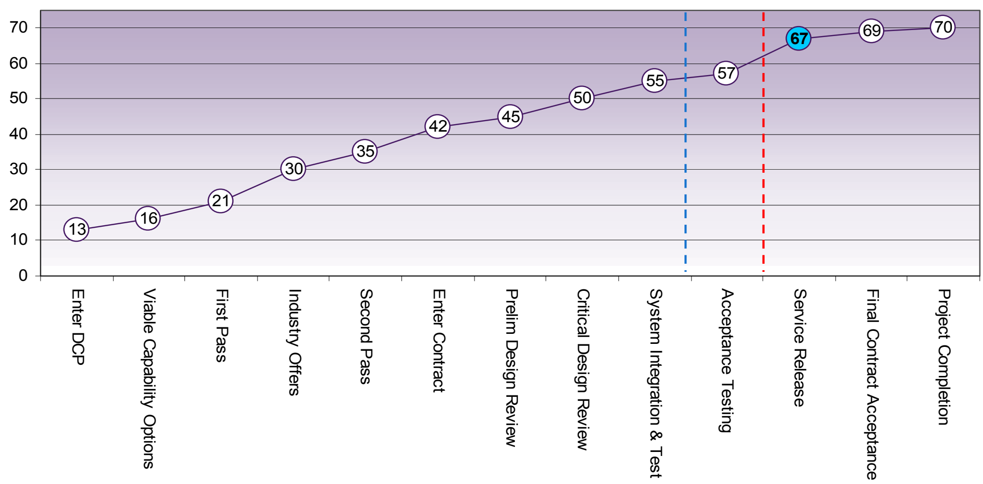
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
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).

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage: **Service Release**	Benchmark	**9**	**10**	**10**	**10**	**10**	**9**	**9**	**67**
	Current Project	**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. • **Requirements to Technical Uncertainty 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 early 2011. Overall though, the current version of software, APB 06, provides sufficient capability and stability for the platform to achieve IOR.**							

Project Stage	Total Benchmark Score	Total Current Score
Service Release	**67**	**62**



2008-09 DMO MPR Status - - - - -	2009-10 DMO MPR Status - - - - -

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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)		
30 Jun 10	Price Indexation			**55.5**		
30 Jun 10	Exchange Variation			**(51.1)**		
30 Jun 10	**Total Budget**	**453.6**		**458.0**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to 30 Jun 09			**79.2**		**US Government (FMS)**	**9**
			57.2		**US Government (ACP)**	**10**
			98.8		**Raytheon Australia**	
			26.3		**Thales Underwater Systems**	
			26.8		**Sonartech Atlas**	
			126.7		**Other**	**3**
				415.0		
FY to 30 Jun 10			**0.0**		**US Government (FMS)**	
			0.7		**US Government (ACP)**	
			0.4		**Raytheon Australia**	
			0.2		**Thales Underwater Systems**	
			0.0		**Sonartech Atlas**	
			6.0		**Other**	**11**
				7.3		
30 Jun 10	**Total Expenditure**			**422.3**		
30 Jun 10	**Remaining Budget**			**35.7**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (Current Price) $m (Note 8)	Quantities at Jun 10	Equipment	Notes
US Government (FMS)	Jun 03	143.9	7	79.2	7	US Tactical Control Command Subsystem	6
US Government (ACP)	Nov 04	92.7	7	121.0	7	US Tactical Control Command Subsystem	7
Raytheon Australia	Aug 03	53.9	7	101.6	7	Tactical System sub-systems and components	4
Thales Underwater Systems	Oct 03	22.9	7	26.47	7	Scylla Sonar and associated sub-systems	
Sonartech Atlas	Jun 03	22.5	4	35.76	7		5

Major equipment received and quantities to 30 Jun 10	
Six RCS Ship Sets delivered. Category 4 Harbour Acceptance Testing Combat System achieved. Engineering and maintenance arrangements established.	
Notes	
Note 1:	Transfer to DSTO.
Note 2:	Administrative savings harvest.
Note 3:	**Other expenditure 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 listed at Table 1.3. The remaining expenditure comprises: operating expenditure, consultants, contingency.**
Note 4:	**Includes on-going involvement in the Tactical Control 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,**
Note 5:	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**.
Note 6:	**Included on-going involvement in the Tactical Command and Control hardware and software development process for the duration of the MOU. The FMS Case LBR valued at $143.9M was written back to $79.2M with the introduction of the Armaments Cooperative Project (ACP).**
Note 7:	**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.**
Note 8:	**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.
Note 9:	**The FMS case value is $79.2 (written back from $143.9m - see Note 6). The supplies remaining under the most significant FMS case would then be delivered under the ACP.**
Note 10:	**The ACP is the main vehicle for supplying equipment and services for the Tactical Command and Control hardware and software development.**
Note 11:	**The amount of $6.0m is predominantly related to the ASC Pty Ltd contract and sundry contractor services.**

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The end of financial year expenditure of $7.3m against a budget of $12.3m resulted in an end of financial year underspend of $4.9m, which is primarily due to lower payments than expected for Australian Industry work, better foreign exchange conditions than expected and lower payments for the USA Yearly Expenditure Program work.**
		(2.0)	Overseas Industry	
		(2.9)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
12.2	**7.3**	**(4.9)**	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Readiness	Combat System	Nov 04	N/A	Nov 04	0
System Design	Combat System	May 05	N/A	May 05	0
Preliminary Design	20 Separate sub-systems or major components	Oct 03 – Oct 06	N/A	Nov 03 – Oct 06	1
Critical Design	20 Separate sub-systems or major components(4)	Nov 03 – Apr 07	N/A	Nov 03 – Apr 07	0
Variance Explanations	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 Full Cycle Docking (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. Note 4. Some sub systems or major components have several Critical Design Reviews or US equivalent.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
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**
	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**	**Aug 10**	**4**
Variance Explanations	**Combat System CS04 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. **Combat System CS05.01 baseline Sea Acceptance Trials should be completed in August 2010 in lieu of April 2010. The variance is due to 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 CAT 5 trials. These dates are subject to Navy exigencies and boat availability.**				

3.3 Progress toward Initial Operational Capability

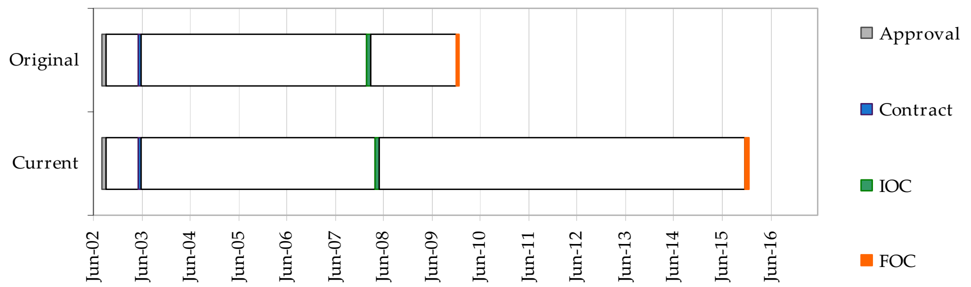
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Mar 08	May 08	2	**The RCS baseline (CS04) installed in HMA WALLER and FARNCOMB was approved for IOR by Chief of Navy in May 2008 and September 2009 respectively. Chief of Navy subsequently approved Operational Release of that baseline on 9 December 2009. The capability delivered by the project is consistent with the MAA and IOC will be achieved when the Capability Manager confirms all other Fundamental Inputs to Capability (FIC) are complete.**

.4 Progress toward Final Operational Capability

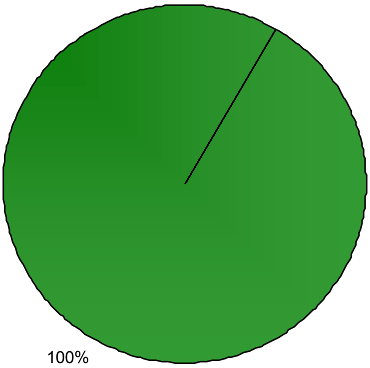
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	**2010**	**2016**	**Up to 72**	**WALLER and FARNCOMB have achieved Operational Release and are awaiting confirmation by the Capability Manager that other FIC are complete.** FOC date was set at project 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 the 4th quarter of **2015**.

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Sep 02	May 08	**2016**



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	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 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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 the Tactical Command Control System baseline will be affected by unforseen US Navy led baseline changes leading to an impact on cost and schedule.	• This risk has been retired.
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
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 is being treated by:** • **Engaging with project stakeholders to limit the loss impact of contractor expertise.** • **Seeking ways to mitigate the consequences of personnel turn-over and loss of expertise.** • **Initiating early recruitment action to replace personnel turn-over and to mitigate recruitment lead-times.** • **Initiating action to transfer knowledge and to share knowledge across the organisation.** • **Recruiting to maximum salary budget and Full-Time Equivalent manning numbers.**

Collins RCS

DMO REPORT

4.2 Major Project Issues

Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the installation schedule.	This issue is being treated by: • monitoring opportunities to install systems earlier. • **stabilising the submarine FCD schedule.**

4.3 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 US Navy Heavy Weight Torpedo currently in service with the RAN.	Required to provide Heavy Weight 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 Submarine through a program of replacement and improvement.	Sonar tracking and analysis data passed to the RCS.

Section 5 – Lessons Learned

5.1 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**

PROJECT DATA SUMMARY SHEET[131]

REPLACEMENT HEAVYWEIGHT TORPEDO

SEA 1429 Phase 2

This project was first reported in the 2009-10 DMO MPR

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Navy	Replacement	ACAT III	Jul 01	US Government

30 June 2010	Name
General Manager	Mr Warren King
Program Head	AVM Chris Deeble
Branch Head	CDRE Bronko Ogrizek
Project Director	CMDR Stephen O'Hearn

History	Name	Start	End
Project Manager	Mr Walter Daly	Dec 08	Current
	Mr Edward Louis	Feb 08	Oct 08
	Mr Glenn Doherty	Jul 05	Nov 07
	Mr Bob Clark	Mar 05	Jul 05
	Mr David Connolly	Feb 96	Mar 05

1.2 Project Context

Project	Explanation
Description	The $441.5 million SEA 1429 Phase 2 Heavyweight Torpedo (HWT) Project is acquiring a HWT for the Collins Class submarine to replace the US Navy Mk 48 Mod 4 HWT currently in service with the Royal Australian Navy (RAN). The torpedo is being supplied by the US Government under a Memorandum of Understanding (MOU), with work performed by Raytheon US and the US Naval Undersea Warfare Centre (NUWC). The project is also acquiring associated logistic support, weapon system interface equipment, and operational support and test equipment. ASC Pty Ltd is undertaking integration to the Collins Class submarine platform.

131 Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

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 Royal Australian Navy (RAN) and United States Navy (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 Full Cycle Docking (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 program. 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.

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 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 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. The next software baseline to be implemented by the RAN will be Spiral 4 and that development is progressing to schedule. The Torpedo deliveries from the US have been slower than planned but have had no operational impact on the RAN. **Capability Performance** The replacement HWT with Spiral 1 software and the integration modifications to Collins Class Submarines were approved for Operational Release by the Chief of Navy (CN) on 10 March 2010. Operational Release is the milestone which represents the In-Service date at which Chief of Navy is satisfied that the equipment is in all respects ready for operational service. Platform modifications have been completed in HMA Ships WALLER, FARNCOMB and DECHAINEUX and are progressing in concert with the FCD for SHEEAN. Platform modifications in 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 Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	N/A	Jul 01	N/A

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
US Government Initial MOU	Participation in a Joint Development Program with the US Navy to design, develop and support the Common Broadband Advanced Sonar System (CBASS) MK 48 HWT capability delivered through a Memorandum of Understanding arrangement with the US Navy	Fixed	MOU Agreement	Mar 03
US Government Follow on MOU	Participation in a Joint Development Program with the US Navy to design, develop and support the Common Broadband Advanced Sonar System (CBASS) MK 48 HWT capability delivered through a Memorandum of Understanding arrangement with the US Navy	Fixed	MOU Agreement	Nov 09

1.5 Other Current Project Phases or Sub-Projects

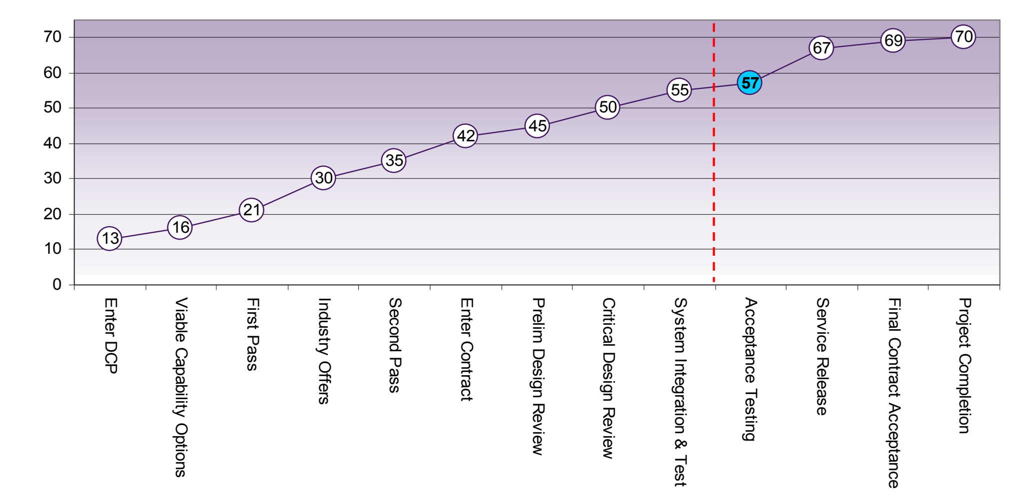
Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: Acceptance Testing	Benchmark	8	8	8	8	9	8	8	57
	Current Project	8	7	9	8	8	8	8	56
	Explanation	• **Cost:** Confidence in cost is lower than the benchmark because of potential cost effects of delay due to submarine availability affecting the HWT installation program. • **Requirement:** System integration and testing processes have verified the platform modification requirements and those modifications apply to later Spiral baselines. The Spiral 1 baseline has also been accepted for Initial Operational Release. Therefore, the assessment score is marginally ahead of the benchmark score for this particular maturity gate. • **Technical Difficulty:** Spiral 1 software had been granted Operational Release; Spiral 4 software is still under development. 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.							

(Attributes: Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, Operations and Support)

Project Stage	Total Benchmark Score	Total Current Score
Acceptance Testing	57	56



2009-10 DMO MPR Status

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Jul 01	Original Approved	238.1		238.1		
Mar 03	Real Variation – Scope	213.3	213.3			1
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 10	Price Indexation			91.6		
Jun 10	Exchange Variation			(102.3)		
Jun 10	**Total Budget**	**452.2**		**441.5**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			192.0		US Government Initial MOU	
			0.0		US Government Follow on MOU	
			55.5		Other	4
				247.5		
FY to Jun 10			2.9		US Government Initial MOU	
			13.4		US Government Follow on MOU	
			3.4		Other	4
				19.7		
Jun 10	**Total Expenditure**			**267.2**		
Jun 10	**Remaining Budget**			**174.3**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
US Government Initial MOU	Mar 03	$336.7m	Classified	$336.7m	Classified	Heavyweight Torpedoes	
US Government Follow-on MOU	Nov 09	$131.9m	Classified	$131.9m	classified	Heavyweight Torpedoes	

Major equipment received and quantities to 30 Jun 10
Spiral 1 Software baseline achieved. Platform modifications in three submarines completed.

Notes	
Note 1:	Heavyweight Torpedoes purchase under Armament Co-operative Project with the US.
Note 2:	Transfer from SEA 1429 PH1.
Note 3:	Administrative Savings Harvest.
Note 4:	Prior to June 2009: $2.1m paid to DSTO; $20.7m to ASC Pty Ltd; $5.0m to RCS/MOU USN; $3.2m to FMS Case (AT-P-GZU); and $10m to L3 Nautronics Pty Ltd. ASC work is budgeted and undertaken on an annual basis for integration activities. L3 Communications was engaged to provide a portable test range. This contract was established by Maritime Ranges System Program Office (MRSPO) but funded by SEA 1429 Phase 2. The test range has been delivered to MRSPO. The remaining other expenditure comprises: operating expenditure, contractors, consultants and other capital expenditure not attributable to the aforementioned top two contracts.

2.4 Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	The end of financial year expenditure of $19.7m against a budget of $21.7m resulted in a underspend of $2m. The underspend was due to lower than expected payments for Australian Industry work and favourable foreign exchange rates.
			Overseas Industry	
		(1.9)	Local Industry	
			Brought Forward	
			Cost Savings	
		(0.1)	FOREX Variation	
			Commonwealth Delays	
21.7	19.7	(2.0)	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Final Design Review	Weapon Handling & Discharge Training Rig Modifications	Jun 05		Oct 05	4
	Submarine Weapon Handling & Discharge System Modifications	Jan 06		Nov 06	10
Acceptance	Weapon Handling & Discharge Training Rig Modifications	Nov 05		Nov 07	24
	Submarine Weapon Handling & Discharge System Modifications	Mar 06		Jun 07	15
Design Review	MK48 ADCAP Torpedo Specification Compliance	Dec 07		Feb 08	2
	Explosive Ordnance Approval Process MK48 Mod 6 ACOT and Mod 7 CBASS HWT	Mar 08		Mar 08	0
Incorporation Approval	Weapon-Collins Combat System (AN/BYG-1 (V8) Compatibility Certificate SMCSPO 0094 Version 1.0 1 May 08	May 08		May 08	0
Variance Explanations	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. 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 is dependent on the issue of the US Torpedo Specification Compliance (issued 22 February 2008) and is a pre-requisite for granting Initial Operational Release (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)
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	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	0
Variance Explanations	Variance is attributable to the Navy Regulatory Review process and submarine program.				

3.3 Progress toward Initial Operational Capability

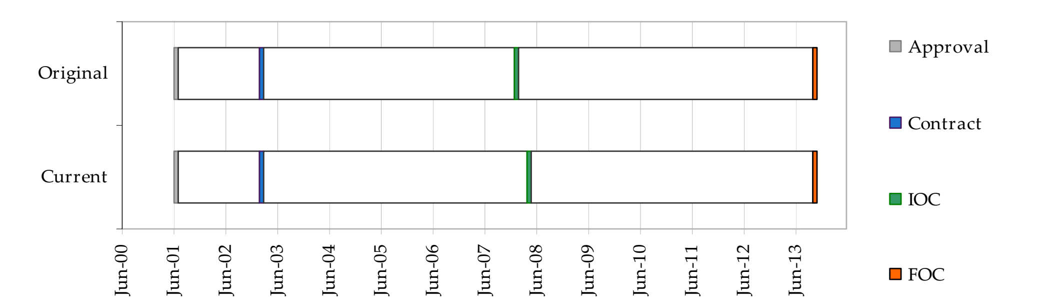
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
Initial Operational Release (Platform Modifications and Spiral 1)	Feb 08	May 08	3	Variance is attributable to the Navy Regulatory Review process.
Initial Operational Release (Spiral 4)	Nov 12	Nov 12	N/A	Dependent upon US Government acquisition process.

3.4 Progress toward Final Operational Capability

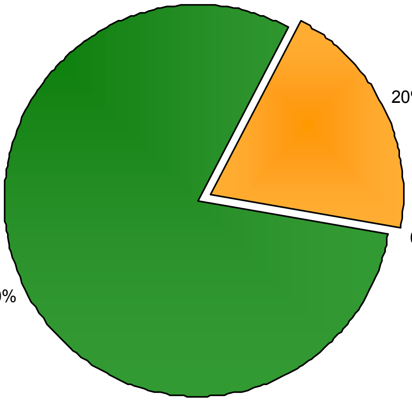
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
Operational Release Platform Modifications and Spiral 1)	Jan 10	Mar 10	2	Variance is attributable to the Navy Regulatory Review process.
Final Operational Capability (Spiral 4)	Nov 13	Nov 13		Achievement of 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 10

Approval	IOC	FOC
Jul 01	May 08	Nov 13



3.5 Measures of Effectiveness

<table>
<tr><th colspan="2">Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)</th></tr>
<tr><td rowspan="3">
</td><td>Green:
Torpedo performance and training and simulation facilities requirements currently being met.</td></tr>
<tr><td>Amber:
Lack of submarine availability due to higher operational priorities and reduced weapon production capacity at the Torpedo Maintenance Facility (TMF) has resulted in an inability of the project to conduct exercise firings with developmental CBASS software.</td></tr>
<tr><td>Red:
N/A</td></tr>
</table>

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

<table>
<tr><th colspan="2">Identified Risk (risk identified by standard project risk management processes)</th></tr>
<tr><th>Description</th><th>Remedial Action</th></tr>
<tr><td>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.</td><td>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; and
• Actively recruiting to mitigate skills shortages.</td></tr>
<tr><td>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.</td><td>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.</td></tr>
<tr><td>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.</td><td>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.</td></tr>
<tr><th colspan="2">Emergent Risks (risk not previously identified but has emerged during 2009-10)</th></tr>
<tr><th>Description</th><th>Remedial Action</th></tr>
<tr><td>Nil</td><td>Nil</td></tr>
</table>

4.2 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.

4.3 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 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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

DMO REPORT

PROJECT DATA SUMMARY SHEET[132]

COLLINS CLASS SUBMARINE RELIABILITY AND SUSTAINABILITY

SEA 1439 Phase 3

This project was first reported in the 2009-10 DMO MPR

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Navy	Upgrade	ACAT III	Sep 00	ASC Pty Ltd

30 June 2010	Name
General Manager	Mr Warren King
Division Head	AVM Chris Deeble
Branch Head	CDRE Bronko Ogrizek
Project Director	CMDR Stephen O'Hearn

History	Name	Start	End
Project Manager	CMDR Brian Mateer	Nov09	Current
	CMDR Ian Jimmieson	Jan07	Nov09
	CMDR Richard Fitzgerald	Jan03	Dec06

1.2 Project Context

Project	Explanation
Description	The $407.7 million SEA1439 Phase 3 is a program of upgrades to Collins Class platform systems and shore infrastructure to improve the Class reliability, sustainability, safety and capability.
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

132 Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

	could approve transfer of funding between SEA1439 Phase 3, SEA1439 Phase 4B (Improvements to Collins Sensors), SEA1439 Phase 4A (Replacement Combat Systems) and SEA1429 (Replacement Heavy Weight Torpedo) to achieve optimum capability. Under the global budget there have been reductions in funding allocations to SEA1439 Phase 3 in favour of SEA1439 Phase 4A and SEA1429, with a commensurate reduction in the number of engineering enhancements to be implemented through SEA1439 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 Full Cycle Docking (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 platform upgrades managed by the SEA1439 Phase 3 project 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. • **Main Battery Improvements (Engineering Enhancement):** Upgrade will facilitate Main Storage Battery (MSB) gas charging at sea through use of a single cell pulse charger. • **Submerged Signal Ejector (SSE) Top Plate Upgrade (Engineering Enhancement):** Upgrade to the existing SSE top plate ball valves to provide greater reliability against leakage and facilitates reliable use of Submarine Expendable Bathy Thermograph. • **Noise and signature Improvements (Engineering Enhancement):** Through research and development, improve the overall detectable signatures of the submarines. • **Diesel Land Based Test Site (LBTS) Auxiliary Systems (Engineering Enhancement):** Provide training and validation facility for submarine auxiliary systems, including interface to diesel engine. • **Diesel LBTS – Generator (Engineering Enhancement):** Provide a land based generator to interface to the land based diesel engine for the purposes of training and validation. • **Maritime Ranges SPO Enhancements (Engineering Enhancement):** Upgrade the underwater telephone capability, provide a portable acoustic ranging system and to procure towed arrays. • **Microwave ESM (Engineering Enhancement):** Upgrade the Microwave equipment to the Condor CS5600 system in line with fast track configuration. • **Remotely Operated Vehicle (ROV) Capability for SMER (Engineering Enhancement):** Provide a ROV as part of a Submarine Escape Rescue and Abandonment System. • **Global Positioning System (GPS) Receiver Upgrade (Engineering

	Enhancement): Upgrade of the legacy GPS unit to an integrated receiver/display unit which is compatible with the Navigation Sub-system of the Replacement Combat System delivered under SEA1439 Phase 4A. • **Simulator Upgrade – Submarine Training and Systems Centre (STSC) (Engineering Enhancement):** Enhance Platform Training Simulators. • **CBT System – STSC (Engineering Enhancement):** Incorporated into Simulator Upgrade – STSC. • **MCC Simulator – STSC (Engineering Enhancement):** Incorporated into Simulator Upgrade – STSC. • **Propulsion Control Reference System STSC (Engineering Enhancement):** Provide a land based facility for training and validation pertaining to the submarine propulsion switchboard. • **Battery Internal Safety Switch (Engineering Enhancement):** Provide a safe means of splitting battery sections to enable defect investigation and rectification. • **Collins Class Hazard Log issues with Hazard Risk Index less than 9 (Engineering Enhancement):** To remediate all submarine hazards with a safety HRI of less than 9. • **Additional Spares and Objective Quality Evidence (OQE) Remediation (Engineering Enhancement):** To either provide satisfactory OQE to enable utilisation of submarine spares quarantined within Naval Stores, or to replace quarantined stores. • **Computer Modelling (Engineering Enhancement):** Computer modelling of the submarine and its systems for design and assessment of changes. • **Diesel Engine Upgrades (Engineering Enhancement):** Improve reliability of the diesel engines. • **Third Generation propeller prototype (Engineering Enhancement):** To provide a replacement for the Sonistan propellers which are prone to reliability and signature issues.
Uniqueness	Project SEA1439 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.

Current Status	**Cost Performance** The Through Life Support Agreement with 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. **Schedule Performance** Current scheduled dates will not be achieved due to slippage in the Submarine FCD program (a result of unscheduled maintenance arisings), which is beyond the control of the project. HMAS DECHAINEUX recently completed an FCD and a series of engineering enhancements, including Special Forces capability upgrades, were installed and all have now completed CAT 5 Sea Trials. Installation of engineering enhancements on HMAS SHEEAN will also be subject to FCD delays. Submarine unavailability has also delayed the conduct of CAT 5 Sea Trials and Operational Test and Evaluation (OT&E) of the Torpedo Decoy. **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, while the other will undergo CAT 5 Operational Test and Evaluation (OT&E) with the Royal Australian Navy (RAN) in late 2010. Torpedo Decoy will also undergo OT&E in late 2010. 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 Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	Sep 00	Sep 00	0

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
ASC Pty Ltd	To rectify identified boat deficiencies through the installation of approved engineering enhancements and new capability on Collins-class submarines using the extant TLSA. The TLSA is not specific to this project but is the support contract for the submarines. This project funds specific work packages under that contract.	Variable (Cost Plus)	Strategic Agreement	Dec 03

1.5 Other Current Project Phases or Sub-Projects

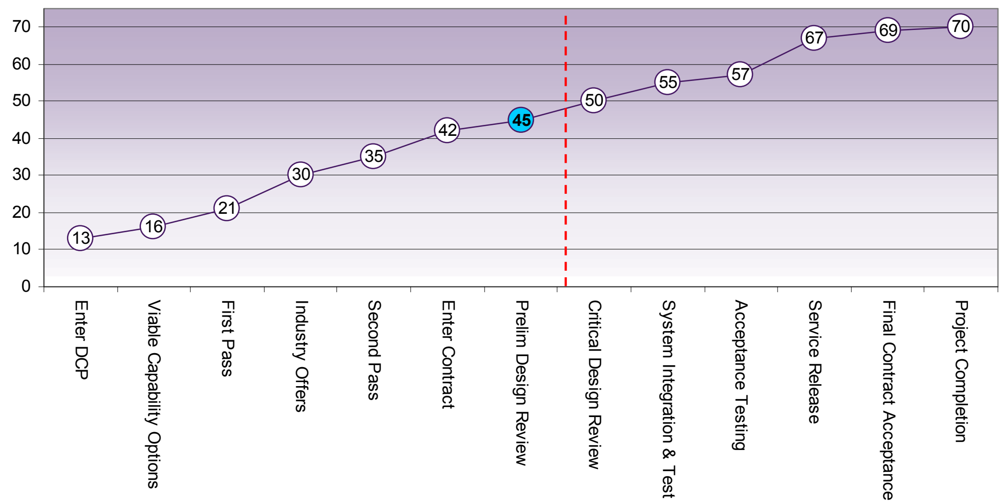
Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: Preliminary Design Review	Benchmark	6	6	7	6	6	7	7	45
	Current Project	7	2	8	8	8	8	7	48
	Explanation	• **Schedule**: Establishment of the Integrated Master Schedule (IMS) and maturity of the majority of designs gives confidence in the schedule. • **Cost:** Project estimates for individual enhancements were infeasible 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 Understanding**: Most enhancements are well understood and have undergone some level of at-sea or shore-based testing. • **Technical Difficulty**: Some verification of designs have been completed, however some technical design challenges remain in progress; such as, composite external pressure vessels. • **Commercial:** Most work is performed under the ASC TLSA which is being transitioned to an In Service Support Contract (ISSC) to facilitate better control of cost and quality.							

(Attributes: Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, Operations and Support)

Project Stage	Total Benchmark Score	Total Current Score
Preliminary Design Review	45	48



2009-10 DMO MPR Status

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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 10	Price Indexation			66.8		
Jun 10	Exchange Variation			(2.3)		
Jun 10	**Total Budget**	**343.2**		**407.7**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			167.4		ASC Pty Ltd	8
			107.6		Other	7
				275.0		
FY to Jun 10			22.1		ASC Pty Ltd	8
			2.2		Other	9
				24.3		
Jun 10	**Total Expenditure**			**299.3**		
Jun 10	**Remaining Budget**			**108.4**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
ASC Pty Ltd	Dec 03	N/A	N/A	N/A	N/A	See 1.2 Background for further information.	8

Major equipment received and quantities to 30 Jun 10

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 Full Cycle Docking Program.

Notes

Note 1:	Transfer from SEA 1439 PH 1B.
Note 2:	Implementation of a reliable and sustainable Platform (full scope).
Note 3:	Transfer to SEA 1439 PH 4A as part of initial approval.
Note 4:	Administrative Savings harvest.
Note 5:	Skilling of Australia's Defence Industry harvest.
Note 6:	RCI of $7.499m for Special Forces modification to an additional Collins Class submarine.
Note 7:	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.

Note 8:	All work carried out by ASC is managed under the TLSA 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 Ph3 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 of the 24 platform upgrades.
Note 9:	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, and other capital expenditure not attributable to ASC under the TLSA.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	The Project's budget has underspent by a reduction in work scope, which was necessary to maximise class-wide sub-project implementation activities throughout project life.
			Overseas Industry	
		(1.7)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
26.0	24.3	(1.7)	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Final Design Review	Special Forces	Note 1		Dec 04	N/A
	Torpedo Decoy	Jun 10		Jul 10	1
	Fire Fighting Upgrade	Note 1		Jun 04	N/A
	Sewage System Upgrade	Note 1		Nov 04	N/A
	Fast Track Enhancements	N/A		N/A	N/A
First of Class Implementation	Special Forces (COLLINS)	Jun 05		Oct 07	28
	Torpedo Decoy (DECHAINEUX)	Jun 10		Jun 10	0
	Fire Fighting Upgrade (RANKIN)	Jul 06		Oct 07	15
	Sewage System Upgrade (WALLER)	Jul 06		Jul 08	24
	Fast Track Enhancements (RANKIN)	May 01		Jun 06	61
Full Class Implementation	Special Forces (DECHAINEUX)	May 08		Feb 10	21
	Torpedo Decoy(RANKIN)	Oct 13		Oct 13	0
	Fire Fighting Upgrade (SHEEAN)	Sep 22		Sep 22	0
	Sewage System Upgrade (FARNCOMB)	Mar 17		Mar 17	0
	Fast Track Enhancements (WALLER)	Jul 06		Nov 07	16
Variance Explanations	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. Note 1: 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).

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Harbour Acceptance Test (HAT)	Special Forces (COLLINS)	Jun 05		Sep 06	15
	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
	Fast Track Enhancements	N/A		N/A	N/A
Sea Acceptance Test (SAT)	Special Forces (COLLINS)	Aug 05		Dec 07	28
	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
	Fast Track Enhancements	N/A		N/A	N/A
Variance Explanations	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.				

3.3 Progress toward Initial Operational Capability

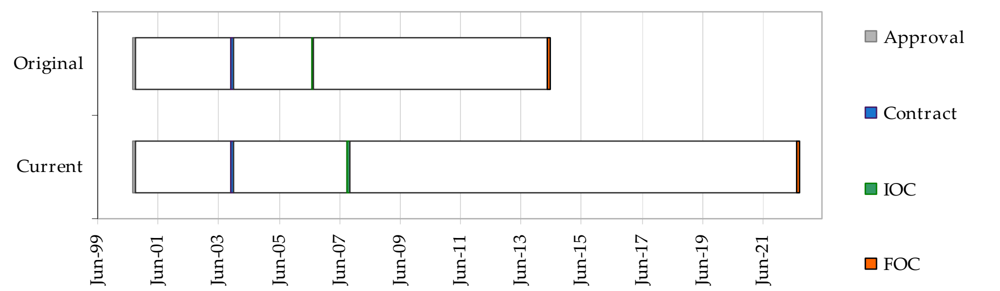
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
Initial Operational Release Special Forces (COLLINS)	Nov 10	Nov 10	0	
Initial Operational Release Torpedo Decoy (DECHAINEUX)	Aug 10	Aug 10	0	
Fire Fighting Upgrade (RANKIN)	Oct 13	Oct 13	0	IOC is linked to 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 Integrated Master Schedule 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 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.

3.4 Progress toward Final Operational Capability

Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
Operational Release of Special Forces	Jun 07	Dec 15	102	MAA delivery date was for COLLINS only. 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 of the constraints of the docking maintenance schedules and can be simultaneously rolled out to platforms.
Fire Fighting Upgrade (SHEEAN)	Jun 14	Sep 22	100	Variance due to changes in docking maintenance schedule since original MAA.
Sewage System Upgrade (FARNCOMB)	Jun 14	Mar 17	34	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 10

Approval	IOC	FOC
Sep 00	Oct 07	Sep 22



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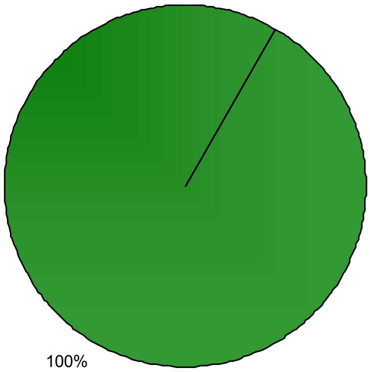
Collins R&S

3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	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 Manual ABR 6492. System upgrades meet supportability requirements as defined under individual system upgrade certification plans.
	Amber: N/A
	Red: N/A

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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; and • Improving management of maintenance schedules.
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 2009-10)	
Description	Remedial Action
Nil	Nil

4.2 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.	This Issue is being actioned by: • Monitoring Submarine Availability Group outcomes. 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.

4.3 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1439 Phase 4A	Replacement Combat System	SEA 1439 Ph 3 have provided Global Positioning Systems (GPS) to SEA1439 Ph 4A for installation with each Replacement Combat System (RCS) implementation.
SEA 1446 Phase 1	Interim Minimum Operating Capability	SEA 1446 Ph 1 supplied approved and verified fast track platform designs for implementation into four submarines.

Section 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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

PROJECT DATA SUMMARY SHEET[133]

FOLLOW-ON STAND OFF WEAPON

AIR 5418 Phase 1

This project was first reported in the 2009-10 DMO MPR

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Air Force	New Capability	ACAT II	Dec 05	US Government

30 June 2010	Name
General Manager	Ms Shireane McKinnie (acting)
Division Head	Mr Anthony Klenthis
Branch Head	Mr Martin Weir
Project Director	Mr Peter Kiss

History	Name	Start	End
Project Manager	SQNLDR Michael Cox	Feb 09	Current
	Mr Paul Davies	Aug 08	Feb 09
	SQNLDR Michael Spencer	Apr 06	Aug 08
	Mr John Crathern	Nov 98	Apr 06

1.2 Project Context

Project	Explanation
Description	The $400 million AIR 5418 Phase 1 Follow-on Standoff Weapon (FOSOW) Project will acquire the Lockheed Martin AGM-158A-4 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 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.

[133] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

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Background	Project AIR 5418 is scoped to acquire a FOSOW capability to provide Australia with the ability to conduct effective airborne precision land or littoral (maritime) 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. The AP-3C was nominated as the primary control platform to provide guidance to the FOSOW, if required, during flight to the target area. A Request for Proposal (RFP) 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 RFP. However, the project was subsequently delayed in the Defence Capability Plan, and Government First Pass approval was achieved in December 2003. 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 two contractual vehicles — a Foreign Military Sales (FMS) Case with US Air Force (USAF) for the supply of the operational and test missiles, support equipment and USAF program management support; and a Direct Commercial Sales (DCS) contract with Lockheed Martin Missiles and Fire Control (LMMFC) for the supply of certification/airworthiness data, integration support, and missile capability enhancements. The original definitions for Initial Operational Capability (IOC) and Full Operational Capability (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 (MI) 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 Anti-surface Warfare (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 is being undertaken by the US Navy (USN) Advanced Weapons Laboratory at China Lake, California, through an FMS case. The integration effort requires the inclusion of the JASSM capability into the F/A-18 A/B Hornet Operational Flight Program (OFP) software. The OFP software is the designated Hornet software that will provide JASSM functionality. Flight testing to authorise the F/A-18 A/B Hornet to carry JASSM was conducted in Australia, while the USN continues to develop the F/A-18 A/B Hornet OFP software. Once software integration efforts are complete, the F/A-18 A/B Hornet will carry the JASSM and use the USN developed OFP in respective USN and Australian test and evaluation programs. This will culminate in live missile firings, conducted in both the US and Australia in December 2010 and August 2011 respectively, to validate aircraft integration and missile capabilities.

Uniqueness	JASSM is a Military-Off-The-Shelf (MOTS) guided weapon acquisition. The Commonwealth of Australia is the first Foreign Military Sales (FMS) customer authorised by the US Department of State to purchase this product. This weapon is operated by the USAF from platforms 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 have 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 has been 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. Previous ADF acceptance testing (Operational Test and Evaluation) methodologies and approvals may not apply to JASSM, as the theoretical maximum distance the missile could travel exceeds Australian range boundaries. This has necessitated development of new or revised methodologies and policy. Due to the stealth characteristics of JASSM, many of the system details are highly protected by the US Government. Gaining the required design disclosure to achieve technical certification has been difficult or unachievable due to the US International Trade in Arms Regulations (ITAR) restrictions.
Current Status	**Cost Performance** Project AIR5418 Phase 1 is currently on track to achieve the forecast out turn. **Schedule Performance** Current schedule delay is due to rectification of anomalies detected during software testing of the F/A-18 A/B Hornet OFP Software. **Capability Performance** Successful achievement of both the US Air Force Reliability Assessment Program and a US Air Force live firing of an Australian configuration missile have improved the capability outlook. US Navy test and certification of the F/A-18 A/B 21X software, and completion of successful end-to-end testing of JASSM remain the key risks.

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	Dec 03	N/A
Second Pass	Dec 05	Dec 05	0

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
US Government (AT-D-YLA)	JASSM Materiel System	FMS	FMS	Jul 06
Lockheed Martin (C439115)	JASSM Data, Training and Integration Support	Firm/Fixed	DCS	Sep 06
US Government (AT-P-GJO)	F/A-18 A/B Operational Flight Program (OFP) Software development, testing and certification.	FMS	FMS	Jun 06

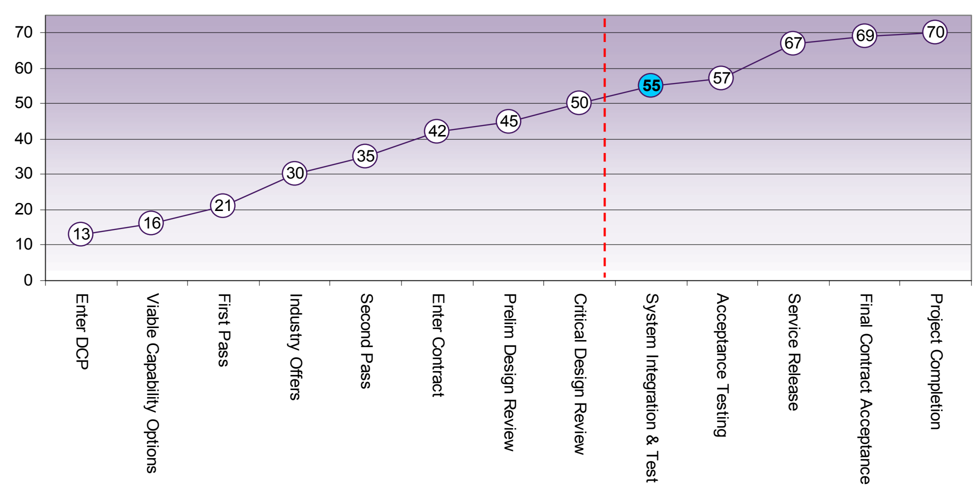
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
N/A	N/A

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage: System Integration and Test	Benchmark	7	8	8	8	8	8	8	55
	Current Project	7	7	8	7	8	8	7	52
	Explanation	• **Cost:** Final missile production costs are pending final USAF JASSM Lot 8 contract pricing negotiations. • **Technical Understanding:** Anomalies discovered during platform software integration have required extensive testing and redevelopment to ensure airworthiness and operational effectiveness. • **Operations and Support:** Operational and Support elements are being procured. System Acceptance cannot be finalised until completion of Operational Test and Evaluation.							

Project Stage	Total Benchmark Score	Total Current Score
System Integration and Test	55	52



2009-10 DMO MPR Status

DMO REPORT

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m	Contractor	Notes
Dec 03	Original Approved	14.9	14.9		1
Dec 05	**Government Second Pass Approval**	355.3	355.3		
Jun 10	Price Indexation		59.2		
Jun 10	Exchange Variation		(29.8)		
Jun 10	**Total Budget**	**370.2**	**399.6**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			71.3		US Government (FMS Cases)	2
			60.5		Lockheed Martin	
			23.1		Other	3
				154.9		
FY to Jun 10			28.2		US Government (FMS Cases)	2
			12.7		Lockheed Martin	
			4.7		Other	4
				45.6		
Jun 10	**Total Expenditure**			**200.5**		
Jun 10	**Remaining Budget**			**199.1**		

2.3 Contract Details

Contractor	Signature date	Price at signature $m	Quantities at signature	Price at 30 Jun 10 $m	Quantities at Jun 10	Equipment	Notes
US Government FMS Cases AT-D-YLA and AT-P-GJO	Jul 06 Jun 06	160.1	Classified	165.7	Classified	JASSM Materiel System and AF/A-18 Integration	2
Lockheed Martin	Sep 06	67.1	Various	81.4	Various	JASSM Data, Training and Integration Support	

Major equipment received and quantities to 30 Jun 10
All major Design and Build Readiness Reviews have been completed.

Notes	
Note 1:	First Pass approval.
Note 2:	The Section 1.4 Prime Acquisition Contracts covering acquisition of the JASSM Materiel System (AT-D-YLA) and integration with the AF/A-18 (AT-P-GJO) have been combined due to classification.
Note 3:	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top three contracts and minor contract expenditure. Specifically, $11.9m relates to pre-contract expenditure and $3m pertains to DSTO Weapon Systems Division.
Note 4:	Other expenditure for FY to June 2010 includes activities by Defence Science & Technology Organisation (DSTO), Aerospace Operational Support Group (AOSG), Tactical Fighter SPO (TFSPO) integration support, Joint Mission Planning System (JMPS) support and specialist engineering services for the AIR5418 Project Office.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		10.8	FMS	The $10.8m of additional expenditure was a direct result of an increase in production effort.
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
34.7	45.5	10.8	**Total Variance**	

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
Prior Certification	AGM 158A-4 Missile System	Aug 06	Jan 07	Feb 07	6[1]
System Requirements	AGM 158A-4 Missile System	Jun 07	N/A	Jun 07	0
	AF/A-18 System Segment	Sep 05	N/A	Sep 05	
Preliminary Design	AGM-158A-4 Missile System	[2]	N/A	N/A	N/A
	AF/A-18 System Segment	Mar 06	N/A	May 06	2[3]
Critical Design	AGM 158A-4 Missile System	[2]	N/A	N/A	N/A
	AF/A-18 System Segment	Aug 06	N/A	Mar 07	7[3]
Build Readiness	AF/A-18 System Segment	Nov 07	N/A	Jul 09	20[3]
Variance Explanations	[1] Variance due to protracted commercial contract negotiations. Prior Certification Review was completed in late Jan 07. The approval to exit the Prior Certification Review was dated 01 Feb 07. [2] The weapon is military-off-the-shelf (MOTS). Preliminary Design Review (PDR) and Critical Design Review (CDR) issues were addressed in the Prior Certification Review (PCR). [3] Data listed is for the F/A-18 21X Build 3 (JASSM functionality) Operational Flight Program software. Variance due to the detection of software anomalies and the undertaking of corrective and preventative action.				

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Integration	JASSM System (Weapon integrated into platform)	Jun 09	Feb 11	Feb 11	20 [1]
Acceptance	JASSM System (Weapon integrated into platform)	Dec 09	Dec 11	Dec 11	24 [2]
Variance Explanations	(1) 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) Delay between System Integration and IOC due to availability of Woomera Test Range and support agencies.				

3.3 Progress toward Initial Operational Capability

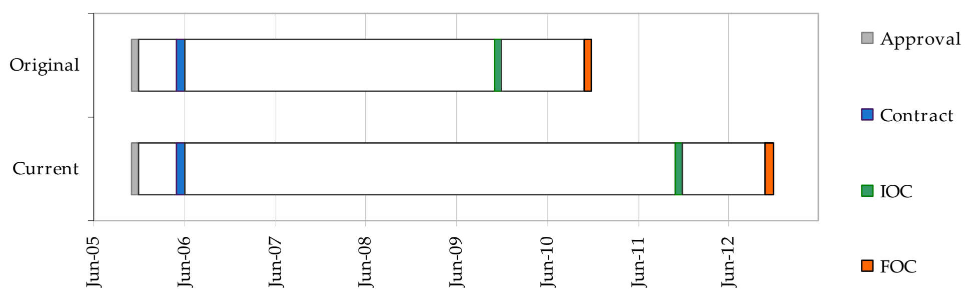
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Dec 09	Dec 11	24	The AIR5418 Project Office is currently working toward achieving an Initial Materiel Release which will allow IOC by December 2011. The variance is attributable to delays in the AF/A-18 A/B software development and certification process, which has required extensive testing and redevelopment to ensure airworthiness and operational effectiveness.

3.4 Progress toward Final Operational Capability

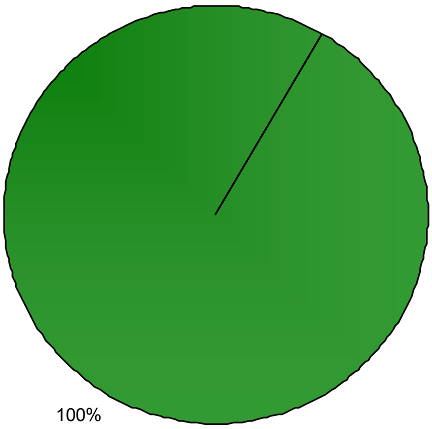
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Dec 10	Dec 12	24	FOC requires delivery of the approved full quantity of JASSM war stock. The FOC war stock missiles are being manufactured in Lot 8. The USAF contract for the Lot 8 missiles was delayed due to US JASSM program delays and missile reliability concerns.

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Dec 05	Dec 11	Dec 12



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	Green: The supplies are complying with the Contracted Systems Performance Specification.
	Amber: N/A
	Red: N/A

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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 AIR5418 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 (DEOC) for advice on accepting public risk.
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 AIR5418 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 in Table 4.2.
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 progression to IOC.
Successful integration of JASSM onto the RAAF Hornets may not be completed within the Operational Flight Program (OFP) timelines, leading to a delay to IOC.	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. USN and Lockheed Martin have retired much of this risk through collaborative efforts. This risk will be 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 and, schedule and performance.	Project AIR5418 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.
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
Anomalies with the JASSM Trimble GPS Receiver caused by the GPS firmware update implemented in January 2010 will not be resolved in a timely manner, leading to a deferral of the F/A-18 Hornet JASSM Live Fire event planned for China Lake and a delay to IOC.	Lockheed Martin is currently testing a permanent solution (GPS Receiver firmware upgrade). This is expected to be released by September 2010. Through remedial action, this is now not expected to impact the China Lake test schedule. This risk has been remediated during 2009-10 and has been closed.
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.	The solution is to replace existing hardware to incorporate related software updates (Link 21).
The planned China Lake and Woomera Live Fire events may be delayed due to expiry of Flight Termination System Lifed components.	The remedial action will be dependent upon the dates of the live fire events. The US Navy Range Safety Officer has approved a life extension of the Flight Termination System batteries until 31 Dec 10. For live fire events post this date, AIR5418 are seeking availability of alternate components and closely managing all Lifed items. A fall back is to cannibalise other missiles until replacement components are available.

4.2 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 United States Navy 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.
Initial Operational Test & Evaluation may be affected by unresolved Safety Critical Software issues between PO 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 are updating the urgency of this risk to the project office on an ongoing regular basis.

4.3 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 5 – Lessons Learned

5.1 Key Lessons Learned

Project Lesson	Category 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 are 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

PROJECT DATA SUMMARY SHEET[134]

ANZAC ANTI SHIP MISSILE DEFENCE

SEA 1448 Phase 2A

This project was first reported in the 2009-10 DMO MPR

Section 1 – Project Summary

1.1 Project Management

Service	Capability Type	Complexity	Government 2nd Pass Approval	Prime Contractor
Royal Australian Navy	Upgrade	ACAT II	Nov 03	ANZAC Alliance

30 June 2010	Name
General Manager	Ms Shireane McKinnie (acting)
Division Head	RADM Peter Marshall, RAN
Branch Head	CDRE Mick Uzzell, RAN
Project Director	CAPT Rob Elliott, RAN

History	Name	Start	End
Project Manager	CAPT Rob Elliott, RAN	Feb 08	Current
	Mr Grant Boore	Oct 06	Feb 08
	Mr Chris Eggleton	Feb 03	Oct 06

1.2 Project Context

Project	Explanation
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, with an approved budget of $377 million, 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.

[134] Notice to reader

Future dates, Sections; 1.2 (Major Challenges), 3.5 (Measures of Effectiveness), 4.1 (Major Risks) and 4.2 (Major 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.131.

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. A Capability Options Document (COD) was approved in October 2004 as a precursor to Phase 2B second pass approval. This document assessed the relative capabilities offered by various combinations of sensors and systems against agreed ASMD threats, and concluded that there was a significant capability advantage with a phased array radar based solution over the VSRAD plus conventional radar system option in the High Threat environment. As a result the VSRAD funding was later transferred to Phase 2B, when phased array radar options and their potential capability advantages were assessed by Defence; this was formally agreed by Government in September 2005. The ANZAC Alliance was contracted under a Non-Target Cost Project Charter in September 2004 to commence work on Phase 2A whilst finalising the Target Cost Estimate. This permitted work to be progressed towards achieving Phase 2A Systems Requirements Review (SRR) in August 2005. The Alliance contract was signed in May 2005 and included the procurement for eight ship sets of the Saab Mk3E Combat Management System from Saab Systems (Australia) and the Sagem VAMPR NG IRST System. This initial contract did not include any costs for platform detailed design, materials, installation or test. These costs were included once sufficient preliminary platform design had been completed and hence was able to be costed in detail. The amendment to the Project Charter to include this effort was approved in January 2006. Following the decision to exclude VSRAD in late 2005, the Electronic Optronics package and the Low Noise Amplifier modification for the Fire Control Director were removed from the scope. Other variations to the Project Charter were in December 2006 to conduct requirements analysis for the upgrade of the Combat System Simulator for the IRST System and to install the Saab Emulator Training System at the Adelaide Test Site. 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. In February 2007 the existing ANZAC Class Simulator (simulating the ships radars and weapon systems) at the ASSC was upgraded to include the IRST. 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 is intended to occur before December 2010. 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 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.
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. **Capability Performance** Successful completion of the land based combat management system integration testing in December 2009 and demonstrations of the ASMD System and its hardware and software with the RAN (using ASMD software in a realistic simulation and emulation environment) has confirmed that the integrity of the capability delivery is being met for the ASMD Upgrade.

1.3 Project Approvals

Approval	Original Planned	Achieved	Variance
First Pass	N/A	N/A	N/A
Second Pass	Nov 03	Nov 03	0

1.4 Prime Acquisition Contract(s) Details

Prime Contractor(s)	Scope Outline	Type (Price Basis)	Form of Contract	Signature
ANZAC Ship Integrated Material Support Program Alliance (ASIPA)	Supplies to be delivered under this contract: • Eight SAAB Mk3E Combat Management Systems and 3 years support spares; • Eight SAGEM VAMPIR NG Infra-red Search and Track Systems and 3 years support spares; and • An ASMD Integration and Training System.	VARIABLE	Alliance	May 05

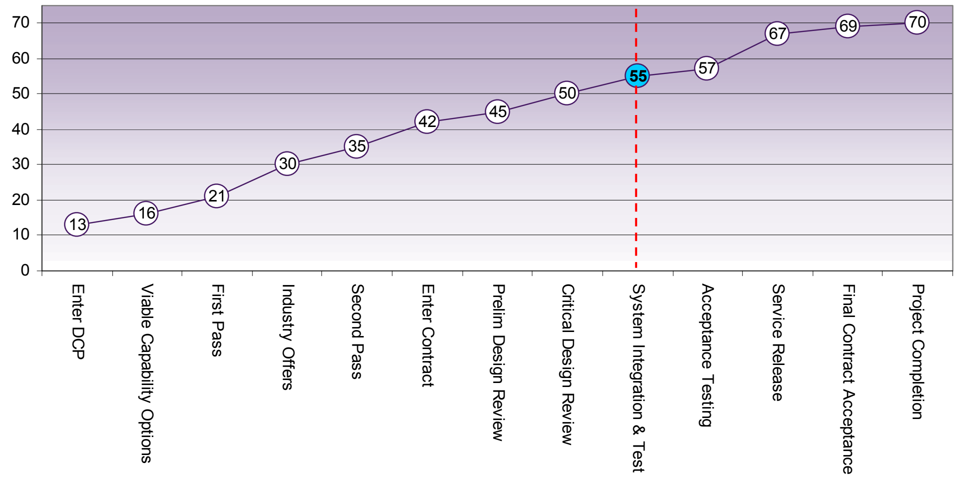
1.5 Other Current Project Phases or Sub-Projects

Phase or Sub-Project	Description
Phase 2B	This Phase completes the ASMD Upgrade by delivering a Phased Array Radar (PAR) system consisting of a target indication and tracking radar titled CEAFAR and a missile illuminator system, titled CEAMOUNT which will provide mid course guidance and terminal illumination to the Evolved Sea Sparrow Missile (ESSM). This phase also replaces the existing ANZAC Class navigation radar.

1.6 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage: System Integration and Test	Benchmark	8	7	8	8	8	8	8	55
	Current Project	8	8	9	7	8	8	7	55
	Explanation	• **Cost:** With no major issues and the maturity of the delivery of the Mk3E Combat Management System and Infra-Red Search and Track System, costs are well understood. • **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 Royal Australian Navy (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. • **Operations and Support:** As the systems being installed under Phase 2A are linked to Phase 2B, there are some elements of support that will not be fully determined until the next reporting period.							

Project Stage	Total Benchmark Score	Total Current Score
System Integration and Test	55	55



2009-10 DMO MPR Status

Section 2 – Financial Performance

2.1 Project Budget History

Date	Description	Base Date $m	Current $m		Contractor	Notes
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			88.7		
Jun 10	Exchange Variation			(0.7)		
Jun 10	**Total Budget**	**289.1**		**377.1**		

2.2 Project Expenditure History

Date	Description	Base Date $m	Current $m		Contractor	Notes
Prior to Jun 09			85.3		SAAB Systems Pty Ltd	3
			6.0		SAAB Systems Pty Ltd	4
			62.6		BAE Systems Australia	5
			6.7		BAE Systems Australia	6
			11.7		Other	7
				172.3		
FY to Jun 10			7.1		SAAB Systems Pty Ltd	3
			0.9		SAAB Systems Pty Ltd	4
			9.9		BAE Systems Australia	5
			4.4		BAE Systems Australia	6
			1.2		Other	7
				23.5		
Jun 10	**Total Expenditure**			**195.8**		
Jun 10	**Remaining Budget**			**181.3**		

2.3 Contract Details

Contractor	Signature date	Price at signature (base) $m	Quantities at signature	Price at 30 Jun 10 (base) $m	Quantities at Jun 10	Equipment	Notes
SAAB Systems Pty Ltd	Apr 05	$123.1m	8	$119.7m	8	Combat Management Systems and Fire Control System upgrades	
SAAB Systems Pty Ltd	Apr 07	$9.9m	N/A	$9.9m	N/A	First of Class (Lead Ship) Installation	
BAE Systems Australia	Apr 05	$104.9m	8	$108.6m	8	Infrared Search and Track Systems	8
BAE Systems Australia	Apr 07	$26.2m	N/A	$26.2m	N/A	First of Class (Lead Ship) Installation	8

Major equipment received and quantities to 30 Jun 10
All major design reviews completed. Equipment has been delivered into store and is being appropriately maintained until required by Ph2B for its installation.

Notes	
Note 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.
Note 2:	Transferred to DSG for facilities funding of the ASMD Systems Integration and Training Centre.
Note 3:	Expenditure on the contract for upgrading the eight Combat Management Systems and Fire Control Systems.
Note 4:	Expenditure on the contract for First of Class Installation of the Combat Management Systems and Fire Control System.
Note 5:	Expenditure on the contract for eight Infrared Search and Track Systems.
Note 6:	Expenditure on the contract for First of Class Installation of the Infrared Search and Track System.
Note 7:	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned top five contracts and minor contract expenditure.
Note 8:	These contracts are listed with BAE Systems Australia who were formally Tenix Defence.

2.4 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	The underspend reflects the incorrect programming of a lump sum payment to the Alliance Industry Participants to escalate contract prices from base date of September 2004 to effective date May 2007. This has remained a variance for most of the financial year. This variance aside, the Alliance reported a slight overspend of $1.6m due to effort required to correct minor problems with the final release of the Combat System Management software and additional integration testing.
			Overseas Industry	
		1.6	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(17.5)	Commonwealth Delays	
39.5	23.5	(16.0)	**Total Variance**	

DMO REPORT

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/ Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)
System Requirements	Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track – Stage 1 (Requirements Review)	Feb 04		Aug 05	18
	Mk3E Combat Management System/Fire Control Director – Stage 1 (Functional Review)	Apr 05		Aug 06	16
	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
	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
	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
Variance Explanations	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)
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	Jan 11	Jan 11	38
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
Variance Explanations	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.				

3.3 Progress toward Initial Operational Capability

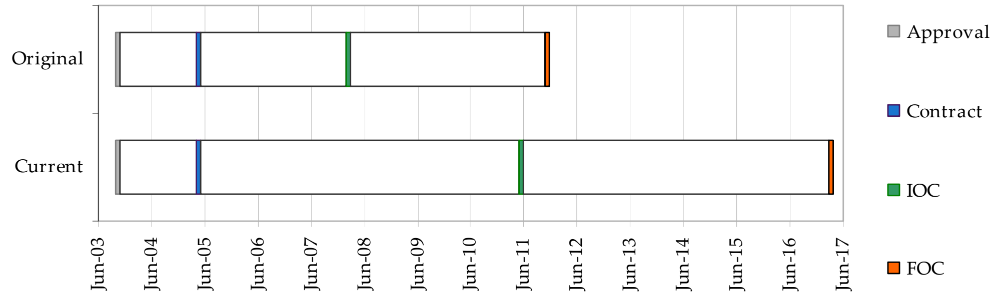
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
IOC	Mar 08	Jun 11	39	Variance is directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.

3.4 Progress toward Final Operational Capability

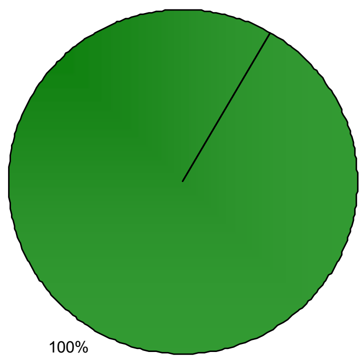
Item	Original Planned	Achieved/ Forecast	Variance (Months)	Variance Explanations/ Implications
FOC	Dec 11	Apr 17	64	Variance is a result of the ASMD Project Management Stakeholder Group agreeing to link the completion date of this Phase of the Project with that of Phase 2B.

Schedule Status as at 30 Jun 10

Approval	IOC	FOC
Nov 03	Jun 11	Apr 17



3.5 Measures of Effectiveness

Capability Pie Chart (Percentage breakdown of Project Measures of Effectiveness - MOEs)	
	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

DMO REPORT

Section 4 – Major Risks, Issues and Linked Projects

4.1 Major Project Risks

Identified Risk (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.	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.
Emergent Risks (risk not previously identified but has emerged during 2009-10)	
Description	Remedial Action
Nil	Nil

4.2 Major Project Issues

Description	Remedial Action
There are no major issues impacting on the project	N/A

4.3 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 5 – Lessons Learned

5.1 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

Appendices

Appendix 1: Guidance for Readers of the DMO's 2009-10 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 2009-10 MPR are either "Repeat" projects i.e. projects that appeared in the 2008-09 MPR and are providing an update in the 2009-10 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..

PROJECT DATA SUMMARY SHEETS

Data Element No/ Heading	Data	Definition/ Description
1.1 Project Management		• Service: could be either one or a combination of Royal Australian Navy, Australian Army or Royal Australian Air Force. • Capability Type: is one of the following; New Capability, Replacement or Upgrade. • Complexity: either ACAT I, ACAT II, ACAT III or ACAT IV • Government 2nd Pass Approval Date. • Prime Contractor: Contractor title as represented in the contract.
	Line Management	• General Manager • Division Head or Program Manager • Branch Head • Project Director
	History	• Project Manager: Name and title of officer, and start and end dates on project
1.2 Project Context	Description	A short description of the project, commencing with the current project cost. The description is presented in capability terms and, where appropriate, will mention equipment quantities.
	Background	A summary statement that covers Government approvals history and any strategic changes that have occurred since approval. Also provides the context for the current status of the project.
	Uniqueness	This data element focuses on those particular aspects that make the project unique.
	Major Challenges	This data element identifies the challenges facing the project in the reporting year and in the coming year. The focus is on the project's current major issues rather than short-term problems.

Current Status	Cost Performance	At a strategic level this identifies project expenditure in relation to its approved project cost. It also confirms whether the project is on track for delivering within budget. Circumstances that may have affected cost performance are briefly mentioned.
	Schedule performance	Briefly describes key schedule milestones achieved and issues facing the project in achieving future milestones. Milestone achievement or non-achievement in the current year is also mentioned.
	Capability performance	At a strategic level, this section describes the progress of the capability being acquired.
1.3 Project Approvals	First Pass	Identifies the First Pass Government approval date for post-Kinnaird projects. For pre-Kinnaird projects the equivalent date is shown.
	Second Pass	Identifies the Second Pass Government approval date for post-Kinnaird projects. For pre-Kinnaird projects the equivalent date is shown.
1.4 Prime Acquisition Contract(s) Details	Top 5 contracts	<u>Prime Contractor(s):</u> Identifies the top 5 contracts. Restricted to contracts that are valued at greater than 10% of the current approved project cost or $10m (whichever is the greater). Foreign Military Sales (FMS) procurements are identified as "US Government"
		<u>Scope Outline:</u> Briefly identifies the essence of the contract in supply terms (e.g. how many items being procured, duration of support contract as part of the acquisition contract, etc.)
		<u>Type (Price basis):</u> There are three usual choices for this: Variable – where the base contract price is variable for indexation and/ or foreign exchange Firm – where the price is firm and unalterable For Foreign Military Sales – FMS
		<u>Form of Contract:</u> This refers to the genesis of the contract i.e. DEFPUR 101, ASDEFCON (Strategic, Complex). See Abbreviations for explanation

		of terms. Unique arrangements such as alliance or Public Private Partnerships. For Foreign Military Sales - FMS
		Signature: The date that the contract was signed
1.5 Other Current Project Phases or Sub Projects	Phase or Sub-Project	Includes approved projects with the main project number and the phase of the project
	Description	The name of the project and a brief description of the capability
1.6 Project Maturity Score and Benchmark	Benchmark	Benchmark Maturity Score. See explanation in Appendix 4.
	Current Project	The maturity score recorded in June.
	Explanation	A short explanation of the difference between the Current and Benchmark scores.
2.1 Project Budget History	Original Approved	The approved project cost for the DMO element of the project at Government Approval.
	Real Variation	"Scope" changes which are attributable to changes in requirements by Defence. These generally take the form of changes in quantities of equipment, a change in requirements that result in specification changes in contracts, changes in logistics support requirements or changes to services to be provided which are accompanied by a corresponding budget adjustment. Where the original approved amount is not Second Pass Government Approved, projects will show the actual Government Second Pass Approval amount 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).
	Price Indexation Variation	Variations to the Original Approved project cost for the DMO element of the project from price indexation adjustments to take account of variations in labour and materiel indices over time.
	Exchange Variation	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 variations.
2.2 Project Expenditure History	Prior to July 2009	This item comprises all amounts incurred in all periods before the current reporting period (e.g. all project expenditure up to 30 June 2009). 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 (whichever is the greater). **Other** which comprises operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. The two expenditure elements above are subtotalled to give a single amount for all prior period expenditure.
	2009-10 Financial Year	This item comprises all expenditure for the 2009-10 financial year. Reporting of expenditure is 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 (whichever is the greater). **Other** expenditure which comprises operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. The two expenditure elements above are subtotalled to give a single amount for financial year expenditure.

	Total Expenditure	This item discloses total project expenditure as at 30 June 2010. It is the sum of prior period and current period expenditure reported above.
	Remaining Budget	This item discloses the total remaining project budget by subtracting the total expenditure from the total budget.
2.3 Contract Details	Contractor	Lists the the top 5 contractors. The top 5 contracts will be restricted to contracts that are valued at 10% or more of the current total budget or $10m (whichever is the greater). For FMS procurements this field will show US Government.
	Signature Date	The date the contract was signed as documented in section 1.4.
	Base Price at Signature ($m)	This is the base date price at contract signature and by definition is expressed in base date dollars.
	Quantities at Signature	Expressed in whole numbers, this is the quantity of equipment under contract as at the date the contract was signed. The quantity of contracted equipment is provided at a summary level.
	Base Price at 30 June 2010 ($m)	The base date contract price as at 30 June 2010 expressed in base date dollars.
	Quantities at 30 June 2010	Expressed in whole numbers, this is the quantity of equipment under contract as at 30 June 2010. The quantity of contracted equipment is provided at a summary level.
	Equipment	Generally includes hardware only and provides a platform level summary, disclosing prime mission and support system elements.

2.4 In-year Budget Expenditure Variance	Estimate ($m)	The estimated project expenditure for the 2009-10 financial year.
	Actual ($m)	The actual project expenditure for the 2009-10 financial year.
	Variance ($m)	Budget expenditure variances disclosed separately as per the variance factors described in the following section. The sum of these variances gives 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 factors are: • Brought forward; • Cost savings; • Foreign Military Sales; • Commonwealth Delays; • Local industry; • Overseas industry; and • FOREX variations.
	Explanation	An explanation addresses the variance factors noted above, where relevant.
3.1 Design Review Progress	Review	The events included as applicable to the project are: • System Requirements Review; • Preliminary Design Review; and • Critical Design Review.
	Major System/ Platform Variant	States the major system that the design review refers to. If there are significant variants for the major systems then these are identified.
	Original Planned	The original planned achievement dates for the events per the contract at signature.
	Current Planned	Replanned dates as evidenced by a contract amendment.
	Achieved/ Forecast	• Achieved: The date that the event was achieved. • Forecast: The date the event is likely to be achieved.
	Variance (months)	The difference between the original planned date and the achieved/forecast date, expressed in months.
	Variance explanations	A top level description of the reasons for the variance to achieved/forecast dates.
3.2 Contractor Test	Test and	The events included as applicable to the

and Evaluation Progress	Evaluation	project are: • System Integration • Acceptance
	Major System/ Platform Variant	States the major system to which the Test and Evaluation event refers.
	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 that the event was achieved. • Forecast: The date the event is likely to be achieved.
	Variance (months)	The difference between the original planned date and the achieved/forecast date, expressed in months.
	Variance explanations	A top level description of the reasons for the variance to achieved/forecast dates.
3.3 Progress Toward Initial Operational Capability	Item	Represented at a whole of capability level, unless Initial Operational Capability is 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 Initial Operational Capability.
	Achieved/ Forecast	• Achieved: The date that the event was achieved. • Forecast: The date the event is likely to be achieved.
	Variance (months)	The difference between the original planned date and the achieved/forecast date, expressed in months.
	Variance Explanations/ Implications	A brief description of the reasons for the variance to achieved/forecast dates.
3.4 Progress Toward Final Operational Capability	Item	Represented at a whole of capability level, unless Final Operational Capability is detailed under individual Mission or Support Systems.
	Original Planned	The original date on which the capability element was schedule to achieve Final Operational Capability.

	Achieved/ Forecast	• Achieved: The date that the event was achieved. • Forecast: The date the event is likely to be achieved.
	Variance (months)	The difference between the original planned date and the achieved/forecast date, expressed in months.
	Variance Explanations/ Implications	A top level description of the reasons for the variance to achieved/forecast dates.
Schedule Status Bar Graph	Graph	A graphical representation of the projects original and current achievement dates for: • Project approval; • Prime contract signature; • Initial Operational Capability; and • Final Operational Capability.
3.5 Measures of Effectiveness	Capability Pie Chart and associated Traffic Light Analysis	Pie chart and associated narrative provides a percentage breakdown of the projects Measures of Effectiveness (MOEs) status as at 30 June 2010. The narrative identifies: • Issue: Strategic level detail of the issue/s impacting the MOEs. • Remediation: Strategic level detail of remedial activity to recover MOEs performance.
4.1 Major Project Risks	Identified Risk (Risk identified by standard project risk management processes)	• Description: A major project risk rated as “extreme” or “high” on DMO’s Standard Risk Management Matrix. • Remedial Action: The risk treatment/action proposed for the risk identified.
	Emergent Risk (Risk identified during 2009-10)	• Description: A major project risk that has emerged during the 2009-10 financial year. • Remedial Action: The risk treatment/action proposed for the risk identified.

4.2 Major Project Issues	Description	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
4.3 Linked Projects	Project	The project name and number that this project is dependent on to deliver its outcomes
	Description of project	A brief description of the linked project.
	Description of Dependency	Describes the nature of the dependency
5.1 Key Lessons Learned	Project Lesson	Describes the strategic lesson(s) learned.
		Refers to one of the following 'DMO Systemic Lessons' that can be cross referenced back to each individual Project Lesson include: • Requirements Management; • First of Type Equipment; • Off-the-shelf Equipment; • Contract Management; • Schedule Management; or • Resourcing.

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

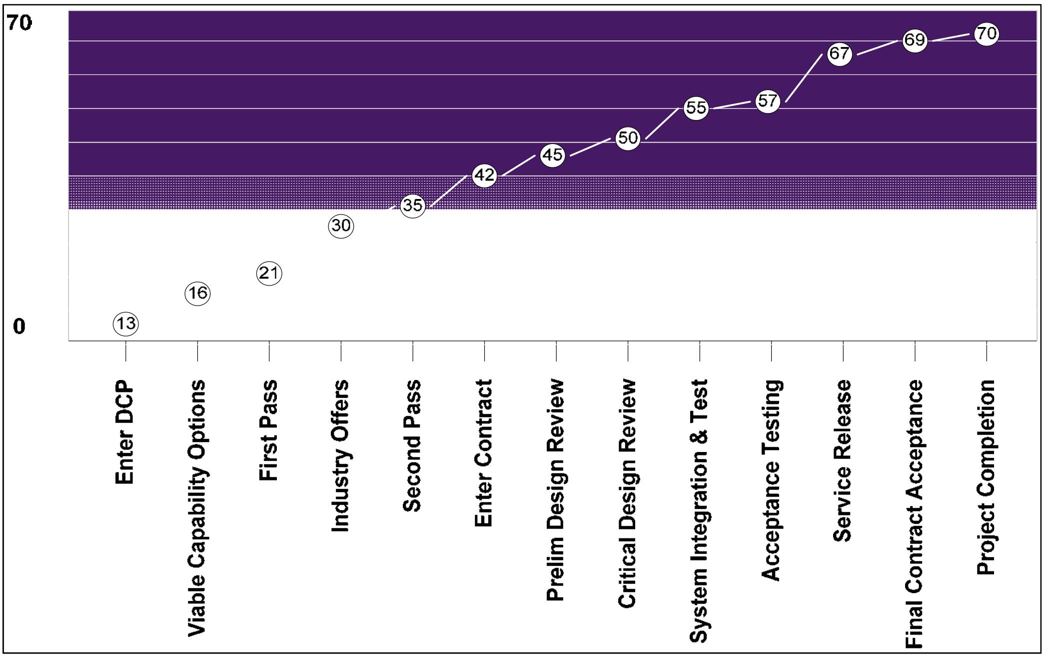
The DMO categorises its acquisition projects to enable it to differentiate between the complexity of business undertakings, focus management attention, provide a basis for professionalising its workforce and facilitate strategic workforce planning. Projects are graded into one of four Acquisition Categories (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*[135]	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

[135] 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 416 Review of Major Projects Report 2007-08 Recommendations and DMO Response

Recommendation 1

That all Major Project Reports from the year 2009-10 onwards contain a section that clearly outlines the lessons learned on the MPR projects which are systemic and interrelated in nature. This section must include plans for how the lessons learned will be incorporated into future policy and practice. This section is in addition to Section 5 in the PDSSs (i.e. 'Lessons Learned) which should still contain descriptions of lessons learned that are unique to the individual projects and how they will be incorporated into future policy and practice across the DMO. Section 5 of the PDSSs should also cross-reference to the systemic issues where relevant to individual projects.

Recommendation 2

That all Major Project Reports from the year 2009-10 onward provide a breakdown of maturity scores against the following seven attributes in project data: Schedule; Cost; Requirement; Technical understanding; Technical Difficulty; Commercial; Operations and Support. Additionally all Major Projects Reports from the year 2009-10 onward provide a succinct and straightforward explanation of how the DMO determines the benchmark, as opposed to the maximum, materiality score.

Recommendation 3

That the Defence Materiality Organisation provide a traffic light analysis of the percentage breakdown of Capability Measures of Effectiveness for each project. This traffic light analysis should be include in each MPR from 2009-10 onward until such time as the DMO is able to replace this analysis with unclassified and standardised capability achievement information.

Recommendation 4

That no later than 31 August each year, the ANAO and the DMO will consult the Committee on the projects to be included in and where appropriate, excluded from, the following years MPR

Recommendation 5

That where possible the order of presentation of the projects will remain consistent across the Major Projects Report.

DMO Response

The DMO agreed to all recommendations and has implemented action for the 2009-10 MPR.

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 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 Operational Capability (FOC)	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 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.
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.

DMO REPORT

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.
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 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.
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. (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 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.
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.
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 Management	At the highest level, it involves the identification and 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.
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.
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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