

The Auditor-General
Report No.12 2013–14
Assurance Report

2012–13 Major Projects Report

Defence Materiel Organisation

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Cover photos: Giraffe Agile Multi-Beam Radar being acquired under project LAND 19 Phase 17A Counter – Rocket, Artillery and Mortar (C-RAM) (spine); Mercedes-Benz Geländewagen (G-Wagen) vehicles being acquired under project LAND 121 Phase 3A Overlander Vehicles (left); one of two Landing Helicopter Docks (LHDs) being acquired under project JP 2048 Phase 4A/4B Amphibious Ships (centre); and, a Boeing F/A-18F Super Hornet acquired under project AIR 5349 Phase 1 Bridging Air Combat Capability (right). (Source: Department of Defence)





Canberra ACT
17 December 2013

Dear Mr President
Dear Madam Speaker

The Australian National Audit Office has undertaken a review of the status of selected major Defence equipment acquisition projects as at 30 June 2013, as presented by the Defence Materiel Organisation, in accordance with the authority contained in the *Auditor-General Act 1997*. Pursuant to Senate Standing Order 166 relating to the presentation of documents when the Senate is not sitting, I present the report of this review to the Parliament. The report is titled *2012–13 Major Projects Report*.

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

Yours sincerely

A handwritten signature in black ink, appearing to read 'Ian McPhee', is positioned above the printed name.

Ian McPhee
Auditor-General

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

AUDITING FOR AUSTRALIA

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

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Abbreviations

ADF	Australian Defence Force
ANAO	Australian National Audit Office
APR	Acquisition Performance Report
ARH	Armed Reconnaissance Helicopter
ASAE	Australian Standard on Assurance Engagements
ASMD	Anti-Ship Missile Defence
AWD	Air Warfare Destroyer
C-17	Boeing C-17 Globemaster III aircraft
CEO DMO	Chief Executive Officer, Defence Materiel Organisation
CFO DMO	Chief Finance Officer, Defence Materiel Organisation
COTS	Commercial-Off-The-Shelf
DCP	Defence Capability Plan
DMO	Defence Materiel Organisation
EI&W	Early Indicators and Warnings
ERMF	Enterprise Risk Management Framework
EVMS	Earned Value Management System
FFG	Fast Frigate Guided (Guided Missile Frigate)
FIC	Fundamental Inputs to Capability
FMR	Final Materiel Release
FMS	Foreign Military Sales
FOC	Final Operational Capability
HF	High Frequency
Hw	Heavyweight
IMMS	Interdependent Mission Management System
IMR	Initial Materiel Release

ISPE	Industry Skilling Program Enhancement
IOC	Initial Operational Capability
IPPO	Independent Project Performance Office
IT	Information Technology
JCPAA	Joint Committee of Public Accounts and Audit
JPD	Joint Project Directive
LHD	Landing Helicopter Dock
MAA	Materiel Acquisition Agreement
Major Projects	Major Defence equipment acquisition projects
MOTS	Military-Off-The-Shelf
MOU	Memorandum Of Understanding
MPR	Major Projects Report
MRH90	Multi-Role Helicopter
MRM	Materiel Release Milestone
MRS	Monthly Reporting System
PDSS	Project Data Summary Sheet
PIC IP	Priority Industry Capability Innovation Program
RCS	Replacement Combat System
R&S	Reliability and Sustainability
SADI	Skilling Australia's Defence Industry
SATCOM	Satellite Communication
SMEWA	Specialist Military Equipment Weighted Average

Part 1. ANAO Review and Analysis

Auditor-General's Foreword

The Defence Materiel Organisation (DMO) provides support to Australian Defence Force (ADF) operations through the acquisition and sustainment of ADF capabilities, which is critically important work, in view of projects' high cost and their contribution to national security. This sixth Major Projects Report (MPR) continues the review and analysis by the Australian National Audit Office (ANAO) on the progress of selected major Defence equipment acquisition projects (Major Projects), managed by the DMO.

This report builds on the earlier work by the DMO and the ANAO to improve the transparency of, and accountability for, the status of Major Projects for the benefit of the Parliament, the Government and other stakeholders. Additionally, with the number of projects having plateaued, (29 projects in 2012–13 and 2011–12, and 28 projects in 2010–11), the report now provides for the longitudinal analysis envisaged when it was conceived.

The ongoing support of the Joint Committee of Public Accounts and Audit (JCPAA) has been very important to the development of the MPR. Each year the JCPAA reviews and endorses the Guidelines for the preparation of this report and provides direction and recommendations to assist the development of future MPRs.

The management of Major Projects is complex and, for this reason, it is a major challenge for the DMO to deliver the required capability on schedule and within budget. Consistent with previous years, schedule slippage remains a key focus for the DMO, particularly for projects regarded as developmental. Given the ongoing interest in the timely delivery of Major Projects, the ANAO will continue to monitor delivery in terms of cost, schedule and capability.

As previously, this year's review continued the strong working relationship between the ANAO and the DMO. Defence and industry stakeholders also provided valuable input to assist with the review.



Ian McPhee

5 December 2013

Summary

Introduction

1. Major Defence equipment acquisition projects (Major Projects) remain the subject of considerable parliamentary and public interest, in view of their high cost, contribution to national security and the challenges involved in completing them within budget, on time and to the required level of capability.
2. The Defence Materiel Organisation (DMO) provides support to Australian Defence Force (ADF) operations through the acquisition and sustainment of ADF capabilities¹ and expended some \$3.7 billion on major and minor capital acquisition projects in 2012–13.²
3. Although the next Defence White Paper is planned for early 2015, it is expected that Major Projects of high cost and contribution to the future security of Australia will proceed.³ These Major Projects will consist of acquisitions of all major elements of ADF capability, including land, air, sea and information capabilities, and represent significant investment decisions for the Commonwealth. These investment decisions will concern the procurement of additional Joint Strike Fighters and the approach to maintaining an effective submarine capability, and are foreshadowed to be two of the most significant Defence investment decisions in the Commonwealth's history.
4. Acquisitions by the DMO alone do not generate new capability for the ADF until they have been successfully introduced into service. The overarching responsibility for the introduction into service of Major Projects, for example, provision of personnel, training and command, normally resides within other areas of the Defence organisation.⁴ Thus, while the DMO's role is only part of the introduction into service of new capability, it is a significant one.

1 Department of Defence, *Defence Annual Report 2012–2013*, Chapter 12 – Defence Materiel Organisation, p. 183.

2 Department of Defence, *Defence Annual Report 2012–2013*, Part 5 – Financial Statements, p. 338.

3 The then Leader of the Opposition, the Hon. Tony Abbott MP, and the then Shadow Minister for Defence, Senator the Hon. David Johnston, *The Coalition's Policy for Stronger Defence*, 2 September 2013.

4 Department of Defence, *Defence Capability Development Handbook 2012*, pp. 2–3.

2012–13 Major Projects Report

5. This sixth Major Projects Report (MPR) covers 29 of the DMO's Major Projects. This is the second report covering 29 projects (2011–12: 29 and 2010–11: 28) and provides the basis for a focus on longitudinal analysis, as envisaged by the Joint Committee of Public Accounts and Audit (JCPAA), '...to provide the Parliament and the wider Australian community with accessible, transparent and accurate information about the status of Defence's major acquisition projects, providing a basis for longitudinal analysis of project performance.'⁵ It is anticipated that 30 projects will be reviewed in the 2013–14 MPR.

6. The Australian National Audit Office's (ANAO) review of Major Projects in the MPR is in addition to the regular program of performance and financial statement audits conducted within the Defence portfolio. While by its nature, the report is not as in depth as a performance audit, it provides an opportunity to analyse data across a consistent range of projects over time. These benefits have already been noted by a variety of stakeholders, including Ministers, Parliamentary Committee members, industry and the media.

2012–13 Major Projects

7. Projects included in the MPR are selected based on criteria included in the *2012–13 DMO Major Projects Report Guidelines* (the Guidelines)⁶, endorsed by the JCPAA. These criteria aim to provide a selection of the most significant Major Projects managed by the DMO on behalf of the ADF.

8. The total approved budget for the Major Projects included in the 2012–13 MPR is approximately \$44.3 billion, as at 30 June 2013. The MPR therefore covers nearly 56 per cent of the budget within the Approved Major Capital Investment Program of \$78.8 billion.⁷

9. The projects and their approved budgets are listed in Table 1, below.

5 JCPAA, Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, paragraph 1.1, p. 1. Longitudinal analysis has been a key focus of the JCPAA from 2008 as noted in JCPAA, Report 411, *Progress on equipment acquisition and financial reporting in Defence*, August 2008, paragraph 5.30, p. 164.

6 The Guidelines for the 2012–13 MPR, endorsed by the JCPAA in September 2012, set out the requirements for the DMO to provide complete and accurate PDSSs and supporting information for the ANAO review, and have been included in Appendix 1, pp. 515–543.

7 Based on information contained in the Approved Major Capital Investment Program provided to the ANAO by the DMO.

Table 1: MPR projects and approved budgets at 30 June 2013

Project	DMO Abbreviation	Approved Budget \$m
Air Warfare Destroyer Build (SEA 4000 Ph 3)	AWD Ships	7 869.2
Airborne Early Warning and Control Aircraft (AIR 5077 Ph 3)	Wedgetail	3 843.7
Multi-Role Helicopter (AIR 9000 Ph 2/4/6)	MRH90 Helicopters	3 649.9
Bridging Air Combat Capability (AIR 5349 Ph 1/2)	Super Hornet	3 556.0
Amphibious Ships (LHD) (JP 2048 Ph 4A/4B)	LHD Ships	3 073.5
Future Naval Aviation Combat System Helicopter (AIR 9000 Ph 8)	MH-60R Seahawk	2 958.3
New Air Combat Capability (AIR 6000 Ph 2A/2B)	Joint Strike Fighter	2 592.4
Armed Reconnaissance Helicopter (AIR 87 Ph 2)	ARH Tiger Helicopters	2 031.5
F/A-18 Hornet Upgrade (AIR 5376 Ph 2)	Hornet Upgrade	1 878.6
Air to Air Refuelling Capability (AIR 5402)	Air to Air Refuel	1 802.6
Guided Missile Frigate Upgrade Implementation (SEA 1390 Ph 2.1)	FFG Upgrade	1 450.1
Bushmaster Protected Mobility Vehicle (LAND 116 Ph 3)	Bushmaster Vehicles	1 254.3
Field Vehicles and Trailers (LAND 121 Ph 3A)	Overlander Vehicles	990.5
Next Generation SATCOM Capability (JP 2008 Ph 4)	Next Gen Satellite	863.7
ANZAC Anti-Ship Missile Defence (SEA 1448 Ph 2B)	ANZAC ASMD 2B	675.9
High Frequency Modernisation (JP 2043 Ph 3A)	HF Modernisation	580.1
Additional Medium Lift Helicopters (AIR 9000 Ph 5C)	Additional Chinook	564.0
Armidale Class Patrol Boat (SEA 1444 Ph 1)	Armidales	537.2
Collins Replacement Combat System (SEA 1439 Ph 4A)	Collins RCS	449.9
Battlespace Communications System (JP 2072 Ph 2A) ¹	Battle Comm. Sys. (Land)	441.2
Indian Ocean Region UHF SATCOM (JP 2008 Ph 5A)	UHF SATCOM	435.8
Replacement Heavyweight Torpedo (SEA 1429 Ph 2)	Hw Torpedo	425.3
Collins Class Submarine Reliability and Sustainability (SEA 1439 Ph 3)	Collins R&S	411.4
SM-1 Missile Replacement (SEA 1390 Ph 4B)	SM-2 Missile	400.2
ANZAC Anti-Ship Missile Defence (SEA 1448 Ph 2A)	ANZAC ASMD 2A	386.5
Artillery Replacement (LAND 17 Ph 1A)	155mm Howitzer	323.9
Follow On Stand Off Weapon (AIR 5418 Ph 1)	Stand Off Weapon	317.4
Battlefield Command Support System (LAND 75 Ph 3.4)	Battle Comm. Sys.	308.0
Counter – Rocket, Artillery and Mortar (LAND 19 Ph 7A)	C-RAM	253.9
Total		44 325.0

Source: 2012–13 MPR, Part 3, Project Data Summary Sheets.

Note 1: Battle Comm. Sys. (Land) is included in the MPR program for the first time in 2012–13.

Report objective and structure

10. The objective of this report is to provide the Auditor-General's independent assurance over the status of selected Major Projects, as reflected in the Project Data Summary Sheets (PDSSs) prepared by the DMO, and the Statement by the Chief Executive Officer (CEO) DMO. Assurance from the ANAO's review of the preparation of the PDSSs by the DMO is conveyed in the Auditor-General's Independent Review Report, prepared pursuant to the endorsed Guidelines, contained in Part 3.

11. Excluded from the scope of the ANAO's review is PDSS data on expected future events or the forecast achievement by future dates (including forecasts on delivery of key capabilities), the project financial assurance statements, and major risks and issues. By its nature, this information relates to future events and depends on circumstances that have not yet occurred or may not occur, or may be impacted by events that have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information.

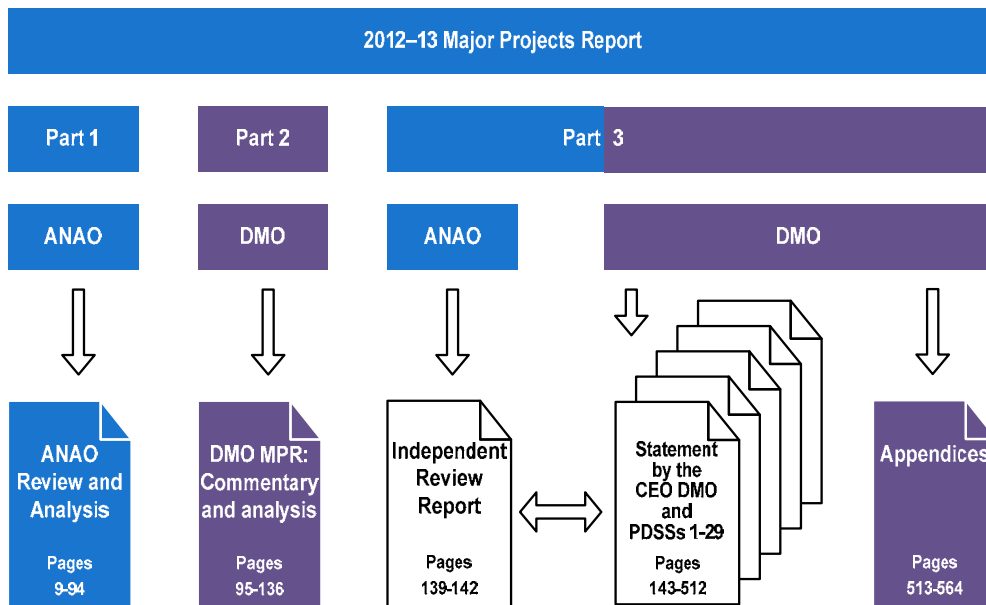
12. ANAO analysis on the three key elements of the PDSSs—cost, schedule and the progress towards delivery of required capability, in particular, longitudinal analysis across these key elements of projects over time, are contained in Part 1. Additional analysis on other elements of the PDSSs, for example, Project Maturity is also included in this part.

13. Further insights and context by the DMO on issues highlighted during the year are contained in Part 2—although not included within the scope of the review by the ANAO.

14. The report also contains appendices, incorporating the Guidelines and other information to assist the reader, as shown in Figure 1, below.

15. To assist in conducting inter-report analysis, the presentation of data remains largely consistent and comparable with the 2011–12 MPR.

Figure 1: Report structure



16. For each Major Project, a corresponding PDSS includes detailed information on project performance; the approved budgeted cost and expenditure, schedule progress, the DMO's assessment of progress toward delivering those aspects of key capabilities for which the DMO is responsible, major risks and issues, maturity scores and lessons learned. This information has been prepared by the DMO in accordance with the Guidelines as endorsed by the JCPAA.

17. Additionally, as projects appear in the MPR for multiple years, changes to the PDSS from the previous year are depicted in bold purple text. Each PDSS comprises:

- Section 1—Project Summary: including description; current status, including a project financial assurance statement; context, including background, unique features and major challenges; and linked projects;
- Section 2—Financial Performance: including an outline of the project's budget and expenditure, as well as variations to the budget over the life of the project to date, in-year variances between budgeted and actual expenditure; and major contracts in place (in addition to quantities delivered as at 30 June 2013);

- Section 3—Schedule Performance: provides information on the project's design development; test and evaluation process; and forecasts and achievements against key project milestones including Initial Materiel Release (IMR)⁸, Final Materiel Release (FMR)⁹, Initial Operational Capability (IOC)¹⁰ and Final Operational Capability (FOC)¹¹;
- Section 4—Project Cost and Schedule Status: represents the project's cost and schedule status in a graphical format as at 30 June 2013;
- Section 5—Materiel Capability Performance: provides a summary of the DMO's assessment of its progress on delivering key capabilities (also referred to as Measures of Materiel Capability Performance);
- Section 6—Major Risks and Issues: outlines the major risks and issues faced by the project;
- Section 7—Project Maturity: provides a summary of the Project Maturity as defined by the DMO and a comparison against their benchmark structure;
- Section 8—Lessons Learned: outlines the key lessons that have been learned; and
- Section 9—Project Line Management: details current project management responsibilities within the DMO.

18. Consistent with the Guidelines, information of a classified nature has been excluded from the PDSSs.

8 Initial Materiel Release (IMR): A milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of Initial Operational Release. It is defined in the MAA. Department of Defence, *Defence Capability Development Handbook 2012*, p. 130.

9 Final Materiel Release (FMR): A milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of Final Operational Capability (FOC). It is defined in the MAA. Department of Defence, *Defence Capability Development Handbook 2012*, p. 129.

10 Initial Operational Capability (IOC): The point when the first 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 reached by the Capability Manager. Department of Defence, *Defence Capability Development Handbook 2012*, p. 130.

11 Final Operational Capability (FOC): The point when the final subset of a capability system that can be operationally employed is realised. FOC is a capability state endorsed at project approval at Second Pass, and reported as having been reached by the Capability Manager. Department of Defence, *Defence Capability Development Handbook 2012*, p. 129.

The role of the Joint Committee of Public Accounts and Audit

19. Influential in establishing the MPR, the JCPAA has taken an active role in the development and review of the MPR program. Each year, the Committee considers the draft Guidelines, incorporating the selection of projects for review, and provides recommendations relating to the Guidelines' content and development, prior to their endorsement. Following endorsement by the Committee, the Guidelines¹² provide the basis for the DMO's preparation of the PDSSs and the ANAO's review.¹³

20. The main change to the 2012–13 Guidelines was the introduction of a risk-based approach for the exit of individual projects prior to the achievement of FOC. This amendment will provide the JCPAA with the opportunity to endorse the removal of projects from the review process based on a review of remaining risks, as proposed by the DMO. Previously projects were only considered for removal once FOC had been attained. The process by which projects are able to exit the MPR, post FMR, with JCPAA approval, provides for a balance between projects remaining in the MPR once considered sufficiently low risk, and the opportunity cost of preventing other projects entering the MPR.

21. Subsequent to the tabling of the MPR in Parliament each year the JCPAA considers the inclusion of the report in its schedule of review.

22. In May 2013 the Committee published Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*. The JCPAA's recommendations are set out below¹⁴:

12 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Appendix 1, pp. 515–543.

13 The Guidelines for the 2012–13 MPR were endorsed by the JCPAA in September 2012.

14 JCPAA, Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, pp. xi–xii.

Recommendation 1

To help ensure that project financial assurance statements continue to be robust and meaningful, the Committee recommends that, in consultation with the Australian National Audit Office, the Defence Materiel Organisation continue to seek independent financial assurance during the development of future Major Project Reports for an appropriately selected sample of projects.

Recommendation 2

The Committee recommends that, by 20 June 2013, the Defence Materiel Organisation submit a proposal, for incorporation into the 2013–14 Major Projects Report Guidelines, on how project-level contingency fund data could be disclosed in future Major Projects Reports without being significantly prejudicial to taxpayers' interests. At a minimum, projects that have utilised contingency funds during the previous financial year or are anticipated to use contingency funds in the forthcoming financial year, and the amount of such funds, should be identified in the reports.

Recommendation 3

The Committee recommends that the Defence Materiel Organisation review its current approach to assigning maturity scores to projects to improve the consistency of their application and their consistency with the *Defence Capability Plan*.

Recommendation 4

The Committee recommends that the Defence Materiel Organisation develop a business systems improvement plan which prioritises projects, assigns completion dates and allocates senior level ownership for implementation. A progress update on achievements against the plan should be included in the 2012–13 Major Projects Report.

Recommendation 5

The Committee recommends that, by 20 June 2013, the Department of Defence reports to the Committee on how it intends to achieve greater transparency in relation to its spending on sustainment activities.

23. The Committee's recommendations contribute to the specific areas of focus for the ANAO's review and analysis each year. While the response by Defence and the DMO to the 2013 recommendations is outstanding at the time of preparation of this report, the ANAO's review of the activities in relation to these focus areas are included in this report as follows:

- project financial assurance statements at paragraphs 1.22 to 1.27 in Part 1;
- project-level contingency fund data at paragraphs 1.15 to 1.21 in Part 1;
- maturity scores at paragraphs 1.28 to 1.35 in Part 1; and
- business systems improvement plan at paragraphs 3.22 to 3.27 in Part 1.

24. Defence sustainment activities are outside the scope of the MPR.

Overall outcomes

25. This sixth MPR continues the review of the DMO's Major Projects which were initially introduced in the 2007–08 MPR and has continued to introduce new projects up to the originally agreed maximum of 30 projects for review.¹⁵ The MPR maintains the transparency and accountability for performance relating to cost, schedule and progress towards delivering the key capabilities of Major Projects, and provides opportunities for further longitudinal and other analysis into the future.

2012–13 Major Projects Report review (Chapter 1)

26. Following identification of this review as a 'Priority Assurance Review' under section 19A(5) of the *Auditor-General Act 1997* by the JCPAA, the ANAO has reviewed the PDSS data as contained in this volume and presents the Auditor-General's Independent Review Report.

27. For the second year, the 2012–13 MPR includes a project financial assurance statement within each PDSS, provided by the project. The project financial assurance statement is intended to provide readers with a clear articulation of a project's financial position and to provide transparency in regard to whether there is '...sufficient remaining budget for the project to be completed...' ¹⁶

28. The ANAO continued to assess the progress of the introduction of the individual project financial assurance statements and the overarching assessment by the Chief Finance Officer (CFO) DMO of the DMO's capacity to deliver requirements within the remaining budget.

29. In the 2012–13 MPR, no project reported insufficient budget to completion, although it should be noted that Joint Strike Fighter assurance was only provided against Stage 1 of the project, given the requirement for future government approvals in relation to this acquisition. Additionally, AWD Ships

15 Eight of the nine projects in the 2007–08 MPR remain included under the Guidelines endorsed by the JCPAA. One project, C-17 Heavy Airlift, met the requirements for Final Operational Capability in December 2011 and is no longer included in the review. Additionally, Hornet Refurb achieved FOC in 2011–12 and was subsequently removed from the MPR.

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

has flagged again in 2012–13 that the out-turned budget may be insufficient to cover actual costs incurred, including indexation.¹⁷ This is discussed further in paragraph 1.24 in Part 1, in the context of the DMO's financial assurance framework.

30. Additionally, the ANAO continued to assess the progress of the DMO in addressing previously raised issues in relation to the administration of Major Projects. In 2012–13 issues were again noted within the following areas of project management, including:

- inconsistency in the application of the Project Maturity framework¹⁸, reducing its level of reliability of the maturity assessment, (Section 7 of the PDSS);
- inconsistent recording and reporting of major risks and issues by projects, and the removal of major risks and issues from the DMO's Monthly Reporting System, (Section 6 of the PDSS); and
- inconsistency in the application of the capability assessment framework¹⁹ and difficulties in gaining assurance in relation to expected capability delivery, (Section 5 of the PDSS).

31. The Auditor-General's Independent Review Report takes into account the overall governance of major projects, the results of our examination of the DMO's project management and reporting arrangements, and the results of our substantive procedures to gain assurance in relation to key information reported in PDSSs.

32. In 2012–13, the results of the ANAO's assurance review of the 29 PDSSs was that nothing has come to the attention of the ANAO that causes us to believe that the information in the PDSSs, within the scope of our review, has not been prepared, in all material respects, in accordance with the Guidelines.

17 Further, in the Statement by the CEO DMO at page 143 in Part 2, the CEO notes '...emerging concerns from the AWD Alliance around cost overruns and associated delays in shipbuilding aspects of the AWD Program'.

18 The Project Maturity framework outlined in the Department of Defence, DMO, Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, 8 September 2010, is a methodology used to quantify the maturity of projects as they progress through the acquisition lifecycle.

19 The capability assessment framework is a methodology used to assess the likelihood of delivering the key capabilities outlined in project's Materiel Acquisition Agreement (refer to paragraphs 1.46 to 1.50 in Part 1 for more information).

Analysis of projects' performance (Chapter 2)

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

34. Table 2, below, provides summary data on the DMO approved budget, schedule performance and progress toward delivering capabilities for the Major Projects covered in this report, and compares performance against that reported in previous MPR editions.

Table 2: Summary longitudinal analysis

	2010–11 MPR	2011–12 MPR	2012–13 MPR
Number of Projects	28	29	29
Total Approved Budget	\$46.1 billion	\$47.3 billion	\$44.3 billion
Total Increase/Decrease since Second Pass Approval	\$7.8 billion	\$5.9 billion	\$6.5 billion ¹
Approved Budget Increase/Decrease (In-year)	-\$0.1 billion (-0.3 per cent)	-\$1.1 billion (-2.4 per cent)	-\$1.5 billion (-3.4 per cent)
Schedule Slippage (Total) ²	760 months (31 per cent)	822 months (30 per cent)	957 months (36 per cent)
Average Schedule Slippage per Project ¹	30 months	30 months	35 months
Schedule Slippage (In-year)	72 months (3 per cent) ³	99 months (4 per cent) ³	147 months (5 per cent)
Expected Capability Delivery ⁴			
• High level of confidence that will be delivered (Green)	94 per cent	91 per cent	95 per cent
• Under threat, considered manageable (Amber)	5 per cent	8 per cent	5 per cent
• Unlikely to be met (Red)	1 per cent	1 per cent	0 per cent

Note 1: Adjusted for Overlander Vehicles, see paragraph 39.

Note 2: The data for the 29 Major Projects in the 2012–13 MPR compares results with the data from projects in the 2011–12 MPR and 2010–11 MPR. A comparison of the data across years should be interpreted in this context, i.e. once a project is removed from the MPR, data is removed from the total slippage calculation for all years, but remains within in-year calculations where relevant.

Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's MPR analysis is Production Period Five. Project slippage based on prior Production Periods has been removed from the 2011–12 and 2012–13 total slippage analysis (37 months).

Note 3: Based on the 22 projects from the 2009–10 MPR and 27 projects from the 2010–11 MPR respectively.

Note 4: The grey section of the table is excluded from the scope of the ANAO's assurance review.

Cost

35. Within the review period, all projects continued to operate within the total approved budget of \$44.3 billion.²⁰

36. The total budget for Major Projects included in this MPR has increased by \$6.5 billion (15.5 per cent), (adjusted for Overlander Vehicles, see paragraph 39 below) since Second Pass Approval. The \$6.5 billion increase reflects net price (materials and labour) variation increases of \$7.4 billion, real variation (such as scope changes and budget transfers between projects) increases of \$3.0 billion, and foreign exchange rate movement (FOREX) decreases of \$3.9 billion.

37. In 2012–13, two projects, Joint Strike Fighter (reinstatement of a prior reduction) and Bushmaster Vehicles (additional quantities) were provided budget supplementation for real cost/scope increases. These were \$201.5 million and \$221.2 million respectively.²¹

38. Only two projects have had a real budgeted cost increase since Second Pass Approval of greater than \$500 million, namely the MRH90 Helicopters and Bushmaster Vehicles, both for scope increases.²²

39. Overlander Vehicles, initially provided with Second Pass Approval for a broad suite of platforms in August 2007, was separated into two phases, Phase 3A Lightweight and Light Capability and Phase 3B Medium and Heavy Capability, in December 2011. Phase 3A was reapproved for Second Pass at that time, however, Phase 3B, which did not receive Second Pass Approval prior to 30 June 2013, is reflected as a scope decrease of \$2.2 billion in this report (except where noted). This timing difference will readjust in the 2013–14 MPR following Phase 3B's Second Pass Approval (in July 2013) as it is expected that the 2013–14 MPR will include both Phase 3A and 3B.

20 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 1, Table 4, p. 57.

21 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 1, Table 4, p. 57.

22 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 3, PDSSs. The MRH90 Helicopters scope increase was due to the inclusion of an additional 34 helicopters to replace the Black Hawk (Phase 4) and Sea King (Phase 6) helicopter fleets, and Bushmaster Vehicles was for additional vehicles and upgrades.

Schedule

40. Maintaining Major Projects on schedule remains the most significant challenge for the DMO; in turn affecting when the capability is made available for operational release and deployment by the ADF.

41. In the 2012–13 MPR, the total schedule slippage for the 29 Major Projects as at 30 June 2013 is 957 months (2011–12: 822 months) when compared to the initial schedule first approved by government. This represents a 36 per cent (2011–12: 30 per cent) increase on the originally approved schedule.

42. In the 12 months that have passed since the last MPR, 147 months of slippage has been added to the schedule of the projects in the report.²³ This slippage is made up of: Collins RCS (36 months); FFG Upgrade (24 months); Wedgetail (20 months); HF Modernisation (13 months); Air to Air Refuel (12 months); SM-2 Missile (11 months); Stand Off Weapon (nine months); Hornet Upgrade (eight months); AWD Ships (ten months, including an adjustment to original FOC which moved the date seven months earlier); and Battle Comm. Sys. (Land) (4 months). This confirms that managing Major Projects to successful delivery, within the approved timeframe, is a widespread challenge.

43. The projects which have experienced the most significant delays from original planned FOC are: Wedgetail (78 months); ARH Tiger Helicopters (79 months); FFG Upgrade (120 months); ANZAC ASMD Phase 2B (57 months); HF Modernisation (147 months); Collins RCS (108 months); Collins R&S (99 months); and ANZAC ASMD Phase 2A (72 months).

44. Disaggregation according to a project's Second Pass Approval shows that 87 per cent (2011–12: 87 per cent) of the total schedule slippage across the Major Projects covered in the 2012–13 MPR is made up of projects approved prior to the DMO's demerger from the Department of Defence, in July 2005. This is a positive indicator of the benefits that the DMO, as a specialist acquisition and sustainment organisation, is able to bring to complex Defence procurement.

23 Further, in the Statement by the CEO DMO at pages 143 to 144 in Part 2, the CEO makes reference to additional information on milestone achievement dates for AWD Ships, Hornet Upgrade, Overlander Vehicles, Hw Torpedo and Battle Comm. Sys.

45. Additional ANAO analysis (refer to Figure 8, at page 64) presents project slippage as reported in each of the six MPRs against the DMO classification of projects as Military-Off-The-Shelf (MOTS), Australianised MOTS or Developmental.²⁴ These classifications are a general indicator of the difficulty associated with the procurement process. This figure highlights, prima facie, that the more developmental in nature a project is, the more likely it will experience project slippage, as well as demonstrating the advantages of selecting MOTS acquisitions.²⁵

46. The reasons for schedule slippage vary but primarily reflect the underestimation of both the scope and complexity of work, particularly for Australianised MOTS and Developmental projects.

Capability

47. The third major aspect of project performance examined by this report is progress towards the delivery of capability required by government and specified by the ADF. Assessment of expected capability delivery by the DMO is outside the scope of the Auditor-General's formal review conclusion, but is included in the analysis to provide an overall perspective of the three major components of project performance.

48. The DMO expects that the 29 projects in this year's MPR will deliver all of their key capability requirements, recognising that some elements of the capability required may be under threat, but are considered manageable (assessed as either green or amber). This is an improvement on the 2011–12 assessment, where both Wedgetail and MRH90 Helicopters were assessed as unlikely to meet all of their capability requirements.

49. This year, as reported by the DMO, the delivery of five per cent (2011–12: eight per cent) of the key capabilities is considered to be 'under threat'. The projects considered to have some elements 'under threat' are: Wedgetail, MRH90 Helicopters, Joint Strike Fighter, Air to Air Refuel, FFG Upgrade and 155mm Howitzer. Further details are outlined at paragraph 2.66 in Part 1.

24 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 2, p. 116.

25 Off-The-Shelf (OTS): Hardware or software that already exists, is in service with one or more other customers for an equivalent purpose and requires no, or minimal, change. Sometimes expressed as COTS (Commercial Off-The-Shelf) or MOTS (Military Off-The-Shelf). Department of Defence, *Defence Capability Development Handbook 2012*, p. 133.

50. In addition, in this report the DMO has continued the past practice of including declassified information on settlement actions for projects, to ensure that transparency in relation to project information is provided to readers of the report.

51. In 2012–13, a renegotiation with Australian Aerospace regarding delivery of MRH90 Helicopters contracted requirements resulted in the signing of a Deed of Variation (see paragraph 1.24 in Part 1 for additional information). Additionally, in relation to Wedgetail, in 2012–13 a Capability Realisation Plan was developed by the DMO in conjunction with Boeing to remediate previously expected shortfalls in capability delivery. Prior settlements for projects within this report include ARH Tiger Helicopters²⁶ and Air to Air Refuel.²⁷

Developments in governance and reporting (Chapter 3)

52. Consistent with previous years, developments in governance and reporting process areas covered in the ANAO's review included:

- the Gate Review process²⁸, which is designed to provide the 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 Projects of Concern process, which is designed to address project issues of concern to the DMO and government relating to cost, schedule and capability;
- the Early Indicators and Warnings system, with the purpose of identifying problems with projects in the formative stages of the project lifecycle, for appropriate action to remediate them;

26 Department of Defence, Submission No. 4.1 to the JCPAA, 15 February 2007.

27 Air Vice Marshall Thorne, Official Committee Hansard, Senate Estimates Committee Hearing, 4 June 2013, pp. 64–65.

28 ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 13, pp. 15–16, found that, while generally, the DMO has improved the effectiveness of the program, there remain opportunities for further improvement and rigour.

- the introduction of a requirement for Joint Project Directives in 2009–10, for all projects approved by government from 1 March 2010²⁹;
- the DMO's business systems³⁰ rationalisation, which is aimed at consolidating processes and systems in order to provide a more manageable system environment;
- the Earned Value Management System, a method of using detailed cost and schedule information to measure and report project performance, as well as to forecast future performance; and
- the project skills professionalisation and development program in the DMO and industry, which is directed at enhancing the skill sets available to manage the DMO's Major Projects.

53. Consistent with previous years, the ANAO's assessment of these governance initiatives is outlined in Chapter 3 of Part 1.

29 Joint Project Directive: A project-specific directive issued by the Secretary of the Department of Defence and the Chief of the Defence Force to the nominated Capability Manager, assigning overall responsibility, authority and accountability for realisation of the capability system to an in-service state. Department of Defence, *Defence Capability Development Handbook 2012*, p. 131.

30 JCPAA, Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, paragraphs 3.53 to 3.61, pp. 25–26.

1. 2012–13 MPR Review

Introduction

1.1 This chapter provides an overview of the 2012–13 review scope and approach adopted by the Australian National Audit Office (ANAO) in consideration of the Project Data Summary Sheets (PDSSs) and subsequent review results.

1.2 Previous reviews have highlighted a number of issues which impact on the Defence Materiel Organisation's (DMO's) administration of major Defence equipment acquisition projects (Major Projects), and their related frameworks. These issues are reconsidered, where appropriate, in order to consider the DMO's progress in addressing them during 2012–13. Frameworks considered further in this chapter include the:

- financial assurance framework as it applies to the management of project budgets, particularly in an out-turned budget environment;
- Project Maturity framework and system in place to support the provision of this data in the PDSS;
- maturity of the Enterprise Risk Management Framework as it applies to major risk and issue data; and
- capability assessment framework, as it relates to the DMO's evaluation of the probability of delivering key capabilities.

1.3 This chapter also makes reference to other areas of focus raised by the Joint Committee of Public Accounts and Audit (JCPAA) for consideration in the development of this and future Major Projects Reports (MPRs). The JCPAA examined the 2011–12 MPR in JCPAA Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*.

1.4 Chapter 3 of Part 1, includes developments in the DMO's governance and reporting arrangements which were also taken into consideration during the review process.

Review scope and approach

1.5 In February 2012, the JCPAA identified the review of the DMO's PDSSs as a 'Priority Assurance Review' under section 19A(5) of the *Auditor-General Act 1997*. The main consequence of the Committee identifying a review as a priority

assurance review is that it allows the ANAO full access to the information gathering powers under the *Auditor-General Act 1997*.

1.6 The ANAO's review of the individual project PDSSs, which are contained in Part 3, was conducted in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements other than Audits or Reviews of Historical Financial Information* issued by the Australian Auditing and Assurance Standards Board.

1.7 Excluded from the scope of the ANAO's review is PDSS data on expected future events or the forecast achievement by future dates (including forecasts on delivery of key capabilities), the project financial assurance statements, and major risks and issues. This information relates to future events and depends on circumstances that have not yet occurred or may not occur, or may be impacted by events that have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information.

1.8 While our work is appropriate for the purpose of providing an Independent Review Report in accordance with ASAE 3000, our review of individual PDSSs is not as extensive as individual audits conducted by the ANAO, in terms of the nature and scope of issues covered, and the extent to which evidence is required by the ANAO. Consequently, the level of assurance provided by this review in relation to the 29 Major Projects is less than that provided by our program of audits.

1.9 However, the MPR is well positioned to examine systemic issues and provide longitudinal analysis for the 29 projects reviewed, and may also reflect, or have implications for general project management practices in the DMO.

1.10 The ANAO's review of the information presented in the individual PDSSs included:

- an examination of each PDSS;
- a review of relevant processes and procedures used by the DMO in the preparation of the PDSSs;
- an assessment of the systems and controls that support project financial management, risk management, and project status reporting;
- a review of documents and information relevant to the PDSSs;

- interviews with persons responsible for the preparation of the PDSSs and those responsible for the management of the 29 projects;
- taking account of industry contractor comments provided to the DMO on draft PDSS information;
- assessing the assurance by the DMO managers attesting to the accuracy and completeness of the PDSSs;
- an examination of the management representations by the Chief Finance Officer (CFO) DMO and supporting project financial assurance statements including the third-party review;
- an examination of confirmations, provided by the Secretary of the Department of Defence and Chief of the Defence Force, from the Capability Managers, relating to each project's progress toward Initial Materiel Release (IMR) and Final Materiel Release (FMR), and Initial Operational Capability (IOC) and Final Operational Capability (FOC); and
- an examination of the statement and management representations by the Chief Executive Officer (CEO) DMO.

Areas of review focus

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

- the financial assurance framework, particularly as it applies to the project financial assurance statements and managing project budgets in an out-turned budget environment, within Sections 1 and 2 of the PDSSs;
- the Project Maturity framework and reporting and the systems in place to support the provision of this data within Section 7 of the PDSSs;
- ongoing review of the implementation of the Enterprise Risk Management Framework and major risk and issue data contained within Section 6 of the PDSSs;

- capability assessment framework, as it relates to the DMO's evaluation of the likelihood of delivering key capabilities contained within Section 5 of the PDSSs; and
- developments in the governance and reporting of acquisitions such as: Gate Reviews, the tailored oversight arrangements for projects on the Projects of Concern list, the Early Indicators and Warnings system implemented to help identify and correct potential problems with projects, and skilling initiatives within the Commonwealth and industry. The results of the ANAO's review of these initiatives is included in Chapter 3 of Part 1.

1.12 This review informed the ANAO's understanding of the DMO systems and processes used to populate the PDSSs for the 2012–13 review period, and highlighted issues in those systems and processes that could be beneficially addressed by the DMO in the longer term.

Review results

1.13 The following sections outline the results of the key focus areas from the ANAO's review, which contributes to the overall conclusion in the Auditor-General's Independent Review Report for 2012–13.

Financial assurance framework

1.14 In 2012–13, the ANAO reviewed the financial assurance framework as it applies to managing project budgets in an out-turned budget environment, and the project financial assurance statements.

Project budget management

1.15 In particular, our review examined projects' management of budgets, and specifically the adequacy of projects' contingency budgets within the out-turned³¹ budget environment.

1.16 A project's total approved budget comprises:

- the programmed budget, which covers the project's approved activities; and

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

- the contingency budget, which is established to provide adequate budget to cover the inherent cost, schedule and technical risks.³²

1.17 As noted earlier, in 2012–13 all projects continued to operate within their total approved budget.

1.18 The ANAO's examination of the DMO's contingency budget management highlighted that:

- where projects had used contingency funds, the purpose was within the approved scope of the project;
- the clarity of the relationship between contingency allocation and identified risks varied; and
- the method for allocating contingency varied between the expected costs of the risk treatment and a proportionate allocation based on the likelihood of the risk eventuating.

1.19 As reported in the 2011–12 MPR, the ANAO also observed that some project contingency budgets included provision for an anticipated difference between price variation obligations built into current supplier contracts³³, and the approved indexation. Prior to 1 July 2010, projects were periodically supplemented for price indexation however the allocation for price indexation is now provided for on an out-turned basis at Second Pass Approval.³⁴ The change in supplementation policy has meant that price indexation has emerged as a risk for some projects, and for which contingency funds may need to be drawn upon.

1.20 The ANAO notes that the emergence of indexation risk has, to some extent, changed the nature and use of the contingency budget from dealing only with project risk management to including broader price management, and requires project finance staff to have a greater understanding of the factors that influence indices and their likely movement over the life of the project.

1.21 The DMO's management of this financial risk is based on a portfolio management approach within the responsibilities of the CFO (refer to paragraph 1.12 in Part 2 of the 2011–12 MPR, where this is explained further).

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

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

34 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 3, PDSSs.

Project financial assurance statement

1.22 The project financial assurance statement was added to the PDSSs in the 2011–12 MPR to provide readers with a clear articulation of a project's financial position and to provide transparency in regard to whether there is 'sufficient remaining budget for the project to be completed...' ³⁵ In the 2011–12 MPR, no project reported insufficient budget to completion.

1.23 During 2012–13, the DMO made arrangements for a third-party review of a selection of project financial assurance statements; based on factors including remaining budget, Projects of Concern listing, complexity, diversity across divisions and past history. The following projects were selected for review:

- detailed advisory review: AWD Ships, MRH90 Helicopters, Air to Air Refuel and Battle Comm. Sys. (Land); and
- desktop review: Wedgetail, Bushmaster Vehicles, Next Gen Satellite, ANZAC ASMD 2A and Battle Comm. Sys.

1.24 The project financial assurance statements within the PDSSs, indicate that all projects expect to complete within budget, however, the following projects added additional disclosures³⁶ to their statements:

- AWD Ships—the statement notes the issues disclosed in Section 6.2 of the PDSS in relation to additional price indexation incurred. In addition, the project has highlighted that there is some uncertainty in relation to the adequacy of contingency³⁷;
- MRH90 Helicopters—reflects that: 'The Commonwealth has conducted negotiations with the prime contractor regarding commercial, technical and schedule issues, resulting in the signing of a Deed of Variation to the original contract on 9 May 2013, which has been termed 'Deed 2'. The effective date of Deed 2 is 1 July 2013';
- Joint Strike Fighter—as at 30 June 2013, overall Project AIR 6000 Phase 2A/2B, Stage 1 cost performance remains within the approved

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

36 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 3, PDSSs.

37 Further, in the Statement by the CEO DMO at page 143 in Part 2, the CEO notes '...emerging concerns from the AWD Alliance around cost overruns and associated delays in shipbuilding aspects of the AWD Program'.

budget. That is, assurance was only provided against Stage 1 of the project; and

- Hornet Upgrade—upon agreement to commence the Hornet Aircrew Training System Improvement Program (HIP), the project's approved scope and budget will be re-programmed. As of 30 June 2013, the HIP was not yet approved.

1.25 Projects recognising that available funding for indexation may be at risk, include LHD Ships and ANZAC ASMD Phase 2B, when contracted indices escalation may be greater than that approved for the project.

1.26 In addition, the CFO DMO has provided overarching assurance through:

- the DMO Budget Estimates and Additional Estimates review processes; and
- the implementation of a specific DMO Finance Instruction for projects regarding the project financial assurance statement in the PDSS, including representations and sign-offs from accountable officers within the DMO responsible for the delivery of projects in the MPR.

1.27 In conclusion, for the 2012–13 MPR, the CFO's representation letter to the CEO DMO on the project financial assurance statements was unqualified. This reflects the DMO's confidence that these projects will be completed within budget. However, the project financial assurance statement is restricted to being made under the following limitations: it is subject to current financial contractual obligations of the DMO for these projects including the result of settlement actions and the receipt of any liquidated damages; and is made as at 30 June 2013 given current known risks and estimated future expenditure.

Project Maturity framework

1.28 Project maturity assessments have been a feature within the MPR since its inception in 2007–08. At that time the DMO reflected that they were introduced as Project Risks Scores in 2004, and later renamed Project Maturity Scores in 2005.

1.29 The *DMO Project Management Manual 2012*, defines a maturity score as:

The quantification, in a simple and communicable manner, of the relative maturity of capital investment projects as they progress through the capability development and acquisition life cycle.³⁸

1.30 Additional guidance³⁹ provides a succinct breakdown of the project life cycle gates, what they represent, and the applicable benchmark maturity score, see Table 3, below.

38 Department of Defence, DMO, Defence Materiel Manual Project, DMM (PROJ) 1-0-001, *DMO Project Management Manual 2012*, 5 April 2012, Glossary, p. 75.

39 Department of Defence, DMO, Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, 8 September 2010.

Table 3: Capability Definition and Acquisition Life Cycle Gates

Project Life Cycle Gates ▣ CDG Responsibility ▣ DMO Responsibility	Represents	Benchmark Maturity Score	DMO Schedule Milestone
ENTER DEFENCE CAPABILITY PLAN	<i>The stage at which a project is recommended to Government for inclusion in the Defence Capability Plan</i>	13	
Decide Viable Capability Options	<i>The stage in the capability definition/ development process when 1st Pass options that will be put to Government are decided by CCDG</i>	16	
1 st Pass Approval	<i>The stage at which 1st Pass options to be put to Cabinet are endorsed by the DCC</i>	21	R01
Industry Proposals/ Offers	<i>The stage at which formal responses from industry to an RFP or RFT have been received and evaluated</i>	30	
2 nd Pass Approval	<i>The stage in the capability definition/ development process when 2nd Pass Approval is sought from Cabinet</i>	35	R02
Contract Signature	<i>On completion of contract negotiations and on concluding contract signature of a contract that has maximum influence on the project.</i>	42	R03
Preliminary Design Review(s)	<i>On completion of System Requirements Reviews and when Preliminary Design Reviews are completed</i>	45	R04
Detailed Design Review(s)	<i>On completion of Detailed Design Reviews</i>	50	R05
Complete System Integration and Test	<i>On completion of Verification and Validation activities at the system and subsystem levels</i>	55	R08
Complete Acceptance Testing	<i>On completion of all contractual acceptance testing and associated testing activities nominated in the TEMP</i>	57	R10
Initial Materiel Release (IMR)	<i>Occurs when the materiel components that represents the DMO contribution to Initial Operational Release (IOR) are ready for transition to the Capability Manager</i>	60	R11
Final Materiel Release (FMR)	<i>Occurs when all the products and services within the MAA have been transitioned to the Capability Manager.</i>	63	R13
Final Contract Acceptance	<i>On Final Acceptance as defined in the contract</i>	65	R14
MAA Closure	<i>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.</i>	66	R15
Acceptance Into Service	<i>The point at which the Capability Manager accepts the Materiel System, supplies and services for employment in operational service¹</i>	67	
Project Completion	<i>Project closure is achieved when the project is financially closed, support arrangements have been transitioned and all MAA requirements have been demonstrated and transitioned.</i>	70	

Source: DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, 8 September 2010.

Note 1: 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, that is, when the Initial Operational Capability is achieved. (DI(G) OPS 45-2 refers).

1.31 Maturity scores are a composite indicator, constructed through the assessment and summation of seven different attributes which cumulatively form a project 'maturity score'. The attributes are: Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, and Operations and Support, which are assessed on a scale of one to 10. Comparing the maturity score against its expected life cycle gate benchmark, provides internal and external stakeholders with an indication of a project's progress. This may trigger further management attention or provide confidence that progress is satisfactory.

1.32 Highlighting the importance of transparent project information through maturity scores, the JCPAA, in its recent Report 436, also noted that '...Imprecise and inconsistent maturity scores could therefore make a difference in determining which projects receive approval – decisions which can have significant long-term consequences for both budgets and defence capability'⁴⁰, and subsequently recommended that the DMO review its current approach to assigning maturity scores, particularly in relation to improving the consistency of their application and their consistency with the Defence Capability Plan (DCP).⁴¹

1.33 While the 2012 DCP recognises different benchmarks for Off-The-Shelf and Developmental projects at First Pass and Second Pass Approval⁴², the DMO's Project Maturity framework does not. The benchmark set for all seven attributes in the DMO's framework and reporting system, is the same for all projects regardless of their acquisition type.

1.34 The ANAO has previously raised issues including the inconsistency of the application of project maturity scores, which have again been noted in 2012–13.

40 JCPAA, Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, paragraph 3.51, p. 24.

41 The 2012 Defence Capability Plan (DCP) endorsed by the then Minister for Defence, provides an example where the benchmarks for Second Pass Approval for Off-The-Shelf and Developmental projects are 44 and 35 respectively. Project Maturity at Second Pass Approval for the projects in the 2012–13 MPR varies and is often inconsistent with this expectation. The majority of projects in the 2012–13 MPR (23 of 29) at Second Pass Approval had 35 as their Project Maturity, regardless of acquisition type, based on a different reflection of Project Maturity contained within DMO policy to that of the DCP.

42 Benchmarks for all other stages (gates) in the 2012 DCP are the same for all projects regardless of type.

1.35 Against this background, review of the policy and alignment with DMO corporate systems and other policies would benefit the users of Project Maturity information, particularly by emphasising the importance of objective and soundly based assessments of Project Maturity.

Enterprise Risk Management Framework

1.36 In the 2011–12 MPR, the ANAO's review concluded that while the DMO continued to work toward improving the standard of risk management arrangements applying to Major Projects, the inherently uncertain nature of risks and issues meant that PDSS data could not be considered complete because of unknown risks and issues that may emerge in the future. For this reason, under arrangements for the 'Priority Assurance Review', major risks and issues data in the PDSSs continue to remain out of scope.

1.37 In 2012–13 the ANAO again reviewed the developments with risk management at an enterprise and project level, in order to update its understanding of the DMO's risk management systems and processes.

1.38 The development of the DMO's Enterprise Risk Management Framework (ERMF) was identified in 2008–09 by the ANAO as a challenging but necessary step for the DMO in achieving its goal of improving project management. This was consistent with advice from the DMO that it would take some time before reliance could be placed on the framework.⁴³ The ANAO highlighted particular challenges, such as the gap between risk management practices and those preferred practices as set out in the ERMF.⁴⁴

1.39 Risk management was also a major focus within the sustainment function of the DMO's business in the *Plan to Reform Support Ship Repair and Management Practices* (Rizzo Report). The Rizzo Report stated that 'Navy and DMO need to improve coordination and integrate their interdependent activities more effectively'⁴⁵ and as a result, recommended that Navy and the DMO establish an Integrated Risk Management System.⁴⁶ As part of implementing this recommendation, the DMO Risk Management team, along with their Navy

43 Dr SJ Gumley, *Official Committee Hansard*, Joint Committee of Public Accounts and Audit Hearing, 15 March 2010, p. PA14.

44 ANAO Report No.13 2009–10, *2008–09 Major Projects Report*, Part 1, paragraphs 2.12 to 2.18, pp. 37–39.

45 Paul J Rizzo, *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 7. See: <<http://www.defence.gov.au/oscdf/rizzo-review/Review.pdf>> [accessed 6 November 2013].

46 Paul J Rizzo, *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 12. See: <<http://www.defence.gov.au/oscdf/rizzo-review/Review.pdf>> [accessed 6 November 2013].

counterpart, have developed the Interdependent Mission Management System (IMMS) to address the need for a Navy/DMO integrated risk management system. The IMMS is designed to provide joint visibility and management of shared controls or treatments across the DMO and Capability Managers (i.e. at the enterprise level), and introduce greater accountability in relation to risk management.

1.40 Risk registers have been developed at the division, branch and business unit levels to reflect the different responsibilities for risk management at each level and show both the internal DMO risks and the interdependent risks with the Capability Manager.⁴⁷ The intent is to record the risks in one of the mandated systems, and then upload this data into the IMMS.

1.41 A system module relevant to the acquisition function of the business has recently been integrated into the IMMS which will focus on facilitating the outcomes of Materiel Acquisition Agreements (MAAs).⁴⁸ The IMMS is also being enhanced to incorporate risk management into business planning and strategy development. The ANAO appreciates that this is still in the formative stages and will monitor its progress in 2013–14.

1.42 At the project level, the ANAO's review indicates that there has been some progress in improving the consistency of risk management across the Major Projects with a corporate focus on a more interdependent approach. However, the ANAO observed inconsistencies in projects' risk management processes, with some projects unable to review their project risk and issue logs and their Risk Management Plans in a timely manner during 2012–13, which reduces the quality and reliability of the information available.

1.43 To achieve greater consistency in the approach to risk management, the *DMO Project Risk Management Manual* (PRMM)⁴⁹ has been updated, which outlines the mandatory and recommended monitoring and review activities for each phase of the Capability Life Cycle. At a minimum, the PRMM requires that risk reviews should be undertaken at a number of key decision points and

47 Implementation has occurred in the maritime domain and is expected to be available across the DMO and Capability Managers in the future.

48 Materiel Acquisition Agreement: An agreement between the Capability Manager, Capability Development Group and DMO that states in concise terms what services and products the DMO (as supplier) will deliver to Defence, for how much and when. Department of Defence, *Defence Capability Development Handbook 2012*, p. 132.

49 Department of Defence, DMO, DMM (PROJ) 11-0-002, *DMO Project Risk Management Manual* (PRMM) 2013, 24 July 2013. However was unavailable on the DMO's intranet as at November 2013.

milestones during the acquisition phase.⁵⁰ However, the ANAO noted that few projects review their risks and issues regularly, with other projects only conducting their reviews annually prior to scheduled Gate Reviews or ANAO site visits in relation to the MPR.

1.44 In addition, projects are no longer able to report their major risks and issues in the Monthly Reporting System. The ANAO was informed that 46 per cent of the Monthly Reporting System data fields were turned off as a result of a review in 2012, to reduce the reporting burden on projects. The ANAO's review indicates that some projects were only made aware of this change during the next reporting cycle, despite corporate notifications to Divisional Coordinators advising of the impending change.

1.45 The ANAO will continue to review the DMO's progress on risk management across the Major Projects in 2013–14.

Capability assessment framework

1.46 The DMO's evaluation of the probability of delivering key capabilities, as denoted by Materiel Release Milestones (MRMs) and Completion Criteria in MAAs, which specify the key elements required for the achievement of materiel release to the Australian Defence Force, is set out by the DMO as a 'traffic light' pie chart in Section 5.1 of each project's PDSS. These measures of materiel capability performance primarily focus on the anticipated future attainment of particular technical, regulatory and operational requirements.

1.47 During prior reviews, the ANAO found that the measures of capability performance recorded in the Monthly Reporting System do not always align with MAAs, and are inconsistent in terms of the degree of detail represented by each measure. For instance, the \$7.9 billion AWD Ships project has four MRMs and Completion Criteria (Ship 1, Ship 2, Ship 3 and FMR) whereas 155mm Howitzer (a \$0.3 billion project) has 23 MRMs and Completion Criteria. In addition, MRMs and Completion Criteria often include schedule and cost factors which need to be excised from the PDSS in order to present data solely focussed on materiel capability performance.

1.48 The ANAO continued to observe these issues in the 2012–13 MPR, and noted that there can be lengthy delays in receiving advice in relation to

50 Department of Defence, DMO, DMM (PROJ) 11-0-002, *DMO Project Risk Management Manual (PRMM)* 2013, Chapter 7 – Contract Risk Management, p. 97.

achievement of key milestones, for example IOC and FOC, given the complexity of some projects.

1.49 Inevitably, the assessment of future capability delivery typically involves making certain assumptions in predicting achievements and consequently involves some subjectivity in approach. Taking into consideration this subjectivity and the inherent uncertainty of future events, this information continued to be excluded from the scope of the ANAO's review. However the ANAO has included the DMO's capability forecasts in addition to our analysis of projects' performance in relation to budgeted cost and schedule in Chapter 2 of Part 1.

1.50 Additional ANAO analysis of capability performance is set out from paragraph 2.53.

Efficiency of the Major Projects Report process

1.51 In the 2011–12 MPR, the ANAO reflected on a process which had matured, allowing the majority of project managers to produce PDSSs with the benefit of previous experience, supported by a stable set of Guidelines, which resulted in higher quality PDSSs. Consistent with previous years, projects prepared indicative PDSSs and supporting evidence prior to 30 June 2013 to support the initial stage of ANAO fieldwork. In general, projects maintained previously achieved standards, with a few exceptions.

1.52 However, while more recent requirements of the MPR, such as the provision of the project financial assurance statement, are still maturing, the provision of core project information on cost, schedule and the progress of delivering key capability, remains a largely manual process. Additionally, a significant amount of project information is not centrally maintained, requiring extensive contact with individual projects to obtain evidence to assure the information in the PDSSs.

1.53 Decentralised project management and manual processes increase the cost of the production and validation of project information and does not facilitate ready access to key project information for DMO personnel.

Inconsistent application of DMO policies⁵¹ for project management increase these difficulties.

1.54 The need for consistent application of policy and adequate system support for projects was again a focus within the JCPAA Report 436. Two recommendations of the JCPAA (replicated, at page 20 of this report) seek to address these issues, and increase the efficiency of the collation and assurance over project information in the future. The ANAO will maintain its focus on the developments in this area and continue to assess the efficiency and consistency of the production and assurance of the PDSSs.

Review conclusion

1.55 The Auditor-General's Independent Review Report takes into account the overall governance of major projects, the results of our examination of the DMO's project management and reporting arrangements, and the results of our substantive procedures to gain assurance in relation to key information reported in PDSSs. In 2012–13, the results of the ANAO's assurance review of the 29 PDSSs was that nothing has come to the attention of the ANAO that causes us to believe that the information in the PDSSs, within the scope of our review, has not been prepared, in all material respects, in accordance with the Guidelines.

51 The DMO have advised that there are approximately 7 500 DMO policies and procedures governing their practices.

2. Analysis of Projects' Performance

Introduction

2.1 Key project performance information is important in the management and delivery of major Defence equipment acquisition projects (Major Projects) within government approved budget and schedule, and to the required capability. Such information provides an important focus for management attention, sound advice to government on project progress and performance, and informed decisions to be made about the allocation of resources.

2.2 Three key indicators have been derived to analyse the three major dimensions of a project's progress and performance, utilising data extracted from the Project Data Summary Sheets (PDSSs), and to provide a series of snapshots. These indicators are the:

- percentage of budget expended (Budget Expended)—which measures the total expenditure as a percentage of the total current budget;
- percentage of time elapsed (Time Elapsed)—which measures the percentage of time elapsed from original approval to the forecast Final Operational Capability (FOC); and
- percentage of key capabilities expected to be delivered (Expected Capability)—which is the Defence Materiel Organisation's (DMO's) assessment of the likelihood of delivering the required level of capability.

2.3 Performance indicators are measured in percentage terms, to enable comparisons between projects of different characteristics, and to provide a portfolio view of project progress and performance.

2.4 As in previous Major Projects Reports (MPRs), the Australian National Audit Office (ANAO) has included an analysis of the key indicators against the DMO's assessment of project maturity, at defined milestones⁵², as a percentage of the predefined maximum maturity score of 70. As explained in the previous Chapter, the DMO's Project Maturity framework is an assessment methodology used for quantifying, in a practical and communicable manner,

⁵² Project Maturity scores are required to be recorded by Major Projects at 16 stages, also known as gates, throughout the project's lifecycle. Department of Defence, DMO, Defence Materiel Standard Procedure (Project Management), DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, 8 September 2010, pp. 4–5.

Project Maturity as projects progress through the capability definition and acquisition lifecycle, and comprises a matrix of seven attributes: Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, and Operations and Support, which are each assessed on a scale of one to 10.⁵³ Project Maturity is a composite performance indicator available to the DMO, Defence Executive and government for decision making and to assess the overall status of Major Projects.

2.5 The first snapshot, Figure 2, at page 48, provides an overview of the three major dimensions of project performance, and sets out Budget Expended, Time Elapsed and Expected Capability.⁵⁴ The figure shows that, for most projects (18 of 29), the Budget Expended is broadly in line with, or lagging behind, the Time Elapsed.⁵⁵ This relationship is generally expected in an acquisition environment predominantly based on milestone payments, subsequent to delivery or achievement of contracted capabilities.

2.6 The exceptions, where Budget Expended leads Time Elapsed by more than 20 per cent, include:

- Collins Class Submarine projects (Replacement Combat System, and Reliability and Sustainability enhancements), where most of the materiel has been acquired and expenditure undertaken, and additionally, originally planned installation dates have been extended, based on submarine availability (30 per cent for the Replacement Combat System project and 23 per cent for the Reliability and Sustainability project); and
- UHF SATCOM, where significant milestones have been achieved (IS-22 Satellite launch and all 20 channels delivered), however FOC (Pacific Ocean) is not forecast to be achieved until June 2018, when the

53 Source 1: ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Appendix 4, pp. 549–552.
Source 2: DMO, DMSP (PROJ) 11-0-007, *Project Maturity Scores at Life Cycle Gates*, 8 September 2010.

54 Source 1: A project's budgeted cost and schedule data is at 30 June 2013, and may differ from originally approved budgets and schedules.
Source 2: As the DMO's assessment of the likelihood of delivering key capabilities involves high levels of uncertainty which may cause actual outcomes to differ materially from that stated in the PDSSs, this data and the DMO's assessment is outside the scope of the ANAO's review.

55 A project's budgeted cost expended is accrual based. In cases where pre-payments/committed funds have been made but have not been expensed/amortised (for example, the AWD Ships, Super Hornet and LHD Ships projects), cash paid by a project will be greater than the percentage of budget expended.

Chief Information Officer Group will be in a position to acquire agreed UHF capacity from the United States as their capacity builds up in the region (29 per cent variance).

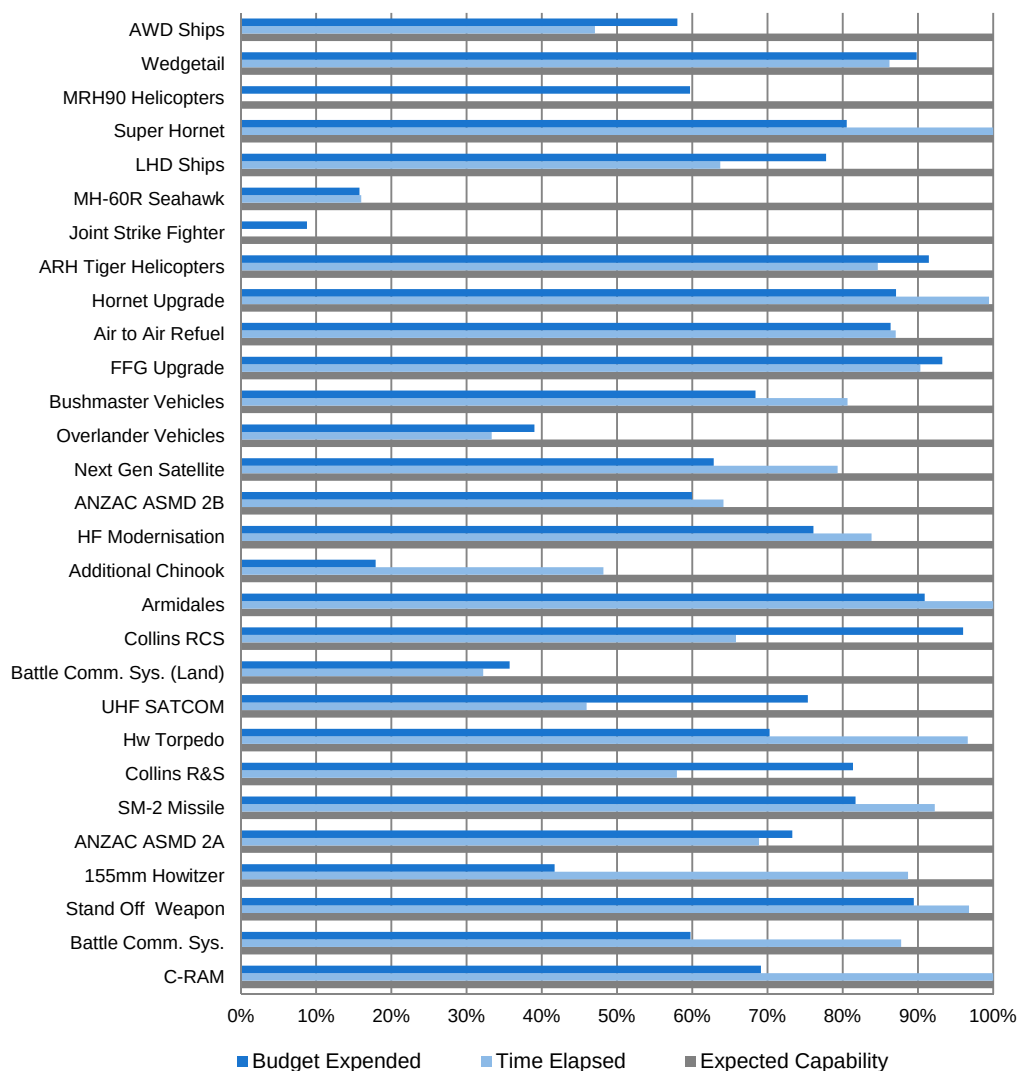
2.7 Projects where the Time Elapsed is approximately 20 per cent greater than the Budget Expended, include:

- MRH90 Helicopters, where developmental issues have significantly delayed schedule (although new Final Material Release (FMR) and FOC dates have not yet been negotiated)⁵⁶;
- Super Hornet, where despite FOC being achieved, final deliveries of weapons will continue post FOC (28 per cent variance);
- Additional Chinook, where delivery and acceptance of helicopters has been delayed, although FMR and FOC are still scheduled to be achieved as planned (30 per cent variance);
- Hw Torpedo, where submarine availability has impacted the project installation schedule (26 per cent variance);
- 155mm Howitzer, where equipment deliveries have been delayed, including the Course Correcting Fuze capability (47 per cent variance);
- Battle Comm. Sys., where meeting design requirements continues to remain a challenge as the project is exposed to multiple platform design authorities, adding to schedule delays (28 per cent variance); and
- C-RAM, where some milestones are yet to be achieved under the Foreign Military Sales agreement (46 per cent variance).

2.8 The DMO expects that all 29 projects in this year's MPR will deliver all of their key capability requirements, recognising that some elements of the capability required for some projects may be under threat, but are considered manageable (assessed as either green or amber). This is an improvement on the 2011–12 assessment, where both Wedgetail and MRH90 Helicopters were assessed as unlikely to meet all of their capability requirements.

56 The 2011–12 MPR identified that the time elapsed was 20 per cent greater than the budget expended. ANAO Report No.15 2012–13, *2011–12 Major Projects Report*, Part 1, paragraph 2.6, p. 50.

Figure 2: Project snapshot—Budget Expended, Time Elapsed and Expected Capability



Source: ANAO analysis of 2012–13 PDSSs.

Note 1: The Expected Capability for Wedgetail has been assessed against the Supplies section of the Materiel Acquisition Agreement (MAA), which lists the equipment to be delivered.

Note 2: MRH90 Helicopters—FMR and FOC are being reviewed as part of the MAA update post Deed 2 agreement. FMR and FOC dates were not included in the PDSS.

Note 3: Joint Strike Fighter—a revised Stage 1 Joint Strike Fighter MAA is being developed for the acquisition of the approved first 14 Aircraft. FMR and FOC dates were not included in the PDSS.

Cost performance analysis

Project snapshot—Budget Expended and Project Maturity

2.9 The second snapshot, Figure 3, at page 51, sets out each project's Budget Expended against the Project Maturity.⁵⁷ As noted previously, Figure 2 shows that, for most projects (18 of 29), the Budget Expended is broadly in line with, or lagging behind, the Time Elapsed, which is expected in an acquisition environment predominantly based on milestone payments. Figure 3 shows that Project Maturity leads Budget Expended for the majority of the projects (24 of 29), and that the variance between expenditure and maturity score progress can be significant.

2.10 Unlike the relationship between Budget Expended and Time Elapsed, there are no major exceptions to Project Maturity leading Budget Expended (greater than 20 per cent) to this outcome. Projects where Project Maturity leads Budget Expended with an approximate differential of 20 per cent or more at 30 June 2013 include: MRH90 Helicopters (25 per cent); MH-60R Seahawk (56 per cent); Joint Strike Fighter (48 per cent); Overlander Vehicles (47 per cent); ANZAC ASMD 2B (21 per cent); Additional Chinook (56 per cent); Battle Comm. Sys. (Land) (50 per cent); 155mm Howitzer (43 per cent); Battle Comm. Sys. (20 per cent); and C-RAM (24 per cent).

2.11 In part, these variances are the result of the DMO's Project Maturity framework attributing approximately 50 per cent of the total Project Maturity at Second Pass Approval, which is normally prior to entering into a contract and making contractual payments. The variance is also influenced by the acquisition contracts which generally provide for milestone payments subsequent to the delivery or achievement of contracted capabilities.

2.12 While both the Budget Expended and Project Maturity are only indicators of a project's progress, as noted previously, the Project Maturity is a composite indicator comprising a balance of seven separate attributes.

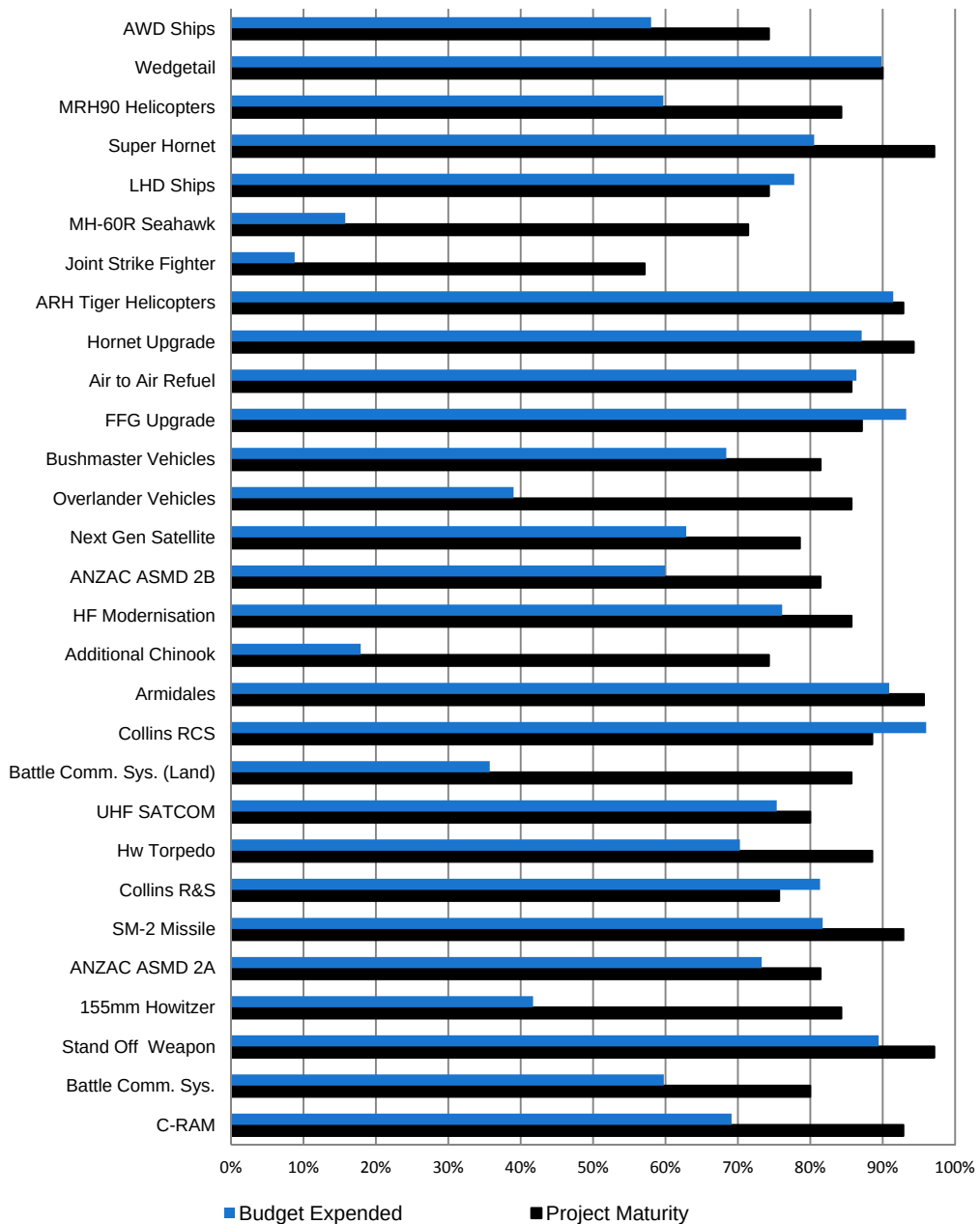
57 The DMO has advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 7, and 12. A process which was supported by the JCPAA. JCPAA, Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, pp. 23–24.

Engineers Australia⁵⁸ has recently indicated that Australian government agencies including the DMO, are increasingly using this style of indicator to inform themselves in response to heightened pressure on the delivery of outcomes and accountability within the Australian Public Service.

2.13 Combined with the analysis undertaken for the 2011–12 MPR, additional analysis for the 2012–13 MPR continues to highlight inconsistencies within the application of Project Maturity, reducing the level of reliability of maturity assessments for key decision makers and other stakeholders, as noted at paragraphs 1.31 to 1.35 in Part 1.

58 Engineers Australia, 2012, *Government As An Informed Buyer – How the public sector can most effectively procure engineering-intensive products and services*, p. 61.

Figure 3: Project snapshot—Budget Expended and Project Maturity



Source: ANAO analysis of 2012–13 PDSSs.

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

Second Pass Approval and 30 June 2013 approved budget

2.14 For the 29 Major Projects, Figure 4, below, compares each project's approved budget at Second Pass Approval (the main investment decision by government) and their approved budget at 30 June 2013.

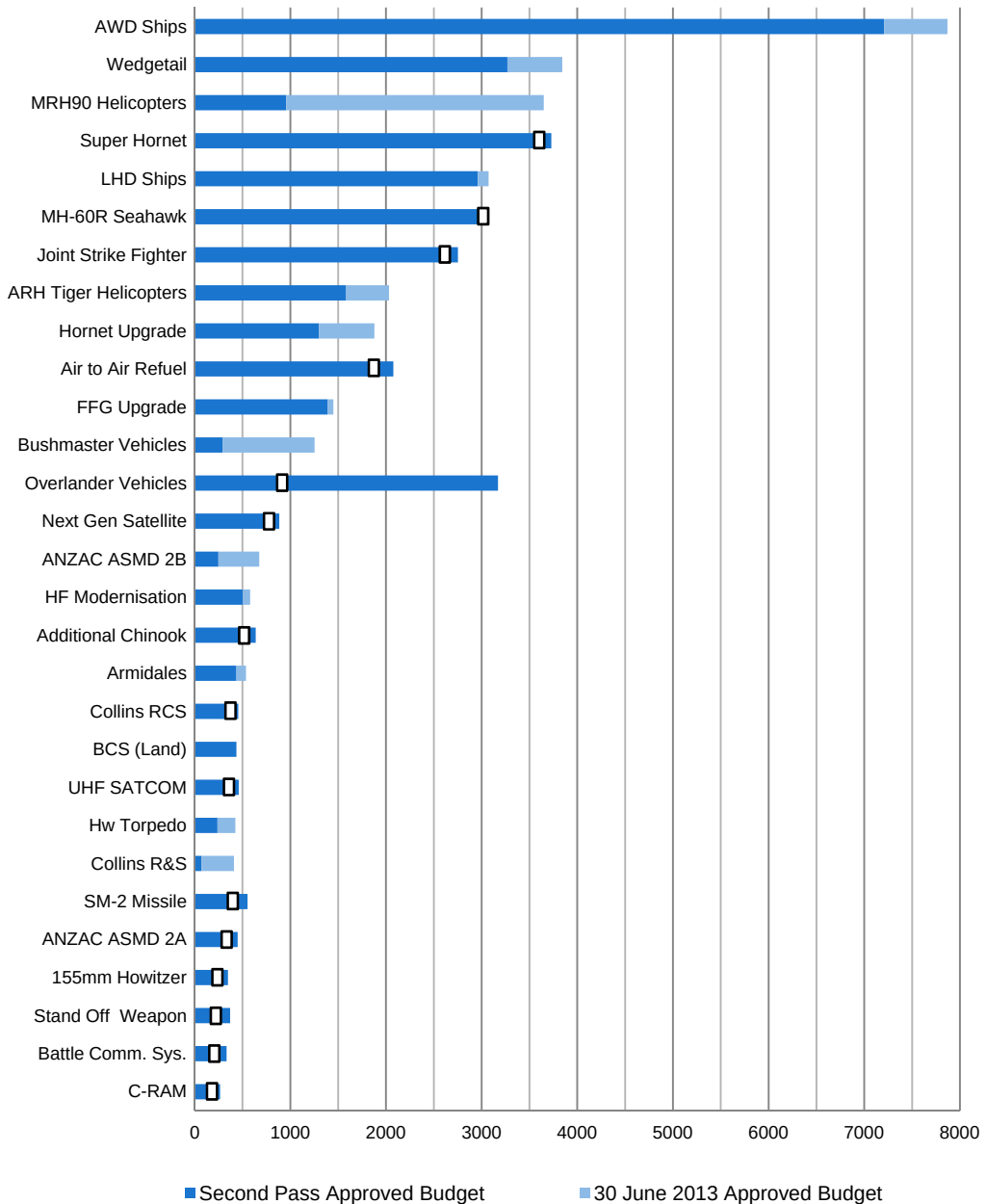
2.15 The total approved budget for the 29 projects at 30 June 2013 was \$44.3 billion, a net increase of \$3.8 billion (including Overlander Vehicles), when compared to their Second Pass Approval approved budget of \$40.5 billion (the analysis of this variance is included at page 55 in Figure 5).

2.16 Figure 4 indicates relative budget variations from Second Pass Approval of 150 per cent or greater for the following projects:

- MRH90 Helicopter—increase of \$2.7 billion mainly for additional aircraft in 2006 (total increase of 281.3 per cent);
- Bushmaster Vehicles—increase of \$959.3 million mainly for additional vehicles in 2007, 2011 and 2013 (total increase of 325.2 per cent);
- ANZAC ASMD 2B—increase of \$427.1 million, including \$214.7 million for the follow-on ships 2–8 in 2011 (total increase of 171.7 per cent); and
- Collins R&S—increase of \$339.4 million, including \$302.8 million for the implementation of additional scope to the reliable and sustainable platform in 2001 (total increase of 471.4 per cent).

2.17 Overlander Vehicles, initially provided with Second Pass Approval for a broad suite of platforms in August 2007, was separated into two phases, Phase 3A Lightweight and Light Capability and Phase 3B Medium and Heavy Capability, in December 2011. Phase 3A was reapproved for Second Pass at that time however Phase 3B, which did not receive Second Pass Approval prior to 30 June 2013, is reflected as a scope decrease of \$2.2 billion in this report. This timing difference will readjust in the 2013–14 MPR following Phase 3B's Second Pass Approval in July 2013 as the 2013–14 MPR will include both Phase 3A and 3B.

Figure 4: Projects' Second Pass Approval and 30 June 2013 approved budget (\$m)



Source: ANAO analysis of 2012–13 PDSSs.

Note: □ indicates that the budget for the project at 30 June 2013 is less than the original budgeted cost.

Longitudinal and in-year budget variance analysis

2.18 Approved budget variations are disaggregated by the DMO into three main factors: price indexation (material and labour), exchange rate and real variation. The 2012–13 budget variation of \$3.8 billion (including Overlander Vehicles) for the 29 Major Projects, when compared to their Second Pass Approval budget, comprises net price variation increases of \$6.7 billion, foreign exchange rate movement decreases of \$3.8 billion and real variation increases of \$0.9 billion.

2.19 Figure 5, below, examines the three main factors contributing to budget variations in each of the last five years, and highlights the in-year impact of variations for the 29 projects in the 2012–13 MPR.

2.20 From 1 July 2010, all projects' approved budgets include the total price indexation, adjusted for the Specialist Military Equipment Weighted Average (SMEWA)⁵⁹ or other appropriate index, to the point of the project's forecast FOC. This is defined as the budget being 'out-turned'.⁶⁰ No price indexation adjustments were made in 2011–12 or 2012–13.

2.21 Exchange rate variations in project budgets are a result of projects' exposure to foreign currencies and movement in foreign exchange rates against the Australian dollar.⁶¹ The exposure of specific projects to currency exchange variations is established through the initial government procurement decision and contractual agreement. The US dollar and the Euro are the main influences, although other currencies also have an impact. Unlike the previous three years, the Australia dollar remained relatively stable against the US dollar and the Euro until the last quarter of the 2012–13 financial year, where it started to fall, resulting in a negative in-year exchange variation of \$0.4 billion.

2.22 Real variations in project budgets primarily reflect changes in the scope of projects, transfers between projects for approved equipment/capability, and budgetary adjustments such as administrative savings decisions. The comparatively larger in-year variation this year reflects the \$2.2 billion

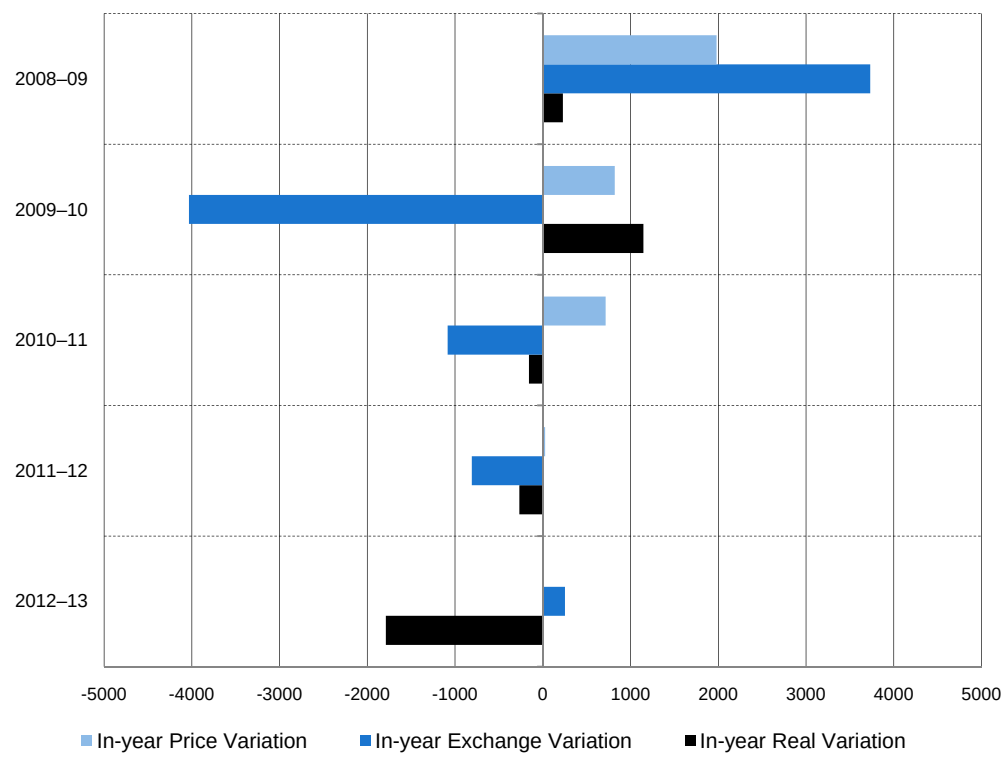
59 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Appendix 6, pp. 556–557.

60 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 2, paragraph 1.9, p. 104.

61 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.

reduction in the total approved budget for Overlander Vehicles Phase 3. As explained in paragraph 2.17, this is expected to be reinstated subsequent to returning to government for revised Second Pass Approval post 30 June for Phase 3B.

Figure 5: Longitudinal budget variations for 2008–09 to 2012–13 (\$m)



Source: ANAO analysis of 2012–13 PDSSs and Project Budget Approval Histories.

2.23 Table 4, at page 57, sets out the 2012–13 in-year budget variations for each of the 29 Major Projects. Overall, the 30 June 2013 approved budget for the 29 projects in the 2012–13 MPR decreased by \$1.5 billion in 2012–13 or 3.4 per cent (including Overlander Vehicles), compared to their 30 June 2012 approved budget. This was driven by net real decreases of \$1.8 billion, and exchange variation increases of \$0.4 billion.

2.24 In 2012–13, of the real variations affecting projects' budgets, the more significant changes are due to scope variations. Projects with larger real cost variations include:

- Joint Strike Fighter—real cost increase of \$201.5 million to correct a misinterpretation of a government decision;
- Bushmaster Vehicles—real cost increase of \$221.2 million for additional vehicles; and
- Stand Off Weapon—real cost decrease of \$25.0 million for returned contingency resulting from the retirement of risks as the project approached FMR.

2.25 Additionally, as noted in paragraph 2.17, Overlander Vehicles was separated into two phases in December 2011. Phase 3A was reapproved for Second Pass at that time, however Phase 3B, which did not receive Second Pass Approval prior to 30 June 2013, is reflected as a scope decrease of \$2.2 billion in this report. This timing difference will readjust in the 2013–14 MPR following Phase 3B's Second Pass Approval in July 2013 as the 2013–14 MPR will include both Phase 3A and 3B.

2.26 Projects with larger movements in foreign exchange, as a result of the depreciating Australian dollar, include:

- MH-60R Seahawk—\$48.1 million, or 1.7 per cent increase in budget; and
- Joint Strike Fighter—\$56.9 million, or 2.4 per cent increase in budget.

Table 4: 2012–13 In-year budget variations by project

Project	Approved Budget 2011–12 \$m	Approved Budget 2012–13 \$m	In-year Exchange Variation \$m	In-year Real Variation \$m	Total Variance \$m	Total Variance (per cent)
AWD Ships	7,853.1	7,869.2	16.1	-	16.1	0.2
Wedgetail	3,829.5	3,843.7	14.2	-	14.2	0.4
MRH90 Helicopters	3,628.4	3,649.9	21.5	-	21.5	0.6
Super Hornet	3,538.5	3,556.0	17.5		17.5	0.5
LHD Ships	3,052.1	3,073.5	21.4	-	21.4	0.7
MH-60R Seahawk	2,910.2	2,958.3	48.1	-	48.1	1.7
Joint Strike Fighter	2,334.0	2,592.4	56.9	201.5	258.4	11.1
ARH Tiger Helicopters	2,028.9	2,031.5	2.6	-	2.6	0.1
Hornet Upgrade	1,875.5	1,878.6	3.1	-	3.1	0.2
Air to Air Refuel	1,795.7	1,802.6	6.9	-	6.9	0.4
FFG Upgrade	1,449.6	1,450.1	0.5	-	0.5	0.0
Bushmaster Vehicles	1,032.1	1,254.3	1.0	221.2	222.2	21.5
Overlander Vehicles	3,171.2	990.5	5.8	(2,186.5)	(2,180.7)	-68.8
Next Gen Satellite	861.1	863.7	2.6	-	2.6	0.3
ANZAC ASMD 2B	675.8	675.9	0.1	-	0.1	0.0
HF Modernisation	580.1	580.1	0.0	-	0.0	0.0
Additional Chinook	550.9	564.0	13.1	-	13.1	2.4
Armadales	537.2	537.2	-	-	0.0	0.0
Collins RCS	449.9	449.9	-	-	0.0	0.0
Battle Comm. Sys. (Land)	-	441.2	4.8	-	4.8	1.1
UHF SATCOM	432.5	435.8	3.3	-	3.3	0.8
Hw Torpedo	425.1	425.3	0.3	(0.1)	0.2	0.0
Collins R&S	411.4	411.4	0.0	-	0.0	0.0
SM-2 Missile	398.8	400.2	1.5	(0.1)	1.4	0.4
ANZAC ASMD 2A	386.0	386.5	0.5	-	0.5	0.1
155mm Howitzer	320.6	323.9	3.3	-	3.3	1.0
Stand Off Weapon	340.8	317.4	1.6	(25.0)	(23.4)	-6.9
Battle Comm. Sys.	305.8	308.0	2.2	-	2.2	0.7
C-RAM	251.4	253.9	2.5	-	2.5	1.0
Total	45,426.2	44,325.0	251.4	(1,789.0)¹	(1,537.6)	-3.4

Sources: ANAO analysis of 2011–12 and 2012–13 PDSSs.

Note 1: Adjusted for Overlander Vehicles, in-year real variation is \$397.5 million; refer to paragraph 2.17.

In-year forecast and actual expenditure

2.27 Accurately forecasting expenditure is an important element in the effective management of a portfolio of projects and understandably receives close attention within the Defence Organisation and by key stakeholders. Figure 6, below, sets out the expenditure forecasting performance of each project against the actual expenditure for the 2012–13 financial year. In total, the actual expenditure for the 29 projects at 30 June 2013 was \$2.4 billion, against an initial forecast expenditure of \$2.7 billion and half-year revised forecast of \$2.4 billion. The main factors contributing to the initial variance were schedule delays and delays relating to establishing/revising contractual arrangements.

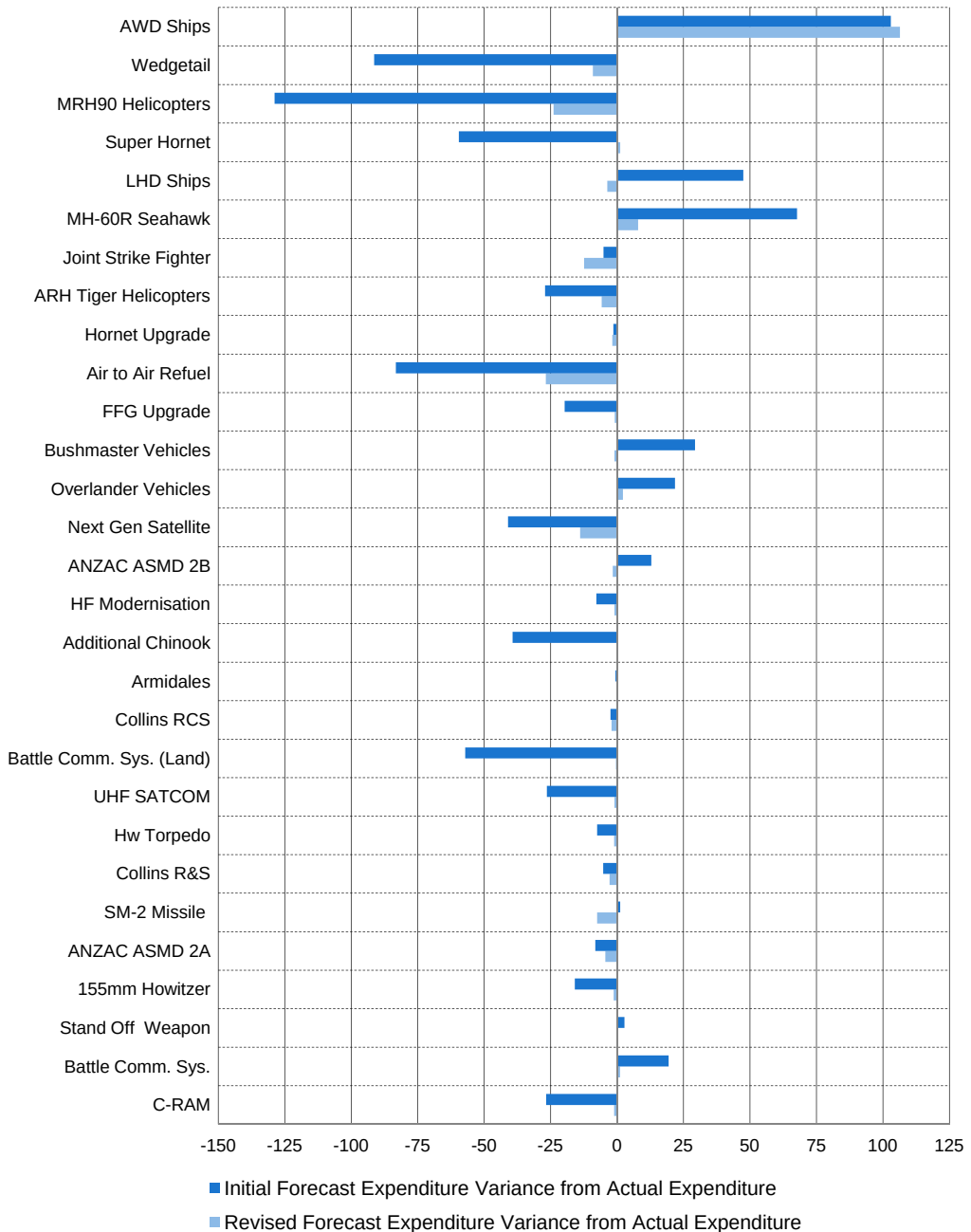
2.28 The DMO's approach to managing these variances is explained in Part 2 of the 2011–12 MPR.⁶²

2.29 Compared to the initial forecast expenditure, significant in-year underspends occurred in the Wedgetail (\$91.4 million), MRH90 Helicopters (\$128.8 million), Super Hornet (\$59.5 million), Air to Air Refuel (\$83.2 million), and Battle Comm. Sys. (Land) (\$57.1 million) projects. Compared to the initial budget allocation, significant overspends occurred in the AWD Ships (\$103.0 million) and MH-60R Seahawk (\$67.7 million) projects.

2.30 The overall project expenditure in the portfolio of projects was as expected in the half-year revised forecast.

62 ANAO Report No.15 2012–13, *2011–12 Major Projects Report*, Part 2, paragraph 1.12, p. 126.

Figure 6: In-year (2012–13) projects' forecast expenditure performance compared to actual expenditure (\$m)



Sources: ANAO analysis of 2012–13 PDSSs and Defence Portfolio Budget Statements.

Schedule performance analysis

2.31 The DMO continues to acknowledge that schedule performance is the key issue in delivering and sustaining equipment for the Australian Defence Force (ADF).⁶³ In 2013, the Minister for Defence, Senator, the Hon. David Johnston confirmed this, stating:

We need to be able to do things much more time effectively, because time is money and this is one of the things we see as the principal causes of problems inside Defence. We want to know when things are beginning to lag, schedule is starting to slip... being forewarned we can give the project appropriate attention.⁶⁴

2.32 In addition, project slippage could effectively introduce or exacerbate an existing capability gap or require extension to the planned withdrawal date for those platforms being replaced, i.e. the withdrawal dates for the Sea King and Black Hawk helicopter fleets included consideration of the introduction of replacement capability.

Project snapshot—Time Elapsed and Project Maturity

2.33 The third snapshot, Figure 7, at page 62, sets out each project's Time Elapsed against the Project Maturity.⁶⁵ The Figure highlights that for most projects, Time Elapsed and Project Maturity broadly align; however for some projects, there is a significant variance.

2.34 For all projects where the variance is 20 per cent or more, Project Maturity leads Time Elapsed. These projects include: AWD Ships (27 per cent); MH-60R Seahawk (55 per cent); Overlander Vehicles (53 per cent); Additional Chinook (26 per cent); Collins RCS (23 per cent); Battle Comm. Sys. (Land) (55 per cent); and UHF SATCOM (34 per cent).

2.35 As recognised in the cost performance analysis at page 49, in part, these variances are the result of projects awarded approximately 50 per cent of the total maturity score at Second Pass Approval.⁶⁶

63 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 2, CEO DMO Foreword, p. 97.

64 Australian Financial Review, *Cost fear sets off \$8bn warships review*, 7 October 2013, p. 2.

65 The DMO has advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 7, and 12. A process which was supported by the JCPAA. JCPAA, Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, pp. 23–24.

66 Second Pass Approval is the point at which government approves a project proceeding to the acquisition phase.

2.36 The variance is further explained by examining the project acquisition type. Design, integration and testing timeframes and risks vary considerably between Military-Off-The-Shelf (MOTS) and Developmental projects. Generally, in Developmental projects, a greater period of time is required for achieving the Capability Managers' agreed requirements and specifications than for Off-The-Shelf acquisitions, and also for the production and integration of project elements. Therefore, it is expected that MOTS projects would have a higher maturity score earlier in the project's lifecycle when compared to Developmental projects. All of the projects where Project Maturity leads Time Elapsed by 20 per cent or more at 30 June 2013, are either MOTS or Australianised MOTS.

2.37 However, inconsistencies within the Project Maturity framework reduce the value of project maturity as an indicator.⁶⁷ For example, MRH90 Helicopters records 10 out of 10 for schedule, because they have achieved 'In-Service Date'⁶⁸ (in accordance with one part of the framework, and not seven out of 10 if they utilised, Initial Material Release (IMR) or FMR as per other parts of the framework). While FMR and FOC dates are under review for MRH90 Helicopters, as part of negotiations for a revised Materiel Acquisition Agreement (MAA), IMR has slipped 35 months. This example indicates how an overly optimistic assessment of Project Maturity may result. This also demonstrates the limited ability to show Project Maturity progress during the later stages of a project's life, as a result of adopting 10 out of 10 prior to FOC.

2.38 As noted above, by attributing approximately 50 per cent of the total Project Maturity at Second Pass Approval (refer to paragraph 2.11), the Project Maturity framework is weighted towards pre-Second Pass Approval processes. This reduces the available score for project managers to adequately indicate progress during the build phases. Descriptors used to define Project Maturity post-Second Pass Approval, are broader and cover the more complex steps, which generally take longer and where issues are more likely to arise.⁶⁹ For example, in terms of Requirement (one of the seven attributes within the

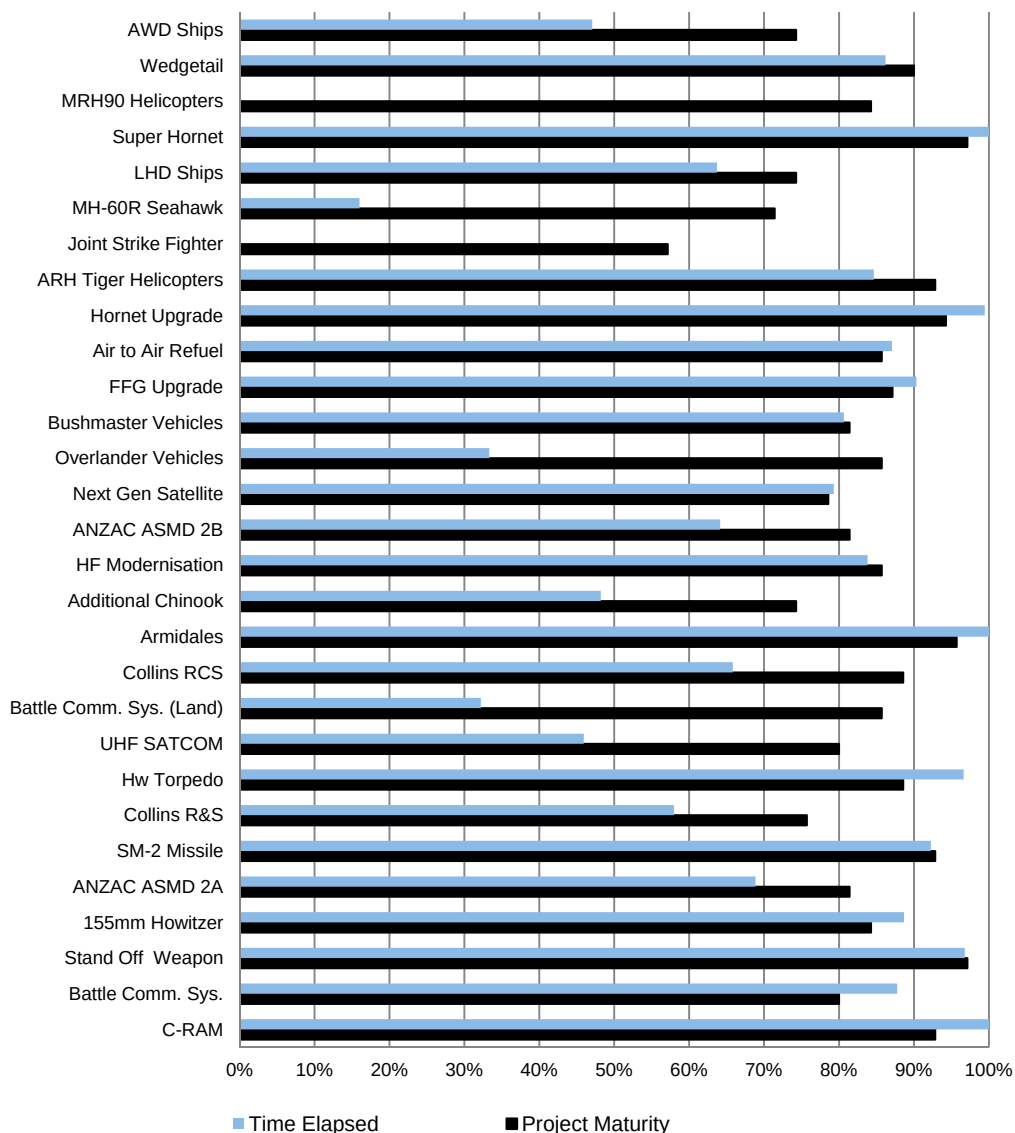
67 For further information on the DMO's Project Maturity framework refer to paragraphs 1.28 to 1.35 in Part 1.

68 In-Service Date is 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. Defence Instructions (General) OPS 54-2 *Capability Acceptance Into Operational Service*, 9 November 2012, Annex B, p. B3.

69 ANAO Report No.12 2013-14, *2012-13 Major Projects Report*, Appendix 4, pp. 549-552.

framework), one point is accumulated for endorsing requirements and one point for testing.

Figure 7: Project snapshot—Time Elapsed and Project Maturity



Source: ANAO analysis of 2012–13 PDSSs.

Note 1: MRH90 Helicopters—FMR and FOC are being reviewed as part of the MAA update post Deed 2 agreement. FMR and FOC dates were not included in the PDSS.

Note 2: Joint Strike Fighter—a revised Stage 1 Joint Strike Fighter MAA is being developed for the acquisition of the approved first 14 Aircraft. FMR and FOC dates were not included in the PDSS.

Note 3: ANZAC ASMD 2B's Project Maturity is based on the progress of the lead ship, not on the current eight ship program.

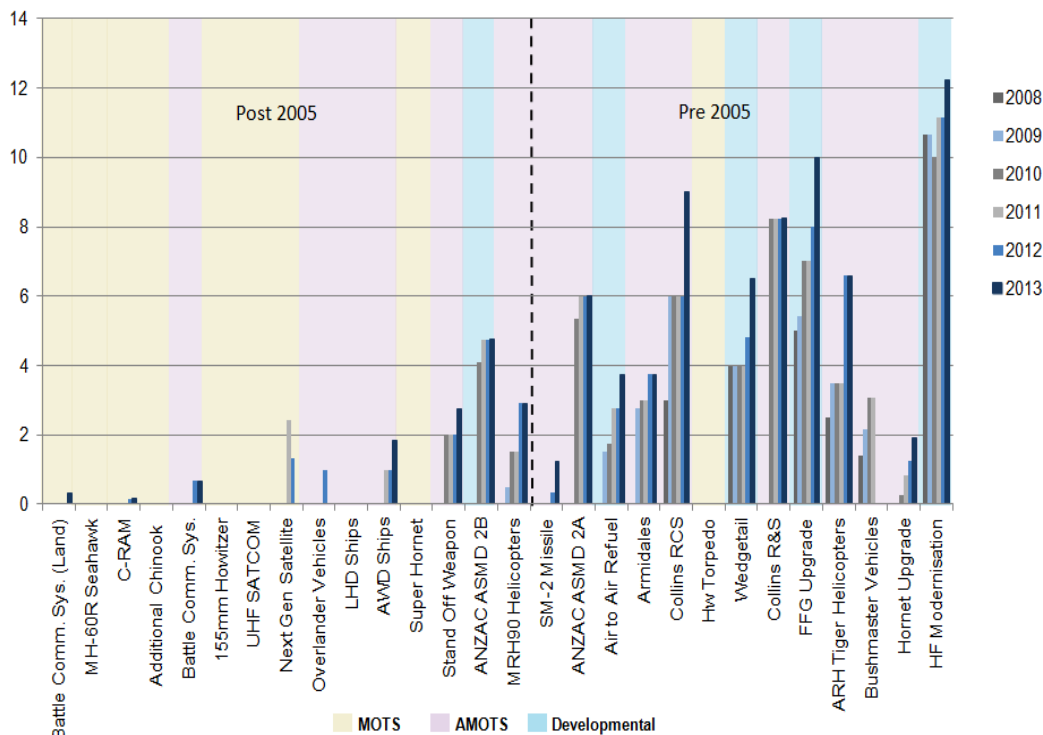
Schedule slippage and acquisition type by approval date

2.39 Examination of the portfolio of projects in the MPR highlights that when dealing with large and often complex Major Projects, slippage can occur for a variety of reasons. Projects are delivered through a range of procurement options, and are subject to multiple pressures including: actions by contractors; economic conditions impacting on workforce supply and demand; and procurement decisions by other nations which may impact on downstream purchases in terms of time to delivery.

2.40 Providing forecasts on the future schedule performance of Major Projects is difficult, requiring a deep understanding of project technical elements and a realistic assessment of the capacity of the private sector to deliver in the expected timeframe. Reference to the historical performance of projects may be useful in this context.

2.41 Figure 8, below, illustrates the total schedule slippage since Second Pass Approval for projects in the 2012–13 MPR, demonstrating how this key performance indicator has altered over time. It also depicts the acquisition type and places projects in order of government approval, allowing for more detailed analysis.

Figure 8: Total slippage post Second Pass Approval and acquisition type by approval date (months)



Source: ANAO analysis of 2007–08, 2008–09, 2009–10, 2010–11, 2011–12 and 2012–13 PDSSs.

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

- Next Gen Satellite – Materiel Release 4 Interim Anchoring Station (East); and
- MRH90 Helicopters – Initial Operational Capability (Army).

Note 2: Joint Strike Fighter—a revised Stage 1 Joint Strike Fighter MAA is being developed for the acquisition of the approved first 14 Aircraft. FMR and FOC dates were not included in the PDSS.

Note 3: The MRH90 Helicopters were originally categorised as a MOTS solution but have since been reassessed as more developmental than envisaged and has been reclassified as Australianised MOTS. This advice was set out in a minute to the CEO Australian Aerospace Ltd from the General Manager Systems DMO, *MRH90 Gate Review Outcomes*, 15 April 2011.⁷⁰

Note 4: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's MPR analysis is Production Period Five. Project slippage based on prior Production Periods has been removed from the 2011–12 and 2012–13 total slippage analysis (37 months).

70 Further information on MRH90 Helicopters can be found in ANAO Audit Reports No.48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, pp. 84, 90 and 133, and No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, pp. 86–87 and pp. 130–133.

2.42 The data illustrates that older projects, which achieved Second Pass Approval prior to 2005, generally experienced the most slippage. These projects tend to be more developmental (complex) in nature and typically experienced schedule slippage in the past, and have continued to do so. The graph shows an ongoing trend of slippage in historically late projects including Collins RCS, Wedgetail, FFG Upgrade and HF Modernisation.

2.43 The challenge of gaining a full understanding of the complexities of developmental aspects of projects at Second Pass Approval, is evident by the extent of slippage over time. The *2008 Audit of the Defence Budget* (Pappas Review) identified technical risk as the largest source of post Second Pass Approval schedule slippage for post-Kinnaird projects, and also observed that schedule slippage causes cost escalation.⁷¹

2.44 In the JCPAA's Report 429, the Committee noted that for new projects in the MPR, if the project's classification is not MOTS or Commercial Off-The-Shelf, an explanation should be provided to ensure that these options were explicitly considered and eliminated for particular reasons before final procurement decisions have been made.⁷² Battle Comm. Sys. (Land) was the only new project included in the 2012–13 MPR and is classified as MOTS by the DMO, requiring no further explanation.

Original and 30 June 2013 Final Operational Capability forecasts

2.45 Figure 9, at page 67, presents information on the projects' original and 30 June 2013 forecasts for achieving FOC. The total schedule slippage for the 29 Major Projects to date is 957 months when compared to the initial prediction when first approved by government. This slippage represents a 36 per cent increase on the expected schedule since the main investment decision.⁷³ Of the 27 projects with an FOC date available in the 2012–13 MPR, 16 have experienced schedule slippage.

71 Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 76.

72 JCPAA, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraph 3.61, p. 25.

73 In instances where a Major Project has multiple segments/capabilities with separate FOC dates, the ANAO has used the project's current lead/main capability FOC for calculating schedule performance. The DMO's approach is to use the final FOC date for a project listed in the 2012–13 PDSSs. These approaches, both valid, led to a small difference in the calculated percentage by which the Major Projects' total schedule has slipped for the 2012–13 MPR (ANAO – 36 per cent; DMO – 35 per cent).

2.46 The reasons for schedule slippage often include underestimation of the difficulties associated with technical factors such as design problems, industry capacity and capability, difficulties in system integration to achieve the required capability, or emergent work associated with upgrades.⁷⁴ In other cases, a project's ability to gain access to the platform (asset) for upgrading, can delay the schedule (for example, the two Collins submarine projects and Hw Torpedo).⁷⁵ Defence's 2011 Defence Capability Plan Review reported that 80 per cent of project schedule changes were due to internal factors.⁷⁶

2.47 A closer examination of the reasons for schedule slippage demonstrates the importance of initial assessments of the purchase type, i.e. MOTS, Australianised MOTS or Developmental. Instances of misclassification in this respect have resulted in extended schedule slippage for ARH Tiger Helicopters and MRH90 Helicopters⁷⁷ noting that at 30 June 2013, FMR and FOC for MRH90 Helicopters were still being reviewed.

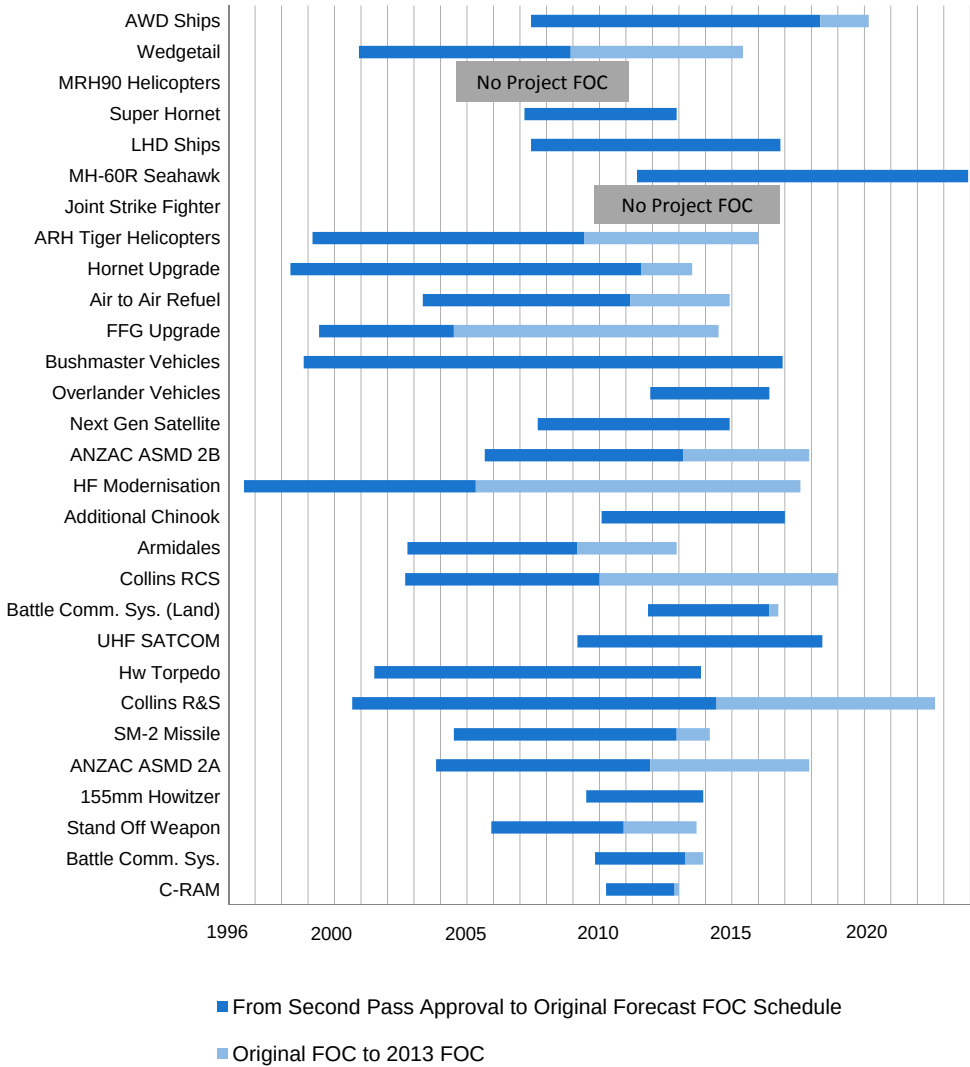
74 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 3, PDSSs.

75 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 3, PDSSs.

76 ANAO Audit Report No.6, *2013–14 Capability Development Reform*, p. 155.

77 Further information on MRH90 Helicopters can be found in ANAO Audit Reports No.48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, pp. 84, 90 and 133, and No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, pp. 86–87 and pp. 130–133.

Figure 9: Projects' original and 30 June 2013 FOC forecasts



Source: ANAO analysis of 2012–13 PDSSs.

Note 1: AWD Ships seven months of the slippage resulted from a change to the original FOC date.

Note 2: MRH90 Helicopters—FMR and FOC are being reviewed as part of the MAA update post Deed 2 agreement. FMR and FOC dates were not included in the PDSS.

Note 3: Joint Strike Fighter—a revised Stage 1 Joint Strike Fighter MAA is being developed for the acquisition of the approved first 14 Aircraft. FMR and FOC dates were not included in the PDSS.

Note 4: Hornet Upgrade FOC date relates to Phase 2.3.

Note 5: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's MPR analysis is Production Period Five. Project slippage based on prior Production Periods has been removed from the 2011–12 and 2012–13 total slippage analysis (37 months).

In-year schedule performance

2.48 In 2012–13, there was a total schedule slippage of 147 months in the forecast achievement of FOC for the 29 Major Projects. Figure 10, below, shows negative slippage for one project:

- Armidales—achieved FOC in October 2012, slightly earlier than forecast last year.

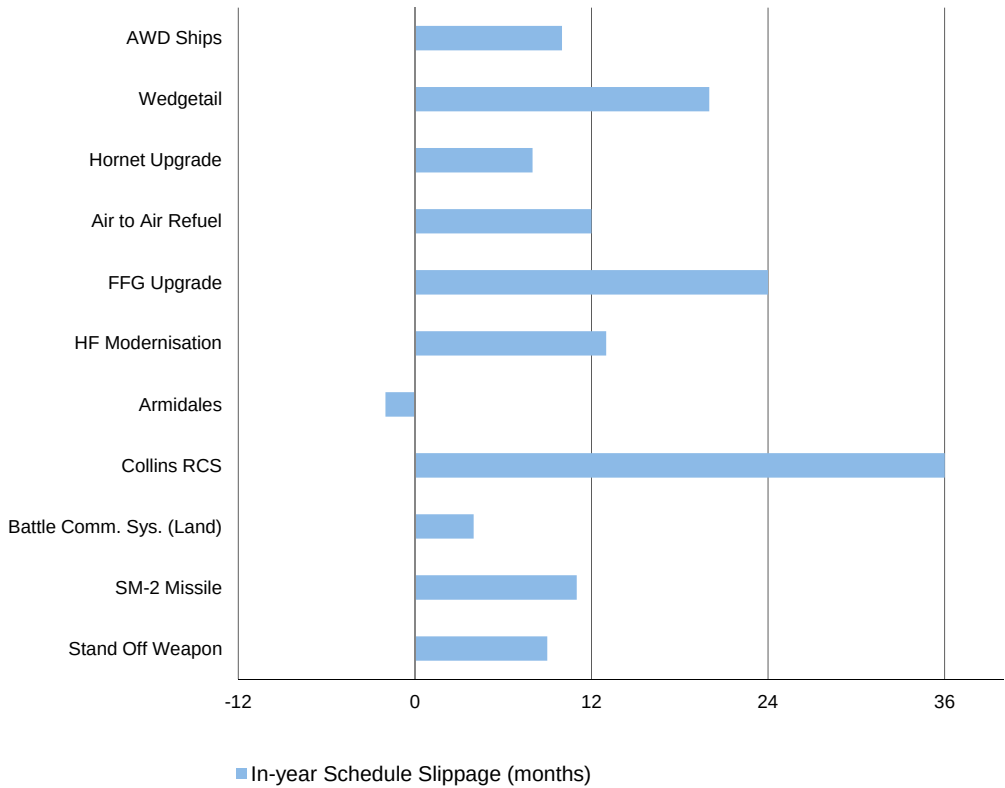
2.49 In-year schedule slippage involved the following ten projects⁷⁸ (the explanation provided, drawn from the 2012–13 PDSSs, may also include the reasons for prior slippage):

- AWD Ships—schedule extended to reduce budget over the forward estimates, workforce planning and to increase the gap between Navy accepting the LHD Ships and the AWD Ships (seven months of the in-year slippage resulted from change to the original FOC date);
- Wedgetail—system delivery delays due to problems with sub-system integration, hardware availability, radar and electronic support measures maturity and aircraft modification;
- Hornet Upgrade—achieved Supplemental Type Certification and Service Release in November 2012, awaiting Air Force Initial Operational Capability (IOC) and FOC declaration for Phase 2.3;
- Air to Air Refuel—delays resulting from issues around the Aerial Refuelling Boom System and flight testing and maintenance requirements on test aircraft;
- FFG Upgrade—schedule extended to allow for passive sonar (PANORAMA) capability to be included in project;
- HF Modernisation—delays resulting from contractual negotiations regarding the Null Steering Signal Enhancement (Nullarbor) capability;
- Collins RCS—slippage resulting from extensions to the originally planned installation dates based on submarine availability;

78 Further, in the Statement by the CEO DMO at pages 143 to 144 in Part 2, the CEO makes reference to additional information on milestone achievement dates for AWD Ships, Hornet Upgrade, Overlander Vehicles, Hw Torpedo and Battle Comm. Sys.

- Battle Comm. Sys. (Land)—forecast date is to the project’s best knowledge due to the limited visibility of Capability Manager milestones;
- SM-2 Missile—delays in receipt of missile spares and arrangement of in-service support requirements; and
- Stand Off Weapon—delivery delays due to issues with the reliability of the fuze.

Figure 10: In-year (2012–13) schedule changes to achieving FOC



Source: ANAO analysis of 2012–13 PDSSs.

Note 1: The DMO’s PDSSs indicate that 16 of the 27 MPR projects with FOC dates did not record changes to those dates this year.

Note 2: AWD Ships seven months of the slippage resulted from change to the original FOC date.

Note 3: MRH90 Helicopters—FMR and FOC are being reviewed as part of the MAA update post Deed 2 agreement. FMR and FOC dates were not included in the PDSS.

Note 4: Joint Strike Fighter—a revised Stage 1 Joint Strike Fighter MAA is being developed for the acquisition of the approved first 14 Aircraft. FMR and FOC dates were not included in the PDSS.

Longitudinal schedule performance

2.50 Figure 11, below, shows the schedule slippage of the Major Projects included in the 2007–08 to 2012–13 MPRs. The Figure shows that the total cumulative schedule slippage for the:

- eight projects⁷⁹ in 2007–08 was 25.7 years (308 months) and that the total schedule slippage for these projects in 2012–13 was 50.0 years or 600 months (an increase of 24.3 years or 292 months over five years);
- 13 projects⁸⁰ in 2008–09 was 31.5 years (378 months) and that the total schedule slippage for these projects in 2012–13 was 55.6 years or 667 months (an increase of 24.1 years or 289 months over four years);
- 20 projects⁸¹ in the 2009–10 MPR was 57.3 years (688 months) and that the total schedule slippage for these projects in 2012–13 was 77.3 years or 928 months (an increase of 20.0 years or 240 months over three years);
- 26 projects⁸² included in the 2010–11 MPR was 63.3 years (760 months) and that the total schedule slippage for these projects in 2012–13 was 79.3 years or 951 months (an increase of 15.9 years or 191 months over two years); and
- 28 projects⁸³ in 2011–12 was 68.5 years (822 months) and that the total schedule slippage for the 28 projects in 2012–13 was 79.4 years or 953 months (an increase of 10.9 years or 131 months over one year).

79 There were nine projects reported in the 2007–08 MPR, they were Wedgetail, Armadales, HF Modernisation, Bushmaster Vehicles, Hornet Upgrade, Collins RCS, ARH Tiger Helicopters, C-17 Heavy Airlift and FFG Upgrade. C-17 Heavy Airlift was removed from the PDSSs in 2012–13 and therefore is not included in the analysis.

80 There were 15 projects reported in the 2008–09 MPR, the nine projects reported in the 2007–08 MPR, plus AWD Ships, Super Hornet, MRH90 Helicopters, LHD Ships, Air to Air Refuel and Hornet Refurb. C-17 Heavy Airlift was removed from the PDSSs in 2012–13 and Hornet Refurb was removed in 2011–12, therefore are not included in the analysis.

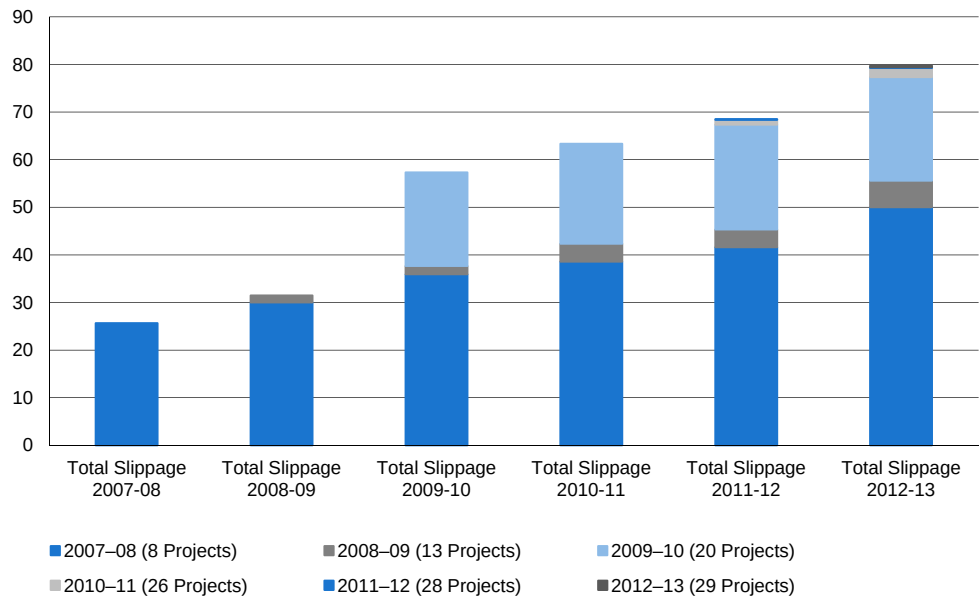
81 There were 22 projects reported in the 2009–10 MPR, the 15 projects reported in the 2008–09 MPR, plus Overlander Vehicles, Next Gen Satellite, ANZAC ASMD 2B, Hw Torpedo, Collins R&S, Stand Off Weapon and ANZAC ASMD 2A. C-17 Heavy Airlift was removed from the PDSSs in 2012–13 and Hornet Refurb was removed in 2011–12, therefore are not included in the analysis.

82 There were 28 projects reported in the 2010–11 MPR, the 22 projects reported in the 2009–10 MPR, plus Joint Strike Fighter, SM-2 Missile, Additional Chinook, UHF SATCOM, 155mm Howitzer and Battle Comm. Sys. C-17 Heavy Airlift was removed from the PDSSs in 2012–13 and Hornet Refurb was removed in 2011–12, therefore are not included in the analysis.

83 There were 29 projects reported in the 2011–12 MPR, the 28 projects reported in the 2010–11 MPR excluding Hornet Refurb, plus Battle Comm. Sys. (Land). C-17 Heavy Airlift was removed from the PDSSs in 2012–13 and Hornet Refurb was removed in 2011–12, therefore are not included in the analysis.

2.51 Similar to 2011–12, the Figure shows that 62.7 per cent (50 years or 600 months) of the total schedule slippage across the Major Projects covered in the 2012–13 MPR (79.8 years or 957 months) is made up of the schedule slippage from the initial eight projects reported in the 2007–08 MPR.

Figure 11: Longitudinal schedule slippage across years (in years)



Source: ANAO analysis of 2007–08, 2008–09, 2009–10, 2010–11, 2011–12 and 2012–13 PDSSs.

Note 1: In 2007–08 there were nine projects, in 2008–09 there were 15 projects; in 2009–10 there were 22 projects; in 2010–11 there were 28 projects; and in 2011–12 there were 29 projects. However, C-17 Heavy Airlift was removed from the PDSSs in 2012–13 and Hornet Refurb was removed in 2011–12, therefore are not included in the analysis.

Note 2: The total schedule slippage in 2012–13 across the 29 projects is 957 months. Battle Comm. Sys. (Land), which is new to this year's MPR, has not experienced slippage against FOC according to the DMO's PDSS.

Note 3: Bushmaster Vehicles has an FOC date for each Production Period (discrete order). The FOC used for this year's MPR analysis is Production Period Five. Project slippage based on prior Production Periods has been removed from the 2011–12 and 2012–13 total slippage analysis (37 months).

2.52 Further disaggregation according to a project's Second Pass Approval date, shown in Table 5, below, shows that 87 per cent of the total schedule slippage across the Major Projects covered in the 2012–13 MPR is made up of projects approved prior to the DMO's demerger from the Department of Defence, in July 2005.

Table 5: Project slippage – Projects approved pre and post DMO demerger

Project	No. of months between Approval and Original FOC date	No. of months between Approval and 30/6/13 FOC date	No. of months slippage between Original FOC and 30/6/13 FOC date
Projects Approved pre July 2005			
Wedgetail	96	174	78
Joint Strike Fighter ¹	N/A	N/A	N/A
ARH Tiger Helicopters	123	202	79
Hornet Upgrade	159	182	23
Air to Air Refuel	94	139	45
FFG Upgrade	61	186	120 ²
Bushmaster Vehicles	217	217	0
HF Modernisation	105	241	147 ³
Armadales	77	120	45 ³
Collins RCS	88	196	108
Hw Torpedo	148	148	0
Collins R&S	165	264	99
SM-2 Missile	101	116	15
ANZAC ASMD 2A	97	167	72 ³
Sub Total - Projects Approved pre July 2005	<u>1,531</u>	<u>2,352</u>	<u>831</u>
Percentage of Total - Projects Approved pre July 2005	<u>58%</u>	<u>65%</u>	<u>87%</u>
Projects Approved post July 2005			
AWD Ships	131	153	22
MRH90 Helicopters ⁴	N/A	N/A	N/A
Super Hornet	69	69	0
LHD Ships	113	113	0
MH-60R Seahawk	150	150	0
Overlander Vehicles	54	54	0
Next Gen Satellite	87	87	0
ANZAC ASMD 2B	90	145	57
Additional Chinook	83	83	0
Battle Comm. Sys. (Land)	55	59	4
UHF SATCOM	111	111	0
155mm Howitzer	53	53	0
Stand Off Weapon	60	93	33
Battle Comm. Sys.	41	49	8
C-RAM	31	33	2
Sub Total - Projects Approved post July 2005	<u>1,128</u>	<u>1,252</u>	<u>126</u>
Percentage of Total - Projects Approved post July 2005	<u>42%</u>	<u>35%</u>	<u>13%</u>
Total - All Projects With Slippage	<u>2,659</u>	<u>3,604</u>	<u>957</u>

Source: ANAO analysis of 2012–13 PDSSs.

- Note 1: Joint Strike Fighter—a revised Stage 1 Joint Strike Fighter MAA is being developed for the acquisition of the approved first 14 Aircraft. FMR and FOC dates were not included in the PDSS.
- Note 2: This figure does not add as new FOC dates were introduced in 2010–11 which were later than the original FOC date. This was not caused by project issues.
- Note 3: These figures do not add precisely due to the exclusion of schedule reductions over the life of the project.
- Note 4: MRH90 Helicopters—FMR and FOC are being reviewed as part of the MAA update post Deed 2 agreement. FMR and FOC dates were not included in the PDSS.

Capability performance analysis

2.53 The ADF defines capability as the power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period.⁸⁴ An operational effect is achieved by combining the eight Fundamental Inputs to Capability: personnel; organisation; collective training; major systems; supplies; facilities and training areas; support; and command and management.⁸⁵

2.54 In acquiring Defence platforms and systems, a range of documentation (including capability definition documents, operational concept documents, function and performance specification, and test concept documents) is developed and sets out the detailed requirements/performance attributes to be achieved. In the case of an aircraft, for example, this would include elements such as its range and speed, handling characteristics, self protection abilities, requirements for runway length and other ground support, civil and military communications and guidance systems, maximum takeoff weights, cargo capacity, maintenance requirements and compliance with military and civil certification regulations and requirements. Depending on the nature of this information, it can be classified for national security reasons and therefore cannot be made public.

2.55 The DMO's assessment of capability performance (Expected Capability) is against the Materiel Release Milestones (MRMs) and Completion Criteria specified in each project's MAA. The exception is Wedgetail, where the assessment is against the Supplies section of the MAA which lists the equipment to be delivered. This is consistent with prior year MPRs.

84 Defence Instructions (General), DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, 9 November 2012, Annex B, p. B1.

85 Source 1: Department of Defence, *Defence Capability Development Handbook 2012*, pp. 2–3.
Source 2: DI(G) OPS 45–2, *Capability Acceptance into Operational Service*, 9 November 2012, paragraph 1.

2.56 In general, MRMs and Completion Criteria (previously Measures of Operations Effectiveness (MOEs)) are designed to define at a strategic level the key elements required to achieve IMR and FMR.⁸⁶ They focus on the achievement of technical, regulatory or operational requirements. Where key requirements are not achieved, this could be expected to have a significant effect on a system's likely suitability for acceptance into operational service.

2.57 The ANAO continues to observe that there is considerable diversity across the projects in the number, level of specification, articulation and focus of MRMs and Completion Criteria in project MAAs. For example, AWD Ships (total budget \$7 869.2 million) has four MRMs and Completion Criteria (IMR—Ship 1, MR 2—Ship 2, MR 3—Ship 3 and FMR), while 155mm Howitzer (total budget \$323.9 million) reports on 23 MRMs and Completion Criteria.

2.58 The MRMs and Completion Criteria are assessed using traffic light indicators by the DMO's project management, and reported monthly within the DMO and the Defence Organisation. The June 2013 traffic light assessment is represented in the PDSSs as Measures of Materiel Capability Performance. Due to national security considerations, only the overall status from each project's assessment of the likelihood of delivering the required materiel capability is disclosed in the 2012–13 MPR and earlier reports.

2.59 Figures 13 and 14 present the DMO's assessment of the percentage of materiel capability that:

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

2.60 For example, Figure 13, at page 79, shows the assessment for MRH90 Helicopters as at 30 June 2013, as having a high level of confidence in delivering 40 per cent of the materiel capability, while 60 per cent of the

86 Source 1: Initial Materiel Release (IMR): A milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of Initial Operational Release. It is defined in the MAA. Department of Defence, *Defence Capability Development Handbook 2012*, p. 130.

Final Materiel Release (FMR): A milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of FOC. It is defined in the MAA. Department of Defence, *Defence Capability Development Handbook 2012*, p. 129.

Source 2: A number of MRMs and Completion Criteria at 30 June 2013 include milestones relating to schedule, which are not strictly capability measures within the DMO framework.

materiel capability is 'under threat but still considered manageable'. This differs from 2011–12, where 20 per cent of capability was considered 'unlikely to be met'.

2.61 The DMO's Expected Capability should be interpreted with some caution due to diversity across projects in the basis for assessment (MRMs and Completion Criteria) and the high level of risk and uncertainty in forecasting outcomes. As such, the DMO's assessment of Expected Capability may differ materially from that stated in the PDSSs and is outside the scope of the ANAO's assurance review.⁸⁷ However, the ANAO has been provided with data from the DMO's reporting systems in order to examine the accuracy of the disclosure in the PDSSs.

Project snapshot—Expected Capability and Project Maturity

2.62 The fourth snapshot, Figure 12 at page 77, sets out the DMO's assessment of the likelihood of delivering all of the key capability (Expected Capability) and the Project Maturity.⁸⁸

2.63 The DMO expects that all 29 projects in this year's MPR will deliver all of their key capability requirements, recognising that some elements of the capability required for some projects may be under threat but considered manageable (assessed as either green or amber).

2.64 This is an improvement on the 2011–12 assessment, where both Wedgetail and MRH90 Helicopters were assessed as unlikely to meet all of their capability requirements as follows:

- Wedgetail—performance of the phased array radar was not expected to meet the specification at final delivery at 30 June 2012, however all deficiencies are now expected to be addressed under remediation programs; and
- MRH90 Helicopters—the main contractor was unable to deliver conforming supplies, which resulted in the first maritime and land operational capabilities not being achieved by the schedule date.

⁸⁷ See paragraph 1.7 in Part 1 for PDSS items out of scope for the ANAO's assurance review.

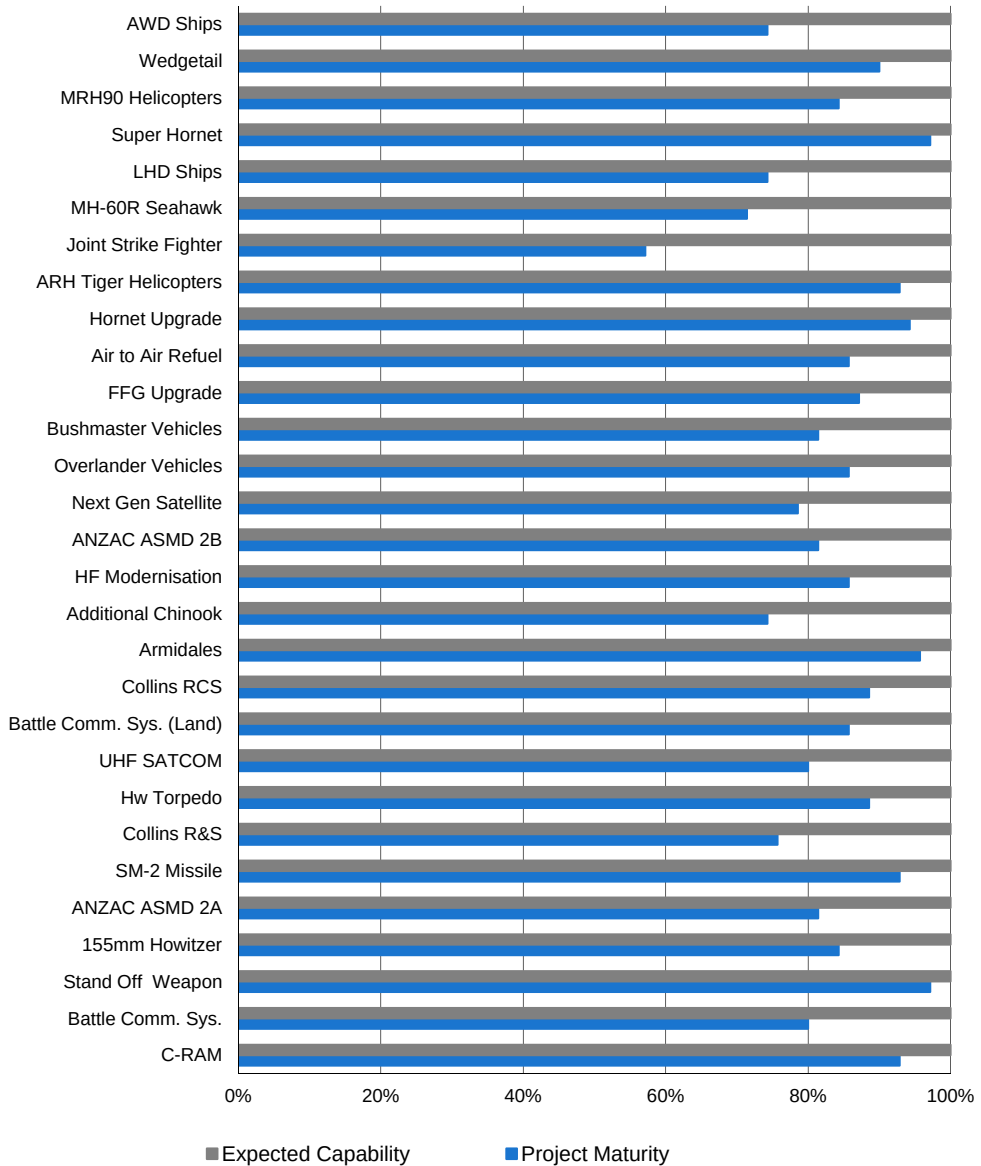
⁸⁸ The DMO has advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 7, and 12. A process which was supported by the JCPAA. JCPAA, Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, pp. 23–24.

However there are associated risks and issues in achieving Service Release, which are being managed.

For detail of the current Expected Capability for these two projects refer to paragraph 2.66 in Part 1.

2.65 The complexity and type of acquisition (MOTS, Australianised MOTS or Developmental) are significant factors affecting the Expected Capability; the risk is appreciably higher for more developmental projects. The DMO's assessment of Expected Capability should become better informed as a project matures along its capability development and acquisition lifecycle.

Figure 12: Project snapshot—Expected Capability and Project Maturity



Source: ANAO analysis of 2012–13 PDSSs.

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

In-year capability performance

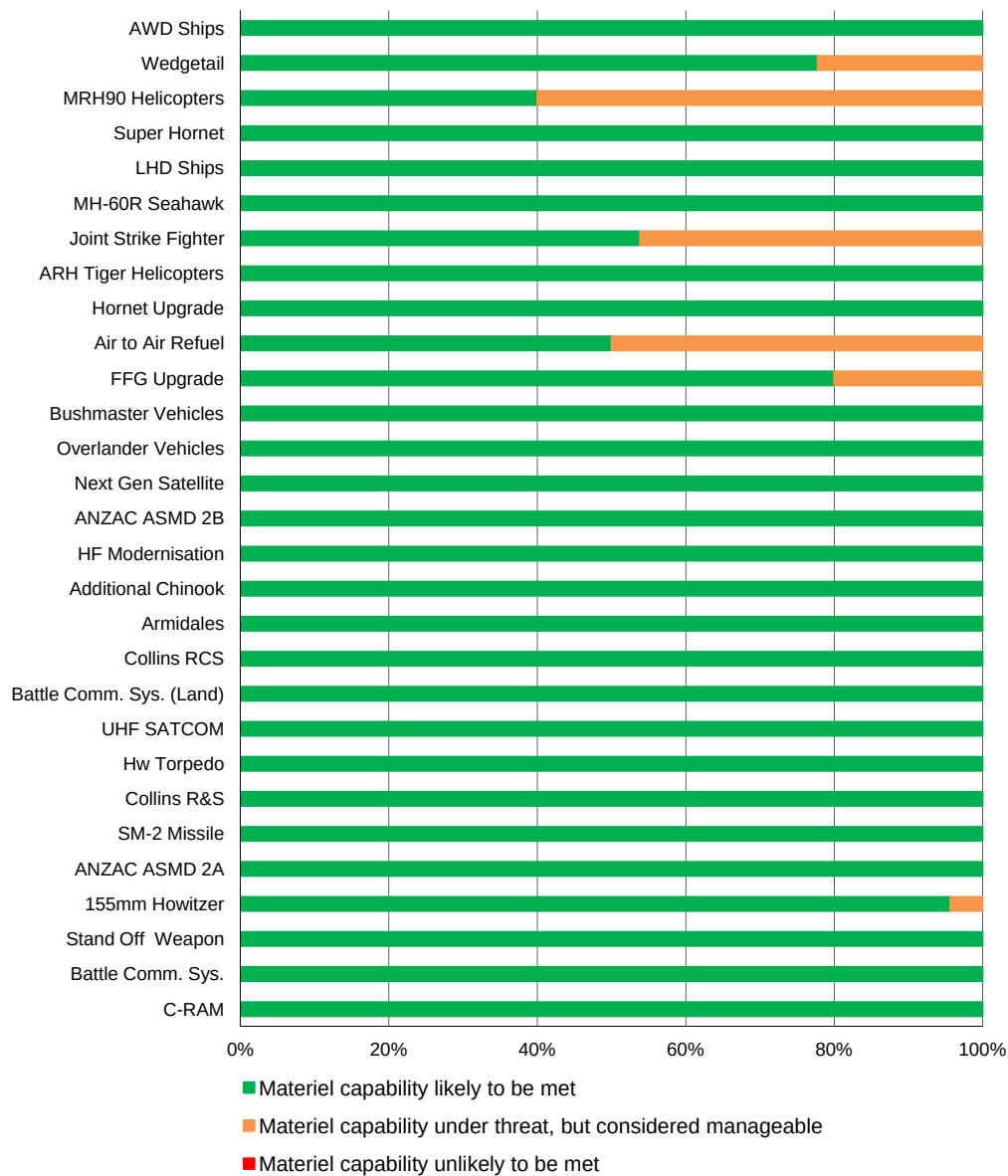
2.66 Figure 13, below, highlights that there are six Major Projects experiencing challenges in delivering elements of their system's planned capability.⁸⁹ These projects are:

- Wedgetail—Performance deficiencies in some elements of the mission system currently pose risk to achievement of FMR. All deficiencies are expected to be addressed under remediation programs agreed by Boeing in accordance with the November 2012 commercial settlement;
- MRH90 Helicopters—notwithstanding the signing of a Deed of Variation, there are some materiel capabilities that are undergoing Operational Test and Evaluation activities. There are associated risks and issues in achieving Service Release of these capabilities, however the project is actively managing them. Examples include interim Fast Roping Device and interim Gun Mount;
- Joint Strike Fighter—there are a number of risks to achieving the materiel capability required under the unapproved Stage 2 required to deliver IOC and FOC. These risks include establishment of enabling capabilities and systems together with aircraft software capabilities;
- Air to Air Refuel—there is risk to meeting all materiel capability requirements for FOC due to acceptance of aircraft in an initial configuration and the risk of successful remediation of all non-conformances and improvements to the Aerial Refuelling Boom System;
- FFG Upgrade—the final capability to be delivered is uncertain at this time. Navy intend to pursue the capabilities as originally scoped, however, production/acquisition is yet to progress on the Torpedo Defence System requirements and a determination on the Mine and Obstacles Avoidance System is pending further Operational Test and Evaluation; and
- 155mm Howitzer—the Course Correcting Fuze continues to be an issue. The capability was subject to a further program of testing to

89 Expected Capability assessments concern forecasting future achievements and are outside the scope of the ANAO's review.

resolve reliability issues, prior to the US Government agreeing to a production milestone.

Figure 13: Expected Capability at June 2013



Source: ANAO analysis of 2012–13 PDSSs.
 Note 1: The Expected Capability assessment for Wedgetail has been against the Supplies section of the MAA, which lists the equipment to be delivered.

Longitudinal capability performance

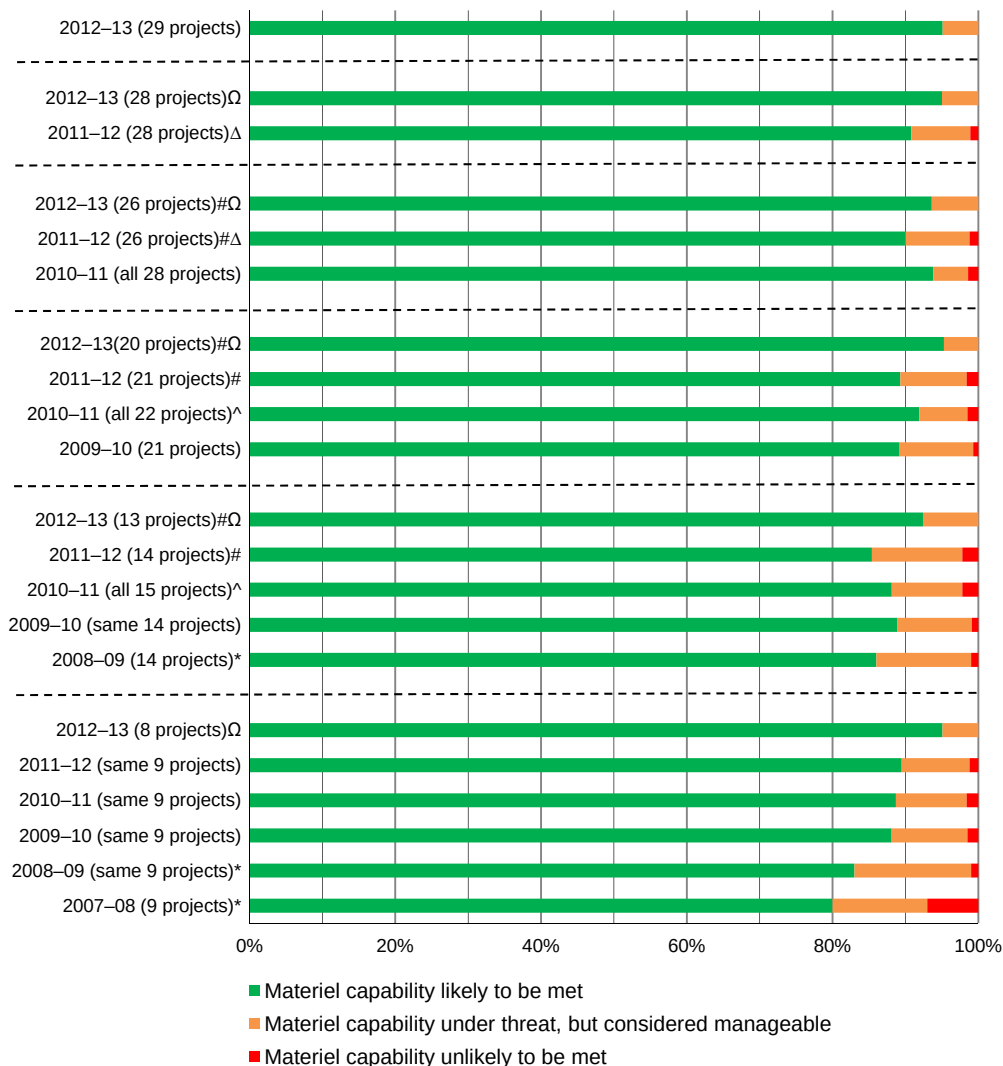
2.67 A multi-year comparison of Expected Capability should be considered with caution as project's Measures of Materiel Capability (MRMs and Completion Criteria) can change from year to year as MAAs are updated. Therefore, any comparison of an individual or a group of projects' Measures of Materiel Capability may not involve comparing 'like with like'. Changes in anticipated capability outcomes should be read in conjunction with the information in the PDSSs.

2.68 Figure 14, below, examines the DMO's assessment of Expected Capability for the same projects from 2008 to 2013 as reported in the DMO's PDSSs using traffic light indicators as defined above.⁹⁰

2.69 As reflected in the portfolio of projects in the 2012–13 MPR, the DMO's assessment is consistent with the 2011–12 MPR, that it has a 'high level of confidence' in delivering 95 per cent (2011–12: 91 per cent) of the key capabilities associated with the Major Projects in this report. While the delivery of five per cent (2011–12: eight per cent) of the key capabilities is considered to be 'under threat', the risk is still considered by the DMO to be 'manageable'. The remaining one per cent, in 2011–12, was previously assessed by the DMO as unachievable.

2.70 The DMO's key capability data shows that the two projects previously assessed by the DMO as 'unlikely' to meet some elements (one per cent) of capability were Wedgetail and MRH90 Helicopters (refer to paragraph 2.64 in Part 1).

90 Expected Capability assessments concern the forecasting of future achievements and are outside the scope of the ANAO's review.

Figure 14: Expected Capability across the 2007–08 to 2012–13 MPRs

Sources: ANAO analysis of 2007–08, 2008–09, 2009–10, 2010–11, 2011–12 and 2012–13 PDSSs.

Note 1: * The ANAO did not examine the accuracy of the recording of this data in previous MPRs.

Note 2: ^ Super Hornet did not have MOEs, but does have Measures of Materiel Capability Performance in the latest MAA.

Note 3: # Hornet Refurb was removed from the PDSSs in 2011–12.

Note 4: Δ Joint Strike Fighter is excluded from this analysis due to a lack of data.

Note 5: Ω C-17 Heavy Airlift was removed from the PDSSs in 2012–13.

Note 6: The Expected Capability assessment for Wedgetail has been against the Supplies section of the MAA, which lists the equipment to be delivered.

3. Developments in Governance and Reporting

Introduction

3.1 Major Defence equipment acquisition projects (Major Projects) are often large, technically complex, high-cost procurement activities, characterised by risk and long timeframes between concept, delivery and acceptance into service. These characteristics pose significant challenges to the effective governance of these projects and highlight the importance of applying a robust governance framework to them. Such a framework has the capacity to enhance transparency and accountability, and support the consistent assessment of the progress of Major Projects across the whole portfolio of projects.

3.2 In addition to those key governance aspects discussed earlier in Chapter 1 of Part 1 (financial assurance framework, Project Maturity framework, Enterprise Risk Management Framework and the capability assessment framework), the Australian National Audit Office (ANAO) review included assessing developments in governance initiatives including: Gate Review Boards; Projects of Concern; Early Indicators and Warnings (EI&W); Joint Project Directives (JPDs); Earned Value Management Systems (EVMSs); and skills development, to gain a greater understanding of the Defence Materiel Organisation's (DMO's) business.

Developments in the governance framework for projects

Gate Review Boards

3.3 Gate Reviews involve a periodic assessment of a project at key milestones by an independent Gate Review Board appointed by the DMO.⁹¹ Their purpose is to provide the Chief Executive Officer (CEO) DMO, particularly in respect of critical 'gates'⁹², with assurance that projects will

⁹¹ Each Board includes a Chair (with the management level dependent on the complexity of the project, its profile and sensitivity), a number of DMO managers selected on their expertise, and up to two external members with extensive Defence or commercial experience. For more complex projects, a Senior Project Analyst is appointed to conduct an independent analysis and identify key issues to bring to the Board's attention.

⁹² A gate is a key project decision point or milestone.

deliver on government approved objectives, focusing on the preparedness of the project to progress to the next stage in its project life cycle.⁹³

3.4 Gate Reviews are mandatory for Major Projects at four specified gates and optional at other gates, depending on the outcomes of the project risk assessment. A project is not permitted to proceed to the next stage of its life cycle until it is cleared by the Gate Review Board. The mandatory gates are: First Pass consideration; Second Pass consideration; Contract Solicitation; and Contract Negotiation.⁹⁴ The DMO also requires a Gate Review to be undertaken where the risks known about the project merit such a review, for example, where new information about a project triggers an early warning of a difficulty arising. As at the end of October 2013, 35 Gate Reviews had been conducted on 27 of the projects in the 2012–13 Major Projects Report (MPR)⁹⁵ (2011–12: 23 MPR projects were subjected to Gate Reviews).

3.5 The DMO held its first two Gate Reviews in August and September of 2008 (during the period of the Mortimer Review)⁹⁶, with no further Gate Reviews held until September 2009.⁹⁷ This initial limited implementation of the Mortimer recommendation, where Gate Reviews were largely ad hoc, led to the decision to strengthen the process and expand it to all Major Projects managed by the DMO, with each project to undergo at least one Gate Review per year.⁹⁸

3.6 This expansion followed a directive from government through the establishment of an Independent Project Performance Office (IPPO)⁹⁹, whose

93 Department of Defence, DMO, Defence Materiel Instruction (Executive), DMI (EXEC) 00-0-009, *Gate Reviews for DMO Projects*, 11 September 2013, p. 3.

94 The decision points and their mandatory status have changed over time. These are detailed in the most recent Gate Review instruction, Department of Defence, DMO, Defence Materiel Instruction (Executive), DMI (EXEC) 00-0-009, *Gate Reviews for DMO Projects*, 11 September 2013, Annex A, pp. 10–12.

95 This includes MH-60R Seahawk (three Gate Reviews) and the LHD Ships, Joint Strike Fighter, Air to Air Refuel, Bushmaster Vehicles, Overlander Vehicles, 155mm Howitzer and C-RAM projects (each with two Gate Reviews). Four projects have Gate Reviews scheduled for later this year. FFG Upgrade and Armadales are the only projects not expected to undergo Gate Reviews in 2013.

96 Mortimer, David, *Going to the Next Level: the report of the Defence Procurement and Sustainment Review*, 18 September 2008, pp. 35–36.

97 ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 5, p. 14.

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

99 The then Minister for Defence, the Hon. Stephen Smith MP, and the then Minister for Defence Materiel, the Hon. Jason Clare MP, *Independent Project Performance Office to oversee major Defence projects established*, 29 June 2011.

responsibilities also include overseeing the remediation of all Projects of Concern (discussed further at paragraphs 3.10 to 3.15), and implementing the Early Indicator and Warnings system (discussed further at paragraphs 3.16 to 3.18) designed to help identify and correct potential problems with projects.¹⁰⁰

3.7 The ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, tabled in June 2012, examined the effectiveness of the DMO's implementation of its Gate Review process for Major Projects, concluding that 'DMO has improved the effectiveness with which it implements its Gate Review program since establishing its Independent Project Performance Office (IPPO) in July 2011, and centralising the management of all Gate Reviews within IPPO'.¹⁰¹ However, the audit also concluded that opportunities for further improvement and rigour remained.

3.8 The DMO agreed to the ANAO's recommendation to monitor the status and completion of actions recommended by Gate Review Boards and agreed by the relevant executive. In March 2013, the DMO advised that the CEO DMO initiated quarterly assurance certification by the DMO Divisions, which includes tracking the completion of Gate Review outcomes.

3.9 The ANAO assessed the material considered in the Gate Reviews and their outcomes where available, however, this was limited by the number of reviews focusing on the 30 June 2013 timeframe.

Projects of Concern

3.10 The Projects of Concern list was established in 2008 to focus the attention of the highest levels of government, Defence and industry on remediating problem projects. Projects were placed on the list by the then Minister for Defence and the then Minister for Defence Materiel on the recommendation of the CEO DMO when, for example, there are significant challenges with cost, schedule or capability delivery.¹⁰²

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

101 ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 13, pp. 15–16.

102 The then Minister for Defence, the Hon. Stephen Smith MP, and the then Minister for Defence Materiel, the Hon. Jason Clare MP, *Projects of Concern - Update*, 15 October 2010.

3.11 The Project of Concern summits¹⁰³ were implemented in February 2011 by the then Minister for Defence Materiel to increase focus from government, Defence and industry to remediate Projects of Concern.

3.12 During 2012–13 three MPR projects were continuing Projects of Concern¹⁰⁴, however in December 2012, the then Minister for Defence and the then Minister for Defence Materiel announced that Wedgetail was being removed from the list following the declaration of Initial Operational Capability by the Chief of Air Force, and the delivery of all six aircraft.¹⁰⁵ The project had been a Project of Concern since 2009–10 due to schedule delays and the complexity of the technical development of the capability.

3.13 Projects were removed from the Projects of Concern list once the Minister was satisfied that remediation activity has been completed successfully or government has decided to cancel the project.

3.14 In May 2013, the then Minister for Defence and the then Minister for Defence Materiel announced that the MRH90 Helicopters project will be considered for removal from the Projects of Concern list by the end of 2013 following the signing of a Deed of Variation, termed Deed 2, to the original contract, to address commercial, technical and schedule issues.¹⁰⁶

3.15 Since the Projects of Concern process was established, nine MPR projects have been on the list and seven have been removed due to remediation.¹⁰⁷

Early Indicators and Warnings

3.16 In May 2011, the Government announced that it would implement an Early Indicators and Warnings (EI&W) system, with the purpose of identifying problems in projects in the formative stages of the project lifecycle, for appropriate action to remediate them.¹⁰⁸ EI&W reviews utilise defined triggers

103 The then Minister for Defence, the Hon. Stephen Smith MP, and the then Minister for Defence Materiel, the Hon. Jason Clare MP, *Defence Capability Reform*, 16 October 2012.

104 Wedgetail, MRH90 Helicopters and Air to Air Refuel.

105 The then Minister for Defence, the Hon. Stephen Smith MP, and the then Minister for Defence Materiel, the Hon. Jason Clare MP, *Update to the Projects of Concern List*, 12 December 2012.

106 The then Minister for Defence, the Hon. Stephen Smith MP, and the then Minister for Defence Materiel, the Hon. Dr Mike Kelly AM MP, *MRH90 helicopter Project of Concern progress*, 9 May 2013.

107 The then Minister for Defence Materiel, the Hon. Dr Mike Kelly AM MP, *Minister for Defence Materiel chairs Projects of Concern Summit*, 10 May 2013.

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

to measure projects against cost, schedule, capability, industry or risk thresholds.

3.17 A project triggering a breach of mandated thresholds is to be notified to DMO senior management to determine remedial actions, which may include a Gate Review. In 2012–13, the DMO conducted quarterly reviews of active post Second Pass Approval projects. Of these, 101 have triggered EI&W criteria, in the first half of their acquisition, with the results reported to the then Minister for Defence. None of the 101 projects which triggered EI&W criteria are included within the MPR this year.

3.18 The Independent Project Performance Office is responsible for the management of the EI&W system, including its ongoing development and associated policy and procedures, and has advised the ANAO that updated policy and procedures are currently in a draft stage with approval expected sometime in the future.

Joint Project Directives

3.19 Joint Project Directives (JPDs) were introduced by Defence for all projects approved by government from 1 March 2010 to identify the scope and limits of acquisition projects and the party responsible for the major components of the work.¹⁰⁹ They are also intended to be an authoritative document which enables any other necessary project document, including Materiel Acquisition Agreements (MAAs)¹¹⁰, to be based on a reliable source. Therefore, JPDs and MAAs are intended to aid sound governance and accountability in Defence acquisition projects.¹¹¹

109 Source 1: Joint Project Directive: A project-specific directive issued by the Secretary of the Department of Defence and the Chief of the Defence Force to the nominated Capability Manager, assigning overall responsibility, authority and accountability for realisation of the capability system to an in-service state. Department of Defence, *Defence Capability Development Handbook 2012*, p. 131. Source 2: For further information on Joint Project Directives see ANAO Audit Report No. 6, 2013–14 *Capability Development Reform*, pp. 219–232.

110 Materiel Acquisition Agreement: An agreement between the Capability Manager, Capability Development Group and DMO that states in concise terms what services and products the DMO (as supplier) will deliver to Defence, for how much and when. Department of Defence, *Defence Capability Development Handbook 2012*, p. 132.

111 The key role of these two documents in Defence's current acquisition arrangements has been set out in The Senate Foreign Affairs, Defence and Trade References Committee *Procurement procedures for Defence capital projects*, Final Report, August 2012, pp. 105–108.

3.20 At government direction, the DMO commenced an acquisition baseline review audit¹¹², which was completed in 2012. The DMO found that ‘all projects were within approved budget, two projects reported variation against the approved scope and around 20 per cent of projects were late against the approved schedule’. In response to the findings of the audit, the government directed that Defence implement a new regime of reporting to government on the variations to original project approvals.¹¹³

3.21 During the 2012–13 review, the ANAO continued to examine a range of governance documents which define project deliverables. Traditionally, MAAs have defined a range of project attributes with the DMO providing JPDs for four MPR projects.¹¹⁴ As a consequence of the slower than anticipated implementation, the ANAO will take JPDs into account in its review program in future years, where these have been prepared.

Business systems

3.22 In the 2011–12 MPR, the ANAO reported that the control environment of each project differed, due to the large range of corporate and project management IT applications being employed by the different project offices. During the 2012–13 review, the same observations apply across the 29 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.

3.23 In its Report 436, the Joint Committee of Public Accounts and Audit (JCPAA) expressed its ongoing concern with the consistency of information in DMO’s business systems, and recommended that ‘the DMO develop a business systems improvement plan which prioritises projects, assigns completion dates and allocates senior level ownership for implementation. A

112 For further information on the acquisition baseline review see ANAO Audit Report No. 6, 2013–14 *Capability Development Reform*, pp. 237–248.

113 Department of Defence, *Defence White Paper 2013*, paragraph 9.23, p. 95.

114 MH-60R Seahawk, Bushmaster Vehicles, Overlander Vehicles and Battle Comm. Sys. (Land).

progress update on achievements against the plan should be included in the 2012–13 Major Projects Report'.¹¹⁵

3.24 During 2012–13, the DMO advised that there are currently 540 separate applications in use, and that the DMO is identifying and confirming where duplicate licenses and other inefficiencies exist, as well as researching software and systems, in order to achieve higher visibility over Information and Communications Technology expenditure in the DMO (which has an annual budget of approximately \$100 million). There have also been developments in terms of bringing all the DMO networks and programs onto the Defence Restricted Network as opposed to projects keeping these on their local area networks, except where compatibility issues prevent such rationalisation.

3.25 In 2010, the DMO informed the ANAO that it was focusing on rationalisation of the finance domain due to resource constraints on progress in reviewing the business systems and implementing recommendations arising from these reviews. This includes the transition from the current program level budget management system (CEPPlan) to the enterprise level system (BORIS) during calendar year 2013 (see paragraphs 1.32 to 1.33 in Part 2).

3.26 The Chief Finance Officer (CFO) DMO is expected to take strategic decisions on the future of DMO finance. The DMO Financial Information Management Advisory Committee exists to make recommendations to the CFO DMO on financial information management, with a view to having a coordinated approach to implementing business rules, process improvements and system rationalisation in the finance domain. The DMO Future Finance State Initiative has been endorsed by the Committee, and is incorporating the work done by the Finance Information Management Improvement Program to inform future systems developments including those to be delivered via the *Finance Systems Modernisation Project* JP 2080 Phase 3 and 4.

3.27 As part of a program to rationalise its information and communications technology systems, the DMO also rolled out a single records management system called Objective in 2013, which has centralised the DMO's electronic document management.¹¹⁶ While some problems were experienced, the implementation went ahead without significant issues and benefits flowing to

115 JCPAA, Report 436, *Review of the 2011–12 Defence Materiel Organisation Major Projects Report*, May 2013, Recommendation 4, p. 26.

116 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 2, paragraph 1.34, p. 111.

project management in the DMO are expected to be evident in next year's review.

Earned Value Management Systems

3.28 The Earned Value Management System (EVMS) is a method of using detailed actual cost and schedule information to measure and report project performance, as well as to forecast future performance, and can be used to ensure that project payments do not exceed the value of work performed. However, EVMS is no longer consistently utilised by DMO projects, as the DMO has indicated a preference to utilise a more milestone focused contract management regime. During the course of the 2012–13 MPR review, the ANAO continued to monitor the extent to which EVMS was being utilised in projects.

3.29 Only seven projects within the MPR currently utilise EVMS data¹¹⁷ and subsequently graphical presentation of a project's cumulative cost and schedule, as shown in ANAO Audit Report No.6 2012–13, *Management of Australia's Air Combat Capability–F-35A Joint Strike Fighter Acquisition*, tabled in September 2012¹¹⁸, cannot be provided for all projects.

3.30 As an alternative the DMO has developed a standardised graphical representation of each project's cost and schedule variance for inclusion in the PDSSs. As a result, a new graph has been included in Section 4.1 of each project's PDSS since the 2011–12 MPR.

3.31 The graph in Section 4.1 of each PDSS presents on the vertical axis the percentage variance of the project cost from budget as at 30 June 2013. The horizontal axis presents the percentage variance of the project schedule from the original planned FMR and the FOC milestones. Analysis of the 29 projects shows that 28 of the projects are currently within budgeted cost. There are two projects (MRH90 Helicopters and Joint Strike Fighter) where a graph has not been included as the FMR and FOC milestones have not been fully defined.¹¹⁹

117 AWD Ships, MRH90 Helicopters, LHD Ships, Next Gen Satellite, Collins RCS, Battle Comm. Sys. and C-RAM.

118 ANAO Audit Report No.6 2012–13, *Management of Australia's Air Combat Capability–F-35A Joint Strike Fighter Acquisition*, Figure 5.2, p. 154.

119 ANAO Report No.12 2013–14, *2012–13 Major Projects Report*, Part 3, PDSSs.

Skills development

3.32 A key challenge for both the DMO and the Australian Defence industry is to improve the project management, scheduling, logistics, procurement and engineering services provided to the Australian Government, within current and future workforce constraints. The DMO's goal to professionalise and 'up-skill' their workforce is seen as key in meeting their current and future challenges¹²⁰, as well as to increase the quality and quantity of skilled personnel available to the Defence industry.

3.33 To assist with professionalising DMO staff, the DMO's Directorate of Professionalisation and Staff Development is responsible for the development of certification programs that focus on developing specific competencies and gaining professional qualifications. This supports the DMO core business of acquisition and sustainment across the Procurement, Financial Management, Project and Sustainment Management, Materiel Engineering and Materiel Logistics streams.

3.34 Prior to the start of the initiative in 2005, the DMO had only 153 staff certified in areas of project management, engineering, and accounting.¹²¹ The Directorate advised that during 2012–13 approximately 900 DMO staff have either been certified or are enrolled in a certification program with a professional body compared with 1 200 staff in 2011–12 and 1 400 staff in 2010–11.¹²²

3.35 To assist with the development of participants within the Defence industry, the Skilling Australia's Defence Industry (SADI) program was established by the Australian Government in 2005. The aim of the SADI program is to up-skill existing employees, improve the quality and quantity of skills training in the Defence industry, and generate additional skilled positions.¹²³

3.36 The SADI program provides funding support to companies and industry associations for training and skilling activities where that training is

120 DMO, *Introducing the Defence Materiel Organisation*, August 2013, p. 7.

121 Department of Defence, *Defence Annual Report 2005–2006*, Volume 2, Table 1.1, p. 13.

122 The ANAO notes that average APS full time equivalent staffing numbers for the DMO increased from 5 533 at 30 June 2011 to 5 989 at 30 June 2012, and then decreased to 5 389 at 30 June 2013.

Source 1: Department of Defence, *Defence Annual Report 2011–2012*, Table 2.9, p. 22.

Source 2: Department of Defence, *Defence Annual Report 2012–2013*, Table 6.3, p. 124.

123 Source: <<http://www.defence.gov.au/dmo/id/sadi/>> [accessed 25 October 2013].

linked to a Defence capability. Since 2005, the program has funded more than 26 500 training places, including more than 2 600 apprentices.¹²⁴ Also, approximately 200 industry participants have been provided with funding support in trade, technical and other professional skill sets.¹²⁵

3.37 To meet the needs of the Australian Defence Force, SADI aims to invest \$215 million¹²⁶ within the period 2005–06 to 2015–16, with over \$10.5 million in 2013–14 providing over 1 000 training opportunities.¹²⁷

3.38 During 2012–13, the DMO has implemented an Internet-based Grants Management System to manage and assess grant applications for funding support of eligible training and/or up-skilling activities within the Defence industry.¹²⁸

3.39 Other government approved programs aimed at up-skilling participants within the Defence industry include the Industry Skilling Program Enhancement (ISPE) package and the Priority Industry Capability Innovation Program (PIC IP). ISPE, which was announced in 2008, provides up to \$60.8 million over five years.¹²⁹ The DMO has advised there is currently no funding programmed past 30 June 2014. This program incorporates a number of initiatives aimed at enhancing work and future career pathways in the sector by implementing programs at schools and offering Defence technical and engineering scholarships.

3.40 PIC IP, which was implemented last year, and provides up to \$45 million over seven years¹³⁰, is aimed at providing Australian Defence companies direct support in the form of repayable and matched grants (the recipient matches the funds provided by the Australian Government on a dollar for dollar basis).¹³¹ The program particularly focuses on assisting small to medium sized enterprises to pursue innovative Defence industry projects.

124 The then Minister for Defence Materiel, the Hon. Jason Clare MP, *Next Round of SADI Grants Open*, 5 November 2012.

125 Source: <<http://www.defence.gov.au/dmo/id/sadi/>> [accessed 28 October 2013].

126 Source: <<http://www.defence.gov.au/dmo/id/sadi/>> [accessed 25 October 2013].

127 Minister for Defence, Senator the Hon. David Johnston, *Skilling program grants provide boost for Australian defence industry companies*, 16 October 2013.

128 Source: <<http://www.defence.gov.au/dmo/id/sadi/>> [accessed 28 October 2013].

129 Source: <http://www.defence.gov.au/dmo/id/industry_skilling/> [accessed 28 October 2013].

130 The then Minister for Defence Materiel, the Hon. Jason Clare MP, *More than \$12 million investment in priority industry capabilities*, 30 April 2012.

131 Source: <<http://www.defence.gov.au/dmo/id/picip/>> [accessed 28 October 2013].

3.41 On 5 September 2011, the then Minister for Defence Materiel underlined the need for the replacement or upgrade of up to 85 per cent of its military equipment over the next 15 years, and asked Skills Australia to work with Defence and the Defence industry to develop a plan to ensure Australian industry has the skills to meet this challenge.¹³² Skills Australia noted the following in their September 2012 report *Building Australia's Defence Supply Capabilities – Main Report for the Defence Industry Workforce Strategy*:

...the current skilling programs offered by the DMO suffer from a lack of longitudinal evaluation processes or strategies in place to assess the effectiveness of these programs. The lack of these mechanisms for either SADI or ISPE means that the DMO and Government are not in a position to determine when success is achieved in these programs and whether they have provided value for money.¹³³

3.42 Skills Australia made three recommendations regarding this issue aimed at undertaking performance evaluations of SADI and ISPE and developing Key Performance Indicators.¹³⁴

3.43 In 2013–14, the ANAO will continue to monitor the SADI and other programs.

132 The then Minister for Defence Materiel, the Hon. Jason Clare MP, *Defence Skills Plan to Meet the Challenges Ahead*, 5 September 2011.

133 Skills Australia, *Building Australia's Defence Supply Capabilities – Main Report for the Defence Industry Workforce Strategy*, September 2012, p. 23.

134 Skills Australia, *Building Australia's Defence Supply Capabilities – Main Report for the Defence Industry Workforce Strategy*, September 2012, p. 24.

Part 2. DMO Major Projects Report

CEO DMO Foreword

I am pleased to present the 2012-13 DMO Major Projects Report (MPR). Since the first DMO MPR, tabled in Parliament in November 2008, which reported on nine of the DMO's major projects, an additional 20 projects are now reported. This year, having successfully achieved its objectives, the C17 Globemaster III Heavy Airlifter project has been removed from the MPR, and Battlespace Communications System (Land) has met the criteria for inclusion.

The DMO MPR is an important component in providing transparency to Parliament on the management of these 29 projects worth more than \$44 billion. The report also provides quantitative data on DMO's project management performance. Importantly, the report shows that the DMO is delivering well against cost and capability.

Schedule performance has worsened by six per cent, mainly due to factors such as availability of platforms due to operational requirements, particularly in the case of Collins Class Submarines, and delays in resolving technical design issues by the contractor, in the case of Wedgetail and Air to Air Refuelling. Schedule performance therefore remains an area for further improvement. Funding constraints in 2013-14 are likely to place further pressure on schedule performance.

I note, however, that some older projects such as ARH Tiger Helicopters, Hornet Upgrade, FFG Upgrade, Bushmaster Vehicles and HF Modernisation are substantially complete and are providing valuable capability to Defence, despite not officially achieving Final Operating Capability at this point in time. These projects have a disproportionate influence on the reported schedule performance.

The format of this year's report is similar to that of last year. Chapter One provides an overview of the DMO's performance and discusses key issues, such as financial, schedule and risk management, which, when combined, drive performance. Chapter Two provides a detailed analysis of schedule, cost and materiel capability delivery.

Over the last year we continued, on average, to deliver our projects within budget. While schedule remains our biggest concern, reforms are underway and, in time, we should see improvement on this front.

Funding constraints in 2013-14 will lead to delays in project delivery as DMO adjusts its acquisition schedule to fit within the available cash.

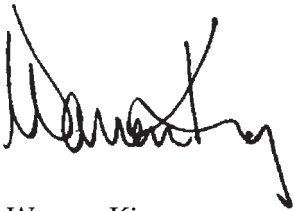
Additionally, the capacity to engage a flexible, professional workforce to drive improved project performance is a challenge for the DMO under its present organisational construct. I therefore welcome the Government's announcement of its intention to review the DMO.

In December 2012, two projects were removed from the Projects of Concern list. This is a credit to the teams (in DMO and industry) who have worked hard to remediate those projects. Two projects, the Mulwala Redevelopment Project and the Direct Fire Support Weapon Project were added to the list.

The Chiefs of Army, Air Force and Navy and the major contractors for each project have reviewed relevant project data. Their views have been considered in finalising this report.

The DMO and ANAO MPR teams continue to have a strong professional working relationship, which has facilitated the delivery of further improvement to the MPR consistent with guidance provided by the JCPAA.

My thanks to the Auditor-General, Mr Ian McPhee, and his staff for their contribution to the overall report, and DMO project office staff of the 29 projects, the DMO MPR Management team, and the numerous other DMO business areas involved in bringing together this DMO MPR.

A handwritten signature in black ink, appearing to read 'Warren King', with a stylized flourish at the end.

Warren King

Chief Executive Officer

5 December 2013

Executive Summary

In 2012-13, the Defence Materiel Organisation (DMO) managed just over \$9.4b¹³⁵ in expenditure for the Department of Defence across the acquisition projects, sustainment programs and other management services. As at 30 June 2013, the DMO managed over 180 major acquisition projects with an average value of \$429m and an annual acquisition budget of \$3.6b.

The Major Projects Report (MPR) examines 29 of these. The key aspects of this MPR are:

- the removal of one project from the 2011-12 MPR (AIR 8000 Phase 3 – C-17 Heavy Airlift) and inclusion of one project (JP 2072 Phase 2A – Battlespace Communications System (Land)), leaving the total number of reported projects at 29;
- all projects are delivering capability within the approved budget; and
- the analysis has identified that schedule performance to Final Materiel Release has deteriorated by six per cent since last year due mainly to platform availability and ongoing resolution of technical issues.

In 2012-13, the DMO continued to analyse the impact of acquisition reforms. For acquisition projects, the DMO's performance is measured in terms of cost, schedule and scope. A February 2013 DMO review of 59 major projects closed since July 2010, found the DMO successfully delivered projects using an average of only 95 per cent of budget.

A study conducted by Independent Project Analysis (IPA), which benchmarked DMO's performance in managing projects against commercial industry, showed this cost performance compares favourably with the private sector. It was further noted that it is rare for DMO projects to overrun their approved budgets, whereas overruns of more than 25 per cent are common in comparable commercial projects. It was speculated that DMO's strong cost performance was the result of excessive contingency budgets, this was investigated and found not to be the case.

The review also assessed the comparative level of difficulty and found DMO projects to be more difficult than the average industrial project. All DMO

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projects, regardless of level of development, rated high on the difficulty scale and corresponded to commercial projects with significant schedule slip. The IPA study indicates that based on industry benchmarks and comparative difficulty level, DMO projects could expect to experience schedule slip of between 45 per cent for low development projects and 60 per cent for innovative projects. However, the current average slip to Final Materiel Release (FMR - the point at which the DMO has delivered the materiel requirements) is eight per cent and to Final Operational Capability (where the Capability Manager declares that the capability has been delivered) is approximately 35 per cent.

In 2012-13 DMO's overall average schedule performance for the achievement of FMR worsened by an average of eight per cent for the 29 MPR projects. 67 per cent of the in-year FMR schedule slip experienced by the projects in the MPR was caused by factors such as by platform availability. (Further detail is in Chapter 2).

For 2012-13, the 29 major projects included in the MPR reported that 269 of the 281 (or 96 per cent) elements of capabilities had a high level of confidence in being met.

This compares favourably with the 2009-10 figures which identified that 123 out of 138 (or 89 per cent) elements of capability had a high level of confidence in being met.

Reforms stemming from the Kinnaird review have had a positive impact on project management. This is most evident in the improved schedule performance for projects approved after 2004. Average schedule slip for these projects is 11 per cent, which compares with 66 per cent for projects approved prior to the review.

The Projects of Concern (POC) regime continues to be of benefit to the DMO in addressing project risks. Since its introduction in 2008, 21 projects have been placed on the POC list, 13 of which have been remediated, two cancelled, and six projects remain on the POC list.

1. DMO Strategic Performance in 2012–13

DMO Overview

1.1 During 2012-13 the DMO managed approximately 180 major acquisition projects in support of the Australian Defence Force with an average value of \$429m. In capability acquisition, the DMO is primarily responsible for managing the acquisition of the materiel systems (the mission and support systems) component of capability while Defence Capability Managers have overarching responsibility to deliver all other Fundamental Inputs to Capability (FIC), such as: training; personnel; doctrine and facilities. 13 projects were closed during the year having met the required capability and were completed using an average of 92 per cent of the approved budget, an overall improvement in budget performance when compared with projects closed since July 2010.

1.2 As advised in previous Reports, the DMO operates in a challenging environment requiring the management of high levels of complexity. Separate benchmarking studies conducted by both the Helmsman Institute and Independent Project Analysis (IPA) Incorporated, indicate that DMO projects are more complex (using the Helmsman benchmark) or more difficult (using the IPA benchmark) than the average industrial project. Factors contributing to the project complexity/difficulty include the level of innovation required, level of technical development, number of stakeholders, ambiguity of requirements and organisational complexity.

DMO Achievements

1.3 An overview of cost and schedule performance is shown in Chapter 2. Examples of significant achievements in 2012-13 are:

- Air Warfare Destroyer (AWD): The AWD project has achieved the delivery of all ship 1 blocks along with the mast¹³⁶ and the keel.
- Wedgetail: The project achieved Initial Operational Capability in November 2012¹³⁷ and final acceptance of the Mission Support

¹³⁶ Defence Media Release, 2 April 2013

¹³⁷ Defence Media Release, 19 November 2012

Segment, Operational Mission Simulator, and Airborne Early Warning and Control Support Facility in December 2012.

- Multi Role Helicopter (MRH): The ADF's Airworthiness Authority, the Chief of Air Force, declared an official type two certification and service release for the MRH in May 2013.¹³⁸
- Super Hornet: Chief of Air Force declared that Phase 1 achieved Final Operational Capability (FOC) on schedule in December 2012 and Final Materiel Release (FMR) in January 2013. Chief of Air Force declared that Phase 2 achieved FMR in September 2012 and FOC in December 2012.¹³⁹
- Air to Air Refuelling: The DMO accepted the fifth and final KC-30A aircraft from Airbus Military in November 2012. The project achieved Initial Operational Capability in February 2013.¹⁴⁰
- Bushmaster Vehicles: Thales completed all Production Period 1 to 4 deliveries and has commenced Production Period 5.
- Overlander Phase 3A: Mercedes-Benz delivered the 1000th G-Wagon to the ADF in June 2013.¹⁴¹
- Next Generation SATCOM Capability: The Interim Anchoring System is fully operational.
- Armidale Class Patrol Boat: Chief of Navy declared Final Operational Capability on 18 October 2012.
- Battlespace Communications System (LAND): The project delivered Combat Radios and ancillaries into service in November 2012.
- Counter-Rocket Artillery and Mortar (C-RAM): The project received delivery of the final of three C-RAM radars in January 2013.¹⁴²

138 South Coast Register, Nowra NSW, 17 May 2013

139 Defence Media Release, 13 December 2012

140 Defence Media Release, 26 February 2013

141 Defence Media Release, 24 June 2013

142 Defence Media Release, 30 January 2013

Projects of Concern

1.4 Since 2008, 21 projects, with a total value of \$21.3b, have been listed as Projects of Concern. 13 of those projects, with a value of \$13.7b, have been remediated and two projects, Seasprite and Landing Platform Amphibious Watercraft, with a total value of just over \$1b, were cancelled in March 2008 and February 2011, respectively. The remaining six projects have a total value of \$6.6b as at 30 June 2013 and are listed in Table 1.1.

Table 1.1 – List of Projects of Concern at 30 June 2013

Project Name	Project Number	Date Added
Collins Class Submarine Sustainment	CN10	November 2008
Air to Air Refuelling	AIR 5402	October 2010
Electronic Support Measures Upgrade for AP-3C Orion aircraft	AIR 5276 Phase 8B	October 2010
Multi-Role Helicopter	AIR 9000 Phase 2,4,6	November 2011
Mulwala Redevelopment Project	JP 2086 Phase 1	December 2012
Direct Fire Support Weapons	LAND 40 Phase 2	December 2012

DMO Challenges

1.5 The DMO delivers the materiel elements of capability to the agreed deliverables of Final Materiel Release (FMR). For the 29 projects in this report, in the last year, the average in year schedule variance for FMR has increased from the two per cent last year to eight per cent in 2012-13. The main factors driving this schedule slip to FMR are: platform availability; problems associated with sub-system integration; and unforeseen technical issues.

1.6 For the 29 projects in this report, the average schedule variance at FOC has increased from a factor of 1.30 reported in the previous MPR, to a factor of 1.35 (or an average slip of 35 per cent). The two main factors driving this are: operational imperatives driving platform availability, especially in the case of Collins Class Submarines; and time taken to resolve technical issues, as is the case with Wedgetail and Air to Air Refuelling. In 2012-13 Defence budget reductions also drove some schedule slip.

1.7 In a number of cases such as the HF Modernisation project core capabilities have been successfully delivered and have been in use for some

time, but final capability elements remain outstanding. The core HF modernisation capability was accepted in 2004.

DMO Major Acquisition Program – Financial Management

1.8 Since the 2011-12 MPR, the DMO CFO has provided financial assurance statements in relation to individual MPR projects delivering the remaining intended scope within approved project budgets. This arises from concerns raised by JCPAA regarding adequacy of project budgets following the move to out turned budgets in 2010.

1.9 When considering and approving budgets, the Government takes account of the estimated impact of inflation over the life of a project. This forecasting of future inflation impacts in a budgetary construct is known as 'out-turning'. From 1 July 2010, all DMO major capital projects have been managed using out-turned budgets. At the time of project approval, project managers estimate the impact of indices tendered (or estimated) for the life of the project. These estimates are built into the project budget as part of the out turning process.

1.10 For this MPR, the financial assurance statements have been validated by an external independent company for nine of the projects reported this year.

Table 1.2 – List of 2012-13 MPR Projects by Total Approved Budget¹⁴³

Project Number	Project Name	2012-13 In-Year Budget \$m	Total Approved Project Budget \$m
SEA 4000 Phase 3	Air Warfare Destroyer	\$618.6	\$7,869.2
AIR 5077 Phase 3	Airborne Early Warning & Control Aircraft	\$206.7	\$3,843.7
AIR 9000 Phase 2, 4 & 6	Multi Role Helicopter	\$155.1	\$3,649.9
AIR 5349 Phase 1 & 2	Bridging Air Combat Capability	\$42.3	\$3,556.0
JP 2048 Phase 4A & 4B	Amphibious Deployment and Sustainment	\$209.2	\$3,073.5
AIR 9000 Phase 8	Future Naval Aviation Combat System	\$204.8	\$2,958.3
AIR 6000 Phase 2	New Air Combat Capability	\$110.3	\$2,592.4
AIR 87 Phase 2	Armed Reconnaissance Helicopter	\$50.7	\$2,031.5
AIR 5376 Phase 2	F/A-18 Hornet Upgrade	\$25.4	\$1,878.6
AIR 5402	Air to Air Refuelling	\$117.6	\$1,802.6
SEA 1390 Phase 2.1	Guided Missile Frigate Upgrade	\$4.2	\$1,450.1
LAND 116 Phase 3	Bushmaster Protected Mobility Vehicle	\$88.3	\$1,254.3
LAND 121 Phase 3	Field Vehicles and Trailers	\$151.6	\$990.5
JP 2008 Phase 4	Next Generation SATCOM Capability	\$88.9	\$863.7
SEA 1448 Phase 2B	Anzac Ship Anti Ship Missile Defence	\$66.5	\$675.9
JP 2043 Phase 3A	High Frequency Modernisation	\$4.2	\$580.1
AIR 9000 Phase 5C	Additional Chinook Helicopter	\$5.5	\$564.0
SEA 1444 Phase 1	Armidale Class Patrol Boat	\$0.6	\$537.2
SEA 1439 Phase 4A	Collins Replacement Combat System	\$4.6	\$449.9
JP 2072 Phase 2A	Battlespace Communications Systems (Land)	\$99.3	\$441.2
JP 2008 Phase 5A	Indian Ocean UHF SATCOM Capability	\$17.6	\$435.8
SEA 1429 Phase 2	Replacement Heavyweight Torpedo	\$6.6	\$425.3
SEA 1439 Phase 3	Collins Reliability and Sustainability	\$10.6	\$411.4
SEA 1390 Phase 4B	SM-1 Missile Replacement	\$27.7	\$400.2
SEA 1448 Phase 2A	Anzac Ship Anti Ship Missile Defence	\$16.0	\$386.5
LAND 17 Phase 1A	Artillery Replacement	\$14.4	\$323.9
AIR 5418 Phase 1	Follow-on Stand Off Weapon	\$7.0	\$317.4
LAND 75 Phase 3.4	Battlefield Command Support System	\$51.3	\$308.0
LAND 19 Phase 7A	Counter Rocket, Artillery and Mortar	\$29.4	\$253.9
Total		\$2,434.9	\$44,325.0

¹⁴³ The convention used in this report is to list projects in order of their total approved budget to deliver the project, from highest to lowest. Where the analysis requires a different order, an explanation is provided.

DMO Project Performance

1.11 DMO continues to deliver approved project scope within the approved budget. A February 2013 review by the DMO, of 59 major projects closed in the last three financial years (since July 2010) found that the DMO successfully delivered the projects outcomes on an average of 95 per cent of the Government approved budget.

1.12 This cost performance compares favourably to the private sector, as evidenced in a 2012 study undertaken by Independent Project Analysis Incorporated (IPA), which benchmarked DMO's performance in managing projects against commercial industry. IPA noted that it is rare for DMO projects to overrun their cost budgets, whereas overruns of more than 25 per cent are common in comparable commercial projects. IPA investigated whether DMO's strong cost performance was the result of excessive contingency budgets and found this not to be the case.

1.13 In their benchmarking study, IPA assessed the comparative level of difficulty in delivering DMO projects using a 'project difficulty index', which is a function of a project's level of difficulty combined with the organisation's experience in conducting similar projects. The results found DMO projects to be more difficult than the average industrial project. Both developmental and off-the-shelf projects sat high on the difficulty scale and corresponded to commercial projects with significant schedule slip. IPA's benchmarks show that industry experiences schedule slip of between 45-50 per cent for off-the-shelf projects and 60 per cent for innovative projects. The current average schedule slip of post-Kinnaird projects of approximately 11 per cent compared with 66 per cent for pre Kinnaird projects and industry benchmarks provides a positive indication of the progress in improving the performance of DMO managed major equipment projects.

Continuous Improvement

1.14 During 2012-13, the DMO continued to pursue organisational business improvement, aimed at enhancing its core business of equipping and sustaining the ADF.

Negotiation Cell

1.15 In 2012-13, the DMO stood up a Negotiation Cell to improve the conduct of commercial negotiations and achieve better commercial outcomes for the Commonwealth. The DMO has successfully completed a pilot activity

which demonstrated the benefits of engaging external experts to coach, mentor the DMO team and lead the DMO negotiation team.

Acquisition and Sustainment Planning Framework

1.16 The 2008 Mortimer review included improvements to DMO's acquisition strategy development process during the requirements phase of the capability systems life cycle. To support this improvement activity, the DMO has developed a new Acquisition and Support Implementation Strategy (ASIS). The new guidance places greater emphasis on implementation of the support system to ensure whole of life issues are better addressed early in the project life cycle. ASIS has been trialled with a group of projects and Senior DMO Executive workshops. The ASIS policy and guidance was released as an Exposure Draft in September 2013.

Schedule Management

1.17 Accurate schedule estimates are an essential enabler of predictable schedule performance. To this end, DMO is currently driving a number of initiatives to improve the schedule estimation of Defence major capital acquisition projects including:

- (a) DMO has established a schedule data repository. The repository leverages data made available by the United States Department of Defense through a Memorandum of Understanding signed in 2012 and provides DMO project Managers access to project cost and schedule estimation data for software intensive projects as a Basis of Estimate in project planning and schedule preparation.
- (b) DMO is assisting Capability Development Group (CDG) with trialling of Open Plan Professional scheduling software (which is the same software that the DMO uses for schedule management).
- (c) DMO, also in conjunction with CDG, is developing a Defence Cost and Schedule Estimation Manual to assist projects with the development of cost and schedule estimates.

Project Performance Reporting System

1.18 The Project Performance Reporting System (PPRS), which was released in November 2011, provides cost and schedule Earned Value Performance metrics to enable managers to assess project status, budget feasibility and overall project achievement against plan. PPRS reports are now part of the

standard gate review data pack and projects are asked to explain observed trends and deviations at the gate review.

Project Controls Manual

1.19 DMO is developing a Project Controls Manual which will update a number of monitoring, controlling, scheduling, and earned value management policy and processes and replace it with a single reference document. The manual will take into account updates to International and National standards and will provide staff with a single consolidated reference document of project controls information. The new manual, along with the Project Management Manual and the Project Risk Management Manual, will form the foundation reference library for DMO Project Managers.

DMO Schedule Compliance Risk Assessment Method (SCRAM)

1.20 Version 2 of the DMO Schedule Compliance Risk Assessment Method (SCRAM), developed by the DMO to foster and encourage schedule performance improvement in materiel acquisition, was released in 2012-13. As well as an improved SCRAM Process Reference and Assessment Models V2.0, the DMO SCRAM product suite now incorporates SCRAM Introductory and Assessor training courses as well as a SCRAM Assessor Guidebook. An assessor certification framework has been introduced to control the integrity, quality and repeatability of the SCRAM assessment process.

1.21 During the past year there have been three additional independent SCRAM reviews performed on the Joint Strike Fighter Program using a newly adopted and scientific Software Parametric Analysis technique to model and forecast Mission System software development duration.

1.22 Further development and refinement of the DMO SCRAM methodology is continuing with work to commence in October 2013 to examine extending the methodology to incorporate Technical Implementation Risk Assessment (TIRA). If feasible, TIRAs will provide a framework, a systematic process and guidance for the conduct of DMO technical risk assessments capturing lessons learned and past experience. TIRAs would also support DMO Materiel Implementation Risk Assessments (MIRA).

DMO Strategic Risk Environment

1.23 The Defence White Paper 2009 highlighted 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.¹⁴⁴ This is driven by the complex and rapidly evolving nature of military technology and the necessarily long lead times involved in developing, acquiring and fielding defence systems.

1.24 The Defence White Paper also noted, "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".¹⁴⁵ In other words, a change in circumstances may require different capabilities.

1.25 The CEO DMO and the Executive Committee are refreshing the DMO's Strategic Risks to ensure that the DMO Risk Management framework is aligned to the strategic goals and themes articulated in the 2013-2015 DMO Strategic Framework.

DMO Project Risk Management Framework

1.26 A comprehensive review of the Project Risk Management Manual (PRMM) was undertaken to ensure that DMO Project Managers have access to current project risk management policy and principles to enable effective risk management in acquisition projects.

1.27 A Risk Categorisation Framework was added to the manual to provide DMO projects with a standardised approach to categorising risks and therefore enabling the improved reporting of risk trends and identification of strategic and enterprise risks. An additional chapter was also developed to provide guidance on the MIRA. This information incorporated a template to facilitate standardised MIRA reporting by projects. Additional guidance on the conduct of Materiel Implementation Risk Assessments and strengthened guidance on contingency management practices were developed to ensure Project Managers understand their responsibility to manage, review and report on project related risk and associated contingency.

Managing Contractors

1.28 In 2012-13, the DMO identified a number of new initiatives designed to drive a stronger commercial outlook and ultimately improve performance.

¹⁴⁴ Defending Australia in the Asia Pacific Century: Force 2030. Defence White Paper 2009.

¹⁴⁵ Defending Australia in the Asia Pacific Century: Force 2030. Defence White Paper 2009, Para 3.20, p. 28.

One such initiative being explored the concept of 'managing contractor' arrangements where industry specialists are invited to compete for the role of managing selected procurement activities.

Information and Communications Technology (ICT) Services

1.29 The DMO relies on the Chief Information Officer Group (CIOG) to deliver and support the ICT infrastructure necessary to deliver materiel capability to the war fighter. In conjunction with CIOG, the DMO is continuing to rationalise dedicated DMO ICT infrastructure through a number of initiatives, including decommissioning or transferring to CIOG standalone Local Area Networks. In addition, the DMO is updating its Information Management Strategy. The updated strategy will align the DMO's information requirements to the DMO Strategic Framework.

1.30 The *DMO Information Management Investment Plan 2013-18* encompasses all significant Information Management investment across the DMO, excluding DCP projects and initiatives, programmes and projects being undertaken by CIOG or other groups for which the DMO is a stakeholder rather than the lead. The Plan has a specific focus on Corporate/Business Information and aims to complement Defence Information Management Strategy and Plan. The use of a five year plan facilitates the securing of senior executive commitment to multi-year strategic information management initiatives within funding constraints.

1.31 The preferred systems of Predict! (risk management software suite) and Excel spreadsheets are used by the DMO to manage risk, and the DMO has advised Project Managers that all other risk management systems are no longer supported.

1.32 The limitations in the enterprise systems for managing project financial information have been highlighted in previous editions of the MPR. Improvements are being pursued through a range of strategies. DMO is continuing to pursue its Acquisition Budget Management Improvement Program which has a goal of a transitioning the functions from its current program-level budget management system for the Acquisition Program (CEPPlan) to the enterprise budget management system (Budget and Output Reporting Information System (BORIS)). DMO is continuing to work with Defence to prioritise requirements in order to progress this reform.

1.33 In addition to improvements to program-level budget management and reporting, there are plans to standardise project financial management tools across DMO projects to support data integration between the project and

program levels. A business case for an Integrated Project Management System has been developed and a cost management system that will interface between OpenPlan Professional (schedule) and ROMAN/BORIS financial systems to automate and increase the integrity of project data and reporting is being scoped.

Document Management systems

1.34 Objective is the mandated records management tool in Defence and was rolled out across the DMO over the last two years with all System Program Offices using Objective by 30 June 2013. It enables the DMO to meet its recordkeeping obligations while at the same time facilitating information management and workplace collaboration.

Professionalisation

1.35 In 2012-13, a project management performance gap analysis was conducted to identify shortcomings in the DMO's professional development of project managers including benchmarking the DMO against industry.

1.36 The results showed that DMO Project Managers scored better than the global cross-industry benchmark and there has been significant improvement in a number of areas such as time management, particularly for those who achieved a competency based project management certification. The gap analysis did identify areas for improvement in relation to advanced project management techniques and risk management.

2. Summary of Major Project Performance in 2012–13

Introduction

2.1 This chapter presents a performance overview for projects included in the 2012-13 DMO MPR. It includes detailed analysis of the three key variables of cost, schedule and materiel systems delivery against the Government's approved budget, schedule and scope. The analysis commences at an aggregate level, discussing performance of all 29 MPR projects collectively, before addressing some project specifics.

2.2 Given that the MPR only covers 29 projects of around 180 major projects, or 16 per cent of the total major acquisition portfolio, caution must be applied when extrapolating any analysis to the entirety of DMO's acquisition effort. This is because the projects in the MPR are not necessarily representative of all projects: the 29 projects are the largest by budget and, in general, involve a much higher level of complexity than the average or lowest budget projects.

Project Performance

2.3 Table 2.1 provides a summary of cost performance and Table 2.2 shows schedule performance for the 29 projects in the MPR. Table 2.3 provides a summary of the key characteristics of each project in terms of maturity and level of development required. The DMO's analysis shows that while projects have been managed within approved budgets, schedule performance, as identified in previous MPRs, continues to be the key issue for DMO and Defence.

Table 2.1 – Project Budget Status

Project	Government Approved Budget \$m	Price Indexation (to July 2010) \$m	Foreign Exchange Variations \$m	Scope Changes \$m	Transfers \$m	Budgetary Adjustments \$m	Net Variation %	Current Budget \$m
AWD Ships	7,207.4	1,173.2	(511.4)	-	-	-	0.0%	7,869.2
Wedgetail	3,269.5	1,111.1	(108.8)	225.6	618.6 ⁴⁶	(173.2)	-5.3%	3,843.7
MRH90 Helicopters	957.2	679.8	(345.2)	2,597.1	(239.0)	-	0.0%	3,649.9
Super Hornet	3,728.2	391.2	(422.9)	-	(33.3)	(107.2)	-2.9%	3,556.0
LHD Ships	2,959.9	428.4	(322.5)	-	9.3	-	0.0%	3,073.5
MH-60R Helicopters	3,029.6	0.1	(71.4)	-	-	-	0.0%	2,958.3
Joint Strike Fighter	2,751.6	351.0	(507.3)	-	-	(2.9)	-0.1%	2,592.4
ARH Tiger Helicopters	1,584.0	418.2	120.3	-	(84.3)	(6.7)	-0.4%	2,031.5
Hornet Upgrade	1,300.0	323.5	2.0	221.5	35.0	(3.4)	-0.3%	1,878.6
Air to Air Refuel	2,076.6	484.1	(469.0)	-	(135.5)	(153.6)	-7.4%	1,802.6
FFG Upgrade	1,392.5	230.3	184.0	(66.7)	(152.6)	(10.9)	-0.8%	1,450.1
Bushmaster Vehicles	295.0	124.6	(5.7)	840.5	-	-	0.0%	1,254.3
Overlander Vehicles	3,171.2	0.0	5.8	(2,186.5)	(10.3)	-	0.0%	990.5
Next Gen Satellite	884.9	132.4	(153.7)	-	-	-	0.0%	863.7
Anzac ASMD 2B	248.8	76.0	(12.4)	214.7	148.7	-	0.0%	675.9
HF Modernisation	505.0	148.1	12.8	(80.1)	(4.8)	(0.9)	-0.2%	580.1
Additional Chinook	637.6	46.9	(120.5)	-	-	-	0.0%	564.0
Armadales	436.8	74.5	(12.1)	67.1	(29.8)	0.7	0.2%	537.2
Collins RCS	455.3	56.5	(60.1)	-	(0.9)	(0.8)	-0.2%	449.9
Battle Comm. Sys. (LAND)	436.4	-	4.8	-	-	-	0.0%	441.2
UHF SATCOM	459.2	18.0	(43.2)	-	-	-	0.0%	435.8
Heavyweight Torpedo	238.1	99.4	(126.3)	213.3	1.0	(0.2)	-0.1%	425.3
Collins R&S	72.0	74.4	(6.2)	310.3	(38.3)	(0.8)	-1.1%	411.4
SM-2 Missile	552.6	127.9	(71.7)	-	(86.5)	(122.1)	-22.1%	400.2
Anzac ASMD 2A	449.0	101.3	(3.9)	-	(159.8)	(0.1)	0.0%	386.5
155mm Howitzer	348.2	17.2	(41.6)	-	-	-	0.0%	323.9
Stand Off Weapon	370.2	62.6	(40.4)	(75.0)	-	-	0.0%	317.4
Battle Comm. Sys.	333.9	15.6	(33.5)	(7.0)	-	-	0.0%	308.0
C-RAM	265.6	5.4	(17.1)	-	-	-	0.0%	253.9
Total	40,416.0	6,771.7	(3,177.2)	2,274.8	(162.5)	(582.1)	-1.4%	44,325.0

146 In this year's MPR we have included data for Project Olympus which was a precursor/related project. Prior MPR's only reported the 'wedgetail' element of this activity.

Table 2.2 - Project Schedule Status

Project	Originally estimated FMR ¹⁴⁷	Forecast FMR at 30 June 2012	Forecast FMR at 30 June 2013	Variance Factor ¹⁴⁸	Originally estimated FOC	Forecast FOC at 30 June 2012	Forecast FOC at 30 June 2013	Variance Factor
AWD Ships	Dec 17	Dec 18	Sep 19	1.2	May 18	Dec 19	Mar 20	1.2
Wedgetail	Nov 12	Aug 13	Dec 14	1.2	Dec 08	Nov 15	Jun 15	1.8
MRH90 Helicopters	Oct 14	Oct 14	Oct 14	1.0	Jul 14	Jul 14	Jul 14 ¹⁴⁹	1.0
Super Hornet	Aug 12	Oct 12	Jan 13	1.1	Dec 12	Dec 12	Dec 12	1.0
LHD Ships	Aug 15	Aug 15	Aug 15	1.0	Nov 16	Nov 16	Nov 16	1.0
MH-60R Helicopters	Dec 23	Dec 23	Dec 23	1.0	Dec 23	Dec 23	Dec 23	1.0
Joint Strike Fighter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARH Tiger Helicopters	Jul 12	Jul 12	Jun 13	1.1	Jun 09	Jan 16	Jan 16	1.6
Hornet Upgrade	Aug 11	Sep 12	Sep 12	1.1	Aug 11	Jun 14	Apr 16	1.4
Air to Air Refuel	Feb 13	Oct 13	Nov 14	1.2	Mar 11	Dec 13	Dec 14	1.5
FFG Upgrade	Dec 11	Sep 13	Dec 14	1.2	Dec 05	Dec 12	Dec 14	2.4
Bushmaster Vehicles ¹⁵⁰	Sep 16	Sep 16	Sep 16	1.0	Dec 16	Dec 16	Dec 16	1.0
Overlander Vehicles ¹⁵¹	Jul 16	Jul 16	Jul 16	1.0	Jul 16	Jul 16	Jul 16	1.0
Next Gen Satellite	Sep 13	Sep 13	Sep 13	1.0	Dec 14	Dec 14	Dec 14	1.0
Anzac ASMD 2B	Jul 17	Sep 17	Sep 17	1.0	Mar 13	Oct 17	Oct 17	1.6
HF Modernisation	Feb 16	Apr 15	Apr 16	1.0	May 05	Aug 15	Sep 16	2.3
Additional Chinook	Jan 17	Jan 17	Jan 17	1.0	Jan 17	Jan 17	Jan 17	1.0
Armidales	Nov 07	Nov 07	Nov 07	1.0	Mar 09	Dec 12	Oct 12	1.6
Collins RCS	Jan 16	Jan 16	Feb 19	1.2	Nov 10	Nov 16	Nov 19	2.1
Battle Comm. Sys (Land)	Jul 16	-	Jul 16	1.0	Dec 16	-	Dec 16	1.0
UHF SATCOM ¹⁵²	Mar 14	-	Mar 14	1.0	Jun 18	-	Jun 18	1.0
Heavyweight Torpedo	Nov 13	Nov 13	Aug 18	1.4	Nov 13	Nov 13	Nov 13	1.0
Collins R&S	Oct 22	Oct 22	Oct 22	1.0	Jun 14	Sep 22	Sep 22	1.6
SM-2 Missile	Sep 12	Jan 13	Jan 14	1.2	Dec 12	Apr 13	Mar 14	1.2
Anzac ASMD 2A	Jul 17	Sep 17	Sep 17	1.0	Dec 11	Oct 17	Oct 17	1.7
155mm Howitzer	Sep 13	Sep 13	Sep 13	1.0	Dec 13	Dec 13	Dec 13	1.0
Stand Off Weapon	Dec 12	Dec 12	Sep 13	1.1	Dec 10	Dec 12	Sep 13	1.6
Battle Comm. Sys.	Apr 13	Dec 13	Dec 13	1.2	Apr 13	Dec 13	Dec 13	1.2
C-RAM	Nov 12	Jan 13	Jan 13	1.1	Nov 12	Jan 13	Jan 13	1.1
			Average Variation	1.08			Average Variation	1.35

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

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

149 Although MRH90 Helicopters does not have a current Forecasted FOC date recorded in the PDSS, the date used is the last known date prior to Deed 2 settlement.

150 Bushmaster was re-baselined by Government. Further details are in the PDSS.

151 Overlander was re-baselined by Government. Further details are in the PDSS.

152 UHF SATCOM had a review of project submission documents and highlighted the omission of some key milestone dates in the PDSS. These have now been reflected accurately. For further details, see the PDSS.

Table 2.3 Project Characteristics

Project	First reported in MPR of	Customer	Purpose of Capability ¹⁵³	Level of Development ¹⁵⁴	Acquisition Category ¹⁵⁵	Pre-/Post-Kinnaid ¹⁵⁶	Project Stage	Prime Systems Integrator
AWD Ships	2008-09	Navy	New	Australised MOTS	I	Post	Detailed Design Review	AWD Alliance
Wedgetail	2007-08	Air Force	New	Developmental	I	Pre	Final Materiel Release	Boeing Company
MRH90 Helicopters	2008-09	Army/Navy	Replacement	Australised MOTS	I	Post	Complete Acceptance Testing	Australian Aerospace
Super Hornet	2008-09	Air Force	Replacement	MOTS	II	Post	Phase 1: Acceptance Into Service Phase 2: Final Materiel Release	US Government
LHD Ships	2008-09	Joint	New	Australised MOTS	I	Post	Detailed Design Review	BAE Systems Australia
MH-60R Helicopters	2011-12	Navy	Replacement	MOTS	II	Post	Detailed Design Review	US Government
Joint Strike Fighter	2010-11	Air Force	Replacement	Developmental	I	Post	Enter Contract	US Government
ARH Tiger Helicopters	2007-08	Army	New	Australised MOTS	II	Pre	Acceptance Into Service	Australian Aerospace
Hornet Upgrade	2007-08	Air Force	Upgrade	Australised MOTS	II	Pre	Project Completion	DMO
Air to Air Refuel	2008-09	Air Force	New	Developmental	II	Pre	Complete Acceptance Testing	Airbus Military
FFG Upgrade	2007-08	Navy	Upgrade	Developmental	II	Pre	Final Contract Acceptance	Thales
Bushmaster Vehicles	2007-08	Army/Air Force	Replacement	Australised MOTS	III	Pre	Complete Acceptance Testing	Thales
Overlander Vehicles	2009-10	Army	Replacement	Australised MOTS	II	Post	Phase 3A: Service Release	DMO
Next Gen Satellite	2009-10	Joint	New	MOTS	II	Post	System Integration & Test	US Government
Anzac ASMD 2B	2009-10	Navy	Upgrade	Developmental	I	Post	Complete Acceptance Testing	ANZAC Alliance
HE Modernisation	2007-08	Joint	Upgrade	Developmental	II	Pre	Complete Acceptance Testing	Boeing Defence Australia
Additional Chinook	2010-11	Army	Replacement	MOTS	III	Post	Detailed Design Review	US Government
Armadales	2007-08	Navy	Replacement	Australised MOTS	III	Pre	Acceptance Into Service	Defence Maritime Services
Collins RCS	2007-08	Navy	Upgrade	Australised MOTS	IV	Pre	Acceptance Into Service	DMO
Battle Comm. Sys (Land)	2012-13	Joint	Replacement	MOTS	III	Post	Acceptance Into Service	DMO
UHF SATCOM	2010-11	Joint	Upgrade	MOTS	II	Post	System Integration & Test	IntelSat
Heavyweight Torpedo	2009-10	Navy	Replacement	MOTS	III	Pre	Complete Acceptance Testing	US Government
Collins R&S	2009-10	Navy	Upgrade	Australised MOTS	III	Pre	Detailed Design Review	ASC
SM-2 Missile	2010-11	Navy	Replacement	Australised MOTS	III	Pre	Acceptance Into Service	DMO
Anzac ASMD 2A	2009-10	Navy	Upgrade	Australised MOTS	II	Pre	Complete Acceptance Testing	ANZAC Alliance
155mm Howitzer	2010-11	Army	Replacement	MOTS	II	Post	Complete Acceptance Testing	US Government
Stand Off Weapon	2009-10	Air Force	New	Australised MOTS	II	Post	Acceptance Into Service	US Government
Battle Comm. Sys.	2010-11	Army	New	Australised MOTS	II	Post	System Integration & Test	DMO
C-RAM	2011-12	Army	New	MOTS	III	Post	Final Contract Acceptance	US Government

153 '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.

154 Appendix 2 has full definition of levels of development.

155 The DMO's categorisation of projects that represent the complexity of the project on a sliding scale of I to IV with ACAT I representing the most complex projects.

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

Budget Performance

2.4 Project budgets against which cost performance is measured are subject to variations arising from: exchange rate variations; Government approval of changes in scope and transfers to Defence Groups. Following the move to out-turned project budgets in July 2010, there are no further variations to project budgets as a result of inflationary effects.

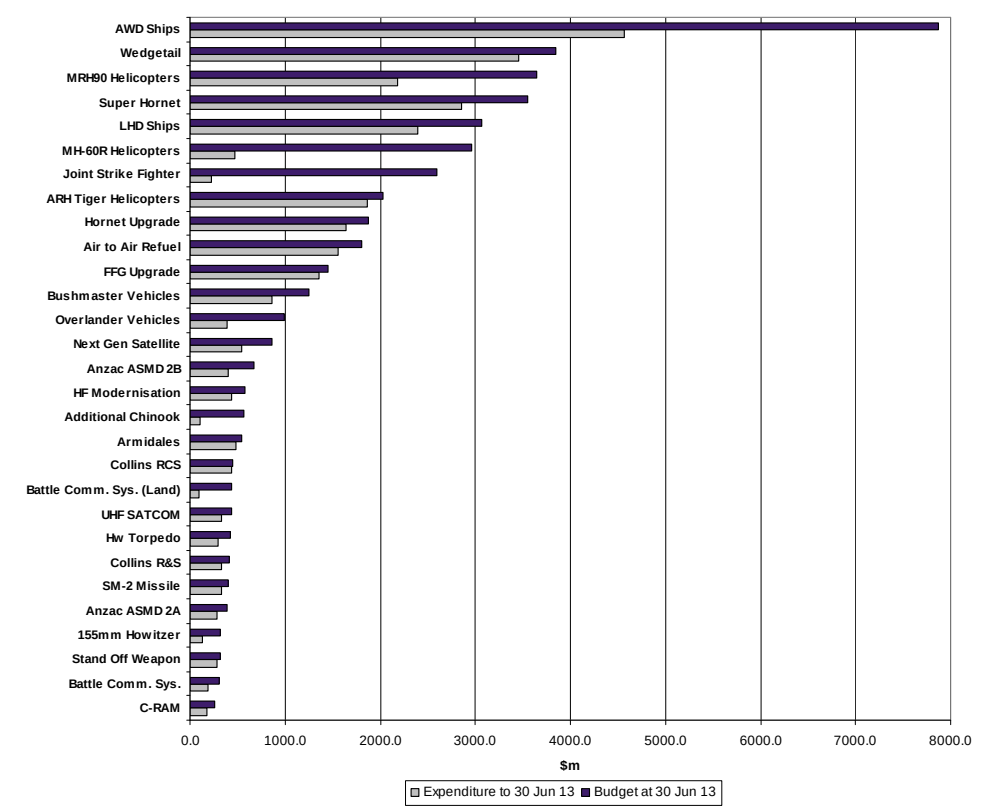
2.5 Budget variation attributions are further defined in Appendix 6.

2.6 Table 2.1 includes a summary of the project budget variations from date of Government approval to 30 June 2013. The significant real variations that occurred during 2012-13 include:

- **Scope changes:** Projects with the largest budget 'real variation' resulting from Government approved scope changes are:
 - Bushmaster Vehicles (March 2013) – The budget increase was to cover the acquisition of 215 additional vehicles to maintain critical industry skills; and
 - Stand Off Weapon (October 2012) – The budget decrease is due to Operational Test and Evaluation being successfully completed within budget.

2.7 Figure 2.1 provides a comparison of expenditure as at 30 June 2013 compared to the total approved budget at that date. No project has exceeded its total approved budget. While this provides an indicator of project progress, the percentage of budget spent is dependent on the nature of the project and the level of early investment that may be required for project start-up and non-recurring engineering effort.

Figure 2.1 Comparison of Overall Project Budget and Expenditure to 30 June 2013 (in \$m)



2.8 The relationship between project expenditure and project progress is not necessarily linear. The profile of expenditure against total approved budget is determined by several factors including the level of development required for the acquisition. For example, a project with a low level of development 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 highly 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.

2.9 Another factor is the evolution of the project and its performance to date. A project may be well advanced but show a low level of expenditure against their total budget. This may result from poor contractual performance

culminating in withholding of payments against specific milestones. This is, in effect, a deferral of payments that will be re-instated upon contractor achievement of milestones.

Contingency Management

2.10 In keeping with standard commercial practice, cost estimates for major Defence capital investment programs include a contingency provision that allows Project Managers the facility to retire risk, and treat risk events that have materialised into an issue, without the administrative overhead 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 generally more complex than commercial projects.

2.11 Across the life of the 29 projects (that is from August 1996 to June 2013), of the total contingency allocated, approximately \$1.2b (or 2.7 per cent of the total of approved project budgets of \$44.3b) has been applied over the 17 year period to retire project risks. The areas where risk has been retired using project contingency budgets include:

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

2.12 It should be noted that any contingency budget expended is done so in accordance with Commonwealth legislation and regulations. In addition, DMO has established a framework which provides full accountability and traceability of all management decisions related to the management of the Project Contingency budget.

Schedule Performance

2.13 In 2010 Defence introduced Initial Materiel Release (IMR) and Final Materiel Release (FMR) as more appropriate milestones for measuring DMO acquisition performance in contributing to the Capability Managers' coordination of all capability elements to achieve Final Operational Capability (FOC). Schedule analysis presented in previous reports was based on achievement, or expected achievement, of FOC.

2.14 Figure 2.2 represents the schedule performance for each of the major projects covered in this year's MPR. The chart shows the original project approval date, the originally approved FMR estimate and the forecast FMR as at 30 June 2013.

2.15 This chart also highlights the time it can take to deliver complex Defence acquisition projects. There are five projects, ARH Tiger Helicopters, Hornet Upgrade, FFG Upgrade, Bushmaster Vehicles and HF Modernisation that all commenced before the turn of the century with a further six projects having commenced over a decade ago.

2.16 There are four projects: C-RAM; Hornet Upgrade; ARH Tiger Helicopters; and Super Hornet, in the MPR that achieved FMR during the 2012-13 financial year. Another five are scheduled to achieve FMR during 2013-14: Battle Command Systems; 155mm Howitzer; Stand Off Weapon; SM-2 Missile; and, Next Generation Satellite.

Figure 2.2 – Schedule from Approval to Current FMR Estimate



Notes:

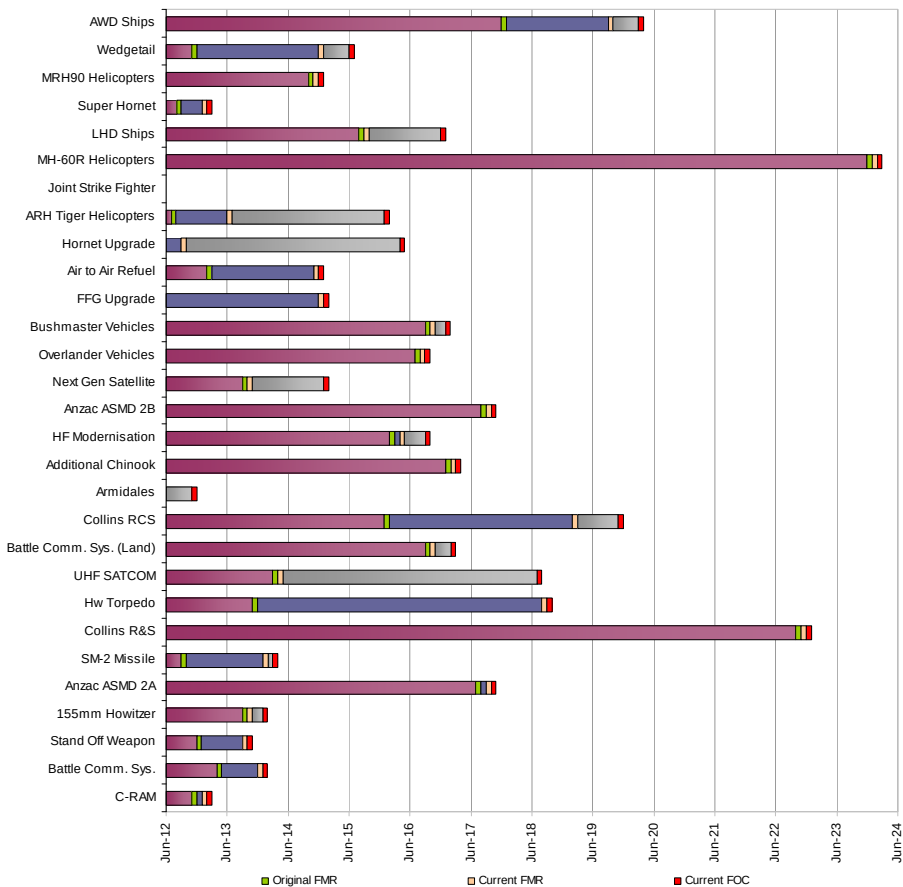
1. As the Joint Strike Fighter project does not have a defined FMR, the Materiel Release 1 milestone forecast has been used.

2.17 The period between FMR and FOC dates indicates the time required by Capability Managers to bring together all the other Fundamental Inputs to Capability elements, usually after the DMO has delivered the materiel elements of capability¹⁵⁷. Figure 2.3 provides an indication of the estimated time required to complete this work.

2.18 There are three projects in the MPR that achieved FOC during 2012-13, being: C-RAM; Armadales; and Super Hornet. Another four are scheduled to achieve FOC during 2013-14. Those four projects are: Battle Command Systems; 155mm Howitzer; Stand Off Weapon; and, SM-2 Missile. The declaration of FOC generally marks the formal transition of capability from the acquisition to the sustainment phase of the capability life cycle at that time.

157 While FMR is generally expected to occur ahead of FOC, there will be instances where FMR is due to occur after FOC. For example Joint Strike Fighter does not have a defined FMR or FOC date whilst the Collins R&S project anticipates the Capability Manager declaring FOC ahead of DMO realising FMR at the completion of a docking cycle one month later. It is likely that this may happen for other new platforms or multi-platform upgrade projects where finalisation of some aspects of materiel acquisitions (e.g. spares or future warrantee resolution) may extend beyond FOC.

Figure 2.3 – Current FMR and FOC Estimates



Notes:

1. Joint Strike Fighter has no defined FMR or FOC date.

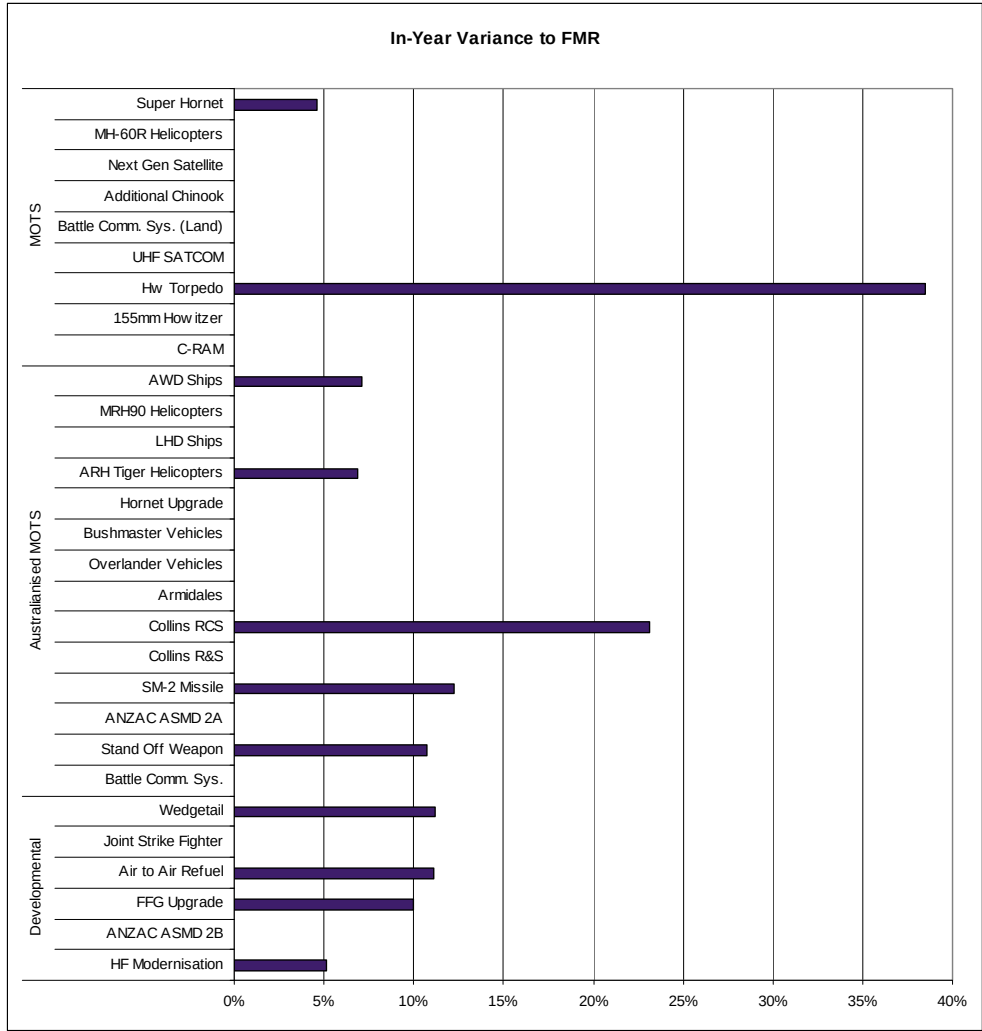
In-year Schedule Variance

2.19 Figure 2.4 illustrates the in-year schedule variance for FMR as a percentage of the total time expected to reach the FMR milestone. In the 2012-13 MPR, twelve projects re-assessed their estimated FMR date.

2.20 The largest individual in-year variance to forecast FMR dates is 38 per cent for Heavyweight Torpedo, reflecting an anticipated delay of fifty-seven months (almost five years) due to currently forecast platform availability. The second largest in-year FMR variance, Collins RCS, has a variance of 23 per cent

also due to forecast platform availability. These adjustments are consistent with Defence’s initiatives arising from the Coles review.

Figure 2.4: In-year FMR Schedule Variance, by project type



Schedule Variance

2.21 Figure 2.5 displays the variance to forecast FMR dates, as a percentage of originally estimated duration, for each of the 29 projects in the MPR, noting that Joint Strike Fighter does not have a defined FMR or FOC. At 30 June 2013,

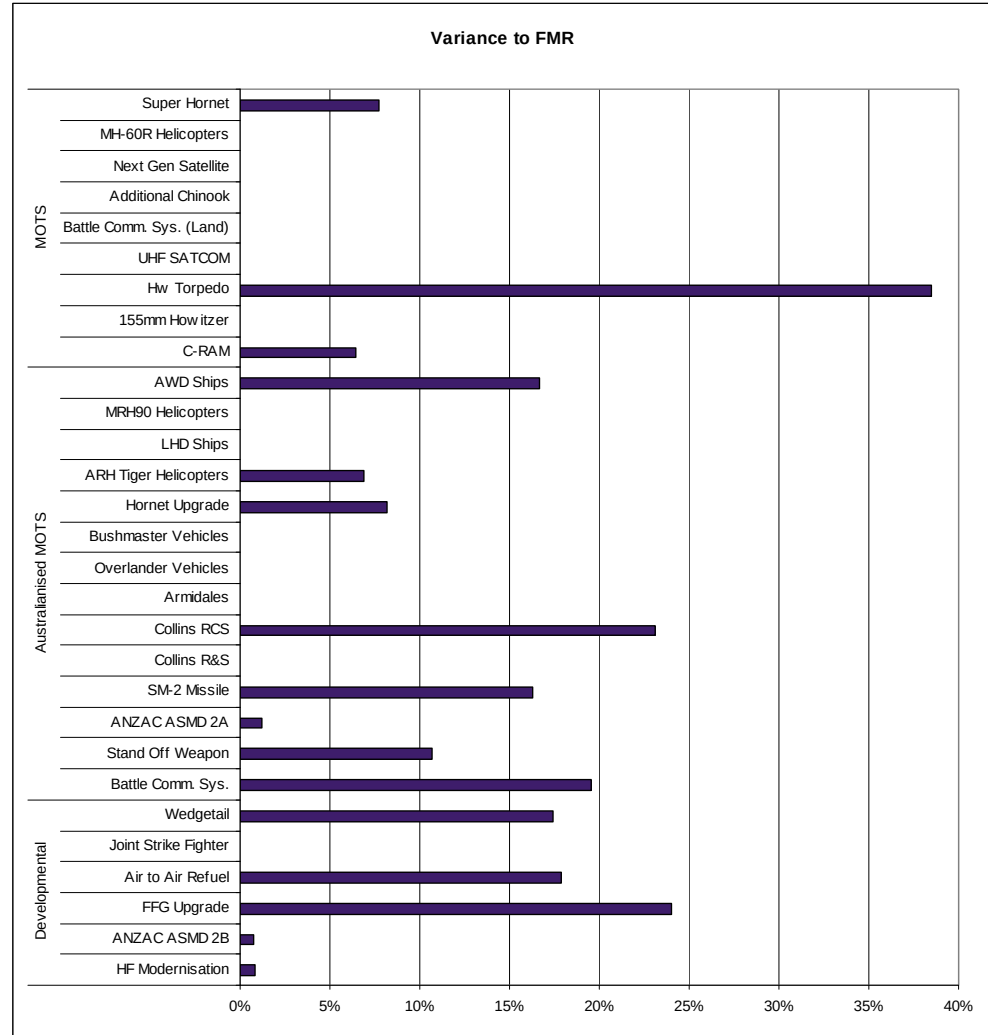
the average FMR variance for all of the MPR projects had increased to eight per cent from two per cent at 30 June 2012.

2.22 Three projects reported an FMR schedule variation of 20 per cent or greater, across the life of the project.

2.23 The largest individual variance to forecast FMR dates for the life of the project, noted in the last financial year, is 38 per cent for Heavyweight Torpedo, reflecting a delay of fifty-seven months (almost five years) due to currently forecast platform availability. Collins RCS has a variance of 23 per cent also due to forecast platform availability. The reduced availability is consistent with the Coles review.

2.24 FFG Upgrade has a variance of 24 per cent, across the life of the project, due to the extended implementation period required for the Torpedo Decoy System. The majority of the FFG capability has been delivered and has been in use by Navy for the last 23 years.

Figure 2.5: Schedule Variance for FMR, by Project Type



Notes:

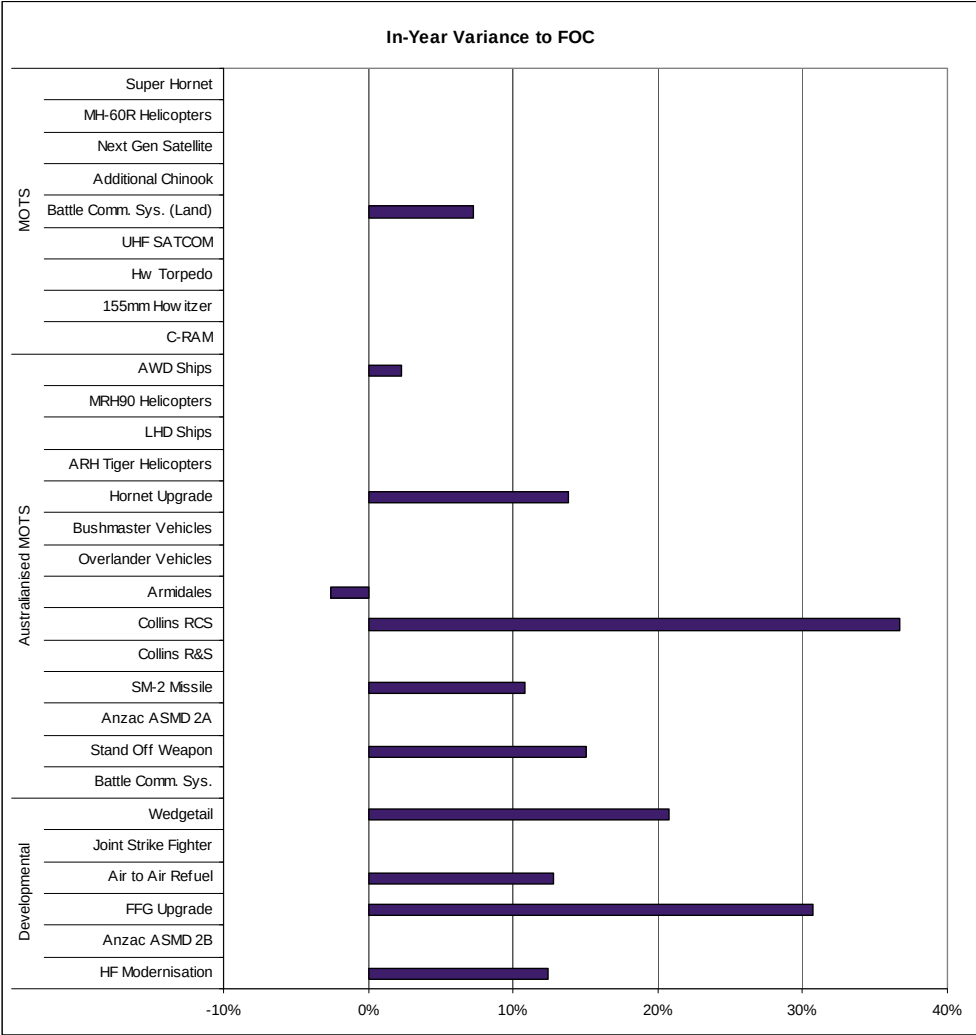
1. Joint Strike Fighter has no defined FMR or FOC date.

2.25 Figure 2.6 shows in-year schedule variance to forecast FOC dates, as a percentage of the 2011-12 MPR project duration estimate. In the 2012-13 MPR, ten projects re-assessed their forecast FOC date as follows:

- The largest in-year schedule variances were recorded by Collins RCS, Wedgetail and FFG Upgrade projects which have had in-year schedule variances exceeding 15 per cent.

- Collins RCS, FFG Upgrade and Wedgetail variances are discussed below in paragraph 2.29.
- The Armidale project regained some schedule and achieved FOC in October 2012.

Figure 2.6: In-year FOC Schedule Variance, by project type



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

2.26 The variance to forecast FOC dates, as a percentage of originally estimated duration, for 28 of the 29 projects in the MPR, noting that JSF does not have a defined FOC, averaged 35 percent at 30 June 2013. This is an increase from 30 per cent as reported in the 2011-12 MPR.

2.27 The five oldest projects (ARH Tiger Helicopters, Hornet Upgrade, FFG Upgrade, Bushmaster Vehicle and HF Modernisation), whilst yet to achieve FOC, are substantially delivered and the lessons learned have been applied to inform contemporary DMO project management. If these five projects were excluded from the analysis above the resultant average schedule variation would be 26 per cent.

2.28 Figure 2.7 charts the schedule variance as a percentage of the originally estimated project duration from Government approval to FOC. The projects are grouped in the categories of Military Off-The-Shelf (MOTS), Australianised MOTS (AMOTS) and Developmental. The chart shows that, generally, MOTS projects are more likely to be delivered on time while AMOTS and Developmental acquisitions are more prone to underestimating technical complexity and systems integration effort.

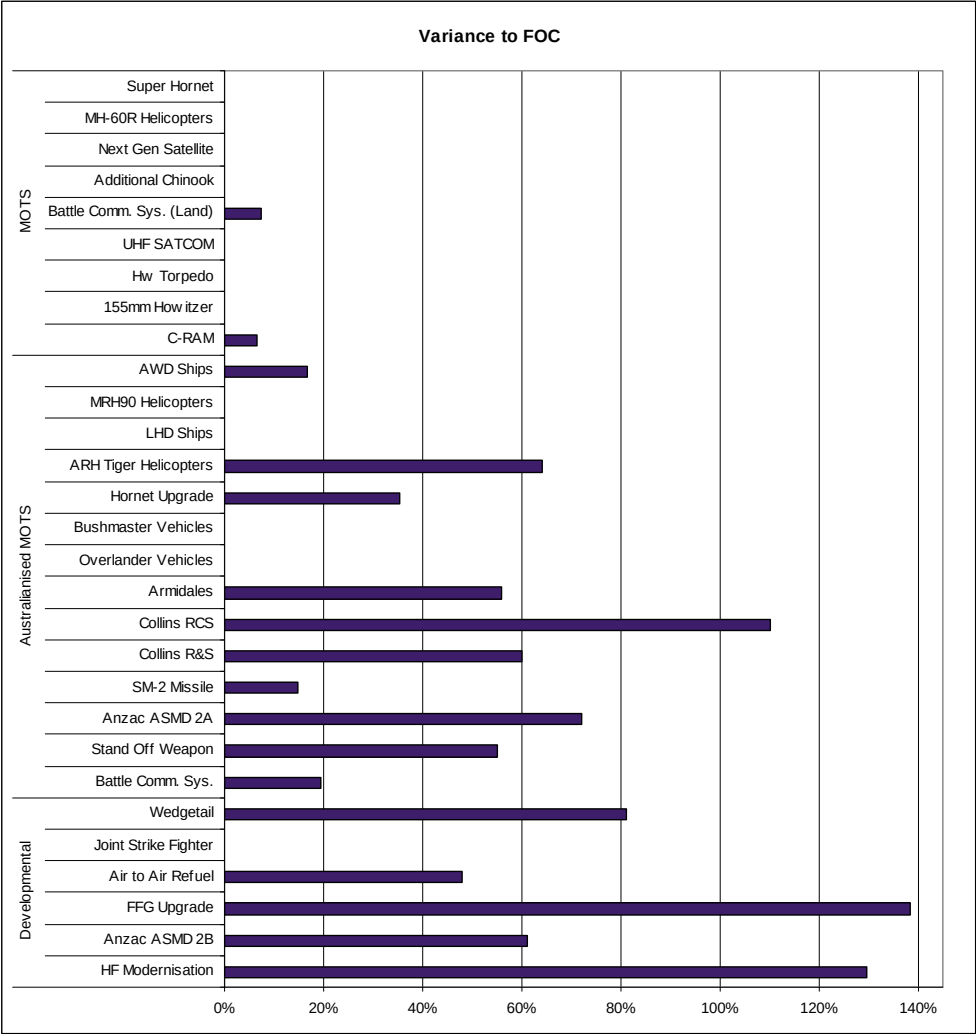
2.29 The number of projects reporting an FOC schedule variation of 50 per cent or greater has increased from nine to ten. Delays to FOC over the life of the projects reported in the MPR are attributed to:

- ARH Tiger project delays are a result of the reduction in the flying rate of effort experienced by ARH fleet.
- Hornet Upgrade delays are due to a further requirement to align Hornet Aircrew Training System with fleet aircraft, noting that this project has achieved FMR.
- Wedgetail, FFG Upgrade and HF Modernisation project delays are fundamentally due to an initial underestimation of project complexity. More specifically, the FFG Upgrade issues concerned the complexity of large scale platform integration efforts; HF Modernisation underestimated the level of effort required to deliver the system; and Wedgetail has faced difficulties integrating the phased array radar and other mission critical elements into an operational system. Most of the capability required of these projects has been delivered and in operation for nine years in the case of HF Modernisation, nine years for

Wedgetail and seven years for FFG Upgrade elements on ships that have been in service for over 25 years.

- The two Collins projects – Replacement Combat System (RCS) and Reliability and Sustainment (R&S) – have been negatively impacted by limited platform availability due to operational requirements arising from the implementation of the Coles review and unscheduled maintenance requirements having a detrimental impact on the Full Cycle Docking program.
- Deferral of FOC for the ANZAC Anti-Ship Missile Defence program (Phases 2A and 2B) resulted from a Government approved change of project delivery strategy and scope, including the decision to substitute the Very Short Range Air Defence System option with a phased array radar capability. This is a significant capability advantage over the originally approved scope, and allowed leading edge Australian technology to be proven in one ship before committing to the upgrade of the remaining seven ships.
- The Stand Off Weapon project incurred delivery delays caused by a fuze reliability issue.

Figure 2.7: Schedule Variance for FOC Since Government Approval, by Project Type



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

Effect of Kinnaird Reforms on Schedule

2.30 Implementation of the Kinnaird reforms in 2004 has delivered a marked improvement in schedule performance for Defence capability acquisition projects. As shown in Table 2.4, average schedule variance to FOC for pre-Kinnaird MPR projects increased from 56 per cent in 2011-12 to 66 per

cent, while the average variance for post-Kinnaird projects increased from 10 per cent in 2011-12 to 11 per cent. This is indicative of a general shift to more military off-the-shelf rather than developmental projects, as well as the age and stage of the post-Kinnaird projects.

Table 2.4: Pre and Post Kinnaird Schedule Variance

		<i>FOC Variance as at 30 Jun 13</i>	<i>In-year FOC variance</i>	<i>Variance Factor</i>	<i>FOC Variance as at 30 Jun 13</i>	<i>In-year FOC variance</i>
Pre-Kinnaird	Wedgetail	81%	21%	1.81	66%	10%
	ARH Tiger Helicopters	64%	0%	1.64		
	Hornet Upgrade	35%	14%	1.35		
	Air to Air Refuel	48%	13%	1.48		
	FFG Upgrade	138%	31%	2.38		
	Bushmaster Vehicles	0%	0%	1.00		
	HF Modernisation	130%	12%	2.30		
	Armadales	56%	-3%	1.56		
	Collins RCS	110%	37%	2.10		
	Heavyweight Torpedo	0%	0%	1.00		
	Collins R&S	60%	0%	1.60		
	ANZAC ASMD 2A	72%	0%	1.72		
Post-Kinnaird	AWD Ships	17%	2%	1.17	11%	2%
	MRH90 Helicopters	0%	0%	1.00		
	Super Hornet	0%	0%	1.00		
	Overlander Vehicles	0%	0%	1.00		
	LHD Ships	0%	0%	1.00		
	MH-60R Helicopters	0%	0%	1.00		
	Joint Strike Fighter	N/A	N/A	N/A		
	Battle Comm. Sys. (Land)	7%	7%	1.07		
	Next Gen Satellite	0%	0%	1.00		
	ANZAC ASMD 2B	61%	0%	1.61		
	Additional Chinook	0%	0%	1.00		
	UHF SATCOM	0%	0%	1.00		
	SM-2 Missile	15%	11%	1.15		
	Stand Off Weapon	55%	15%	1.55		
	155mm Howitzer	0%	0%	1.00		
	Battle Comm. Sys.	20%	0%	1.20		
	C-RAM	6%	0%	1.06		

Schedule Variance Attribution

2.31 Schedule slip for developmental and Australianised MOTS projects is attributable to the higher levels of technical complexity and system integration risk. The higher the technical challenge, the higher the inherent risk to the schedule. Developmental projects are new and often at the leading edge of available technology. As such, it is not uncommon for projects to encounter unforeseen technical difficulties requiring significant modification that results in delay. Similarly, Australianisation can also encounter unforeseen technical difficulties and have an unanticipated impact on existing features of the baseline MOTS product. Rectifications of such issues often require extensive, time consuming remediation work.

2.32 Further analysis for the 2012-13 MPR has revealed additional drivers of schedule delays as shown in Table 2.5. Of the 10 projects that underestimated technical complexity, five could also identify some overestimation of industry capability and performance, and another two were also affected by approved changes to scope (Anzac ASMD 2A and 2B attained Government approval to acquire the more capable phased array radar based solution over the original very short range air defence system solution, though without an increase to schedule). In September 2012, Government announced a re-baselining of the AWD construction schedule¹⁵⁸, and limited platform availability was the primary driver for delays of Collins class submarine projects.

2.33 Three projects have a greater schedule delay to FOC as a result of Capability Manager decisions tying the project equipment to expected capability outcomes or operational imperatives.

158 Minister for Defence, Minister for Defence Materiel and Minister for Finance and Deregulation - Joint Media Release – Air Warfare Destroyer update, 6 September 2012.

Table 2.5 – Attribution of Schedule Variance Factors

Driver of Schedule Variance	Project
Platform availability	Collins RCS
	Collins R&S
Industry Capability / Budget Adjustments	AWD
Technical complexity – underestimation by industry and/or Defence of the complexity of developmental and/or large scale integration projects.	HF Modernisation
	FFG Upgrade
	Wedgetail
	Armadales
	Stand Off Weapon
	Air to Air Refuel
	ARH Tiger Helicopters
	Hornet Upgrade
Technical complexity and Scope Change	ANZAC ASMD 2A
	ANZAC ASMD 2B
FMS contracting Issues	SM-2 Missile
Capability Manager Decisions	Battle Comm. Sys.
	C-RAM

Materiel Scope Performance

2.34 Materiel Scope Performance measures represent the key materiel capability performance attributes of a project delivered by DMO and industry, which if not satisfied could have a significant detrimental effect on the eventual suitability of equipment for operational service. The Materiel Scope Performance measures for each project, as defined in the Materiel Acquisition Agreement, are identified from the project approval documentation, including the Operational Concept Document and the Function and Performance Specification, that details the capital equipment assets to be delivered.

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

2.36 The subjective ‘traffic light’ assessment of each element is indicative of:

- **Green:** a high level of confidence that they will be met;
- **Amber:** being under threat but still considered manageable and able to be met; and
- **Red:** at this stage, unlikely to be met.

2.37 For the 2012-13 DMO MPR, there are 281 individual Materiel Capability elements across the 29 projects with 269 green, 12 amber and no red. Materiel Capability Performance measures indicate the status of the materiel element of capability against the FMR milestones definition as at 30 June 2013 and is not necessarily indicative of each project’s ultimate ability to deliver the final intended scope.

Figure 2.8 – Materiel Capability Performance measures for the 2012-13 Report

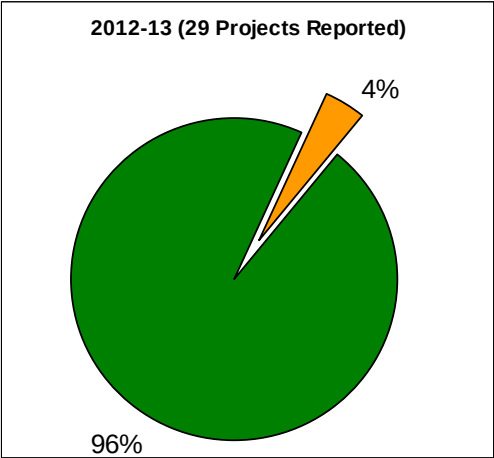
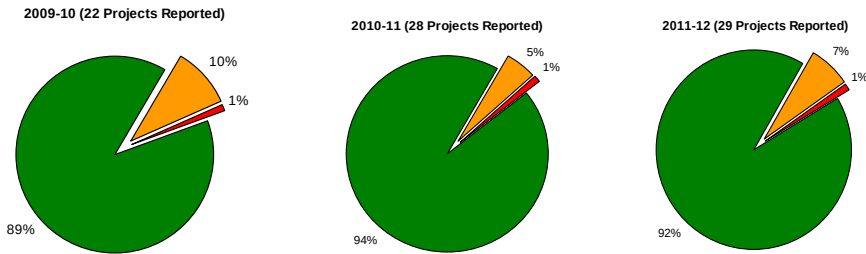


Figure 2.9 – Trends for Materiel Capability Performance measures



2.38 A high percentage (96 per cent) of Materiel Capability Performance measures are reported as green.

2.39 For the four per cent reported as amber, the following explanations are offered:

- Wedgetail – The performance shortfalls and technical difficulties are adversely affecting the transition into operational service and sustainment;
- MRH90 Helicopters – There continues to be a number of capabilities that will need to be progressed and released to support capability. The maturity of contractor support continues to progress but is yet to attain contracted levels;
- Joint Strike Fighter – The JSF program has experienced a delay in weapons integration events. Although this is within project planning parameters for the commencement of training and Operational Test and Evaluation, it is a concern and supports an amber assessment until resolved;
- Air to Air Refuel – There remains a risk to meeting all materiel capability requirements due to delays in final accreditation of the flight simulator, acceptance of aircraft in an initial configuration and successful remediation of all non-conformances, and improvements to the boom system.

- FFG Upgrade – The final capability to be delivered is uncertain at this time. Navy intend to pursue the torpedo defence and mine/obstacle avoidance capabilities. Navy has assessed a DSTO developed passive sonar system in operation with the Albatross Towed Array as meeting Towed Decoy System requirements; however, production/acquisition is yet to progress; and
- 155mm Howitzer – The Course Correcting Fuse capability was delayed and underwent a remediation program to inform materiel acceptance. Outcomes of the remediation program have been provided to the project office who are monitoring the establishment of the contract for the supply of these fuzes.

2.40 Figure 2.9 displays the previous MPR's Capability Performance Measures, as at 30 June for the respective years. Whilst the number of performance measures has increased from 138 in 2009-10 to 281 in 2012-13, analysis of these measures are indicative that the DMO's performance has improved over the last four years, with the majority of performance measures having a high likelihood of being achieved.

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



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

To the President of the Senate

To the Speaker of the House of Representatives

Scope

The review of the accompanying 29 Project Data Summary Sheets (PDSSs) as at 30 June 2013, including the Statement by the CEO DMO, was undertaken as a 'Priority Assurance Review' under section 19A(5) of the *Auditor-General Act 1997*.

My review is designed to provide assurance that the information contained in each PDSS has been prepared in accordance with the DMO 2012–13 Major Projects Report Guidelines (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit. The 29 projects are listed in Attachment A.

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, as set out in the Terms of the Priority Assurance Review Engagement, agreed with the CEO DMO:

- (a) Section 1.2 Current Status—Cost Performance (project financial assurance statement);
- (b) Section 1.3 Project Context—Major Challenges, Section 6.1 Major Project Risks, and Section 6.2 Major Project Issues;
- (c) Section 5.1 Measures of Materiel Capability Performance; and
- (d) 'Forecasts' of future dates regarding a project's expected achievement of delivery schedules and capability where included in Sections 1 and 3 of each PDSS.

The above information has not been included in the scope of the review because by their nature, the identification of Major Challenges, Project Risks and Issues and the achievement of future outcomes (the project financial assurance statement and Measures of Materiel Capability Performance) and forecast future dates relate to events and depend on circumstances that have not yet occurred, may not occur,

or have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information.

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

The Chief Executive Officer of the DMO is responsible for the preparation and presentation of the unclassified PDSSs for the 29 projects outlined in the scope, in accordance with the Guidelines. This responsibility includes ensuring the completeness and accuracy of each project's cost and schedule performance, and capability delivered against contracted requirements, in each PDSS.

The Auditor's Responsibility

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

My review has been conducted in accordance with the Australian Standard on Assurance Engagements, ASAE 3000 *Assurance Engagements other than Audits or Reviews of Historical Financial Information* issued by the Australian Auditing and Assurance Standards Board, which forms part of the Australian National Audit Office Auditing Standards. 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 29 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 processes and procedures used by the DMO in the preparation of the PDSSs;
- an assessment of the systems and controls that support project financial management, risk management, and project status reporting;
- a review of documents and information relevant to the PDSSs;
- interviews with persons responsible for the preparation of the PDSSs and those responsible for the management of the 29 projects;
- taking account of industry contractor comments provided to the DMO on draft PDSS information;
- assessing the assurance by the DMO managers attesting to the accuracy and completeness of the PDSSs;
- an examination of the management representations by the Chief Finance Officer of the DMO and supporting project financial assurance statements including the independent third-party review;
- an examination of confirmations, provided by the Secretary of the Department of Defence and Chief of the Defence Force, from the Capability Managers, relating to each project's progress toward Initial and Final Materiel Release, and Initial and Final Operational Capability; and
- an examination of the statement and management representations by the Chief Executive Officer of the DMO.

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

Conclusion

Based on my review described in this report, 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
5 December 2013

List of Projects

- Air Warfare Destroyer Build - SEA 4000 Phase 3
- Airborne Early Warning and Control Aircraft - AIR 5077 Phase 3
- Multi-Role Helicopter - AIR 9000 Phase 2/4/6
- Bridging Air Combat Capability - AIR 5349 Phase 1/2
- Amphibious Ships (LHD) - JP 2048 Phase 4A/4B
- Future Naval Aviation Combat System Helicopter - AIR 9000 Phase 8
- New Air Combat Capability - AIR 6000 Phase 2A/2B
- Armed Reconnaissance Helicopter - AIR 87 Phase 2
- F/A-18 Hornet Upgrade - AIR 5376 Phase 2
- Air to Air Refuelling Capability - AIR 5402
- Guided Missile Frigate Upgrade Implementation - SEA 1390 Phase 2.1
- Bushmaster Protected Mobility Vehicle - LAND 116 Phase 3
- Field Vehicles and Trailers - LAND 121 Phase 3
- Next Generation SATCOM Capability - JP 2008 Phase 4
- ANZAC Anti-Ship Missile Defence - SEA 1448 Phase 2B
- High Frequency Modernisation - JP 2043 Phase 3A
- Additional Medium Lift Helicopters - AIR 9000 Phase 5C
- Armidale Class Patrol Boat - SEA 1444 Phase 1
- Collins Replacement Combat System - SEA 1439 Phase 4A
- Battlespace Communications System - JP 2072 Phase 2A
- Indian Ocean Region UHF SATCOM - JP 2008 Phase 5A
- Replacement Heavyweight Torpedo - SEA 1429 Phase 2
- Collins Class Submarine Reliability and Sustainability - SEA1439 Phase 3
- SM-1 Missile Replacement - SEA 1390 Phase 4B
- ANZAC Anti-Ship Missile Defence - SEA 1448 Phase 2A
- Artillery Replacement - LAND 17 Phase 1A
- Follow On Stand Off Weapon - AIR 5418 Phase 1
- Battlefield Command Support System - LAND 75 Phase 3.4
- Counter-Rocket Artillery and Mortar - LAND 19 Ph 7A

Statement by the CEO DMO

The attached Project Data Summary Sheets (PDSSs) for the 29 major projects included in this report have been prepared in accordance with the Guidelines developed by the DMO in consultation with the Australian National Audit Office (ANAO) and endorsed by the JCPAA.

Project Status as at 30 June 2013

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 2013. In stating this opinion, and in agreement with the ANAO, I acknowledge that the following sections of each PDSS are not covered in the scope of the Auditor-General's assessment:

- Section 1.2 Current Status–Cost Performance, Section 1.3 Project Context–Major Challenges, Section 5.1 Measures of Materiel Capability Performance, Section 6.1 Major Project Risks, Section 6.2 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 2013

In stating this opinion, I acknowledge the following material events have occurred post 30 June 2013:

SEA 4000 Phase 3 Air Warfare Destroyer

There are emerging concerns from the AWD Alliance around cost overruns and associated delays in shipbuilding aspects of the AWD Program. An independent review is to be commissioned to identify factors contributing to cost growth and delays, and to recommend remediations and mitigation.

AIR 9000 Phase 2 Multi Role Helicopter

In July 2013 the first of 46 MRH-90s was commissioned into the fleet at HMAS Albatross naval base.

LAND 121 Phase 3A Overlander Vehicles

Initial Materiel Release is now expected to be achieved by 31 December 2013.

AIR 9000 Phase 8 Future Naval Aviation Combat System

In July 2013 the Government announced that the first MH-60R successfully completed its test flight, six months ahead of schedule.

AIR 5376 Phase 2 F/A-18 Hornet Upgrade

Final Operational Capability has been delayed due to the requirement for further Operational Testing and Evaluation. This additional testing can only be conducted in the United States and cannot occur until March 2014.

JP 2008 Phase 4 Next Generation SATCOM Capability

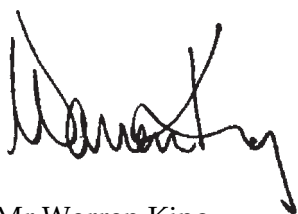
WGS-6 satellite launched on 7 August 2013 and is currently undergoing orbital testing.

SEA 1429 Phase 2 Heavyweight Torpedo

Final Operational Capability was not achieved in November 2013, this date will be re-programmed to align with Final Materiel Release following a review and approval of the Materiel Acquisition Agreement.

LAND 75 Ph3.4 Battlefield Command Support

Final Materiel Release and Final Operational Capability forecasts were adjusted to align with anticipated delivery of supplies in July 2014.



Mr Warren King

Chief Executive Officer

5 December 2013

Project Data Summary Sheets

Project Data Summary Sheet¹⁵⁹

Project Name	AIR WARFARE DESTROYER
Project Number	SEA 4000 Phase 3
First Year Reported in the MPR	2008-09
Capability Type	New
Service	Royal Australian Navy
Government 1st Pass Approval	May 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	\$7,869.2m
2012-13 Budget	\$618.6m
Project Stage	Detailed Design Review
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

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

1.2 Current Status

Cost Performance

In-year

The AWD Program exceeded the budget allocation in Financial Year 2012-13 as a result of increased Direct Project Costs from the Industry Participants for labour, materials and sub-contract costs. Against the original budget, the total was exceeded by \$106.4m, but was within the revised budget, including the two Program Variance Requests.

Project Financial Assurance Statement

Notwithstanding the issues disclosed at Section 6.2, as at 30 June 2013, project SEA 4000 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the Defence Materiel Organisation (DMO). Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

159 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

The AWD Alliance evaluated options to extend the duration of the project in response to a DMO request to:

- Substantially reduce the Forward Estimates budget;
- Avoid the necessity for further significant increases in recruitment that would subsequently require a large workforce reduction as ship production activity progressively reduced;
- Extend the time interval between delivery of the Landing Helicopter Dock (LHD) Ships and AWDs to Navy and so reduce the challenges and risks associated with the acceptance of these two major capabilities into naval service;
- Extend the AWD workforce profile to avoid a sharp decline in naval shipbuilding before the next naval ship programs start in order to foster a smaller, more productive and sustainable Australian industry capability.

Following stakeholder review and support for the schedule extension and resource considerations, the Minister for Defence announced, on 6 September 2012, that the AWD schedule would be re-baselined and revised AWD delivery dates would be HMAS *Hobart* (Ship 1) – March 2016, HMAS *Brisbane* (Ship 2) – September 2017, and HMAS *Sydney* (Ship 3) – March 2019. These new delivery dates represent delays of 15, 18 and 21 months respectively against the original planned dates.

Since June 2012 the following major events have occurred:

- July 2012 – Ship 3 fabrication started;
- September 2012 – the keel for Ship 1 was laid on the Common User Facility and block consolidation commenced;
- November 2012 – the Letter of Acceptance for Foreign Military Sales (FMS) Case Amendment 6 was executed;
- January 2013 – the re-baselined schedule was agreed by the DMO and AWD Industry Participants;
- January 2013 –BAE delivered its final set of blocks for Ship 2;
- February 2013 – the FMS Computer Program Acceptance Panel recommended approval of the A1 Aegis Computer programs for Combat System Light Off and the Shipyard Test Program for Ship 1; and
- June 2013 – all Ship 1 blocks delivered at Australian Submarine Corporation (ASC) Shipyard.

Material Capability Performance

All significant government specified capability is currently planned to be achieved and in some warfare areas, the capability will be exceeded. However, Electronic Warfare Radar – Electronic Attack sub-system procurement has been deferred as current technology does not meet the contract and Royal Australian Navy (RAN) requirements. The budget has been preserved to support second generation technology being fielded in the AWD. It is expected that the capability will be available in the 2017-18 timeframe. Decisions made by the program in conjunction with the Capability Manager will ensure that AWD is delivered with the expected capability and affordable cost of ownership; and within the acquisition budget and schedule.

1.3 Project Context

Project Background

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

Phase 2 oversaw the development of two platform designs:

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

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

In October 2005, Defence sought and received Government approval to acquire three Aegis Weapon Systems to provide the core air warfare capability of the AWD. The Commonwealth subsequently entered into a United States (US) FMS agreement for the acquisition of the Aegis weapons system comprising:

Project Data Summary Sheets

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- 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 AWD utilising the existing design. This decision initiated the current phase of Project SEA 4000 Phase 3, the construction phase.

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

Phase 3 concludes with the delivery to the 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.

Project Uniqueness

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

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

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

Project Contractual Framework

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

- The Alliance Industry Participants (Raytheon Australia and ASC AWD Shipbuilder) are jointly and severally responsible for the delivery of the three ships and their support systems. Each party remains individually responsible for compliance with all statutory requirements.
- The Alliance is neither a legal body, nor a joint venture.
- The legal and commercial basis for the Alliance is established through the Alliance Based Target Incentive Agreement (ABTIA) contract signed by all three participants. This establishes a virtual organisation under the governance of the AWD Alliance Board.
- All participants have a shared commercial interest in the outcome of the Program through pain share/gain share arrangements. The Industry Participants fee is at risk if performance is poor, however, they can benefit from delivery ahead of schedule and / or under budget.
- The Commonwealth retains "step in" rights to protect the national interest and the unilateral right to determine strategic issues relating to the Program.
- Liquidated Damages may apply in the event any ship is delivered later than specified dates.
- Risk is managed through the allocation of management reserve.
- All financial accounting is on an "open book" basis.

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

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

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

Project Major Challenges The major challenges the project faces are: • Achieving maximum productivity levels through efficient shipyard operation and change management; • Managing the level and timing of changes to the production baseline to minimise production rework; • Meeting the consolidation, test and activation schedules for Ship 1 within the constraints of a new build in a new Australian shipyard; • Managing the timely delivery of equipment and fittings from a large number of subcontractors located in Australia and overseas through the AWD Alliance; and • Delivering an effective, efficient and sustainable through-life support system for the <i>Hobart Class</i> DDGs.
Other Current Projects / Sub-Projects SEA 4000 Phase 3.2 – Standard Missile SM-2 Missile conversion and upgrade. The conversion of the missiles will allow them to be used in the AWDs and provide an enhanced anti-aircraft and anti-ship missile defence capability.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 9000 Phase 8 – Future Naval Aviation Combat System	The project will acquire 24 MH-60R Seahawk naval combat helicopters, associated weapons and support systems. The aircraft will provide Navy with a contemporary helicopter with anti-submarine warfare and anti-surface warfare capability.	Hangar facility and weapon magazine modifications to support the integration of the replacement Naval helicopter MH-60R.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

2.1 Project Budget (out-turned) and Expenditure History			
Date	Description	\$m	Notes
	Project Budget		
Jun 07	Original Approved	7,207.4	1
Jul 10	Price Indexation	1,173.2	
Jun 13	Exchange Variation	(511.4)	
Jun 13	Total Budget	7,869.2	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government	(973.2)	2
	Contract Expenditure – AWD Alliance	(2,301.9)	
	Contract Expenditure – Navantia	(368.5)	
	Contract Expenditure – NATO Consortium	(74.3)	
	Other Contract Payments / Internal Expenses	(122.0)	
		(3,839.9)	
FY to Jun 13	Contract Expenditure – US Government	(0.0)	2
	Contract Expenditure – AWD Alliance	(695.1)	
	Contract Expenditure – Navantia	(6.9)	
	Other Contract Payments / Internal Expenses	(23.0)	
		(725.0)	
Jun 13	Total Expenditure	(4,564.9)	
Jun 13	Remaining Budget	3,304.3	
Notes			
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$854.8m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$318.4m having been applied to the remaining life of the project.		
2	Other expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(6.6)	FMS	The Financial Year 2012-13 variance above budget was a result of Alliance Industry Participants exceeding budget for labour, materials and sub-contracts, as well as indexation shortfall.
		(0.5)	Overseas Industry	
		127.5	Local Industry	
			Brought Forward	
			Cost Savings	
		2.3	FOREX Variation	
		(16.3)	Commonwealth Delays	
618.6	725.0	106.4	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts						
Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government	Oct 05	842.7	1,069.9	FMS	FMS	1
AWD Alliance	Oct 07	4,323.1	4,420.6	Variable with Pain/Gain Share	Alliance	
Navantia	Oct 07	373.6	401.7	Fixed with indices escalation	Alliance based	
NATO Consortium	Dec 09	78.5	85.6	FMS (NATO)	FMS (NATO)	
Notes						
1	The FMS Case established pre-Second Pass involved three contractual steps (initial version and two amendments); October 2005 for initial engineering services, April 2006 for long lead items and July 2006 for three ship sets of core Aegis Combat System Equipment. The resulting scope was in accordance with Government approval of SEA 4000 Phase 3.1. Post-Second Pass, there have been three 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 2013 excludes a current Alliance cost of \$201.9m.					
Contractor		Quantities as at		Scope		Notes
		Signature	30 Jun 13			
US Government		3	3	Aegis Combat System		
AWD Alliance		3	3	Air Warfare Destroyer		
Navantia		N/A	N/A	Platform System Design and Services		
NATO Consortium		Classified	Classified	ESSM Missiles		1
Major equipment received and quantities to 30 Jun 13						
Block production is underway at all three shipyards. See Section 1.2 Schedule Performance for further detail.						
Notes						
1	Quantity being acquired is classified.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	AWD Program	Mar 08	N/A	Apr 08	1	
Preliminary Design	AWD Program	Dec 08	N/A	Feb 09	0	1
Critical Design	AWD Program	Dec 09	N/A	Feb 10	0	2
Support System Detailed Design Review	AWD Program	Jun 10	N/A	Aug 10	0	3
Notes						
1	The Preliminary Design Review (PDR) was conducted as scheduled in December 2008 and resulting actions completed as scheduled by February 2009.					
2	The Critical Design Review (CDR) was conducted as scheduled in December 2009 and resulting actions completed as scheduled by February 2010.					
3	The Support System Detailed Design Review (SSDDR) was conducted as scheduled in June 2010 and resulting actions completed August 2010.					

Project Data Summary Sheets

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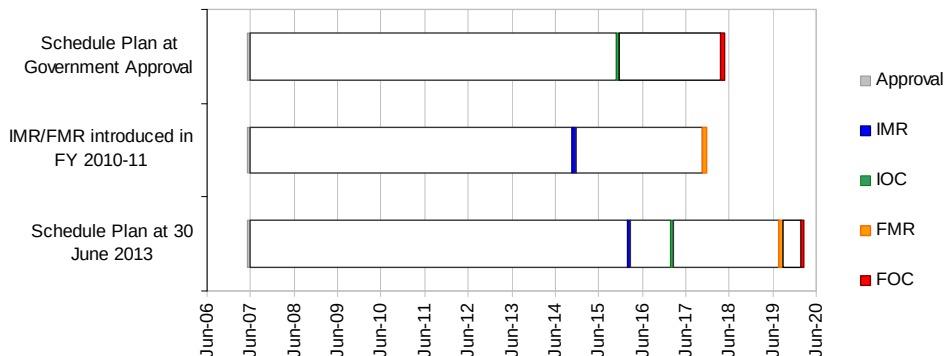
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Ship 1 – Complete Hull Integration	Dec 12	Dec 13	Dec 13	12	1, 3
	Ship 1 – Start Combat System Light Off	Dec 13	Dec 14	Dec 14	12	2, 3
	Ship 2 – Complete Hull Integration	Mar 14	May 15	May 15	14	3
	Ship 2 – Start Combat System Light Off	Mar 15	Jun 16	Jun 16	15	3
	Ship 3 – Complete Hull Integration	Jun 15	Aug 16	Aug 16	14	3
	Ship 3 – Start Combat System Light Off	Jun 16	Oct 17	Oct 17	16	3
Acceptance	Ship 1 – Commencement of Category 5 Trials	Aug 14	Aug 15	Aug 15	12	3
	Ship 1 – Provisional Acceptance (Initial Materiel Release)	Dec 14	Mar 16	Mar 16	15	3
	Ship 2 – Commencement of Category 5 Trials	Nov 15	Feb 17	Feb 17	15	3
	Ship 2 – Provisional Acceptance (Materiel Release 2)	Mar 16	Sep 17	Sep 17	18	3
	Ship 3 – Commencement of Category 5 Trials	Feb 17	Jul 18	Jul 18	17	3
	Ship 3 – Provisional Acceptance (Materiel Release 3)	Jun 17	Mar 19	Mar 19	21	3
Notes						
1	Complete Hull Integration is achieved when the last erection joint is structurally inspected and accepted.					
2	Start Combat System Light Off verifies the readiness of the first set of installed combat system equipment for CAT 4 testing.					
3	In 2010 difficulties were encountered in relation to the engineering and construction of some of the first AWD hull blocks. This resulted in the reallocation of block work between BAE, Forgacs and Navantia and amendment of the Alliance Operational Schedule. In response to a subsequent DMO request which included substantially reducing the Forward Estimate budget demand, the smoothing of workforce requirements, the extension of time interval between delivery of LHDs and AWDs to Navy and the fostering of a sustainable Australian naval shipbuilding industry, the AWD Alliance conducted an evaluation of the construction schedule and advised Defence that the AWD schedule should be re-baselined. Following stakeholder review and support for the schedule extension and resource considerations, the Minister for Defence announced, on 6 September 2012, that the AWD schedule would be re-baselined and that the revised AWD delivery dates would be March 2016, September 2017, and March 2019. An Integrated Baseline Review (IBR) is planned to be completed in August 2013 to validate the revised Performance Measurement Baseline (PMB) resulting from Estimate At Completion planning associated with the schedule extension. The PMB will be set when corrective actions identified in the IBR have been closed out.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

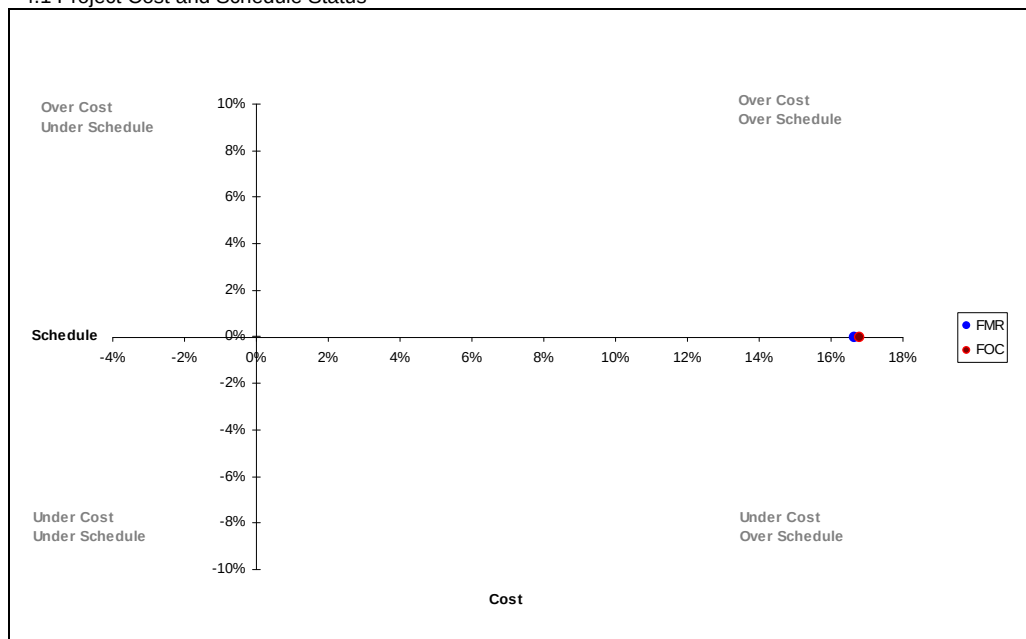
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Dec 14	Mar 16	15	See Note 3 above.
Initial Operational Capability (IOC)	Dec 15	Mar 17	15	See Note 3 above.
Final Materiel Release (FMR)	Dec 17	Sep 19	21	FMR is scheduled 6 months after Materiel Release 3 (MR3).
Final Operational Capability (FOC)	May 18	Mar 20	22	FOC is scheduled 12 months after MR3.

Schedule Status at 30 June 2013



Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



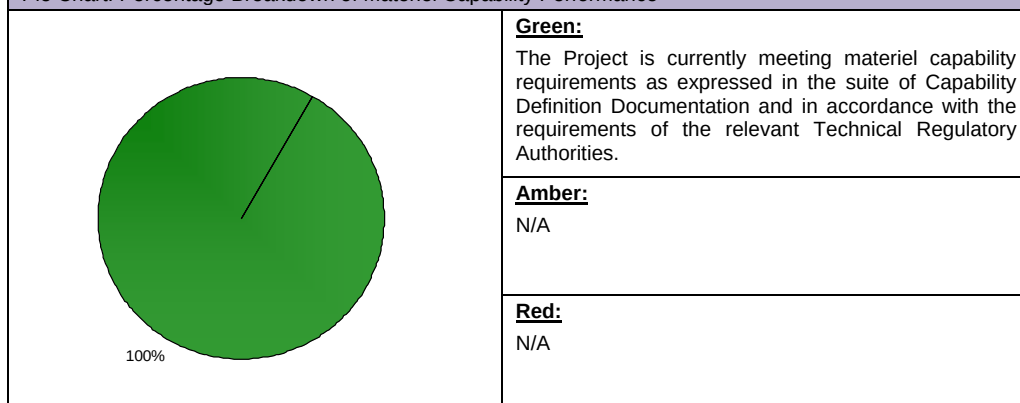
Project Data Summary Sheets

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Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)

Description	Remedial Action
Change Management: Any change introduced to the existing platform design will have cost and schedule impact. The extent of which is dependent upon the timing of the change. Pressure for change could occur for a variety of reasons including: • Requirements change. • Legislative and compliance requirements. • Equipment obsolescence.	This risk has become an issue and has been moved to Section 6.2.
Integration of the Australianised Aegis Combat System. Key Risks: • The current version of the Aegis Weapons System has not been previously integrated in the platform. • Integration of Electronic Warfare and Communications Systems. • Equipment selections may impact on the topside design. • Sonar – The software development and integration.	The risks associated with the integration of the Aegis Weapons System are being actively managed through regular reviews between the Alliance, Platform System Designer, US Navy and Lockheed Martin (the Aegis equipment supplier to the US Navy). Action is taken to ensure emerging issues are identified and addressed in a timely manner. Electronic Warfare and Communications and Information Systems procurement strategies have been developed with a wide range of stakeholder engagement. These strategies are aimed at ensuring that the customer will be satisfied with the contracted solution and that the solution will have minimal impact on the platform design. Sonar – Is being actively managed by the Alliance including formal reviews with close out actions and embedded staff.
Capability Acceptance: Certification requirements are unclear for some equipment and US Navy and some Original Equipment Manufacturers are not disclosing requested objective quality evidence.	The Project Certification Plan has been agreed with the RAN. The Program is working closely with the US Navy and Original Equipment Manufacturers to obtain the required objective quality evidence. Working with RAN to establish processes, procedures and principles to achieve certification.

Subcontractor Performance: Subcontractor performance may result in poor quality product, delays or changed requirements.	The performance of some subcontractors has required active management and intervention. Embedding Alliance staff in block subcontractors premises provides management oversight and the ability to address and resolve issues quickly. Sonar – The Alliance is actively working with the Sonar OEM at all levels, including the embedding of Alliance staff on-site to manage risk associated with software development and integration.
Support System: current data available to the Alliance and/or the Commonwealth may not be mature enough to achieve an optimised support system (maturity of LCC data, loss of project data that supports Through Life Support). Facilities may not be ready when required for transition into in-service support. Intellectual Property (IP) requirements might not be delivered leading to negative through life support impacts.	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. Facilities Submission to the Public Works Committee (PWC) occurred in April 2013, followed by an approved expediency motion in May 2013. Construction will commence in July 2013. An interim Facilities solution has been identified to address potential capability gap as a result of the PWC approval delay. An IP remediation plan was developed and implemented by the Alliance to mitigate the IP risk. The revised IP Plan will be submitted in July 2013, CoA approval expected no later than 30 July 2013.
Shipbuilding Productivity: achieving the required level of shipbuilding productivity may be compromised by skilled labour shortages, delays in deliveries of data and materials to the shipyards, and limitations on the production engineering capacity of the shipyards.	Actions to mitigate include increased shipbuilder recruitment activities, deployment of Navantia skilled labour to all 3 build locations, roll out of Lean process improvement across the ASC facility, process improvements to minimise delays caused by problems at the work front, increased focus on improving construction design products, and prioritisation of the delivery of urgent construction products from Navantia. Benchmarking of the shipbuilder's production effort was undertaken in September 2011 and highlighted initiatives for implementation that could improve shipbuilder's productivity. A Shipbuilder benchmarking program was established in 2012 including regular reporting, identification and implementation of improvement strategies in key areas underpinning shipyard productivity.
Schedule: the quality and rework issues in block construction are higher than originally envisaged. As a result of the increasing workloads the schedule is being reviewed and managed by the Alliance. On 26 May 2011 the Minister for Defence announced the reallocation of construction work for the AWD Project.	The AWD Alliance took two key actions to address schedule slip. There was an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the Australian shipyards and Navantia in May 2011. The AWD Alliance also took action in 2010 to place more shipbuilding experts from Navantia, Bath Iron Works and Lloyds Register into the three shipyards. In September 2012 the Minister for Defence announced that the AWD program would be re-baselined, extending the keel-to-keel interval between each ship to 18 months. ABTIA contract has been amended to reflect the re-baselining.

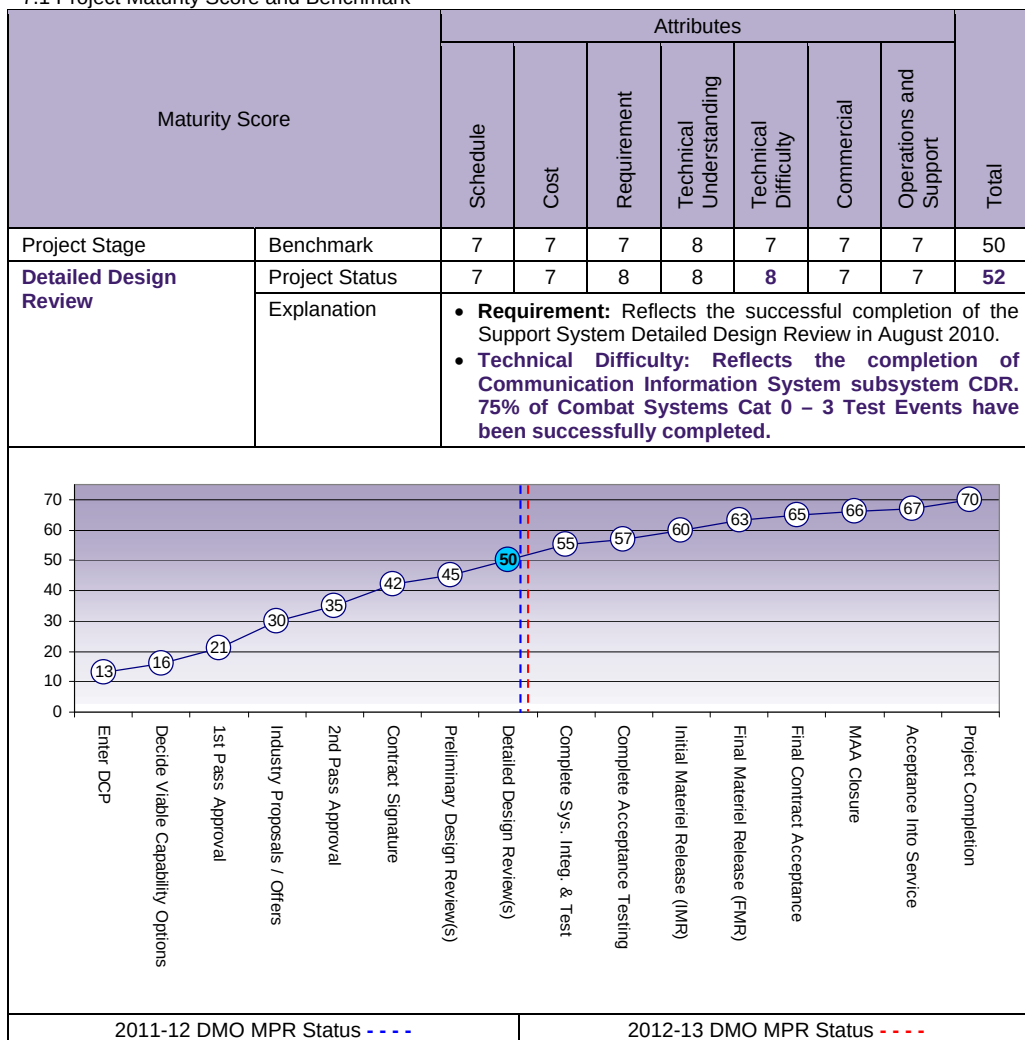
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
Design products may not be available in a timely manner or satisfactory form.	Active monitoring of the Alliance's Platform System Designer's (PSD) contract management strategy to ensure its effectiveness, and engaging the Alliance and PSD as required to resolve current and potential issues as required.
The PSD contract may not provide the level of support that is required to complete ship construction in a timely and cost effective manner.	Establishment of ongoing design support services including construction design support and local design authority availability in support of Ship construction through to delivery of Ship 03.

6.2 Major Project Issues

Description	Remedial Action
The delivery of FMS elements of the AWD supplies may not be possible, or may be delayed or compromised in integrity, due to the budget for FMS Engineering and Technical Assistance (ETA) not being sufficient.	Working with the US to identify options to reduce cost and provide waterfront support for Ships 2 and 3.
Indexation: Applying an average, fixed Specialised Military Equipment index to the Program budget may not be sufficient to fund the actual cost increases and liabilities defined in the ABTIA and PSD contracts.	Close monitoring through annual estimates to ensure that the balance of the total project budget remains sufficient to cover any shortfalls. The program is funding actual cost increases with project contingency funds.
Shipbuilding Delay: The AWD Alliance will not meet contracted delivery dates for the three ships.	In response to delays in hull block fabrication, the AWD Alliance acted to limit a potential two year schedule slip in the delivery of HMAS Hobart by up to 12 months. Two key actions were an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the Australian shipyards and Navantia in May 2011. The AWD Alliance also took action in 2010 to place more shipbuilding experts from Navantia, Bath Iron Works and Lloyds Register into the three shipyards. In September 2012 the Minister for Defence announced that the AWD program would be re-baselined, extending the keel-to-keel interval between each ship to 18 months. ABTIA contract has been amended to reflect the re-baselining.
Change Management: Change introduced to the existing platform design as a result of: • Legislative or regulatory requirements, • Safety requirements, • Equipment obsolescence, • Errors in the original design, and • Interrelated projects (e.g. AIR9000) Will impact cost and possibly schedule. Severity of the cost and schedule impacts to the CoA will be dependent on the scope and timing of the change implementation relative to Ship completion.	A Design Chill was implemented in 2011 to reduce the level of change rolling into the production baseline. Effective engagement with key stakeholders has been critical to ensure the implications of change requests, approval and subsequent implementation are fully understood. Robust mechanisms to control the authorisation of change have been established within the Alliance and Program Office. The change management approval and implementation process has undergone a number of evolutions to expedite change as efficiently as possible. Delays in approval can result in significant cost and schedule impacts.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Formation of the Alliance, a new organisational structure takes time and effort to develop the culture necessary to achieve improved outcomes. An external facilitator was engaged to assist in the initial and ongoing development of the Alliance and this has proved invaluable.	Governance
The Program Office, originally located in both Canberra and Adelaide was relocated to Adelaide to improve operations and interactions with the Alliance. The relocation involved considerable effort and a resultant loss in knowledge of staff who did not relocate. Earlier consolidation of the Program Office would have been beneficial.	Resourcing

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The interpretation of the requirements for fitness of purpose of drawings is different between contracting parties. A review of all product types prior to contract and interrogation of the delivery schedule to confirm sufficient time for reviews and incorporation of comments is necessary.	Contract Management
The shipbuilding capacity of shipyards involved in a project like AWD needs to be assessed in detail in terms of precise capacity to undertake production engineering as well as the workload constraints of facilities, production supervision and overall workforce numbers taking into consideration the total contracts conducted at the shipyard in parallel.	Resourcing First of Type Equipment
The schedule that plans the transition from design to production needs detailed evaluation by the designer(s) and the production shipyard(s) to ensure the balance between commencing production and completing very detailed design is appropriately balanced and agreed.	Schedule Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Mr Andrew Cawley (Acting to Feb 13) AVM Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (May 13–Jun 13) AVM Chris Deeble (Jun 13–current)
Program Manager	Mr Peter Croser (Acting)
Deputy Program Manager	Mr Greg McPherson (Acting)
Deputy Program Manager	Commodore Steve Tiffen, RAN

Project Data Summary Sheet¹⁶⁰

Project Name	AIRBORNE EARLY WARNING AND CONTROL AIRCRAFT
Project Number	AIR 5077 Phase 3
First Year Reported in the MPR	2007-08
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	Dec 97
Government 2nd Pass Approval	Dec 00
Total Approved Budget (Current)	\$3,843.7m
2012-13 Budget	\$206.7m
Project Stage	Final Materiel Release
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

This project will provide the Australian Defence Force (ADF) with an Airborne Early Warning and Control (AEW&C) capability, with the provision of six aircraft and associated supplies and support. As an integral part of a layered ADF Air Defence System, the AEW&C capability will enhance surveillance, air defence, fleet support and force coordination operations in defence of Australian sovereignty and national interests.

1.2 Current Status

This **project was removed from the Projects of Concern list in December 2012.**

Cost Performance

In-year

As a result of the commercial settlements reached in November 2009, April 2011 and **November 2012**, the Commonwealth received compensation from The Boeing Company (Boeing) for costs incurred as a result of project delays and radar **and other mission system** performance shortfalls. Payments are being made in accordance with the revised payment schedule.

Project Financial Assurance Statement

As at 30 June 2013, project AIR 5077 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

As at 30 June **2012**, the Commonwealth had accepted **six** aircraft in **a second-increment** initial configuration, available to the Air Force for training and initial operations. The Commonwealth **had also** accepted the Mission Support Segment, Operational Mission Simulator and AEW&C Support Facility in their respective initial configurations.

160 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Boeing failed to deliver the first aircraft in a final operational configuration in March 2012, as agreed in the settlement reached in April 2011. Under a Remediation Plan agreed with the Commonwealth in December 2011, Boeing delivered the sixth aircraft in a 'final' configuration, capable of supporting all operational tasking short of high-end war fighting in May 2012. However, delays in completing the large volume of formal documentation required for contractual acceptance of the system **and negotiation of a third commercial settlement resulted** in aircraft final acceptance not occurring until November 2012; a total delay to this milestone against the original contract baseline of 72 months. **Materiel Release 3 which supports the declaration of Initial Operational Capability (IOC) was achieved in November 2012. Chief of Air Force declared IOC on 19 November 2012. Final acceptance of the Mission Support Segment, Operational Mission Simulator and AEW&C Support Facility occurred in December 2012.**

Since the final acceptance in December 2012, the focus has been on the planning and initiation of remediation work to rectify identified performance shortfalls that were the subject of the commercial settlement, in particular Data Forwarding, radar performance and system stability.

Materiel Capability Performance

In service Wedgetail aircraft have participated in a number of local and overseas exercises over the past **two years**, with each successive System (software) Build delivered to the fleet demonstrating improved integrated system performance. Radar performance in the clear has been substantially remediated and a number of shortfalls in Electronic Support Measures (ESM), Communications Datalink and residual integrated system performance **have been** progressively remediated. **Under the November 2012 commercial settlement, the Commonwealth and Boeing agreed on a plan to resolve the remaining capability risks that need to be retired in the mission systems, communications and integration areas by December 2014.**

1.3 Project Context

Project Background

Government gave the equivalent of first pass approval for **AIR 5077** 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 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 slip **resulted** 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 **met** the specification and how well it **performed** operationally. The DMO Program Office, Boeing and Northrop Grumman, supported by Defence Science and Technology Organisation (DSTO) and US Government agencies, also cooperated in the conduct of an independent assessment of radar performance by Massachusetts Institute of Technology Lincoln Laboratories to determine the extent of the performance shortfall based on flight test data. An operational utility demonstration was successfully conducted in Australia in April 2009 and provided insight into the operational potential of the AEW&C capability.

Based on the outcomes of these activities, the Commonwealth entered into formal negotiations with Boeing in August 2009 seeking a commercial settlement addressing, among other things, the key issues of: project delays; incremental delivery; and compensation for projected performance shortfalls. The parties reached agreement on the way ahead for the program in November 2009.

In April 2010, the Commonwealth accepted two aircraft in an initial operating capacity in order to commence training and initial operations. A third aircraft was accepted in this initial operating capacity in June 2010 and a fourth in December 2010.

Boeing failed to deliver the first aircraft in a final operational configuration in December 2010, as agreed in the settlement reached in November 2009, due to ongoing issues with Communications and ESM subsystems technical maturity and integrated system stability. The Commonwealth entered into contract

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negotiations with Boeing in November 2010 to refine the path to final acceptance and reached agreement in April 2011.

Boeing failed to deliver the first aircraft in a final operating configuration in March 2012, as agreed in the settlement reached in April 2011, again due to ongoing issues with Communications and ESM subsystems technical maturity and integrated system performance. In December 2011, the Commonwealth and Boeing agreed to a Remediation Plan that required Boeing to deliver the first aircraft in a final operating configuration, capable of supporting all operational tasking short of high-end war fighting, in July 2012.

The Commonwealth entered into contract negotiations with Boeing in September 2012 seeking a final commercial settlement addressing, among other things, compensation for the further delay and residual performance shortfalls. The parties reached agreement in November 2012 resulting in final acceptance of all major systems being achieved by end 2012.

Project 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 **supplier** 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 **is** 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.

Project Major Challenges

Integration of the radar and other mission critical systems such as electronic support measures, communication systems and data links has proved to be more complex than originally anticipated. Initial planning for the project was optimistic, resulting in an aggressive schedule that had been compressed to such a high level that there was no margin for re-work or risks being realised.

Radar performance was subject to detailed independent analysis and operational assessment in preparation for the contract settlement negotiations held in late 2009, resulting in a determination that performance will not achieve specification at final delivery and further development will be required.

Subsequently, a radar remediation program was established. This program **included** a radar collaborative research and development program. A contract for the collaborative program was signed on 21 June 2010. The program has been very successful and consequently the period of performance **was** extended to the end of 2012. Radar performance in the clear has been recovered to very close to specification and substantial improvement in performance in clutter is anticipated by **December** 2013.

Further technical challenges in the development of the Communications, ESM, Electronic Warfare Self Protection (EWSP) and ground support systems **have been** encountered and resolution of these **drove** the schedule to final acceptance.

The remaining technical challenges are low-medium risk. Notwithstanding, incorporation of remaining performance improvements from the remediation activities now relies on the in-service software organisation and processes which are immature, but developing rapidly.

Other Current Projects / Sub-Projects

N/A

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Dec 97	Original Approved	2,170.4	1
Jul 98	Real Variation – Transfer	(170.4)	2
Nov 99	Real Variation – Transfer	807.9	3
Apr 01	Real Variation – Budgetary Adjustments	(166.0)	4
Mar 02	Real Variation – Transfer	(3.9)	5
Jun 04	Real Variation – Scope	225.6	6
Aug 04	Real Variation – Budgetary Adjustments	(2.4)	7
Aug 04	Real Variation – Transfer	(14.0)	8
Jun 05	Real Variation – Transfer	(1.0)	8
Aug 05	Real Variation – Budgetary Adjustments	(4.8)	9
		671.0	
Jul 10	Price Indexation	1,111.1	10
Jun 13	Exchange Variation	(108.8)	
Jun 13	Total Budget	3,843.7	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – Boeing	(2,904.5)	
	Contract Expenditure – US Government	(98.8)	
	Contract Expenditure – Boeing	(4.6)	11
	Other Contract Payments / Internal Expenses	(247.0)	12
		(3,254.9)	
FY to Jun 13	Contract Expenditure – Boeing	(131.0)	
	Contract Expenditure – US Government	(2.9)	
	Contract Expenditure – Boeing	(14.2)	11
	Other Contract Payments / Internal Expenses	(49.5)	13
		(197.6)	
FY to Jun 13	Total Expenditure	(3,452.5)	
Jun 13	Remaining Budget	(391.2)	
Notes			
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.		
2	Transfer to Project Olympus.		
3	Merger of Project Olympus, which had been established separately to acquire classified elements of the AEW&C capability.		
4	Variation for overfunding of indexation and foreign exchange at time of approval.		
5	Transfer to supplement Overseas Allowances.		
6	Increased scope, approved by Government in April 2004, for the acquisition of the fifth and sixth aircraft.		
7	Administrative Savings harvest.		
8	Transfer to Facilities.		
9	Skillings of Defence Industry harvest.		
10	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$1,068.4m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$42.7m. \$388.1m of this amount relates to a real cost increase for contract price indexation variations beyond the supplementation provided by Government.		
11	An additional contract with Boeing, for Radar Subsystem Performance Remediation, previously reported under "Other Contract Payments" has been separated out because the contract value increased to greater than \$10m during FY11/12.		

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12	Out of the \$247.0m Life to Date expenditure up to 30 June 2012 the majority of expenditure is associated with Independent Verification and Validation Services of \$65.8m , In Service Support Contract costs of \$40.1m , Facilities related expenses of \$59.9m, travel costs of \$18.7m and other project management support costs (legal, project administration, minor asset and ancillary support equipment costs etc) of \$62.5m .
13	Out of the \$49.5m expenditure up to 30 June 2013 , the majority is associated with the procurement of ancillary Prime and Support equipment of \$34.3m , In Service Support Contract costs of \$6.4m , External Service Provider support costs of \$6.0m , Operational Test and Evaluation costs of \$1.4m and other project administration costs (travel, legal, DSTO support, administration etc) of approximately \$1.4m .

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(0.3)	FMS	The project underachievement is driven in the main by schedule slip and resultant reprogramming against Performance Incentive Fees (not claimed), ancillary equipment procurements, support services and studies (including AEW&C Radar Collaborative Study (ARCS), ESM/EWSP support, Large Aircraft Infra Red Counter Measures upgrade and integration contracts, and delays in delivery of long lead items). These variances have been partially offset by additional System Acquisition Contract (SAC) spares buys.
		(6.0)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		2.0	FOREX Variation	
		(4.8)	Commonwealth Delays	
206.7	197.6	(9.1)	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts						
Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Boeing	Dec 00	2,257.7	2,599.6	Variable	DEFPUR 101	1
US Government	Jul 01	97.9	137.9	FMS	FMS	
Boeing	Jun 10	5.6	39.6	Fixed	ASDEFCON (Services)	2
Notes						
1	Reflects adjustment to System Acquisition Contract (SAC) for Additional Spares Contract Change Proposal (CCP).					
2	Reflects AEW&C Radar Collaborative Study (ARCS) Radar Identification Friend or Foe (IFF) Capability Improvements contract amendment.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
Boeing	4	6	Boeing 737-700 Increased Gross Weight (IGW) AEW&C Aircraft			
US Government	N/A	N/A	AEW&C Hardware and US Air Force (USAF) Support			
Boeing	N/A	N/A	Radar Subsystem Performance Remediation			
Major equipment received and quantities to 30 Jun 13						
Initial Acceptance of six aircraft, capable of supporting training and peacetime national tasking. Engineering and maintenance arrangements established.						

Section 3 – Schedule Performance

3.1 Design Review Progress

6.1 Design Review Progress						
Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	Airborne Mission System	Jul 02	N/A	Jun 02	(1)	1
	Operational Mission Simulator	Jan 03	N/A	Apr 03	3	
	Mission Support System	Mar 03	N/A	Apr 03	1	
	Operational Flight Trainer	Aug 03	N/A	Jul 03	(1)	
	Airborne Early Warning and Control Support Facility	Nov 03	N/A	Oct 03	(1)	
Critical Design	Airborne Mission System	Feb 03	N/A	Dec 02	(2)	
	Operational Mission Simulator	Nov 03	N/A	Nov 03	0	
	Mission Support System	Dec 03	N/A	Nov 03	(1)	
	Operational Flight Trainer	May 04	N/A	Apr 04	(1)	
	Airborne Early Warning and Control Support Facility	Oct 04	N/A	Sep 04	(1)	
Notes						
1	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 (Note 1)	Achieved /Forecast (Note 1)	Variance (Months)	Notes
System Integration	Airborne Mission System	Mar 06	May 12	Nov 12	80	2
	Operational Mission Simulator	Mar 06	Dec 10	Nov 10	57	5, 6
	Operational Flight Trainer	Dec 05	Dec 05	Dec 05	0	
	Mission Support System	Jul 06	Oct 08	Oct 11	63	3
	AEW&C Support Facility	Dec 06	Dec 10	Jul 11	57	4
Acceptance	Airborne Mission System	Nov 06	May 12	Nov 12	72	5
	Operational Mission Simulator	May 06	Sep 11	Oct 11	62	5, 6
	Operational Flight Trainer	Mar 06	Nov 08	Feb 09	35	7
	Mission Support System	Aug 06	Jul 11	Oct 11	62	5, 6
	AEW&C Support Facility	Mar 07	Mar 11	Feb 12	59	5, 6
Notes						
1	These dates reflect the completion of testing relating to the Contract Specification and do not include testing associated with the additional compensatory work agreed under the commercial settlements.					
2	Airborne Mission System (AMS) integration challenged progress of the AMS development and test program. Most significant challenges related to finalisation and integration of the mission computing, datalinks, and electronic support measures subsystems, including integrated maturity, loading and latency, and stability. Supplier hardware availability presented challenges to the type and production program.					
3	System Integration Test and Evaluation, previously reported as completed in May 2009, was resumed as a result of deficiencies subsequently revealed during integrated mission testing.					
4	The requirement for formal Acceptance Test and Evaluation for AEW&C Support Facility (ASF) Home Maintenance Base was removed via CCP action in September 2011 with achievement of compliance being conducted via 'Analysis'. As a result, the date for completion of ASF System Integration Test and Evaluation reverted to that for the already-completed System Integration Test and Evaluation for ASF Electronic Warfare Squadron.					

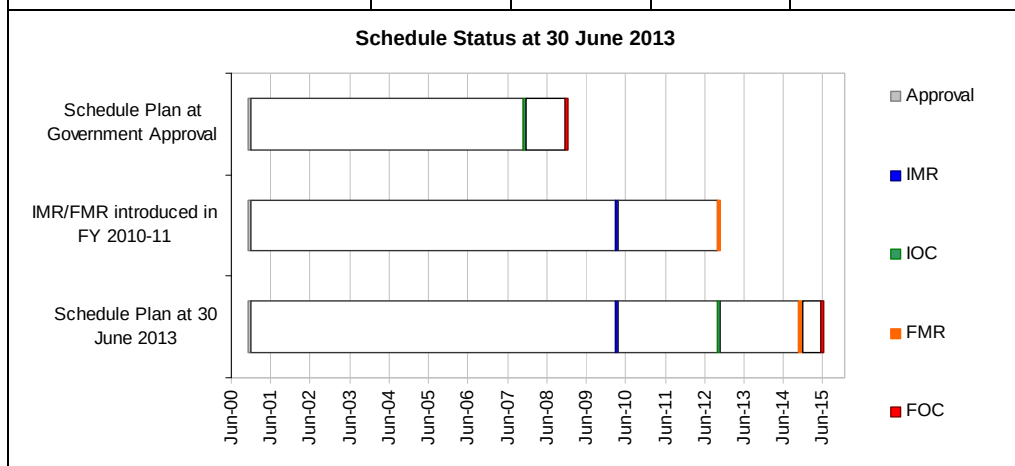
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5	Problems associated with sub-system integration; mission computing, loading and latency, radar and electronic support measures maturity and stability; and supplier hardware availability.
6	Ground Support Segments were impacted by AMS schedule delays.
7	Disagreement between Boeing and Commonwealth over specification requirements.

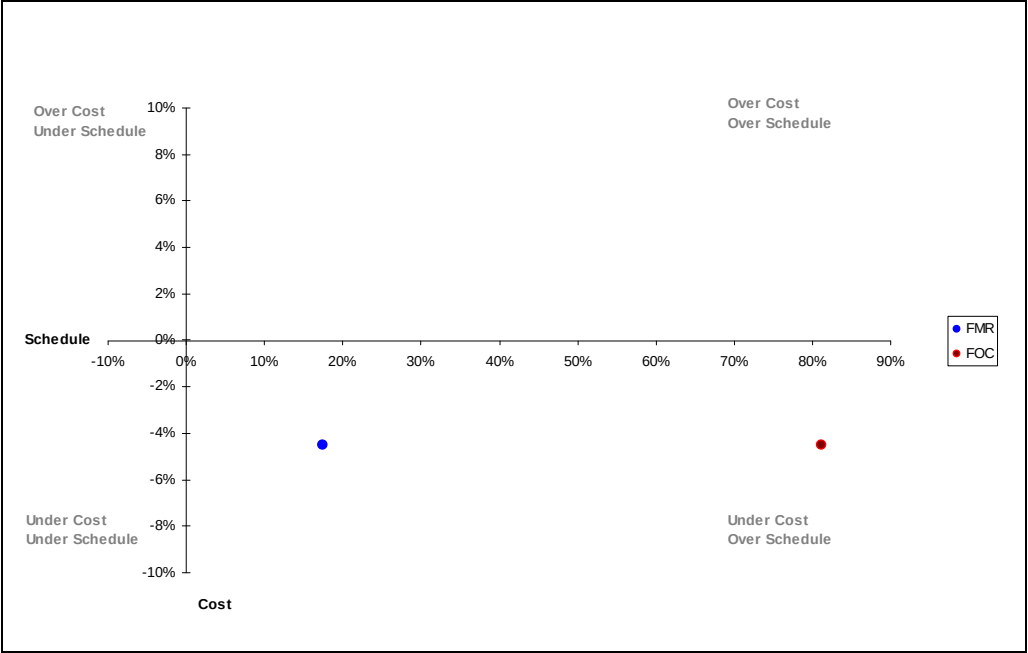
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Apr 10	N/A	Delays to system delivery due to problems associated with sub-system integration, supplier hardware availability, radar and electronic support measures maturity, and aircraft modification.
Materiel Release 2	N/A	Nov 11	N/A	
Materiel Release 3	Jul 11	Nov 12	16	
Initial Operational Capability (IOC)	Dec 07	Nov 12	59	
Final Materiel Release (FMR)	Nov 12	Dec 14	25	
Final Operational Capability (FOC)	Dec 08	Jun 15	78	



Section 4 – Project Cost and Schedule Status

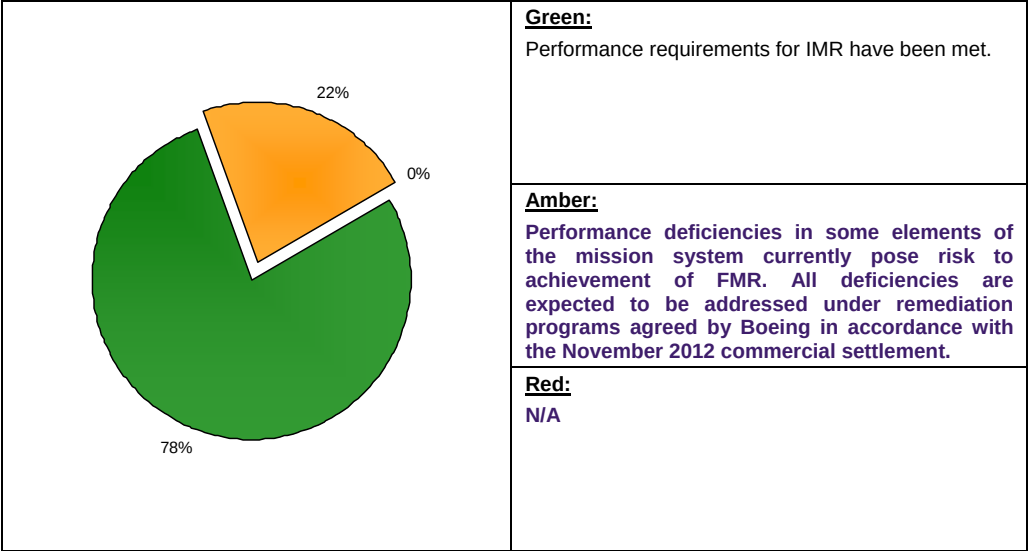
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

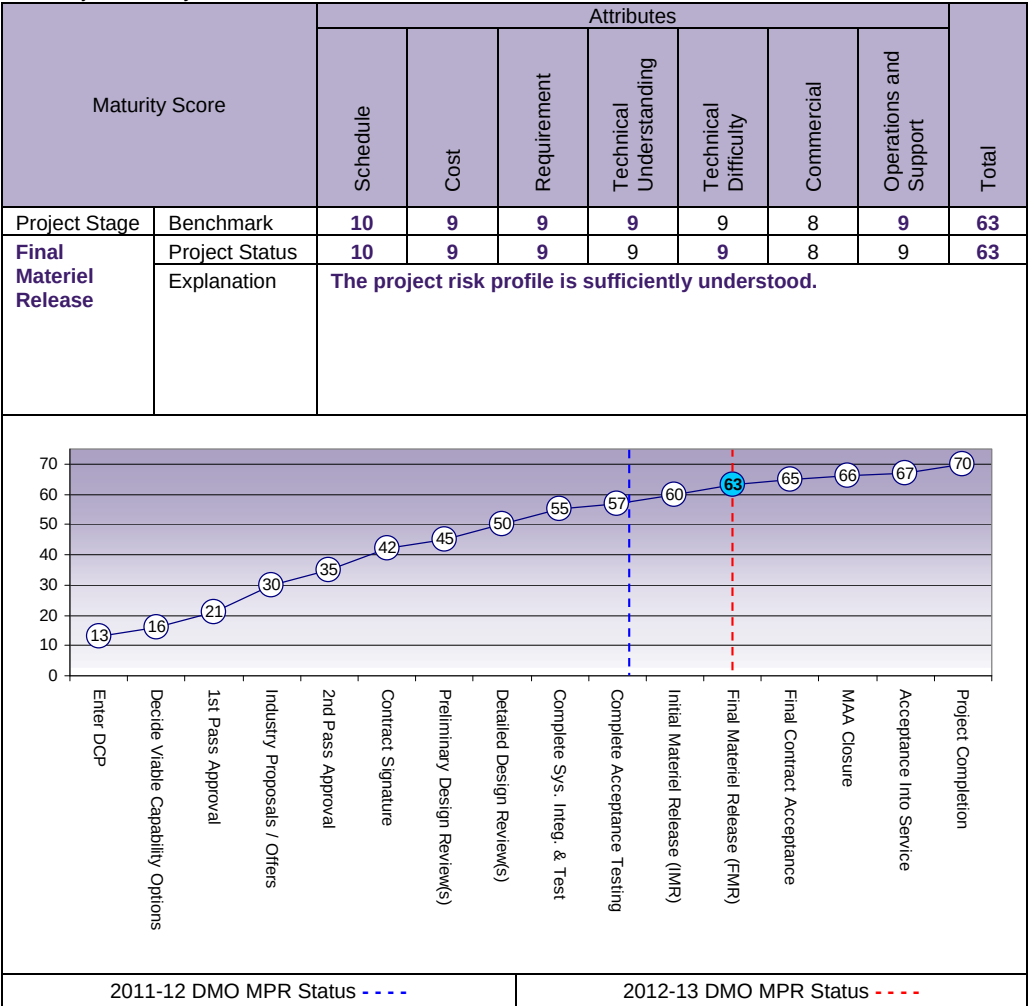
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
The major residual risks to the project fall within the following categories: • Schedule; and • Attainment of contracted technical performance. Schedule and technical performance risks arise from incomplete software development, system integration and acceptance testing.	The major residual risks identified are no longer applicable as the risk profile of the project has changed significantly with the declaration of IOC.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
The remediation activity requires integration and implementation through the sustainment software processes and organisation, however, the planned release date for the target sustainment software build coincides with the current FMR date. As such, any slip in this activity will result in a slip to FMR. Based on the size and scope of the build there is potential for a three to six months delay to its delivery.	The key mitigating action is to provide additional funds for personnel at critical stages of development and to accelerate development if schedule slip is identified. In addition to the application of funding to accelerate development, the Project has established via a senior project manager a relationship with the sustainment software build manager. Ongoing close liaison will allow early intervention should schedule slip be identified and provide focus and influence to meet the planned delivery date.

6.2 Major Project Issues

Description	Remedial Action
N/A	N/A

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 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
Making appropriate investment in pre-contract work (such as an Initial Design Activity phase) to better understand the technical risks, clarify Defence's appetite for it and adjust requirements, acquisition strategy and expectations.	First of Type Equipment
Improving governance to support a more disciplined consideration of strategic trade-offs between performance, cost and schedule post contract signature.	Contract Management Schedule Management
Taking a colder, harder look at risk before contract signature.	First of Type Equipment
Tempering the biases towards overoptimism and underestimation of risk by both industry and Defence, and making allowances for the biases and risks in the commitments made to Government and the Capability Manager.	First of Type Equipment
Accepting and accommodating the likelihood of incremental delivery of capability in developmental projects.	First of Type Equipment
Applying greater workforce, management focus and governance to the definition, planning and execution of the Integrated Logistics Support and sustainment components of the project in keeping with their significant share of total system life-cycle costs.	Resourcing

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Mr Andrew Cawley (to Jan 13) Ms Shireane McKinnie (Feb 13–current)
Division Head	AVM Chris Deeble (to Feb 13) AIRCDRE Leigh Gordon (Mar 13) AVM Colin Thorne (Apr 13–current)
Branch Head	Mr Bill Spencer (to Feb 13) GPCAPT Graham Edwards (Mar 13) AIRCDRE Leigh Gordon (Apr 13–current)
Project Director	AVM Chris Deeble (to Feb 13) Mr Peter Kiss (Mar 13–current)
Project Manager	AVM Chris Deeble (to Feb 13) Mr Peter Kiss (Mar 13–current)

Project Data Summary Sheet¹⁶¹

Project Name	MULTI ROLE HELICOPTER
Project Number	AIR 9000 Phase 2, 4 and 6
First Year Reported in the MPR	2008-09
Capability Type	Replacement
Service	Royal Australian Navy and Australian Army
Government 1st Pass Approval	Apr 06 (Phases 4 and 6)
Government 2nd Pass Approval	Aug 04 (Phase 2), Apr 06 (Phases 4 and 6)
Total Approved Budget (Current)	\$3,649.9m
2012-13 Budget	\$155.1m
Project Stage	Complete Acceptance Testing
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The Multi-Role Helicopter (MRH) Program is a key component of the Australian Defence Force (ADF) Helicopter Strategic Master Plan that seeks to rationalise the number of helicopter types in ADF service. The MRH Program consists of three phases of AIR 9000. Phase 2 is the acquisition of an additional Squadron of troop lift aircraft for the Australian Army, Phase 4 will replace Army's Black Hawk helicopters in the Air Mobile and Special Operations roles, and Phase 6 will replace Royal Australian Navy (RAN) Sea King helicopters in the Maritime Support Helicopter role. All three phases are grouped under the AIR 9000 MRH Program.

1.2 Current Status

On 28 November 2011, the Minister for Defence Materiel announced this project is a Project of Concern.

Cost Performance

In-year

The project had a \$23.9m underspend primarily due to the deferment of milestone payments for the Full Flight Mission Simulator (FFMS) Contract and reduced capital and operating spend against purchase orders offset by additional payments made against the Prime Contract.

Project Financial Assurance Statement

As at 30 June 2013, project AIR 9000 Phase 2, 4 & 6 has reviewed the project's approved scope and budget for those elements required to be delivered by the Defence Materiel Organisation (DMO). Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

The Commonwealth has conducted negotiations with the prime contractor regarding commercial, technical and schedule issues, resulting in the signing of a Deed of Variation to the original contract on 9 May 2013, which has been termed 'Deed 2'. The effective date of Deed 2 is 1 July 2013.

¹⁶¹ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

The project stopped accepting aircraft in November 2010 due to a number of technical and reliability issues, which has impacted the achievement of capability milestones. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on **Australian Aerospace's** agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with the **most recent aircraft (#20) being accepted in May 2013.**

Subsequent to Deed 2 negotiations with the contractor, the final delivery of aircraft is under review impacting on the Initial Operational Capability (IOC), Final Materiel Release (FMR) and Final Operational Capability (FOC) milestones.

Twenty aircraft have been accepted with five aircraft based with the Army's 5th Aviation Regiment in Townsville, **six** aircraft based with Navy's 808 Squadron in Nowra and **five** aircraft with the Army Aviation Training Centre in Oakey. **Four** aircraft are in retrofit at the Australian Aerospace Brisbane facility. The first thirteen aircraft require an in-service retrofit to bring them up to the full Phase 2/4/6 capability baseline. **As at June 2013 one of the thirteen aircraft has been retrofitted and accepted back into service.**

Australian Military Type Certification and Service Release was achieved 17 April 2013. Initial Materiel Release (IMR) was achieved 13 May 2013.

Materiel Capability Performance

Following achievement of In-Service Date (ISD) with agreed partial achievement of the contracted MRH capabilities, there has been significant work by both Industry and the Commonwealth to define and implement a series of capability block enhancements to bring the MRH90 to contracted standards. This includes a retrofit program to progressively bring all aircraft up to the contracted standard.

1.3 Project Context

Project Background

The Additional Troop Lift project was first foreshadowed in the Defence White Paper 2000.

The MRH Program consists of Phases 2, 4 & 6. Phase 2 was approved initially, providing 12 additional Troop Lift helicopters for Army. Phases 4 & 6 were approved subsequently with Phase 4 as the replacement of the Australian Army's fleet of 34 S-70A-9 Black Hawk helicopters, again for troop lift capability, and Phase 6 as the replacement of the RAN's fleet of six Sea King helicopters, providing maritime support capability for Navy. In total, the AIR 9000 MRH Program will acquire **47** MRH90 aircraft and support systems.

Support capabilities, such as Electronic Warfare Self Protection Support System, MRH Software Support Centre, MRH Instrumentation System and a Ground Mission Management System, will be acquired along with training systems and in-service support.

The Phase 2 Acquisition Contract was signed with **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. Initial CCPs for the Acquisition, Sustainment and Program Agreement Contracts were signed in June 2006.

A further CCP for development of associated systems including: Electronic Warfare Self Protection Support System, MRH Software Support Centre, MRH Instrumentation System and a Ground Mission Management System, as well as two part task trainers and a number of aircraft options were signed in October 2006.

The three AIR 9000 Phase 2/4/6 contracts viz. Program Agreement Contract, Acquisition Contract and Sustainment Contract incorporate the above CCPs. On acceptance of two MRH90, appropriate training, maintenance and supply support, an ISD of December 2007 was achieved with aircraft operating under a Special Flight Permit granted by the Chief of Air Force. This triggered the Sustainment Contract to come into effect and all three contracts are now currently active.

The Commonwealth suspended acceptance of aircraft from **Australian Aerospace** in November 2010 but recommenced in November 2011 after negotiating a remediation plan (Deed of Agreement and CCPs) to address a number of engineering and reliability issues. Concurrent with the recommencement of aircraft

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acceptance in November 2011, the Minister for Defence announced that the project would be listed as a Project Of Concern citing early warning thresholds being exceeded for schedule, aircraft technical deficiencies and **Australian Aerospace's** performance.

The Commonwealth has conducted negotiations with the prime contractor to review and settle commercial, technical and schedule issues resulting in a variation to the original contract signed on 9 May 2013, which has been termed 'Deed 2'. Deed 2 will improve the accuracy of sustainment forecasting, provide a more affordable capability, remediate a number of technical issues and re-baseline the delivery schedule.

Project Uniqueness

The MRH90 aircraft is based upon the German Army variant of the NH90 Troop Transport Helicopter. The MRH90 design uses well established aerospace technologies, but will introduce new technologies into Army and Navy, primarily in the areas of composite structure, helmet mounted sight and display and fly-by-wire flight control systems.

The MRH Program is providing an MRH90 capability to two main users - Army and RAN. The capability delivery complexity this introduces has been mitigated through an agreement between Chief of Army and Chief of Navy. This provides the project with a single interface for introduction into service issues.

The MRH Program Office Design Acceptance Strategy is dependent on French Military Airworthiness Authority's, Direction Générale de l'Armement (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.

Project Major Challenges

The reliability and Rate of Effort of MRH90 is lower than expected and has impacted the training of MRH90 aircrew. Key contractual and capability milestones have also been impacted by the reduced Flying Rate of Effort.

Aircraft system lack of maturity has affected the certification schedule of the MRH90 **and subsequently the declaration of capability milestones**. Several aircraft component weaknesses, including the cargo hook release mechanism, **the Fast Rope Rappelling Device (FRRD)** , **the self defence gun mount**, **the cabin seating and the non-compliance of the Full Flight and Mission Simulator activities have impacted the achievement of these capability milestones**.

Other Current Projects / Sub-Projects

N/A

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Apr 04	Original Approved	3.3	1
Aug 04	Government Second Pass Approval	953.9	
Jun 06	Real Variation – Scope	2,565.6	2
Oct 06	Real Variation – Transfer	(219.0)	3
Oct 08	Real Variation – Transfer	(20.0)	4
Oct 08	Real Variation – Scope	31.5	5
		3,312.0	
Jul 10	Price Indexation	679.8	6
Jun 13	Exchange Variation	(345.2)	
Jun 13	Total Budget	3,649.9	
	Project Expenditure		
Prior to Jul 12	Contract expenditure – Australian Aerospace	(1,810.7)	
	Contract expenditure – CAE Australia	(119.7)	
	Other Contract Payments / Internal Expenses	(117.6)	7
		(2,048.0)	
FY to Jun 13	Contract expenditure – Australian Aerospace	(104.2)	
	Contract expenditure – CAE Australia	(14.0)	
	Other Contract Payments / Internal Expenses	(13.0)	7
		(131.2)	
Jun 13	Total Expenditure	(2,179.2)	
	Remaining Budget	1,470.7	
Notes			
1	This project's original DMO budget amount is that prior to achieving Second Pass Government Approval.		
2	Incorporation of AIR 9000 Phase 4 (Black Hawk Upgrade/Replacement) and AIR 9000 Phase 6 (Maritime Support Helicopter).		
3	The funding related to facilities elements of the project that will be managed by Defence Support Group (DSG).		
4	Transfer to DSG for Facilities Infrastructure.		
5	Real Cost Increase funding for Full Flight and Mission Simulator Facilities (FFMS).		
6	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$556.2m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$123.7m having been applied to the remaining life of the project.		
7	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Variation is due primarily to the financial impact of the deferment of milestone payments against the Full Flight Mission Simulator Contract (\$17.2m) reduced capital and operating spend against purchase orders currently in place (\$10.1m), offset by additional payments made against the Prime Contract (\$3.4m) in relation to Earned Value Management (EVM).
			Overseas Industry	
		(23.9)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
155.1	131.2	(23.9)	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Australian Aerospace	Jun 05	846.3	2,492.1	VARIABLE	ASDEFCON (Strategic)	1, 2, 3
CAE Australia	Dec 07	180.5	181.5	VARIABLE	ASDEFCON (Complex)	4
Notes						
1	This contract also includes an Electronic Warfare Self Protection Support System, MRH Software Support System, MRH Instrumented System and 23 Ground Mission Management Systems (GMMS) (4 Fixed GMMS, 7 Deployable GMMS, 1 Reduced, 9 Light and 2 interim GMMS). Contract Base date is January 2004.					
2	The MRH Instrumented System includes an airborne instrumentation pallet, some ground based instrumentation and three aircraft (from the total fleet of 47) that have provisions to have the instrumentation pallet installed.					
3	Previous reporting of the base date value for the Australian Aerospace contract utilised RBA rates, the base date has been amended using Commonwealth Base Date rates as detailed in the AIR 9000 Request For Proposal documents.					
4	This contract includes two MRH90 FFMS and the associated facilities (spares, tools etc.).					
Contractor		Quantities as at		Scope	Notes	
		Signature	30 Jun 13			
Australian Aerospace		12	47	MRH90 Aircraft	1	
CAE Australia		2	2	Full Flight and Mission Simulator		
1	The delivery of a 47 th MRH90 was negotiated as part of Deed 2. This enables one airframe to be rotated through as a Ground Training Device, whilst maintaining an operational fleet of 46 airframes.					
Major equipment received and quantities to 30 Jun 13						
20 MRH aircraft have been accepted to date. Engineering and maintenance arrangements established.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	MRH aircraft - Phase 2	Aug 05	Oct 05	Sep 05	1	1
	MRH aircraft - Phase 4/6	Apr 07	Apr 07	May 07	1	1
	MRH Software Support Centre	N/A	Mar 07	Apr 07	1	
	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 05	N/A	

	Ground based Mission planning and Management System	Oct 05	Oct 05	Feb 07	16	3
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	May 08	Nov 08	Mar 09	9	2
System Design	Full Flight and Mission Simulators	Oct 08	Mar 09	Jun 09	8	2
Preliminary Design	MRH aircraft - Phase 2	Jan 06	Jan 06	Apr 06	3	
	MRH aircraft - Phase 4/6	N/A	N/A	Jun 08	N/A	
	MRH Software Support Centre	N/A	Jun 07	Jun 07	0	
	Electronic Warfare Self Protection Support System	Mar 06	Mar 06	May 06	2	
	Ground based Mission planning and Management System	Jul 06	Apr 07	Jun 07	11	3
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	Feb 09	Sep 09	Oct 09	8	2
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	3
	MRH Instrumented System	N/A	Jun 08	Jun 08	0	
	Full Flight and Mission Simulators	Aug 09	Feb 10	Apr 10	6	2
Notes						
1	Delays in the Systems Engineering process have resulted from the developmental nature of the aircraft system, with the MRH90 variant being unique in some ways.					
2	FFMS design review delays stem primarily from slow Contractor derivation of requirements into a suitable System and Subsystem Specification. This was compounded by delays in the prime contractor establishing a vital subcontract with the aircraft manufacturer.					
3	GMMS software delays are directly attributable to aircraft schedule delivery slip.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRH aircraft - Phase 2	Jul 06	Nov 06	Dec 06	5	
	MRH aircraft - Phase 4/6	N/A	N/A	N/A	N/A	1
	MRH Software Support Centre	N/A	Oct 08	Nov 08	1	
	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 07	N/A	
	Ground based Mission planning and Management System	N/A	N/A	N/A	N/A	2
	MRH Instrumented System	Nov 08	May 09	Dec 09	13	3
	Full Flight and Mission Simulators	Jun 11	Sept 11	Sep 11	4	4

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Acceptance	Type Acceptance Review Special Flight Permit 1	Oct 07	N/A	Dec 07	2	5
	Australian Military Type Certificate	Dec 08	Dec 10	Apr 13	52	6
	Full Flight and Mission Simulators	Mar 13	Mar 13	Apr 14	13	11
	Ground based Mission planning and Management System Lot 1	Feb 09	Sep 09	Dec 09	10	7
	Ground Mission planning and Management System Lot 2	Feb 09	Dec 09	Apr 10	14	7
	Ground Mission planning and Management System Lot 3	Sep10	Sep10	Mar 13	30	7
	MRH Software Support Centre	Feb 09	Feb 09	Dec 08	(2)	
	Electronic Warfare Self Protection Support System	Dec 07	Dec 07	Dec 07	0	
	MRH Instrumented System	Mar 10	Jun 10	Sep 11	18	8
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 #20 (Most Recent)	Mar 11	May 13	May 13	26	9
	MRH aircraft #21 (Next aircraft)	Mar 11	Jul 13	Jul 13	28	9
	MRH aircraft #47 (Final Aircraft)	Jul 17	Jul 17	Jul 17	0	
Notes						
1	Phases 4/6 were rolled into the MRH Program from aircraft 13 onwards, which increased the number of aircraft from 12 to 46.					
2	The acceptance and test-readiness of the GMMS was broken into six lots post contract signature. The lots compose of GMMS deliverables that have been aligned to aircraft delivery – location and baseline. The acceptance of GMMS lots are listed in the acceptance area of this table.					
3	The 13 month delay to closure of Test Readiness Review was due to electronic compatibility test design issues not resolved until November 2009. This delay was mitigated by the development of an interim MRH Instrumentation System capability used for a test activity in October 2009.					
4	Achieved through completion of Test Readiness Review for Contractor In-Plant Test and Evaluation in Sep 11.					
5	The first Airworthiness Board (for a Special Flight Permit (SFP)) was conducted in November 2007 and a SFP was granted in December 2007. There have been a number of SFP extensions to allow flight trials of the aircraft as it further develops to continue. The most recent SFP was granted in December 2012 and expired in April 2013 .					
6	Achievement of the Australian Military Type Certificate proved problematic due to insufficient levels of Rate of Effort. Rate of Effort was required to validate that in-service support arrangements for the fleet are sufficient to cope with current numbers of aircraft and are growing in maturity to meet fleet requirements. Australian Military Type Certificate and Service Release was achieved 17 April 2013.					
7	Lot 1, 2 and 3 have been altered to accommodate the variation in aircraft delivery date and configuration.					
8	The MRH instrumented system incurred delays due to technical and supportability issues that resulted in contractual non-conformances. These non-conformances were rectified by September 2011.					

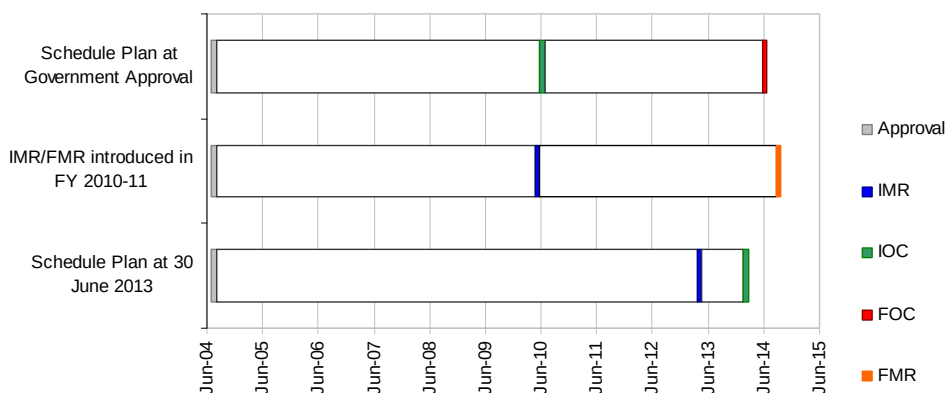
9	The MRH90 program stopped accepting aircraft in November 2010 due to a number of technical and reliability issues. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and contractual issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on Australian Aerospace's agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with the most recent aircraft (#20) being accepted in May 2013.
10	It should be noted that the MRH90 program has incurred delays of up to three years primarily due to technical and supportability issues that have resulted in contractual non-conformances and a reduced aircraft rate of effort. These delays have impacted the delivery of MRH90 capability by deferring the achievement of initial operational milestones as well as technical milestones including the Australian Military Type Certification and Service Release (AMTC/SR).
11	Refers to acceptance of Simulators in Oakey and Townsville. Delays have been incurred due to the late delivery of facilities and an underestimation of the time required to implement the design.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item		Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Army /Navy	Jun 10	May 13	35	The MRH90 program stopped accepting aircraft in November 2010 due to a number of technical and reliability issues. This has impacted the achievement of capability milestones. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on Australian Aerospace's agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with the most recent aircraft (#20) being accepted in May 2013.

Initial Operational Capability (IOC)	Navy	Jul 10	TBD	TBD	Affected by delays to IMR. Chief of Navy is currently reviewing the criteria and schedule for IOC (Navy).
	Army	Apr 11	Mar 14	35	Affected by delays to IMR
Final Materiel Release (FMR)	Army /Navy	Oct 14	TBD	TBD	FMR date directly impacted by delay to IMR. FMR & FOC are being reviewed as part of MAA update post Deed 2 agreement.
Final Operational Capability (FOC)	Navy	Dec 12	TBD	TBD	FOC dates directly impacted by delay to IMR. FMR & FOC are being reviewed as part of MAA update post Deed 2 agreement.
	Army	Jul 14	TBD	TBD	FOC dates directly impacted by delay to IMR. FMR & FOC are being reviewed as part of MAA update post Deed 2 agreement.

Schedule Status at 30 June 13

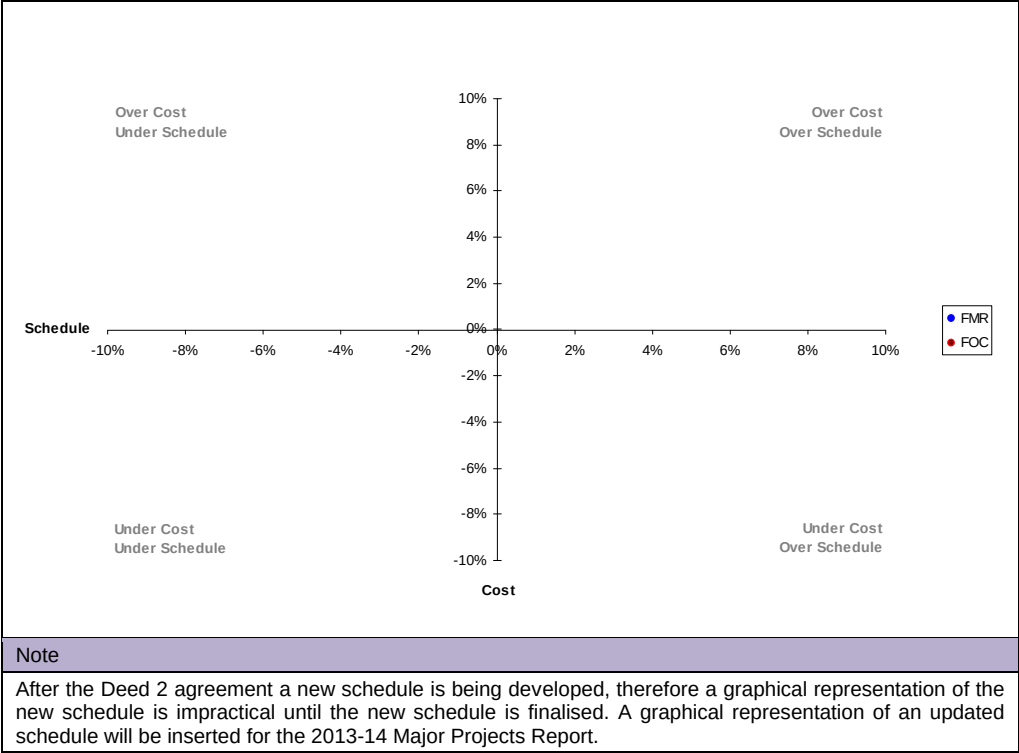


Note

After the Deed 2 agreement a new schedule is being developed, therefore a graphical representation of the new schedule is impractical until the new schedule is finalised. A graphical representation of an updated schedule will be inserted for the 2013-14 Major Projects Report.

Section 4 – Project Cost and Schedule Status

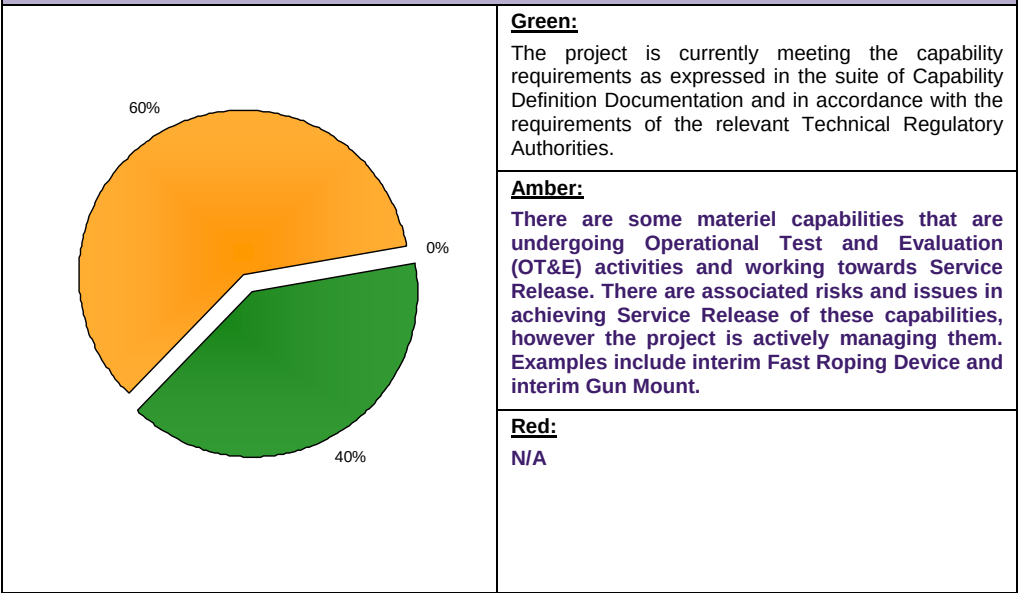
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the Australian Military Type Certificate (AMTC) / Service Release (SR) milestones will be affected by outstanding capability issues and unresolved defects and delays in delivery of planned solutions leading to an impact on performance, schedule and supportability.	As a result of AMTC/SR being achieved, this risk will be retired.
There is a chance that operational capability milestones will be affected by a number of cabin integration issues, leading to an impact on cost, schedule and performance.	1. Formation of Cabin Integration Working Group; 2. Industry Prototyping; 3. Accept incremental improvements; 4. Use of Liquidated Damages as offset; and 5. Leverage NATO Helicopters 90 (NH90) community solutions.
There is a chance that Troop carrying capability will be affected by the troop seat anthropometric issues leading to an impact on operational and capability milestones.	1. Perform analysis to understand limitations; 2. Heavy stakeholder engagement to understand requirement and limitations; 3. Determine appropriate strategy to address requirements and limitations; and 4. Identify commercial options to implement strategy.
There is a chance that an MRH90 Sustainment Training contract will not be in place in time to support MRH90 Sustainment Training to commence from beginning 2013 leading to an impact on cost, schedule and performance.	Implemented interim measures including Contractor instructor support for Initial Employment Training Technician Training in RAEME Aircraft Maintenance School. Consequently, this risk has been transferred to the in-service organisation.
There is a chance that the MRH90 navigational capability will be affected by the inability to resolve technical failures associated with the Inertial Reference System (IRS) leading to an impact on performance.	Software and Hardware (Magnetic Anomaly Detector) being implemented by Australian Aerospace . Planned for completion by October 2013 with earlier rectification possible.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
The operational capability will be affected by delays in resolution of the cargo hook issue, leading to an impact on cost, schedule and performance	Cargo hook modification to be rolled out across the fleet to address the non-conformance. This issue will be retired with the implementation of the modification.
The Deed negotiations will take significantly longer than originally anticipated causing an extended delay to aircraft acceptance and the overall program.	With the signing the Deed 2 this risk will be retired.
The test program will be affected by competing priorities because of limited airframe/aircrew resources which will result in delayed identification of issues, resolution of identified issues and delayed subsequent Operational Test and Evaluation activities leading to an impact on schedule.	1. Continue to closely manage test activities in consultation with other agencies, prioritising activities to support subsequent events. 2. Outsource work where appropriate. 3. Consider posting of key staff ahead of end of year.

	4. Try to balance test crews to maximise efficiency in test activities. 5. Manage tasking/ workload and seek additional support overall as required.
The schedule to achieve Service Release will be affected by IRS reliability issues, which has impacted schedule, supportability and performance.	With the achievement of Service Release this issue will be retired.
The Service Release and Operational capability will be affected by the FRRD being deemed not suitable leading to an impact on schedule and performance.	1. Interim FRRD solution has been design accepted and preliminary trial conducted. 2. Identify design options for enduring solution.
Sustainment training will be affected by the late delivery of Full Flight and Mission Simulators (FFMS) leading to an impact on cost, performance and safety.	1. ADF pilots carry out simulator activities on the Helisim in Europe. The cost of this training was met under the provisions of the acquisition contract. 2. Access arrangement negotiated with CAE to allow development of training materials prior to System Acceptance.

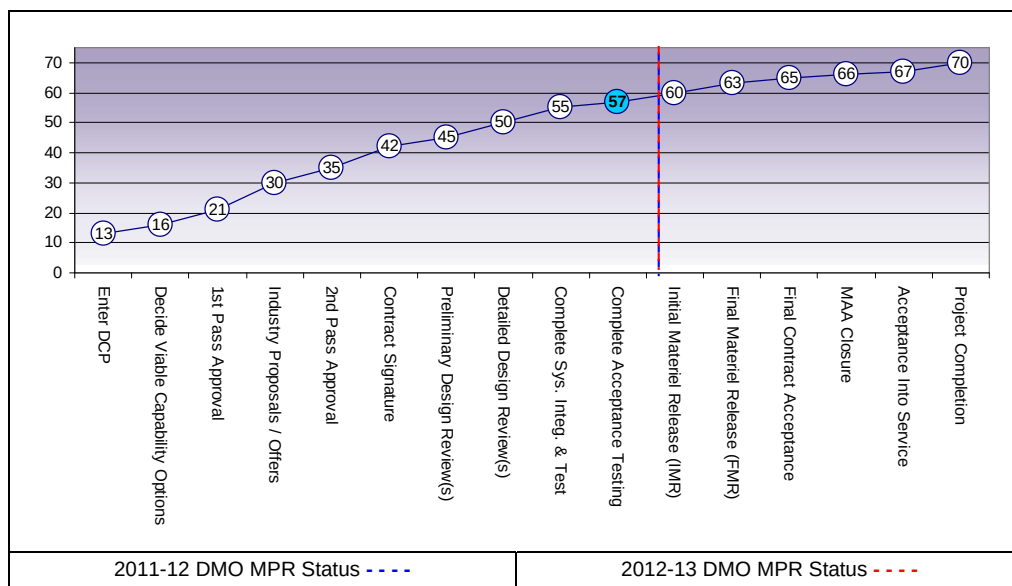
Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Complete Acceptance Testing	Project Status	10	7	10	9	8	6	9	59
	Explanation	• Schedule: Achieved MRH90 ISD. • Cost: Not all risks have been retired; however the estimate at completion to mitigate remains within contingency guidance. • Requirement: The MRH System design and acceptance testing phases being essentially complete. Additionally, the project office, with Navy and Army, is conducting validation trials to demonstrate that the system meets in-service requirements. • Technical Understanding: The knowledge necessary to operate and support the platform is being transferred to the in-service providers; however this is ongoing due to technical concerns. • Technical Difficulty: Capability is still being tested fully due to the immaturity of elements of the capability. • Commercial: The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on Australian Aerospace's agreement to the commercial terms associated with the rectification of the cargo hook issue. Scheduled aircraft acceptance recommenced in June 2012 with the most recent aircraft (#20) being accepted in May 2013. • Operations and Support: The MRH System has commenced progressive transition from the acquisition environment to the in-service support and operational organisations.							

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Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Early establishment of the Sustainment organisations. Both Commonwealth and Industry teams need to be set up well in advance of the delivery of the first of type for projects. The provision of accepted aircraft to an Operational Squadron has led to a range of lessons in regard to command and control of assets and people, stakeholder management and the relationship with Industry.	Resourcing
The impact of attaining limited Intellectual Property rights has been critical to the ongoing development of the capability and achievement of value for money in further contract negotiations. It has also limited the provision of data for integration with other platforms (such as the Landing Helicopter Deck ships).	Contract Management
The MRH Project was viewed as a Military off-the-Shelf (MOTS) acquisition. Lessons associated with MOTS procurements include: that it is essential that the maturity of any offered product be clearly assessed and understood; and that elements of a chosen off-the-shelf solution may not meet the user requirement.	Off-the-shelf Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Mark Campbell (to Jul 12) RADM Anthony Dalton (Jul 12–current)
Branch Head	BRIG Andrew Mathewson
Project Director	COL Ron Dempster (to Jun 13) LTCOL James Allen (Jun 13–current)
Project Manager	LTCOL James Allen (to Jun 13) Mr Hilton Hunter (Jun 13–current)

Project Data Summary Sheet¹⁶²

Project Name	BRIDGING AIR COMBAT CAPABILITY
First Year Reported in the MPR	Phase 1 2008-09 Phase 2 2010-11
Project Number	AIR 5349 Ph 1 and 2
Capability Type	Replacement
Service	Royal Australian Air Force
Government 1st Pass Approval	Mar 07
Government 2nd Pass Approval	Mar 07
Total Approved Budget (Current)	\$3,556m
2012-13 Budget	\$42.3m
Project Stage	Phase 1 Acceptance Into Service Phase 2 Final Materiel Release
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The Bridging Air Combat Capability Project provides for the acquisition of 24 Boeing F/A-18F Super Hornets, associated weapons, support, and training systems to establish a bridging air combat capability for the Australian Defence Force (ADF).

Phase 1 of the project has acquired and delivered all 24 Super Hornets and associated support and training systems.

Phase 2 of the project will acquire the associated missile suite including; AIM-9X Within Visual Range Air-to-Air Missiles (AIM-9X), AGM-154C and C-1 Joint Stand-Off Weapons (JSOW C and C-1), AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM) and new Infra-Red Flares in support of the Super Hornet aircraft.

1.2 Current Status

Phase 1	Cost Performance <u>In-year</u> This year, although there was a slight overspend the relatively low-level of expenditure reflects the reduced activity following declaration of Final Operational Capability (FOC). <u>Project Financial Assurance Statement</u> As of 30 June 2013, project AIR 5349 Phase 1 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

162 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

	Schedule Performance The project achieved FOC on schedule in December 2012. AIR 5349 Phase 1 declared Final Materiel Release (FMR) in November 2012 which was accepted by Air Force in January 2013. Aircraft are in operation at both 1 and 6 Squadrons based at Royal Australian Air Force (RAAF) Base Amberley. The necessary engineering, maintenance, supply and training arrangements to support aircraft operations and aircrew training within Australia have also been established.
	Materiel Capability Performance The F/A-18F Super Hornets have been granted Australian Military Type Certification and all 24 aircraft have been entered on the State Register and released from the DMO to the RAAF. All aircraft have a comprehensive electronic warfare suite, advanced infra-red/laser pods, external fuel tanks, aerial refuelling stores and an Active Electronically Scanned Array (AESA) radar. In addition, ALE-55, a new fibre-optic towed decoy jamming capability, has been introduced into service for operational evaluation and aircrew training. The Super Hornets are able to deploy the AIM-9X and AMRAAM C5 air-to-air missiles, and JSOW-C weapons being procured under Phase 2 of the project along with a range of weapons already in the Air Force's weapons armoury. Two tactical flight simulators and two cockpit procedural trainers have been delivered to provide aircrew training.
Phase 2	Cost Performance <u>In-year</u> This year, there was a slight overspend primarily due to an FMS payment being brought forward. <u>Project Financial Assurance Statement</u> As at 30 June 2013 the project has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope. Schedule Performance The project successfully achieved FMR in September 2012 and Final Operational Capability (FOC) in December 2012. The AIM-9X and JSOW C have been transitioned into service. United States Air Force (USAF) programmatic decisions have delayed the production of Australia's AIM-120 AMRAAMs, with subsequent delays to final deliveries. The United States Navy (USN) has advised that the JSOW C-1 program has been delayed impacting final delivery. Materiel Capability Performance The AIM-9X and JSOW C have been delivered, certified, and are in service. The entire AIM-120 B and C-5 AMRAAM inventory has been upgraded to be compatible with Super Hornet. The USN has advised of issues with the integrated testing of JSOW C-1 and has delayed testing to address the issues.

1.3 Project Context

Project Background

In November 2006, Government directed Defence to develop options to de-risk the transition from the current ADF air combat capability to the new air combat capability being acquired under Project AIR 6000. To achieve this, Defence established Project AIR 5349 to acquire a bridging air combat capability for the ADF. In March 2007, Government approved the acquisition and sustainment of 24 F/A-18F Super Hornet aircraft and associated weapons, support, and training systems.

Under Phase 1 of the project, 24 F/A-18F Super Hornet aircraft and associated training and support systems were to be acquired primarily through Foreign Military Sales (FMS) Cases with the United States (US) Government.

The 24 F/A-18F Super Hornet aircraft were acquired with alternate mission equipment; electronic warfare equipment including an Australian-unique data library, targeting pods; communication and navigation suites. The training systems 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).

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To support introduction into service, mature engineering and maintenance sustainment arrangements coupled with a mature supply system have been developed and are in place.

Phase 2 has acquired and transitioned into service AIM-9X Sidewinder missiles and variants, AGM 154 JSOW C weapons and a trial quantity of IR flares.

In order to maintain JSOW commonality with USN, a limited quantity of JSOW C weapons were procured for Initial Operational Capability (IOC), with the remainder being the updated version JSOW C-1. **New variants of AIM 120 AMRAAM missiles are also being procured.**

Phase 2 was also directed to undertake additional certification and integration activity of the current ADF AIM-120 AMRAAM inventory on to the F/A-18F to achieve IOC. Phase 2 **further provided** JSOW C and Software Upgrade 08 AMRAAM to support the Super Hornet FOC **declared in** December 2012.

Delivery of the new variants for JSOW and AMRAAM **are scheduled to occur subsequent to FOC**. These are highlighted in the Project Event and Supplies Delivery Schedule. These two events will ensure the effectiveness of the weapons system **is maintained** for the life of the capability.

Project Uniqueness

The F/A-18F Super Hornets represent a Military-Off-The-Shelf (MOTS) aircraft acquisition. The aircraft are common with USN F/A-18F Super Hornets with the only significant configuration difference being the inclusion of a civilian-compatible Instrument Landing System and the Australian-unique data library.

The F/A-18F Super Hornet was a directed Government solution resulting from a combined first and second pass project approval process.

The timeframe between the Government approval of the project and the IOC date is significantly shorter than for other major aerospace acquisitions.

The majority of acquisition activity for the aircraft and support equipment is being undertaken through a US FMS case.

Acquisition of the weapons suite is being undertaken using several US FMS cases. The weapons being procured under Phase 2 are continually monitored to ensure the ADF receives the most up to date, USN common weapon, as defined by Government. All the weapons being procured under Phase 2 are new to the ADF.

Project Major Challenges

Whilst the aircraft are MOTS, 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.

The delivery of facilities and Support and Test Equipment **had to be managed** to an aggressive timeline to sustain initial flying operations in Australia.

Procurement of leading edge weapons via FMS is reliant on development schedules, which induce schedule risk that DMO has limited ability to mitigate. **The schedule delays have created a human resource risk to the project, where the updated FMS delivery dates will occur after the planned project closure.**

Whilst weapons are MOTS, there is a requirement for necessary data to be provided to enable RAAF certification. The pace of this acquisition provided challenges for USN to supply associated data in the necessary timeframes.

Other Current Projects / Sub-Projects

AIR 5349 Phase 3 Growler Airborne Electronic Attack Capability: Acquisition of an Airborne Electronic Attack capability based on the EA-18G Growler aircraft.

1.4 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 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Mar 07	Original Approved Phase 1 & Phase 2	3,728.2	
Phase 1			
Mar 07	Original Approved Phase 1	3,545.8	
Jul 08	Phase 1 Real Variation – Transfers	(33.3)	1
May 11	Real Variation – Budget Transfer to Phase 2	(99.0)	2
May 11	Real Variation – Real Cost Decrease	(107.2)	3
		(239.5)	
Jul 10	Phase 1 Price Indexation	367.3	4
Jun 13	Phase 1 Exchange Variation	(392.5)	
Jun 13	Total Budget	3,281.1	
Phase 2			
Mar 07	Original Approved Phase 2	182.4	
May 11	Real Variation – Transfer from Phase 1	99.0	1
Jul 10	Price Indexation	23.9	4
Jun 13	Exchange Variation	(30.4)	
Jun 13	Total Budget	274.9	
	Total Budget Phase 1 & Phase 2	3,556.0	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – US Government Phase 1 (Aircraft)	(2,569.7)	
	Contract Expenditure – US Government Phase 1 (ACMI)	(6.2)	
	Contract Expenditure – US Government Phase 2 (Weapons)	(112.4)	
	Other Contract Payments / Internal Expenses (Phase 1)	(120.9)	5
	Other Contract Payments / Internal Expenses (Phase 2)	(11.1)	6
		(2,820.3)	
FY to Jun 13	Contract Expenditure – US Government Phase 1 (Aircraft)	(10.6)	
	Contract Expenditure – US Government Phase 1 (ACMI)	(9.6)	
	Contract Expenditure – US Government Phase 2 (Weapons)	(13.4)	
	Other Contract Payments / Internal Expenses (Phase 1)	(9.2)	7
	Other Contract Payments / Internal Expenses (Phase 2)	(0.7)	
		(43.5)	
Jun 13	Total Expenditure	(2,863.8)	
Jun 13	Remaining Budget	692.2	
Notes			
1	Guidance transfer to DSG Facilities element.		
2	Real Cost Decrease Phase 1 - budget transfer to AIR 5349 Phase 2 (\$99.0m) for Super Hornet Weapons.		
3	Real Cost Decrease return to Portfolio (\$107.2m).		
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach for Phase 1 was \$351.4m. In addition to this amount, the impact on the		

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	project budget as a result of out-turning was a further \$15.9m having been applied to the remaining life of the project. The cumulative impact of this approach for Phase 2 was \$20.6m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$3.3m having been applied to the remaining life of the project.
5	Other expenditure comprises: operating expenditure, contractors, contingency, other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.
6	'Other' cost is a combination of overseas and domestic travel, professional service providers, freight and general administration of \$2.4m. Also included are FMS Cases ATPBES \$0.8m, ATPAYK \$0.7m, ATDYKX \$1.3m and ATDQAC \$5.9m.
7	Other (Phase 1) expenditure comprises: Chief Information Officer Group Transfer for Advanced Flight Replay Tool and Automated Maintenance Environment Infrastructure \$2.3m, Salaries and travel \$1.3m, Codification and Cataloguing support services \$1.4m, Precision Strike Targeting Local Area Network \$0.9m, Weapons Range Infrastructure \$0.5m, Breathing apparatus \$0.5m, Specialised maintenance tooling \$0.5m, Airspace Command and Control infrastructure \$0.3m, Facility works/upgrades \$0.2m, Strip clearance and engine rectification works \$0.2m and miscellaneous low value procurements \$1.1m.

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		0.6	FMS	Phase 1 FMS payments were \$0.6m higher than planned to ensure sufficient funding for orders placed by USN for acquisition spares and multiple carriage bomb racks.
			Overseas Industry	
			Local Industry	
		0.5	Brought Forward	Phase 2 End of year variance is due to a \$0.5m payment against FMS case ATPAYG being brought forward and FOREX changes.
			Cost Savings	
		0.1	FOREX Variation	
			Commonwealth Delays	
42.3	43.5	1.2	Total Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
(Phase 1) US Government	May 07	2,850.3	2,985.9	FMS	FMS	
(Phase 1) US Government	Jun 11	19.7	19.4	FMS	FMS	1
(Phase 2) US Government	Oct 07 Mar 08 May 09 Oct 11	217.7	220.3	FMS	FMS	2
Notes						
1	This FMS case is to procure Air Combat Manoeuvring Instrumentation capability which was identified as a Baseline Confirmation Proposal.					
2	Various Signature Dates reflect different FMS acquisition cases however their prices have been combined due to classification. Three minor FMS contracts have been removed to reflect requirements of the MPR guidelines.					
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 13				
(Phase 1) US Government	24	24	F/A-18F Super Hornet Aircraft.			
(Phase 1) US Government	20	20	Air Combat Manoeuvring Instrumentation pods.			
US Government	Classified	Classified	- AIM-9X CATM, operational and telemetry missiles, technical assistance and data; - JSOW C operational and telemetry missiles,		1	

			- technical assistance and data; - JSOW C-1 operational and telemetry missiles, technical assistance and data; - Trial quantity of Infra-Red Flares and technical data; - Extant AMRAAM missiles software modification and test, technical assistance and data. AMRAAM, CATM, operational and telemetry missiles, technical assistance and data.	
Major equipment received and quantities to 30 Jun 13				
Phase 1	Twenty Four aircraft have been delivered. Engineering, maintenance, and training arrangements established.			
Phase 2	AIM-9X CATM, AIM-9X and JSOW C operational and telemetry missiles, infra-red flares.			
Notes				
1	Quantities are classified.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant		Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Software Design	Phase 1	Aircraft Software	Feb 08	N/A	Feb 08	0	
	Phase 2	Weapons	N/A	N/A	N/A	N/A	1
System Requirements	Phase 1	Aircraft	N/A	N/A	N/A	N/A	2
		Automated Maintenance Environment	Oct 08	N/A	Oct 08	0	
		Electronic Warfare Data Library	Jul 08	N/A	Jul 08	0	
		Tactical Operation Flight Trainers	Oct 08	N/A	Oct 08	0	
		Low Cost Trainers	Oct 08	N/A	Oct 08	0	
		Integrated Visual Environment Maintenance Trainers	Oct 08	N/A	Oct 08	0	
	Phase 2	Weapons	N/A	N/A	N/A	N/A	1
Preliminary Design	Phase 1	Aircraft	N/A	N/A	N/A	N/A	2
		Automated Maintenance Environment	Nov 08	N/A	Nov 08	0	
		Electronic Warfare Data Library	Oct 08	N/A	Dec 08	2	3
		Tactical Operation Flight Trainers	Apr 09	N/A	Mar 09	(1)	4

Critical Design		Low Cost Trainers	Apr 09	N/A	Mar 09	(1)	4
		Integrated Visual Environment Maintenance Trainers	Jan 09 – Oct 09	N/A	Jan 09 – Oct 09	0	5
	Phase 2	Weapons	N/A	N/A	N/A	N/A	1
	Phase 1	Aircraft	Jul 08	N/A	Sep 08	2	6
		Automated Maintenance Environment	Feb 09	N/A	Mar 09	1	7
		Electronic Warfare Data Library	Dec 08	N/A	Jul 09	7	8
		Tactical Operation Flight Trainers	Apr 09	N/A	Mar 09	(1)	
		Low Cost Trainers	Apr 09	N/A	Mar 09	(1)	
		Integrated Visual Environment Maintenance Trainers	Jan 09 – Oct 09	N/A	Jan 09 – Oct 09	0	
	Phase 2	Weapons	N/A	N/A	N/A	N/A	1
Notes							
1	All missiles acquisitions within the Scope of Phase 2 are MOTS – all reviews were completed by the US Government prior to Commonwealth acquisition.						
2	No Aircraft Systems Requirement Review or Preliminary Design Review for the project as the aircraft is a MOTS design.						
3	The Electronic Warfare data library preliminary design review was delayed due to the USN adopting a new design process, and the issue of classified data being unable to be released.						
4	Preliminary and Critical Design Reviews were combined to meet delivery targets.						
5	The Integrated Visual Environment Maintenance Trainers follow a spiral development path with several combined Preliminary/Critical Design Reviews beginning in January 2009 and continuing through until October 2009.						
6	The Aircraft Critical Design Review was delayed due to the Instrument landing system integration requiring re-design.						
7	The Critical Design Review for the Automated Maintenance Environment slipped by one week.						
8	The Electronic Warfare data library critical design review was delayed due to the USN adopting a new design process and the continuing issue of classified data being unable to be released.						

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant		Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Phase 1	Instrument Landing System Antennae Qualification	Jul 08	N/A	May 09	10	1
		Instrument Landing System - Aircraft Integration Test	Jan 09 – Mar 09	N/A	May 09 – Jun 09	3	2

		Aircraft Software Integration	Mar 09 – Jul 09	N/A	Mar 09 – Dec 09	5	3
		Electronic Warfare Data Library	Mar 09	N/A	May 10	14	4
		Automated Maintenance Environment	Aug 09	N/A	Aug 09	0	
	Phase 2	JSOW-C, JSOW C-1, AIM-9X and AMRAAM	N/A	N/A	N/A	N/A	5
Acceptance	Phase 1	Lot 32 Aircraft Production Test (Boeing) – 12 Aircraft	Jul 09 – May 10	N/A	Jul 09 – May 10	0	
		Lot 33 Aircraft Production Test (Boeing) – 12 Aircraft	Aug 10 – Jul 11	N/A	Aug 10 – Jul 11	0	
		Aircraft Post-Production Test and Evaluation (USN)	Jul 09 – Oct 09	N/A	Jul 09 – Dec 10	14	6
		Electronic Warfare Data Library	May 09	N/A	Jun 10	13	7
		Automated Maintenance Environment	Aug 09	N/A	Aug 09	0	
		Tactical Operation Flight Trainers #1 (On-Site Test)	Mar 10	N/A	May 10	2	8
		Low Cost Trainers	Feb 10	N/A	May 10	3	9
		Visual Environment Maintenance Trainers	Sept 09	N/A	Oct 09	1	10
		Computer Based Training Classrooms	Nov 09	N/A	Dec 09	1	
	Phase 2	AIM-9X	Mar 10		Mar 10	0	
		JSOW C	N/A		Feb 10	0	11
		JSOW C-1	Mar 10	Feb 16	Feb 16	71	12 & 13
		AMRAAM C-7	Dec 11	TBC	TBC	N/A	
Notes							
1	Instrument Landing System antennae qualification and integration tests delayed due to a test failure of the antennas and the need to redesign.						
2	Airframe Integration Test – Slip due to failure of Instrument Landing System antennae.						
3	Software Integration – classified.						
4	The Electronic Warfare data library testing was delayed due to the USN adopting a new design process, and the continuing issue of classified data being unable to be released.						
5	Integration of weapons onto aircraft is within the scope for AIR 5349 Phase 1.						
6	Post-production test and evaluation affected by the delays in the instrumented landing system qualification and aircraft software integration. The 14 month delay related to the first aircraft which						

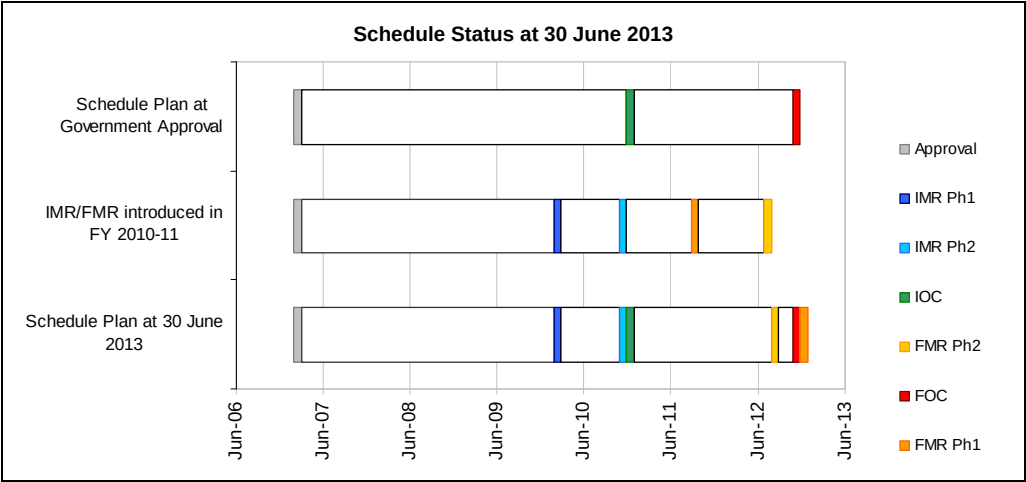
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	remained in the US under USN custody for Contractor rectification testing with the avionics issue and USN weapon risk mitigation activity.
7	Thirteen month delay due to System Integration failures and delays with USN development.
8	Two month variance due to delays in the US Government data release approval process and approval required for US export of equipment.
9	Three month delay due to late delivery of Low Cost Trainer facility at Amberley.
10	One month variance due to delays in the US Government data release approval process and approval required for US export of equipment.
11	Due to JSOW C-1 schedule slip, JSOW C was acquired to meet December 2010 IOC requirement.
12	Deliveries of post FOC weapons are a result of the spiral acquisition process. This is inherent in a modern weapons project whereby new weapons will be procured following discontinued production runs of the JSOW-C and AMRAAM C-5 weapons variant.
13	Reflects up to 71 months delay in US program of JSOW C-1, noting original planned date was based on USN advice prior to full disclosure of USN development schedule. JSOW C missiles were purchased to provide required IOC/FOC capability of the Super Hornet. Since acquisition of JSOW C meets the IOC/FOC requirement, actual delay should be considered as post FOC, December 2012.

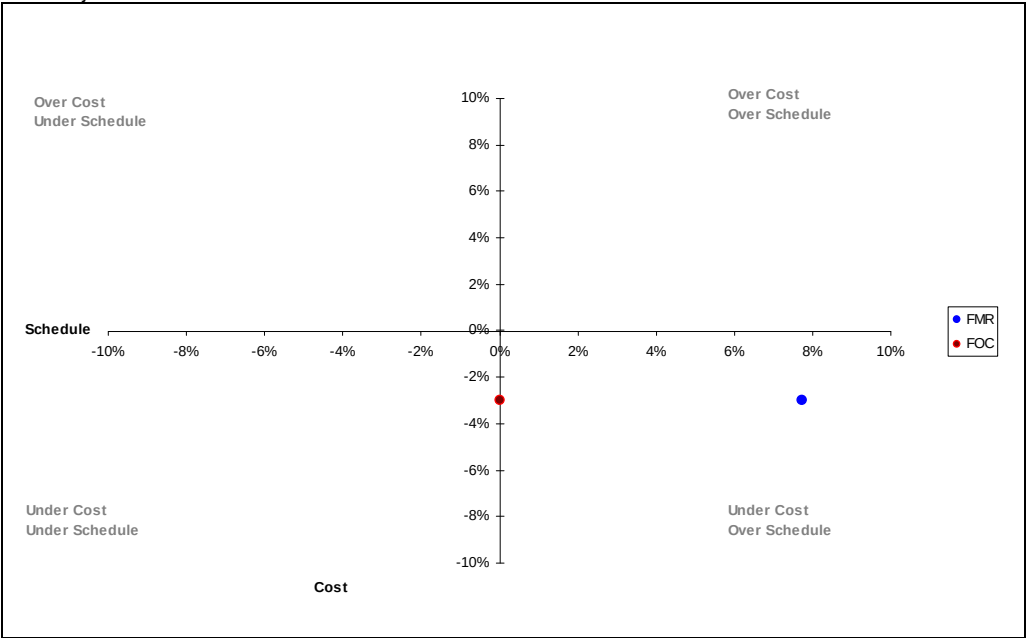
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item		Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Phase 1	N/A	Mar 10	N/A	
	Phase 2	N/A	Dec 10	N/A	
Initial Operational Capability (IOC)	Phase 1	Dec 10	Dec 10	0	
	Phase 2	Dec 10	Dec 10	0	
Final Materiel Release (FMR)	Phase 1	Oct 11	Jan 13	15	Whilst the final four aircraft were delivered in October 2011, thus completing the tangible materiel deliveries required under the Materiel Acquisition Agreement (MAA), the project had to ensure that adequately mature engineering, maintenance and supply support arrangements were in place to meet FOC requirements. The AIR 5349 Phase 1 project office assessed that these were fully matured by November 2012 and declared FMR which was duly accepted by Air Force in January 2013.
	Phase 2	Aug 12	Sep12	1	Advice provided to Air Force in August 2012, response provided in September 2012.
Final Operational Capability (FOC)	Phase 1	Dec 12	Dec 12	0	
	Phase 2	Dec 12	Dec 12	0	



Section 4 – Project Cost and Schedule Status (Combined Phase 1 & Phase 2)

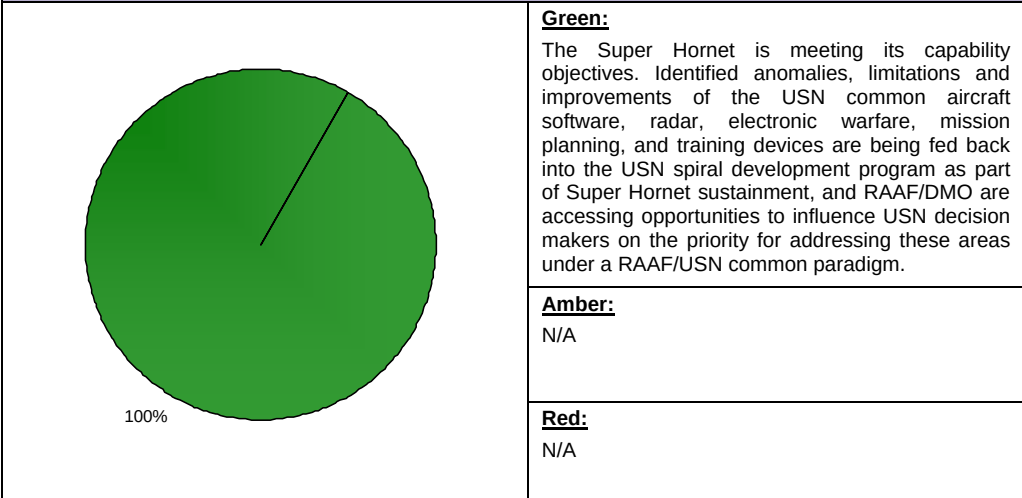
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

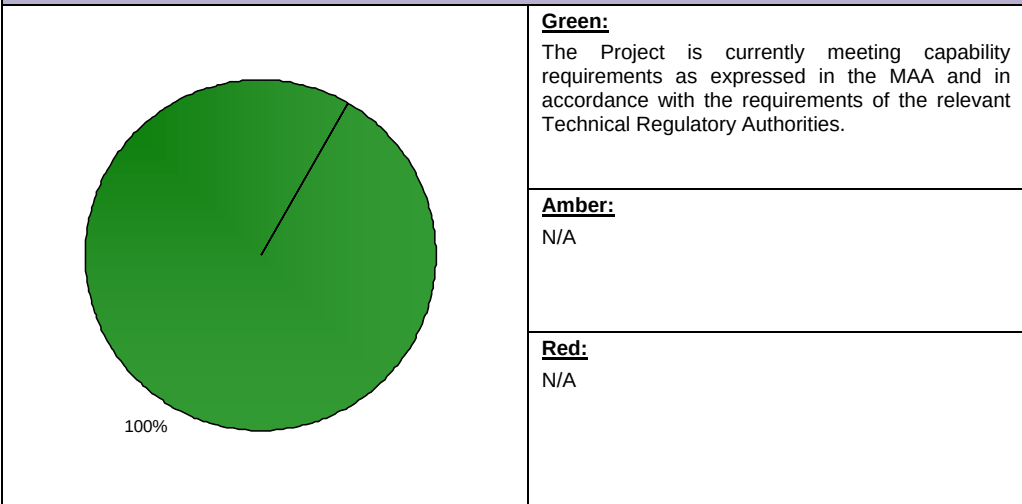
5.1 Measures of Materiel Capability Performance Phase 1 (Aircraft)

Pie Chart: Percentage Breakdown of Materiel Capability Performance



5.1 Measures of Materiel Capability Performance Phase 2 (Weapons)

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)

	Description	Remedial Action
Phase 1	N/A	N/A
Phase 2	There is a chance that delivery of JSOW C-1 is delayed.	This risk has been realised and is now being managed as an issue.
	There is a chance that USN/Raytheon have insufficient Telemetry Instrumentation Kits (TIK) to support Operational Test and	The project has requested the USN contract Raytheon to provide cost and schedule data for the supply of TIKs. The project is

	Evaluation (OT&E) and Raise Train Sustain firings of JSOW C/C-1.	currently waiting on this information. This risk has been downgraded to medium.
	There is a chance that there are software integration issues with JSOW C-1 on Super Hornet.	This risk has been realised and is now being managed as an issue.
	There is a chance that technical or US programmatic issues will delay availability of some Australian Super Hornet weapons.	Closely engage with the US authorities who are managing the Australian Super Hornet weapon programs.
Emergent Risks (risk not previously identified but has emerged during 2012-13)		
	Description	Remedial Action
Phase 1	N/A	N/A
Phase 2	There is a chance that the JSOW C-1 will be affected by the USN Furlough restrictions leading to an impact on integration and delivery.	The US have advised that FMS positions have not been affected by the furlough. Some domestic activities have been affected but this poses a lesser risk than initially anticipated. This risk has been downgraded to medium.
	There is a chance that the AMRAAM will be affected by a Mean Time Between Failure (MTBF) less than indicated by the USAF leading to an impact on availability of assets.	The Project is obtaining definitive MTBF figures in order to further define this risk.

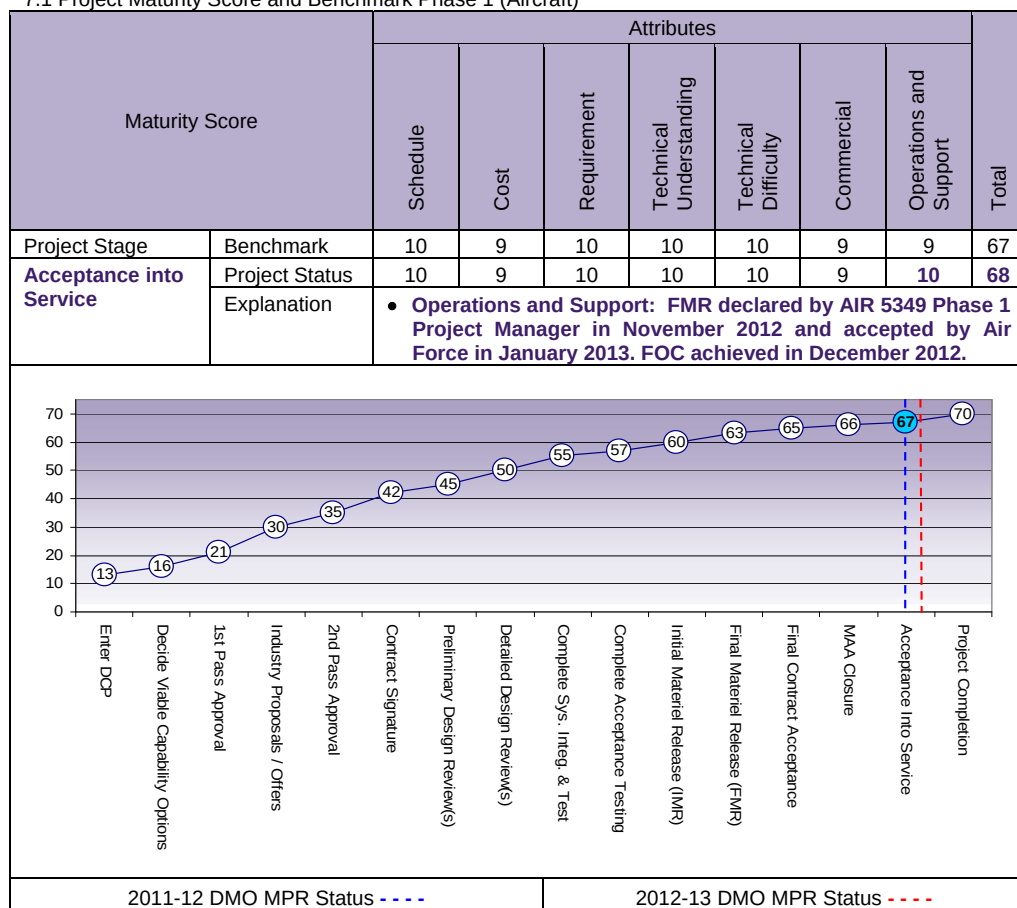
6.2 Major Project Issues

Description		Remedial Action
Phase 1	Spares availability has been affected by late delivery of spares because of Original Equipment Manufacturer delays and USN delays in award of Supplier contracts leading to an impact on performance, supportability and schedule.	Strategy to deliberately expedite acquisition deliverables including: 1. prepare list of USN accepted "Not Complete" National Item identification Numbers; 2. prioritise outstanding items in conjunction with Boeing Defence Australia; 3. note items not on contract (USN to Boeing St Louis); 4. suggest feasible options to speed up supply; and 5. expedite USN contracting and delivery schedule. This issue has been transferred to Air Combat and Electronic Attack Systems Program Office Risk and Issues Log for management.
	Super Hornet has not been certified to tank from the KC-30A because of delayed delivery of RAAF Air-To-Air capability, leading to an impact on performance and cost.	This was identified as an emergent risk in the 2011-12 MPR and has now been realised. Two stage strategy: First stage is Partial Clearance followed by Full Clearance activity. Following completion of Full Clearance activity, USN will issue Flight Clearance Recommendation for Australian Super Hornet. Following the introduction into service of a partial clearance capability, this issue has been retired.

	There is a possibility that the Forward Looking Infra Red performance will be degraded.	This was identified as an emergent risk in the 2011-12 MPR and has now been realised. Engineering Change Proposal No 35 will introduce an Electronic Image Stabilisation Card. This issue has been transferred to Air Combat and Electronic Attack Systems Program Office Risk and Issues Log for management.
Phase 2	The JSOW C-1 has been affected by software integration issues leading to an impact on Australian Super Hornet capability.	The USN has slipped the integration of the JSOW C-1 into the next build of software for the Super Hornet. The Project has no control over this slip. The treatment option is to inform government, and re-schedule the project accordingly.
	The JSOW C-1 FOT&E test event in September 2014 has been affected by the integration issues with the software build leading to an impact on Materiel Release of the JSOW C-1.	This issue has been retired as the shoot is no longer happening and has been rescheduled.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark Phase 1 (Aircraft)



7.1 Project Maturity Score and Benchmark Phase 2 (Weapons)

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	9	9	9	8	9	63
Final Materiel Release	Project Status	8	8	9	8	8	8	9	58
	Explanation	Schedule: Project has delivered AIM-9X and JSOW C. JSOW C-1 weapons are expected to be delivered in 2014. AIM-120 AMRAAM was contracted in May 13 for delivery in 2015. Cost: The project is on track to meet the budgeted forecast for the project. Technical Understanding: The JSOW C-1 and AMRAAM integration programs remain in progress. Technical understanding is still transferring to the ADF. Technical Difficulty: The JSOW C-1 and AMRAAM integration programs are in the test phase, validation of the designs continues within the US Government. DMO's current method for calculating Project Maturity does not fully accommodate projects acquiring multiple designs or delivery of materiel post FOC. The benchmark score reflects the declaration of FMR and FOC. The Project Status score reflects the late delivery of the JSOW C-1 and AMRAAM. The current MAA acknowledges the materiel releases post FOC.							

Project Stage	Maturity Score
Enter DCP	13
Decide Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Offers	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ. & Test	55
Complete Acceptance Testing	57
Initial Materiel Release (IMR)	60
Final Materiel Release (FMR)	63
Final Contract Acceptance	65
MAA Closure	66
Acceptance Into Service	67
Project Completion	70

2011-12 DMO MPR Status - - - -	2012-13 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson		Categories of Systemic Lessons
Phase 1	A reasonable presence of Australian Super Hornet Project Staff in the US is required to enable the Commonwealth adequate insight, influence and progress reporting of the USN 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
	Personnel resourcing, especially continuity in Business and Finance staff, requires careful management in project wind-down leading to FOC as project reporting and accurate financial accounting remains obligatory and at the same magnitude. Australian Super Hornet Project Office suffered when the business and finance responsibilities were reassigned from the Project Office in Canberra to Tactical Fighter Systems Program Office 12 months before FOC without an associated transfer of personnel. Furthermore, the level of work to account for assets and inventory procured by the project and the finance resource that would be required following FMR was underestimated causing the processing of Assets Under Construction to be adversely affected. This was further exacerbated by increased governance required through the utilisation of Quality Assurance Rollout Assist. To overcome these deficiencies, finance and logistics resources are being shared within Tactical Fighter Systems Program Office.	Resourcing
Phase 2	Weapons acquired under the scope of the Project proved to be cost effective for the Commonwealth as the weapons were USN common and this also assisted in providing common integration and technical input from the USN.	First of Type Equipment; and Off-The-Shelf Equipment
	FMS is a good procurement vehicle when a US Program is truly MOTS. However, FMS provides little ability for DMO to manage capability and associated risk when the US program is less mature.	First of Type Equipment; and Off-The-Shelf Equipment
	The level of experience gained as a result of the JSOW C operational test and evaluation program has provided DMO with the ability to streamline raise train sustain weapons test programs.	Resourcing

Section 9 – Project Line Management

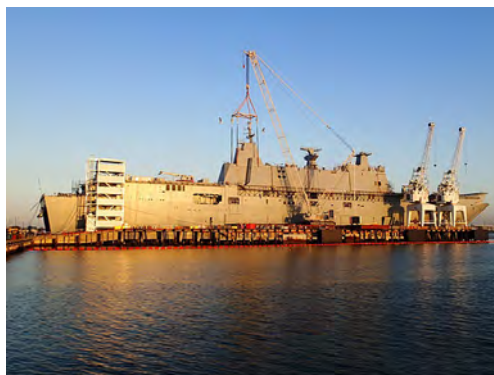
9.1 Project Line Management in 2012-13

Position	Name
General Manager	Phase 1 Ms Shireane McKinnie Phase 2 Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb–Mar 13) Mr Michael Aylward (Acting Mar13–Jun13) AVM Chris Deeble (Acting Jun13–current)
Division Head	Phase 1 AVM Colin Thorne Phase 2 Mr Anthony Klenthis (to Jan 13) Mr Martin Weir (Acting Jan 13–Feb 13) Mr Ivan Zlabur (Acting Feb 13–current)
Branch Head	Phase 1 AIRCDRE Axel Augustin Phase 2 Mr Martin Weir (to Jan 13) Mr Mark Remmers (Feb13–Mar 13) Mr Martin Weir (Mar 13–current)
Project Director	Phase 1 GPCAPT Graham Edwards (to Dec 11) GPCAPT Damien Keddie (Jan 12–Jan 13)

	Mr Steve Secker (Jan 13–current) Phase 2 Mr Peter Kiss (to Apr 12) Ms Catherine Martin (Apr 12–current)
Project Manager	Phase 1 Mr Simon Barnes (to Dec 11) WGCDR Edward Saunders (Dec 11–Jun 12) WGCDR Alistair Third (Jun 12–current) Phase 2 WGCDR Jamie Scott

Project Data Summary Sheet¹⁶³

Project Name	AMPHIBIOUS SHIPS (LHD)
Project Number	JP 2048 Phase 4A/4B
First Year Reported in the MPR	2008-09
Capability Type	New
Service	Joint Services
Government 1st Pass Approval	Aug 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	\$3,073.5m
2012-13 Budget	\$209.2m
Project Stage	Detailed Design Review
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The JP2048 Phase 4A/4B project will provide the Australian Defence Force (ADF) with an increased amphibious deployment and sustainment capability through the acquisition of two Landing Helicopter Docks (LHDs) and associated supplies and support.

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

1.2 Current Status

Cost Performance

In-year

The very minor underspend in Financial Year 2012-13 relates to LHD spares acquisition which will be resolved in Financial Year 2013-14.

Project Financial Assurance Statement

As at 30 June 2013, project JP 2048 Phase 4A/4B has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The project remains on track for delivering the two LHDs by planned dates of 2014 and 2015.

Major project milestones achieved in **2012-13** include:

- **Delivery of LHD 01 Hull to Australia;**
- **Launch of LHD 02 Hull in Spain;**
- **Consolidation of LHD 01 Hull and Superstructure;**

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Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

- **Recommended Provisioning List (RPL) Contract Change Proposal; and**
- **Contractor Temporary Training Facility opened.**

Progress of these milestones demonstrates schedule performance and supports the achievement of project outcomes within the planned timeframes.

Materiel Capability Performance

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

- Carriage, in addition to the crew, of approximately 1,200 personnel in the force ashore with a further 800 personnel providing helicopter operations, logistics, command and intelligence as well as other supporting units;
- Space and deck strength sufficient to carry around 100 armoured vehicles, including tanks, and 200 other vehicles (approximately 2400 lane metres);
- Hangar space for at least 12 helicopters and an equal number of landing spots to allow a company group to be simultaneously landed;
- 45 days endurance for crew and embarked force including sustainment, medical, rotary wing and operational maintenance and repair support to these forces whilst ashore for 10 days;
- Command and control of the land, sea and air elements of a Joint Task Force; and
- The ability to conduct simultaneous helicopter and watercraft operations in conditions up to Sea State 4.

Production set to work and test activities continue to support achievement of project capability outcomes.

1.3 Project Context

Project Background

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

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

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

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

During this process, two shipbuilder/designer teams were formed with Tenix Defence working with Navantia and Thales Australia with Armaris.

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

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

Project Uniqueness

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

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

A unique build strategy 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

Project Data Summary Sheets

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hull will be conducted by BAE Systems Australia Defence (BAE Systems) at their Williamstown (Victoria) Shipyard in Australia. The superstructure contains the high level Combat and Communications Systems equipment that will need to be maintained and upgraded in Australia. BAE Systems will also undertake the final out-fit, set-to-work, and trials.

Project Major Challenges

The project has completed Preliminary Design and Detailed Design Reviews. The project experienced an issue with the **later than planned** delivery of **LHD 01 Hull from the Subcontractor in Spain to BAE Systems in Australia, however, BAE Systems is actively executing mitigation options to recover lost time. The project has also** experienced a number of minor issues concerning the design and integration.

Workforce capacity remains an essential enabler for timely project completion.

Control of commercially sensitive Intellectual Property remains an on-going management issue for all parties.

While the LHD ships are based on the existing Spanish LHD 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 resulted in some minor movement of combat and communication system integration milestones. This has not impacted the major milestone of ship delivery.

One of the additional challenges for this project remains the potential for regulatory changes and/or requirements creep on the capability requirements. The project has a fixed budget for the approved requirements, and any changes to regulations that require a change to the vessel or requested capability changes are likely to impact on the project's performance, cost, and schedule outcomes.

Other Current Projects / Sub-Projects

JP 2048 Phase 3: Watercraft system acquisition to be used in conjunction with the Phase 4A/4B LHD Mission System. This watercraft will be the ship to shore connector for the LHDs.

JP 2048 Phase 4C: Phase 4C acquisition of a strategic sealift capability.

JP 2048 Phase 5: Landing Craft Heavy Replacement capable of small scale independent operations and augmenting larger amphibious and sealift ships.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1442 Maritime Communications Modernisation	The project was established to modernise and integrate the communications infrastructure in the RAN Fleet, and establish the framework for the future modernisation of additional elements of the fleet such as the LHD.	The LHDs will have network capability compatible with the Maritime Tactical Wide Area Network of SEA 1442.
JP 2089 Phase 2 Tactical Information Exchange Domain (Data Links)	The project is intended to deliver tactical data links to legacy platforms and capabilities of the ADF and the infrastructure required to support tactical data exchange at the force level.	The LHDs will be delivered with Link 16, Link 11 and Variable Message Format systems for tactical data exchange that will be compatible with other ADF systems.
JP 2008 Phase 5B Military Satellite Communications	This multi-phased project has been established to provide the ADF with a range of Strategic and Tactical Satellite Communications (SATCOM) capabilities.	Each LHD will include one Maritime Advanced SATCOM Terrestrial Infrastructure System satellite terminal and capability to install a second terminal at a later date if necessary.
JP 5408 GPS Enhancement Project	JP 5408 GPS Enhancement Project is intended to enhance GPS user equipment on ADF legacy platforms.	The GPS Enhancement System will provide protection and/or redundancy capability of sufficient quality and robustness to meet mission critical navigation and timing tasks for ADF systems, including the LHD ships.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Nov 03	Original Approved	3.1	1
Sep 04	Real Variation – Scope	4.8	2
Aug 05	Real Variation – Scope	29.6	3
Jun 07	Government Second Pass Approval	2,920.8	
Oct 08	Real Variation – Transfer	9.3	4
		2,967.6	
Jul 10	Price Indexation	428.4	5
Jun 13	Exchange Variation	(322.5)	
Jun 13	Total Budget	3,073.5	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – BAE Systems	(2,104.9)	6
	Other Contract Payments / Internal Expenses	(80.2)	
		(2,185.1)	
FY to Jun 13	Contract Expenditure – BAE Systems	(200.1)	6
	Other Contract Payments / Internal Expenses	(5.4)	
		(205.5)	
Jun 13	Total Expenditure	(2,390.6)	
Jun 13	Remaining Budget	682.9	
Notes			
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.		
2	To fund a risk reduction activity for the Project to obtain design data and develop designs to meet Australian essential requirements.		
3	First Pass Approval.		
4	Transfer of funding for technical studies from Defence Science and Technology Organisation.		
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$350.0m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$78.4m having been applied to the remaining life of the project.		
6	Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The Year end variance can be attributed to Prime Contract Milestones linked to Spares Provisioning not being received in 2012-13. This has been further compounded by equipment being procured through Naval Inventory Procurement Office and Land Systems Division not occurring as anticipated. This will be resolved in Financial Year 2013-14.
			Overseas Industry	
		(1.6)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(2.1)	Commonwealth Delays	
209.2	205.5	(3.7)	Total Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
BAE Systems	Oct 07	2,268.1	2,494.1	Variable	ASDEFCON	1
Notes						
1	Contract Price at Revision 78. Amendments to Contract since signature include execution of contracted options for Training and Spares.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
BAE Systems	2	2	LHD ships and integrated support systems.			
Major equipment received and quantities to 30 Jun 13						
Construction of LHD 02 hull and superstructure sections for both LHDs continue.						

Section 3 – Schedule Performance

3.1 Design Review Progress

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

Notes	
1	Due to the complexity of the design and integration of the combat, communications and platform systems, more time was allocated to the design review activities. Production activities on both LHD 01 in Melbourne and LHD 02 in Spain continue. The Heavy Lift Ship Company, Dockwise, delivered the LHD 01 hull to BAE Systems in Australia on 28 October 2012 (66 days later than planned) but this is not expected to impact final delivery dates. LHD 02 was launched from the slipway in Ferrol, Spain on 04 July 2012 and is planned to depart Spain on the Heavy Lift Ship, Blue Marlin, in December 2013 to arrive in Australia in February 2014 on schedule.

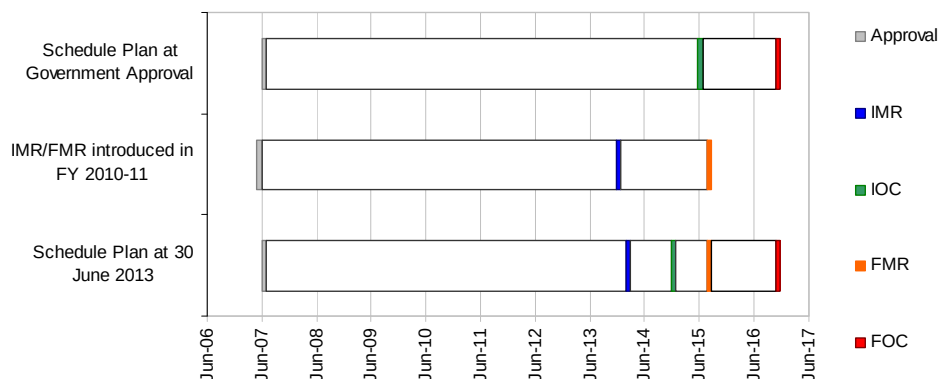
3.2 Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	Mar 15	0	1
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Feb 14	May 14	4	2
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	Aug 15	0	
	LHD Final Acceptance	Sep 15	Sep 15	Sep 15	0	
Notes						
1	System Integration relates to the whole capability, commencing with LHD 01 and completion at LHD 02.					
2	Due to the later than planned delivery of LHD 01 to Australia from Spain by the heavy lift ship. Australian shipbuilding workforce base to up skill and develop confidence in their skills and abilities from a dormant industry state.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation /Implications
Initial Materiel Release (IMR) (LHD 01)	Jan 14	Feb 14	1	Forecast date based on an approved contract change. As per approved MAA Version 1.6.
Initial Operational Capability (IOC) (LHD 01)	Jun 15	Dec 14	(6)	As per approved MAA Version 1.6.
Final Materiel Release (FMR) (LHD 02)	Aug 15	Aug 15	0	
Final Operational Capability (FOC) (LHD 02)	Nov 16	Nov 16	0	

Schedule Status at 30 June 2013

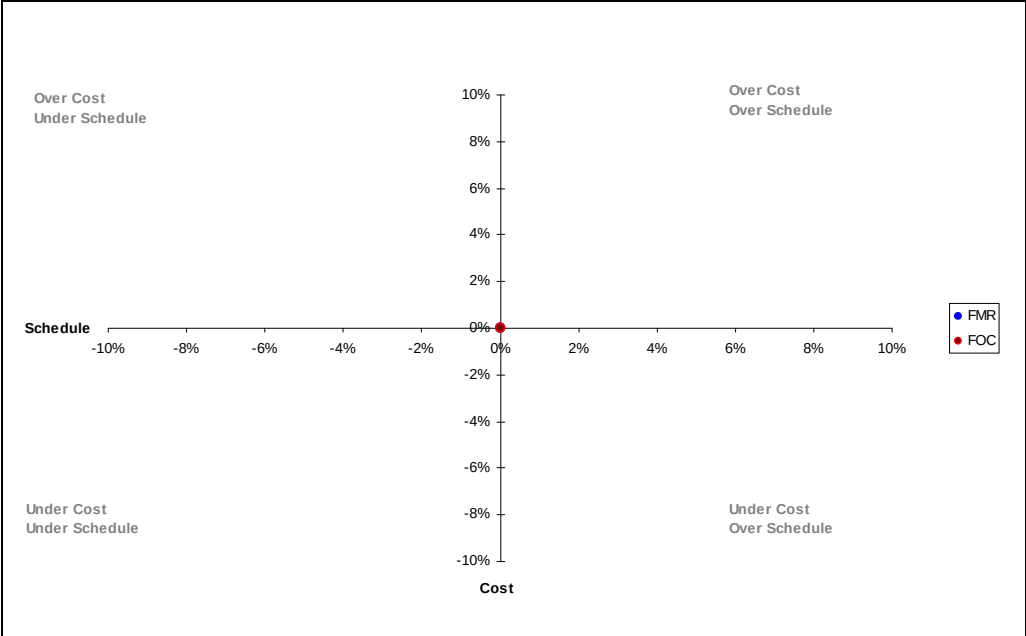


Project Data Summary Sheets

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Section 4 – Project Cost and Schedule Status

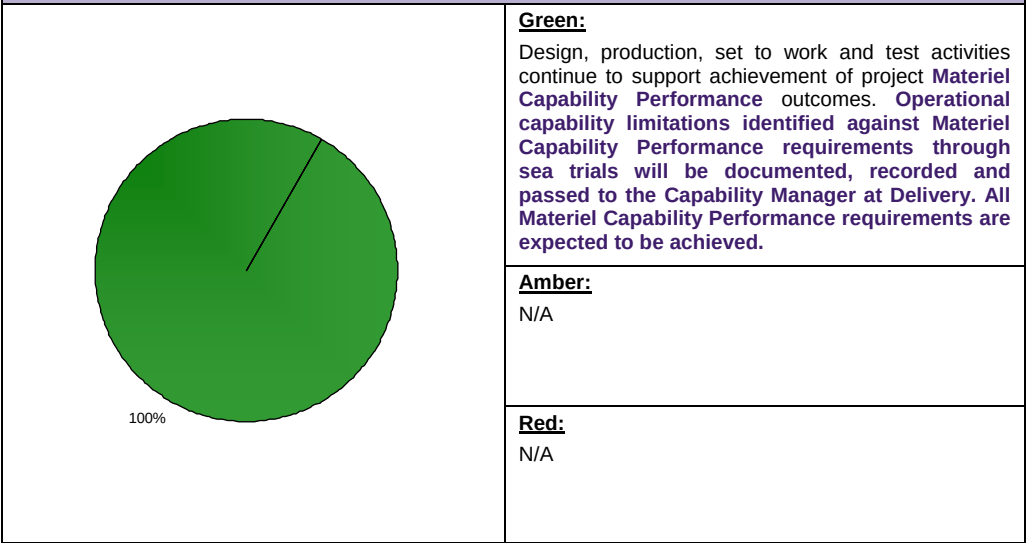
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Legislative / Regulatory Changes may affect Contract Requirements and impact on the delivery of the two LHDs.	• Raise Contract Change Proposals. • Seek Real Cost Increases to Project Funding where affected by Legislative change. • Seek waivers as necessary.
The delivery of the two LHDs will be affected by scope creep caused by contemporary understanding of requirements.	• Seek schedule and cost relief for changes affected by Stakeholder expectations or changes in related Defence projects. • Program change in the Capability Insertion Program (funding source outside JP2048 Phase 4A/4B).
The delivery to Australia of LHD 02 will be affected by loss, damage or delay to the ship.	• Provide Navy escort to Heavy Lift Ship in areas of high piracy risk. • Ensure BAE Systems arrange for tugs to tow ships to Australia should Heavy Lift Ship not be available. • Ensure BAE Systems review options to consolidate Superstructure and Hull in Spain as opposed to in Australia.
The delivery of the two LHDs may be affected by the lack of resources to procure the necessary spares to support the LHDs.	• Review the Recommended Provisioning List (RPL) to identify those items that can be procured more effectively and economically outside the LHD contract, in addition to critically examining the procurement justification. • Reallocate Project Resources. This risk has been retired. Resulting from successful exit from the Provisioning Preparedness Review. Provisioning conference complete and the funding allocated was sufficient to meet the provisioning requirement. Risk not realised.
Contracted indices escalation exceeds the specialist military supplementation provision.	• Real cost increase. • Reduce contracted scope.
The contractor is unable to deliver supplies in accordance with the deliverable schedule.	• Conduct capability schedule trade-off. • Seek schedule relief.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
The LHD Project organisation will be impacted through the lack of the correct number of appropriately qualified personnel available to undertake required LHD Project Office commitments.	• Engaging External Service Providers (ESP / Contractors).

6.2 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.

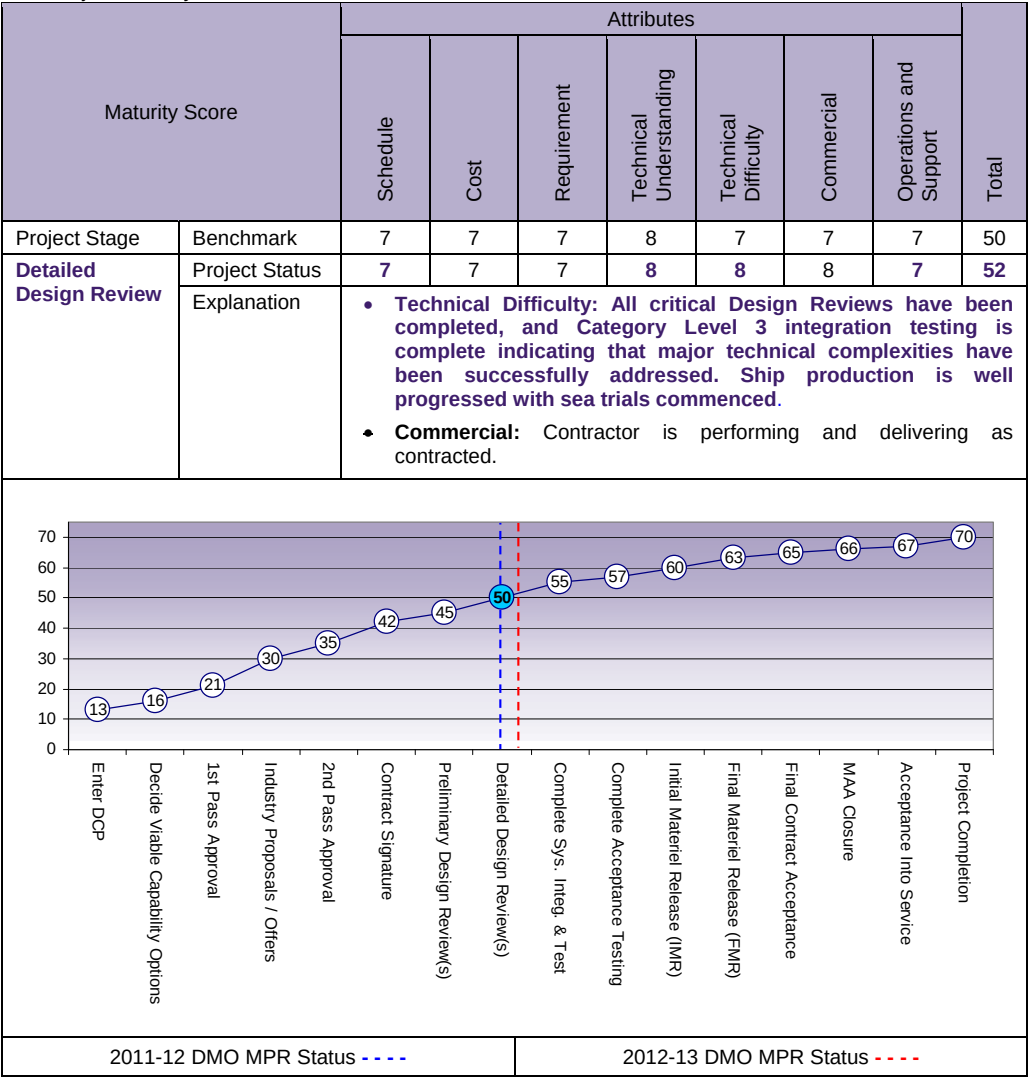
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	The management of Intellectual Property will be monitored through Intellectual Property audits.
Integration complexity.	Due to the complexity of the integration of the combat, communications and platform systems, more time has been allocated to the 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.
Delay of LHD 01 during delivery to Australia	Ensure BAE Systems explores all options to regain schedule and assess and qualify any aspect of schedule movement. This has included reassignment of resources, reviewing timings of activities, additional shift work, prioritisation of cabling and systems required to de-risk critical path activities.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Mr Andrew Cawley (Acting to Feb 13) AVM Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13–Jun 13) AVM Chris Deeble (Acting Jun 13)
Division Head	RADM Mark Purcell (Feb13–current)
Program Manager	Mr Patrick Fitzpatrick
Project Manager	CAPT (RAN) Craig Bourke

Project Data Summary Sheet¹⁶⁴

Project Name	Future Naval Aviation Combat System
Project Number	AIR 9000 Phase 8
First Year Reported in the MPR	2011-12
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	Feb 10
Government 2nd Pass Approval	Jun 11
Total Approved Budget (Current)	\$2,958.3m
2012-13 Budget	\$204.8m
Project Stage	Detailed Design Review
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

AIR 9000 Phase 8 will acquire 24 MH-60R Seahawk naval combat helicopters, associated weapons and support systems to replace the current S-70B-2 Seahawk helicopters and the cancelled SH-2G(A) Seasprite helicopters. The aircraft will be equipped with a highly sophisticated avionics suite designed to employ Hellfire air-to-surface missiles and Mark 54 anti-submarine torpedoes. The aircraft will provide Navy with a contemporary helicopter with anti-submarine warfare (ASW) and anti-surface warfare capability.

The acquisition of 24 helicopters will enable the Navy to deploy at least eight Seahawk flights across the ANZAC class frigates and the new Hobart class Air Warfare Destroyers (AWD).

1.2 Current Status

Cost Performance

In-year

A funds disbursement tracking tool for the Foreign Military Sales (FMS) case **has been developed jointly** by the DMO and United States Navy (USN) **which has added** further fidelity to FMS expenditure forecasts. **Actual expenditure in Financial Year 2012-13 reflects the ramp up of aircraft production to support accelerated delivery, commencement of training device production, and spares delivery prior to aircraft acceptance in late 2013.**

Project Financial Assurance Statement

As at 30 June 2013, project AIR 9000 Phase 8 has reviewed the project's approved scope and budget for those elements required to be delivered by the Defence Materiel Organisation (DMO). Having reviewed the current financial and contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

164 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

The next major milestone will be the In-Service Date (ISD), defined as two aircraft in USN configuration accepted by June 2014.

Project AIR 9000 Phase 8 will declare ISD in the first quarter of 2014 ahead of schedule. The first two aircraft will be delivered early and training for Royal Australian Navy (RAN) aircrew and technical personnel has commenced.

Materiel Capability Performance

The MH-60R Seahawk helicopter being procured is a Military Off the Shelf (MOTS) procurement of a USN specification MH-60R Seahawk. **During aircraft production the** only modification to the standard USN design is the application of Australian identification markings in lieu of USN markings in the paint scheme and the addition of tamper proofing to four US sensitive avionic boxes per aircraft (this will not affect functionality). The MH-60R Seahawk has been in service with the USN since 2005 and was first deployed operationally by the USN in early-2010. The USN has accepted **163** MH-60R and flown in excess of **150,000** flight hours as at **1 May 2013**. The ADF has yet to take delivery of any aircraft, however, there are currently no impediments to the Project achieving the materiel capability performance requirements. The aircraft delivery schedule will result in Australian Defence Force (ADF) MH-60R being delivered **earlier than forecast at Second Pass**.

1.3 Project Context

Project Background

The Defence White Paper 2009 stated that 'As a matter of urgency, the Government will acquire a fleet of at least 24 new naval combat helicopters to provide eight or more aircraft concurrently embarked on ships at sea. These new aircraft will possess advanced ASW capabilities, including sonar systems able to be lowered into the sea and air-launched torpedoes, as well as an ability to fire air-to-surface missiles.'

First Pass Approval for the acquisition of the Future Naval Aviation Combat System (FNACS) to satisfy this requirement was provided by Government on 24 February 2010.

The selection of the MH-60R followed a competitive solicitation process between a US Government FMS case offering the Sikorsky / Lockheed Martin MH-60R Seahawk and a direct commercial sale from Australian Aerospace offering the NATO Helicopter Industries (NHI) NH90 NATO Frigate Helicopter (NFH). Second Pass Approval for acquisition of the MH-60R was provided by Government on 15 Jun 2011.

The Defence White Paper 2013 reaffirms the Government commitment to the acquisition of 24 MH-60R Seahawk naval combat helicopters.

Project Uniqueness

The Australian MH-60R helicopter is being acquired as a true MOTS product, in the same baseline configuration as the USN aircraft. A limited number of Australia unique design modifications will not be incorporated until after all aircraft have been delivered.

The MH-60R is being acquired as a maritime combat capability. It will have limitations in utility roles such as passenger or cargo transfer.

Project Major Challenges

Delivering the required facilities to house and support the MH-60R capability and associated training systems **continues to be** the most significant challenge to achieving the MH-60R initial operational capability milestone. **Although the re-baselined facilities schedule has been maintained over the last 12 months by the Defence Support and Reform Group, including parliamentary approval in May 2013 for the construction to commence, there is no float in the construction program.**

Other Current Projects / Sub-Projects

Unapproved Project AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS). HATS will be an important link in the training continuum for inductees to the MH-60R training system.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1448 Phase 2B – ANZAC Anti Ship Missile Defence (ASMD)	The ASMD upgrades will provide the ANZAC frigates with an enhanced level of self defence against modern anti-ship missiles.	The AIR 9000 Phase 8 project will not achieve Final Operating Capability (FOC) until all ANZAC class frigates are modified for interoperability with MH-60R. ANZAC Class ship modifications will be implemented on vessels post ASMD modification. The aspiration is for the MH-60R modification package to be installed during the ASMD upgrade for scheduling relief. Exceptions to this are HMAS Perth, which has already completed ASMD modification, and Arunta which has already entered ASMD modification program. Any significant changes to the ASMD schedule may impact on MH-60R modifications.
SEA 4000 PH3 – Air Warfare Destroyer Build	The SEA 4000 Phase 3 AWD Project will acquire three Hobart Class Air Warfare capable Destroyers 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.	The AIR 9000 Phase 8 project will not achieve FOC until all Hobart class AWD are modified for interoperability with MH-60R. AWD modification cannot occur until after each ship is accepted into naval service and a suitable maintenance period for the modifications becomes available.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Aug 09	Original Approved	0.3	1
Jun 10	Real Variation – Budgetary Adjustment	9.6	
Jun 11	Government Second Pass Approval	3,019.7	
		3,029.3	
Jul 10	Price Indexation	0.1	2
Jun 13	Exchange Variation	(71.4)	
Jun 13	Total Budget	2,958.3	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government (AT-P-SCF)	(241.7)	
	Contract Expenditure – US Government (AT-P-AHV)	(4.5)	
	Contract Expenditure – Navy – Empire Test Pilots' School	(0.9)	
	Contract Expenditure – US Government (AT-B-ZBZ)	(0.2)	
	Other Contract Payments / Internal Expenses	(6.5)	3
		(253.8)	
FY to Jun 13	Contract Expenditure – US Government (AT-P-SCF)	(188.8)	
	Contract Expenditure – US Government (AT-P-AHV)	(6.8)	
	Contract Expenditure – Navy – Empire Test Pilots' School	(0.5)	4
	Contract Expenditure – US Government (AT-B-ZBZ)	(6.9)	
	Contract Expenditure – US Government (AT-P-GTC)	(0.2)	
	Other Contract Payments / Internal Expenses	(9.5)	3
		(212.7)	
Jun 13	Total Expenditure	(466.5)	
Jun 13	Remaining Budget	2,491.8	
Notes			
1	This amount represents the DMO Budget prior to achieving Second Pass Approval by Government.		
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$0.1m, applied only to the portion of the budget approved at first pass. From July 2010 all project budgets were approved by Government in out-turned dollars including AIR 9000 Phase 8.		
3	Other includes travel, contractor support, legal support and general support activities.		
4	Project contribution to reimburse Navy for the training of a Test Pilot and Flight Test Engineer at the Empire Test Pilots' School.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		0.6	FMS	Variation to 30 June 13 is primarily represented by unfavourable exchange rates against US dollar FMS Quarterly Payments.
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		7.3	FOREX Variation	
			Commonwealth Delays	
204.8	212.7	7.9	Total Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government (AT-P-SCF)	Jun 11	2,090.3	2,090.3	Variable	FMS	
US Government (AT-P-AHV)	Aug 11	168.1	168.1	Variable	FMS	
US Government (AT-B-ZBZ)	Jan 12	12.3	12.3	Variable	FMS	
US Government (AT-P-GTC)	Feb 13	10.9	10.9	Variable	FMS	
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 13				
US Government (AT-P-SCF)	24	24	MH-60R, synthetic training devices, and associated mission and support systems			
US Government (AT-P-AHV)	Classified	Classified	Mk 54 Torpedoes			
US Government (AT-P-ZBZ)	Classified	Classified	AGM-114N Hellfire Air to Surface Missiles			
US Government (AT-P-GTC)	N/A	N/A	RAN MH-60R Detachment - Naval Air Station Jacksonville, Florida support			
Major equipment received and quantities to 30 Jun 13						
Deliveries to date relate to Spares and Support Equipment valued at \$10m. First aircraft delivery is expected in December 2013.						

Section 3 – Schedule Performance

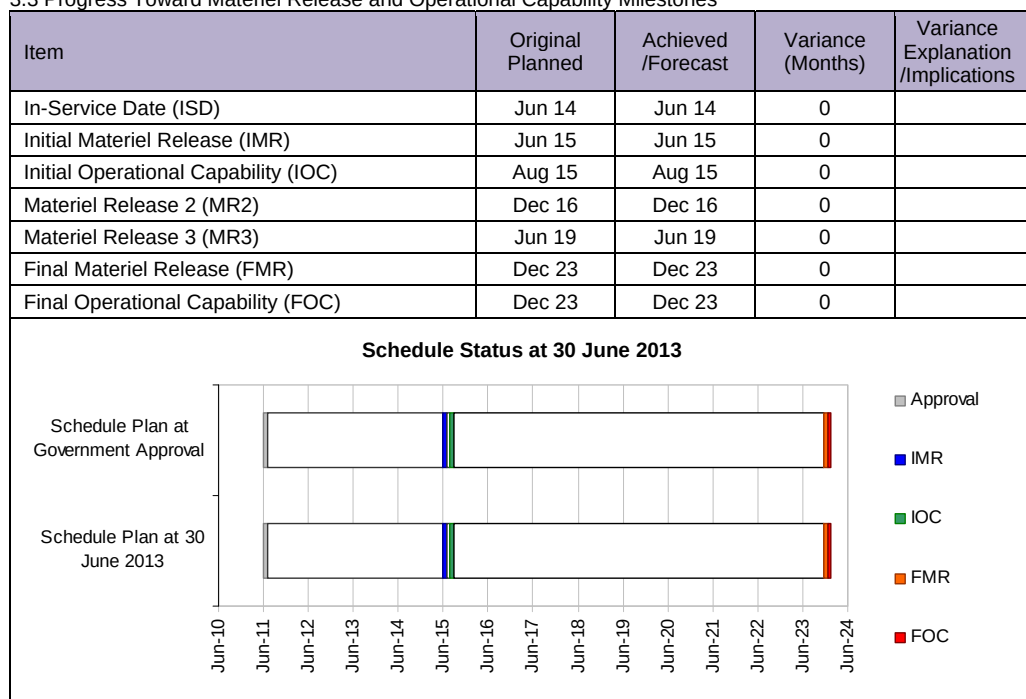
3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	2
Preliminary Design	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	2
Critical Design	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	2
Notes						
1	MH-60R helicopter system requirements and design reviews not required as it is a MOTS helicopter procured through FMS.					
2	Statements of Work (SOWs) for ADF Unique Mission System Options have been developed by the USN, Sikorsky and Lockheed Martin. Project Office (PO) staff have reviewed the SOWs, provided proposed changes to the USN and delivered the latest drafts to Director General Technical Airworthiness (DGTA) for endorsement in accordance with Technical Airworthiness Regulations. The schedule for design review activities will not be finalised until the USN is in contract with Sikorsky and Lockheed Martin, which is expected to be late-2013.					

3.2 Contractor Test and Evaluation Progress

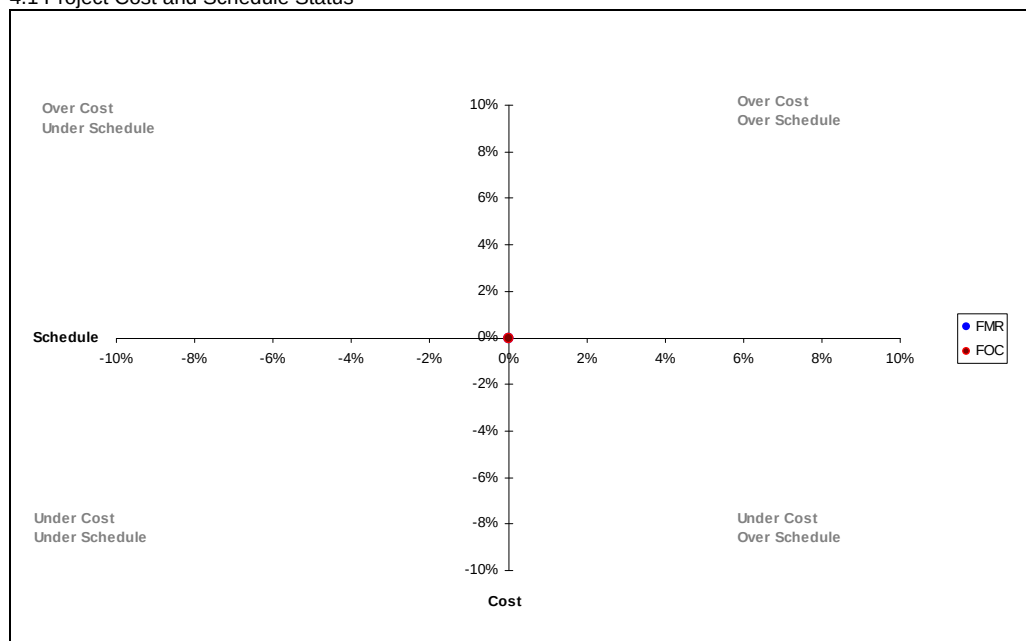
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	1
Acceptance	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	1
	Acceptance of first MH-60R	Jun 14	Dec 13	Dec 13	Nil	
	Acceptance of final MH-60R	Sep 18	Aug 16	Aug 16	Nil	
Notes						
1	SOWs for ADF Unique Mission System Options have been developed by the USN, Sikorsky and Lockheed Martin. PO staff have reviewed the SOWs, provided proposed changes to the USN and delivered the latest drafts to DGTA for endorsement in accordance with Technical Airworthiness Regulations. The schedule for design review activities will not be finalised until the USN is in contract with Sikorsky and Lockheed Martin, which is expected to be late-2013.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones



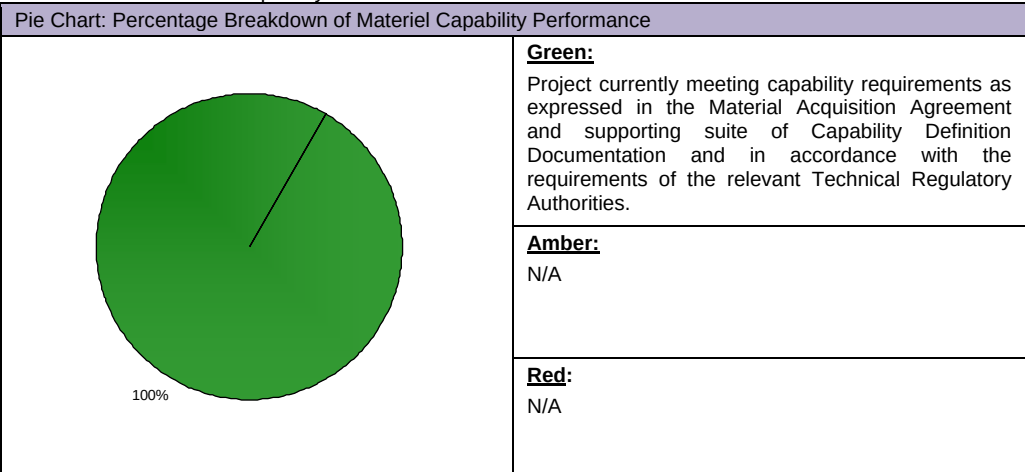
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Facilities. The establishment of the training and squadron complex may be affected by construction delays, leading to an impact on cost, performance and schedule, because the facilities project has been delayed by cost and scope issues with the result that IOC is delayed by up to six months.	Provision will be made, in consultation with HQ Fleet Air Arm, for the use of temporary or shared hangar and administrative facilities, if required. The PO has sought and gained Ministerial approval to accept and operate the initial batches of MH-60R in the US to consolidate training and to mitigate the facilities risk. Despite facilities expediency motion on 16 May 2013 in the House of Representatives, Government approval to establish US based operations and release of approved contingency funds, the residual risk remains high due to no float in build program.
Certification. There is a chance that Design Acceptance will be affected by the inability to use Informed Recognition of Prior Acceptance, leading to an increased Commonwealth certification effort and/or inability to source required level of data, with the result that the cost increases and schedule is not met, or there is a permanent capability gap.	Airworthiness Issue Paper 001 – Single Pilot vs Dual Pilot operations addresses the difference between RAN and USN Configuration, Role and Environment (CRE). Conducted successful due diligence visit to the US (early 2012) to investigate facilities and organisations for visibility of key MH-60R Authorised Engineering Organisation related processes. Perform Statement of Operating Intent (SOI) comparison between USN and RAN. PO perform full CRE assessment (building on SOI comparison) to support design acceptance for each airworthiness milestone. This will include review of the RAN aircraft configuration changes , Aircraft Environment and Usage Comparisons which have been provided by the USN as part of the FMS case, along with a review of USN operational and technical policies and procedures in order to identify potential unresolvable CRE scope issues.

	Review of MH-60R system safety hazard log for RAN acceptability. This has included PO attendance at the H-60 System Safety Working Groups held in the US. Residual risk has been reduced to medium following approval of Project Design Acceptance Strategy and DGTA endorsement of CRE and Certification Basis Document.
Training System. Material Release 2 milestone may be affected by lack of an organic training system leading to an impact on trainee throughput, because the USN are unable to deliver Training Devices to the contracted schedule, with the result that the training system will not be established by February 2015.	USN to identify schedule compression strategies for Australian unique requirements, i.e. double shift production, air freight the devices. PO conducts weekly teleconference meetings with USN and CAE US and has participated in individual device requirements and design reviews which have reduced the residual risk associated with some elements of the training system (e.g. Avionics Maintenance Trainer), however, the residual risk for the overall training system remains at high as the consequence for any delay to the organic training system remains severe despite reduction of likelihood.
Crashworthiness. There is a chance that crashworthiness certification (and therefore design acceptance) will be affected by the requirement to comply with Airworthiness Directive (AD) 03/2009, leading to unnecessary modifications and or additional work to gain waivers, with the result that cost is increased and schedule is not met.	The PO has sought Technical Airworthiness Authority advice regarding an exemption from the requirement of Airworthiness Directive 03/2009 in light of the changes provided via Defence Airworthiness Advisory Circular 001/2012. The Defence aircraft crash protection policy is not mature and consequently the MH-60R PO continues to progress a Crash Protection Assessment (CPA) for the MH-60R. PO has provided the CPA to the USN for input which will support the development of a Cost Benefit Analysis to inform certification documentation.
Issue of Flight Clearance Recommendation. The issue of a Special Flight Permit for ISD may be affected by late delivery of the USN Flight Clearance Recommendation because of the timing and duration of the aircraft test program for 'export variant' configuration changes from the USN baseline with the result that ISD will be delayed.	Liaise with USN to amend the schedule for the test program to finish earlier. Compress schedule required between receipt of the Flight Clearance Recommendation from the USN and the Airworthiness Board (AwB). Continue to utilise USN aircraft via extended on-the-job training or potential USN aircraft lease. Delay the AwB as late as possible, whilst still achieving ISD. Current risk remains at extreme, however, with the upcoming ADF Participation in Combined Test 1 (CT1) in July 2013 and provision of an Interim Flight Clearance (supporting CT1), draft Naval Air Training and Operating Procedures Standardisation Manual and Naval Aviation Technical Information Product (with RAN supplement) by USN prior to AwB submission, residual risk will be reduced to MEDIUM.
Potential future risk to the MH-60R capability. One project objective as per second pass approval is to maintain the same configuration as the USN MH-60R through life of type in order to realise economies of scale, maintain combat capability parity, and to manage obsolescence. If a Capability Assurance Program is not established and funded, the Australian MH-60R will quickly become an orphan product.	Capability Development Group to provide for the block upgrade program by insertion of a MH-60R Capability Assurance Program in the Defence Capability Plan.

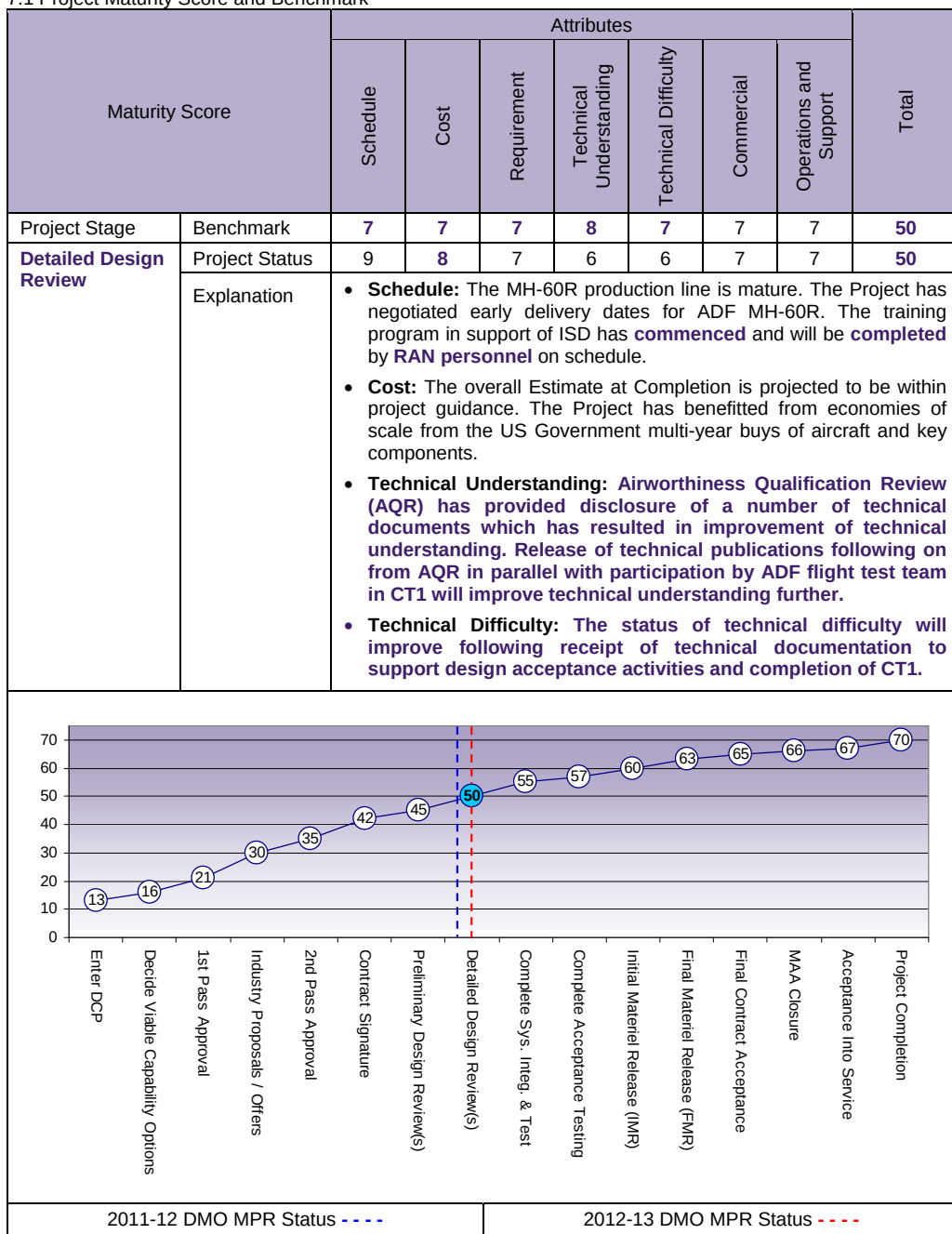
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
Very High Frequency Omni Range Instrument Landing System (VOR/ILS). There is chance that VOR/ILS certification will be affected by integration issues leading to an inability to certify the system with the result of a significant capability gap and/or milestone slip to deliver the required capability.	Residual risk has been reduced to low following receipt of MH-60S VOR/ILS related specifications from USN which has informed development and review of SOW. Additionally the revised delivery schedule for VOR/ILS will see the modification being conducted in the 2016 timeframe.
Delivery of Non-Compliant Logistics Support Analysis Record (LSAR). There is a chance that ISD and IOC will be affected by the USN being unable to deliver a restructured US MH-60R Logistics Support Analysis (LSA) to a Computer Aided Maintenance Management 2 (CAMM2) compliant product leading to an impact on schedule, cost and supportability because of the USN not understanding of the Australian Defence Organisation LSAR unique tables and the CAMM2 data requirements, resulting in a schedule impact.	Residual risk has been reduced to medium following USN contract award to Logistics Engineering Services (LES) to produce LSAR and the regular interaction between the MH-60R PO and LES to streamline the delivery and review of products.
AWD Certification Baseline for MH-60R Integration. There is a risk that the Hobart Class AWD will not be able to embark a MH-60R with full capability and hence affecting FMR, leading to an impact schedule, cost, performance and reputation	The current contractual aviation certification baseline for the AWD is aligned to the S-70B-2. The MH-60R PO and AWD PMO are seeking clarification of the baseline and have engaged DGTA-ADF and RAN regulators to understand the difference between AWD contract certification baseline and any additional requirements to integrate MH-60R into the AWD. Remedial actions are yet to take effect and DGTA-ADF is reviewing extant aviation certification requirements so residual risk remains high at present.

6.2 Major Project Issues

Description	Remedial Action
Unapproved Overseas Travel. A number of project milestones have been affected by overseas travel restrictions that prevent PO participation in a number of key engineering, project management and airworthiness activities in the US. The necessity for overseas travel was detailed in the Government second pass submission and highlighted in the 3 July 12 project Gate Review.	The PO will continue to maximise the use of the Resident Project Team, video conferencing and telephone conferencing. There will be increased travel by USN and contractor staff to Australia, funded through the FMS case. The project will use contracted staff to represent overseas rather than ADF or Australian Public Service (APS) staff.
The project has been affected by the Australian through-life support contractor warehouse not being available due to delays by the USN in letting a contract. Spare parts are being delivered into temporary facilities.	This issue has been retired following the award of a contract to provide a warehouse facility with related supply support arrangements in Jacksonville, Florida, to house spares and to support Australian flight operations in the US. Warehousing will transition to Australia when the training detachment completes in late 2014.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Whilst an FMS program affords a number of advantages, the transfer of a significant amount of project management and engineering functions to the US Government implementing agency (NAVAIR PMA299) and the weak bargaining position of the Commonwealth, increases the project's exposure to risk (technical, schedule and cost). The resultant level of risk and complexity is often understated and poorly understood. The level of Commonwealth contract and financial management involvement and oversight of industry is very low in comparison to that mandated for Direct Commercial Sale (DCS) contracts, yet both procurement methods confront similar issues. Adequate Commonwealth participation in key project management and technical oversight activities in the US, as provided for in the Government Second Pass submission, is critical to provide the required level of contract management.	Contract Management
The recruitment process lead times for candidates not already within the ADF or APS can create significant extended vacancies within the Project workforce, and this is exacerbated by the relatively short notice that Defence personnel are obliged to provide for internal transfers.	Resourcing

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Tony Dalton
Branch Head	CDRE Colin Lawrence
Project Director	CAPT Scott Lockey
Project Manager	CAPT Peter Ashworth (to Dec 12) CMDR Anthony Savage (Jan 13–current)

Project Data Summary Sheet¹⁶⁵

Project Name	NEW AIR COMBAT CAPABILITY
Project Number	AIR 6000 Phase 2A/2B
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Service	Royal Australian Air Force
Government 1st Pass Approval	Nov 06
Government 2nd Pass Approval	Nov 09 (Stage1)
Total Approved Budget (Current)	\$2,592.4m
2012-13 Budget	\$110.3m
Project Stage	Enter Contract
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The AIR 6000 New Air Combat Capability (NACC) Project aims to introduce a new air combat capability that will meet Australia's air combat needs out to 2030 and beyond. On current plans, AIR 6000 Phase 2A/B program will acquire no fewer than 72 Conventional Take Off and Landing (CTOL) Joint Strike Fighter (JSF) aircraft to establish three operational squadrons, a training squadron and necessary supporting/enabling elements to replace the F/A-18A/B Hornet capability.

AIR6000 Phase 2A/B Stage 1 of the project will acquire an initial tranche of 14 CTOL F-35 JSF aircraft and associated support and enabling elements.

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

1.2 Current Status

Cost Performance

In-year

In-year expenditure was approximately 11 per cent less than budgeted due to delays in establishing the Low Rate Initial Production (LRIP) 6 contract covering Australia's first two aircraft and associated supplies and support. The delay in contracting is not expected to affect planned aircraft delivery dates as the aircraft are being produced at Lockheed Martin risk.

Project Financial Assurance Statement

As at 30 June 2013, overall Project AIR 6000 Phase 2A/2B, Stage 1 cost performance remains within the approved budget. Noting the budget remaining for completion of the project, together with the estimated future expenditure and current known risks, the DMO considers that there is sufficient budget remaining for this project.

¹⁶⁵ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

During March-April 2013 Defence conducted an Independent Review of the JSF Program. The review found that overall the F-35A, in Block 3i configuration, together with its corresponding weapons and support systems, is likely to meet an Australian Initial Operational Capability (IOC) schedule of 2020.

Australia's first two aircraft are in production and are scheduled to be delivered in 2014.

Materiel Capability Performance

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

1.3 Project Context

Project Background

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

- Providing First Pass approval in November 2006, which included agreement to join the next phase of the JSF Program and funded project AIR 6000 Phase 1B detailed definition and analysis activities to support Government Second Pass approval for AIR 6000 Phase 2A/B.
- Signing the multilateral Production, Sustainment and Follow-on Development (PSFD) Memorandum of Understanding (MoU) in December 2006 to allow entry into the next stage of the JSF Program.
- AIR 6000 Phase 2A/B Stage 1 Approval in November 2009 to acquire 14 CTOL JSF aircraft and associated support and enabling elements necessary to establish the initial training capability in the US, commencing in 2014, and to allow commencement of Operational Test in the US and Australia.

AIR 6000 Phase 2A/B Stage 2 will acquire at least 58 CTOL JSF aircraft and enabling elements. **In the 2013 Defence White Paper, the Government confirmed its commitment to acquiring the fifth-generation F-35A JSF aircraft, with three operational squadrons planned to enter service beginning around 2020 to replace the F/A-18A/B Hornet aircraft.**

Project Uniqueness

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

The JSF Program is expected to deliver over 3000 aircraft to the eight MoU Partners (with the US to acquire approx 75 per cent of the total) with the potential for significant additional aircraft procurements by FMS customers.

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

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

- The US Government will contract with Lockheed Martin and engine manufacturers on Australia's behalf in accordance with US contracting laws, regulations and procedures.
- The Joint Program Office (JPO) acquisition strategy is for 11 annual **LRIP** contracts, transitioning from a Fixed Price Incentive Fee to a Firm-Fixed Price at the appropriate time.
- Each contract will require a separate Partner Procurement Request (PPR) from each partner nation defining their requirements for that buy. PPRs are submitted two years ahead of contract and four years ahead of delivery.
- Aircraft to be delivered under Phase 2A/B Stage 1 will be acquired under **three** separate annual contracts commencing with LRIP 6.
- The Australian JSF capability is to be supported under a global support arrangement (referred to as 'Autonomic Logistics Global Sustainment') through performance-based contracts.

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

Project Major Challenges

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

The major challenges facing the NACC project are:

- **Resolve issues associated with any potential delays to the stand up of the Pilot Training Centre at Luke Air Force Base, USA.**
- Complete the necessary workforce planning required to transition the JSF into service.
- Resolve arrangements for pooling of JSF partner resources (including aircraft, support equipment and personnel) at the US Integrated Training Centre.
- Improve understanding of JPO requirements development processes and the US Defense Federal Acquisition Regulation Supplement contracting framework in order to optimise execution of Australia's contracts.
- Scope and plan the system integration activities necessary to introduce the JSF into service.
- Appropriately manage the distribution of information in the JSF/NACC Program to interested stakeholders.
- Support the ongoing consultation and engagement of the public on noise issues associated with Royal Australian Air Force (RAAF) Base Williamtown.
- Improve understanding of the full scope of security implications of procuring and operating the JSF aircraft.
- Implementing an industry support program to assist Australian industry to win JSF related contracting opportunities.

Other Current Projects / Sub-Projects

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

AIR 6000 Phase 1B – Detailed Analysis and Acquisition Planning (AUS\$100M): AIR 6000 Phase 1B focused on the analysis and risk mitigation activities necessary to support Government's procurement decision on the JSF and to support Australian defence industry participation in the JSF Program. The primary financial activity was provision of Australia's shared cost contribution to the US JSF Program in accordance with our obligations as a Program partner in the PSFD Phase. Apart from ongoing funding to support some outstanding contracts, Phase 1B is complete and the NACC Project is now in the acquisition phase.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5402 Air to Air Refuelling Capability	Provision of five new generation Airbus A330 Multi-Role Tanker Transport aircraft.	Air to Air refuelling support for extended range/duration missions.
AIR 5077 Airborne Early Warning and Control Aircraft	Provision of six Airborne Early Warning and Control aircraft.	Increased radar detection and communication capabilities to enable large force coordination between JSF and other aircraft.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Nov 09	Original Approved	2,751.6	
May 12	Real Cost Decrease	(204.4)	1
Sep 12	Real Cost Increase	201.5	1
		2,748.7	
Jul 10	Price Indexation	351.0	2
Jun 13	Exchange Variation	(507.3)	
Jun 13	Total Budget	2,592.4	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government (PSFD MoU)	(107.5)	
	Contract Expenditure – US Government - LRIP 6	(8.1)	
	Other Contract Payments / Internal Expenses	(14.3)	3
		(129.9)	
FY to Jun 13	Contract Expenditure – US Government (PSFD MoU)	(55.4)	
	Contract Expenditure – US Government - LRIP 6	(12.3)	
	Other Contract Payments / Internal Expenses	(30.2)	4
		(97.9)	
Jun 13	Total Expenditure	(227.8)	
Jun 13	Remaining Budget	2,364.6	
Notes			
1	A Real Cost Decrease budget adjustment was applied to AIR 6000 Phase 2A/B based on an incorrect interpretation of the Government's decision to vary the NACC Program. With subsequent advice, the reduction was re-instated but was applied using an updated exchange rate . As a result, the project's total approved budget has remained the same as intended by Government.		
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$70.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$280.8m having been applied to the remaining life of the project.		
3	Other expenditure for this period is primarily associated with activity to integrate NACC specific information systems into the Defence Information Environment (DIE) (\$4.7m) , F-35 base planning and facility design (\$1.7m) ; the NACC Industry Support Program (\$1.9m) ; and travel, minor office expenses and contractors.		
4	Other expenditure for this period is primarily associated with: activity to integrate NACC specific information systems into the Defence Information Environment (DIE) (\$19.6m) ; Enterprise Architecture Modelling activity (\$1.6m) ; F-35 facility design and Environmental Impact Statement development (\$0.9m) ; NACC Industry Support Program (Grants) (\$2.7m) and Diminishing Manufacturing Supplies (\$1.0m) . The remainder is comprised of expenditure associated with contractors, project travel and minor office expenses.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Variation primarily due to delays by the US Government in establishing the LRIP 6 production contract and the subsequent impact on invoicing work complete, and additionally a lower exchange rate.
		(17.8)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		5.4	FOREX Variation	
			Commonwealth Delays	
110.3	97.9	(12.4)	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government (PSFD MoU)	Dec 06	137.0	158.0	Various	MoU	1
US Government (LRIP 6)	May 11	22.0	48.7	Fixed Price Incentive	USG Contract	2
Notes						
1	Contribution to PSFD MoU shared costs based on proportionality principle: i.e. number of aircraft purchased as a percentage of entire partner fleet. Commitment via MoU signature in December 2006 though baseline price basis is 2002. Covers period from 2010 to 2014 as approved by Government in November 2009. The PSFD MoU 'contract' is a 'variable' priced 'contract' in that it is updated annually to reflect both estimated shared costs and escalation.					
2	Australia's first aircraft procurement requires initial commitment to Long Lead items and services or Advanced Acquisition contracts covering air systems and propulsion. These contracts are progressively modified with approved work scope and form the basis of the Air Systems and propulsion contracts for the complete systems – per Section 1.3 'Uniqueness'.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
US Government (PSFD MoU)	N/A	N/A	Australia's contribution to shared costs from 2010 to 2014 based on the purchase of 100 aircraft. Includes contribution to production tooling, US overhead cost of running program, follow on development and shared sustainment activities.	1		
US Government (LRIP 6)	2	2	Provision of Advanced Acquisition items and services and progressive associated work scope required for Australia's first two aircraft being acquired under the LRIP 6 acquisition contracts.			
Major equipment received and quantities to 30 Jun 13						
No major equipment deliverables planned until 2014.						
Notes						
1	No equipment delivered as part of this contract.					

Section 3 – Schedule Performance

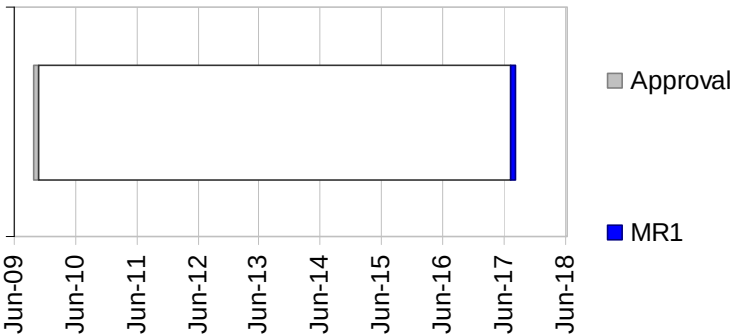
3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	JSF Air System (CTOL Variant)	Mar 03	N/A	July 03	4	1
Critical Design	JSF Air System (CTOL Variant)	Apr 04	Feb 06	Feb 06	22	2
Notes						
1	Aircraft weight was the major issue that delayed the closure of the Preliminary Design Review (PDR) by approximately three months.					
2	Design refinements following PDR failed to achieve the weight savings initially expected and considerable additional design effort was required. The original planned CTOL Critical Design Review (CDR), planned for April 04, was re-scheduled to February 2006 after the redesign effort was complete and included the 'roll up' of many lower-tiered reviews.					

3.2 Test and Evaluation Progress

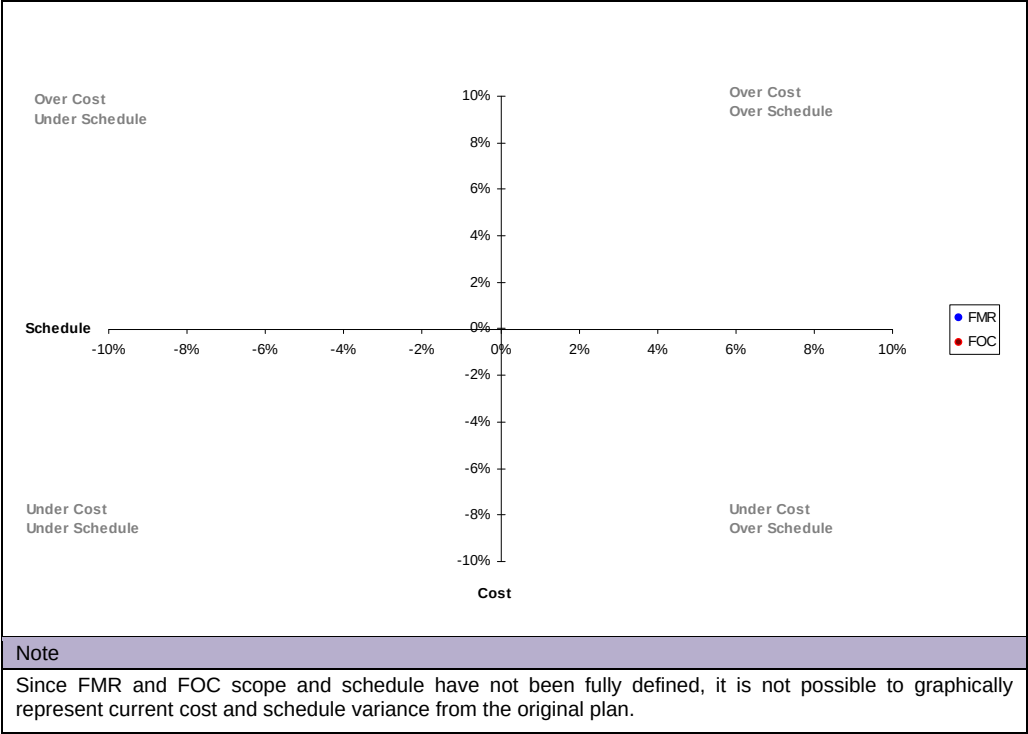
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Acceptance	Accept and deliver two (LRIP 6) aircraft to US ITC	Mar 14	Oct 14	Oct 14	7	1
	Accept and deliver aircraft 3-14	Dec 16	TBA	TBA		2
Notes						
1	The original planned delivery date of March 14 was based on achieving an IOC of 2018. Following the 2 year deferral in production and IOC, the project elected to move the delivery date back to October 2014 to align with US re-baselining of JSF production. Although the LRIP 6 contract is still yet to be finalised, the first two aircraft are in production and on schedule for delivery in October 2014.					
2	The White Paper announcement confirmed commitment to the JSF acquisition. The date for Initial Operating Capability is 2020.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Materiel Release #1 (MR1)	Sep 17	TBA		A revised Stage 1 Materiel Acquisition Agreement (MAA) has been developed for the acquisition of the approved first 14 Aircraft. It reflects the White Paper guidance of an introduction to service in 2020. The MAA update is in progress to endorsement.
Initial Materiel Release (IMR)	N/A	N/A	N/A	
Initial Operational Capability (IOC)	N/A	N/A	N/A	
Final Materiel Release (FMR)	N/A	N/A	N/A	
Final Operational Capability (FOC)	N/A	N/A	N/A	
Schedule Status at 30 June 2013				
Schedule Plan at Government Approval 				
Note				
With the indefinite deferral of MR1 a graphical representation of the new schedule is impractical. A graphical representation of an updated schedule will be re-introduced once government deferral of MR1 is finalised and scope for subsequent milestones is defined.				

Section 4 – Project Cost and Schedule Status

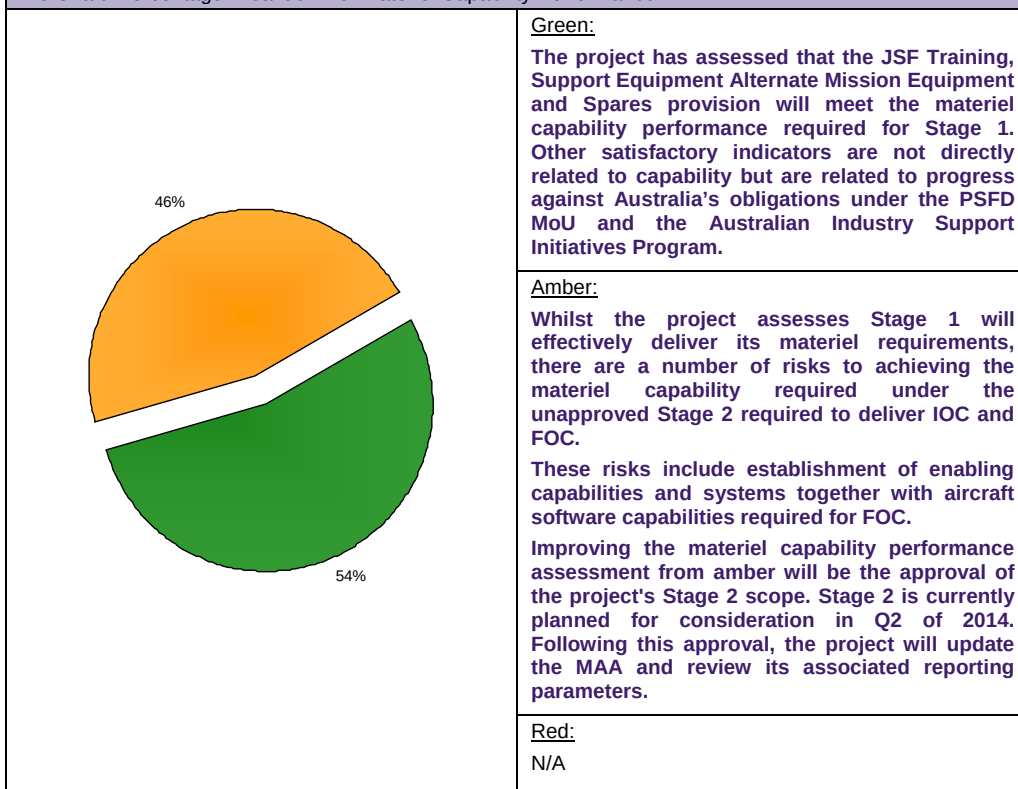
4.1 Schedule – Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)

Description	Remedial Action
Workforce – There is a chance the NACC project will not have access to sufficient project office staff , pilots and maintainers for initial JSF training and transition into service of the new capability because of the requirement to simultaneously support and operate multiple platforms.	Pro-active careful coordination between all the organisations with a responsibility for the workforce to ensure that people are recruited, released, and trained or re-skilled at the right time to meet critical project milestones.
Technical Risks – The JSF is a highly complex project and will carry high technical risk through the design, production and implementation phases. Software development has matured and reduced in risk but is still a major schedule driver .	Independent DSTO analysis of technical risks is ongoing and continues to be incorporated into project planning. Should software development risks be realised, consideration will be given to using an earlier software release to meet IOC schedule requirements.

US Programmatics – There is a chance that current and potential future US Defense and Congressional reviews result in further delays to Australia's IOC.	The NACC project remains subject to US programmatic risks of this type, the likelihood and impact of further major US programmatic changes are diminishing because: 1. The JSF aircraft is now reaching a mature state; and 2. There is a need to replace increasingly costly and obsolete legacy aircraft.
Aircraft Production Costs – With annual contracting, aircraft costs are exposed to uncertainties relating to variations in procurement quantities and Lockheed's ability to meet projected production learning curve efficiencies.	The contract price for LRIP 5 has now been negotiated, and is within the learning curve underpinning the project's cost estimations. This represents a reduced cost risk, however the overall cost risk is expected to remain relatively high until the program moves into multi-year fixed price contracts.
System Integration. A significant task for the NACC project will be integration of the JSF Air System into the Defence environment, including: • integration of the Autonomic Logistics Information System (ALIS) ground support system with existing ADF hardware and software systems, and • platform to platform integration of the combat system necessary for optimum interoperability. The inherent complexity of software intensive integration and multiple stakeholders make this a high schedule risk activity.	Ongoing analysis of interfaces with other ADF platforms to ensure optimal interoperability. Participation in the US test activities will enable Australia to obtain greater understanding of the systems integration risks and issues and thereby develop appropriate treatment strategies. This may include the incorporation of Australian platforms and systems into the test program.
US Government Release Approvals. Previous acquisition programs with the US have experienced delays due to excessive processing time to acquire the necessary US Government release approvals. These approval processes are complex, inconsistent and in some cases are classified and not releasable to Australia. Given the highly sensitive and classified nature of the JSF capability, and Australia's position as an early acquirer of JSF, there is a probability of delays in the delivery of data and materiel to Australia in the early phases of the acquisition program.	Prior to Stage 2 approval the NACC Project Office will complete a comprehensive information needs analysis necessary to effectively operate and maintain the JSF aircraft. The needs analysis will be compared against the proposed suite of information and data to be provided through the MOU procurement process. Information and data release deficiencies, uncertainties and/or issues will be addressed through the engagement of senior US Government officials and the establishment of agreed, predictable and documented processes.
Facilities: The Project has identified significant cost and schedule pressures for the facilities element of the program.	The delivery strategy and scope of facilities program has been significantly revised such that cost pressures are no longer considered a major threat to project success. Schedule pressures are still a significant concern, and underpin the need for the project to progress to Stage 2 Second Pass in 2014.
JSF Program Contracting: The multinational shared contracting framework is extremely complex, relatively immature and considered a source of schedule risk.	Ongoing engagement with the US JSF Program Office to better understand the contracting framework and processes. The 2012-13 decision to delay the further acquisition of aircraft beyond the first two will allow both the US and NACC Program Offices time to better understand the framework and associated processes.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

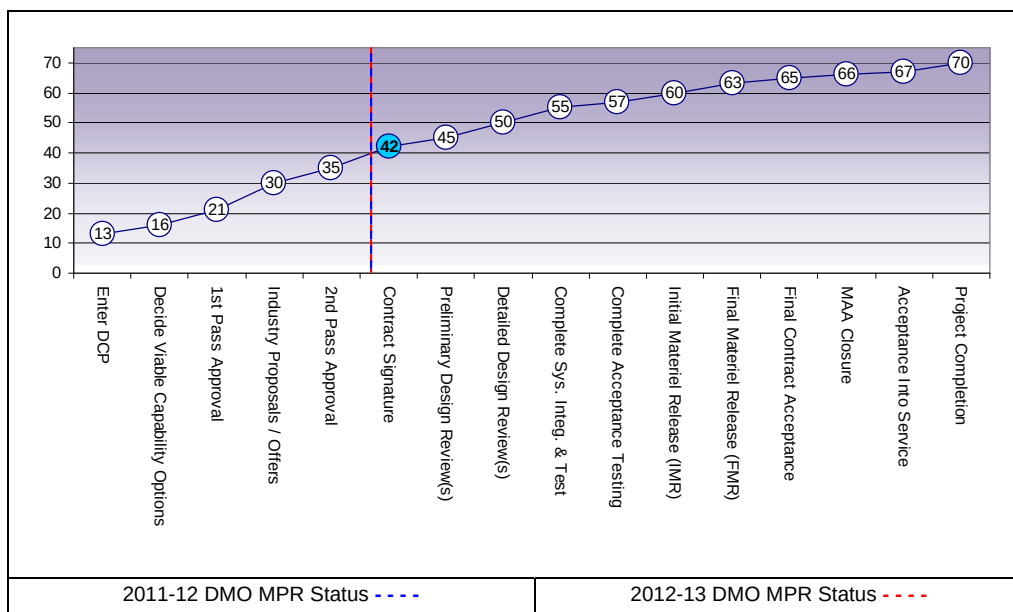
6.2 Major Project Issues

Description	Remedial Action
Noise associated with introducing the JSF at RAAF Base Williamtown is an ongoing sensitive issue and Defence is continuing to investigate options to reduce the noise impacts.	An environmental impact statement is currently being developed to further quantify the noise issue. The project anticipates that noise will remain an ongoing issue to both project approval and implementation. Public consultation is scheduled to occur in late 2013.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	6	6	6	6	6	6	6	42
Enter Contract	Project Status	6	5	6	6	7	5	5	40
	Explanation	• Cost: The cost maturity will remain immature whilst the US maintains annual contracting cycles. However, the recently negotiated LRIP 5 price does give some degree of cost confidence. • Technical Difficulty: The JSF aircraft is an extremely complex weapon system, and whilst the platform is now relatively mature, significant challenges remain in developing the mature (Block 3) software. • Commercial: JPO has increased their management oversight of Lockheed Martin (LM) including via a revised SDD contract structure which rewards measurable progress. Despite LM and JPO having successfully negotiated a fixed price incentive contract for LRIP 5, delays by the US Government have meant that finalisation of the contract for Australia's first two aircraft (LRIP 6) has still not been achieved. • Operations and Support: Global sustainment arrangements are still relatively immature, however they are now becoming a focus for the US Project Office and Lockheed Martin. The NACC Project is refining its own sustainment costs based on JPO analysis and through a series of scenario-based 'war games'.							



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
It is critical that Defence projects establish a robust requirements management regime to ensure capability is delivered to Government approved scope. To achieve this, the project has established a process which aims to ensure: - project delivery of scope in accordance with Government second pass approval; - a clear understanding between key stakeholders (ADF, US Government and Industry) of the materiel and services to be delivered; - effective risk mitigation to reduce the potential of non-delivery of minor elements of materiel, which remain important to the overall success of the NACC program.	Requirements Management
The NACC Project is one of the first Australian projects to directly engage in a cooperative contracting arrangement with the US and other foreign nations. The Project Office underestimated the complexities and resource overhead associated with direct engagement in the US contracting process.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Mr Andrew Cawley (to Jan 13) Ms Shireane McKinnie (Feb 13–current)
Division Head	AVM Kym Osley
Branch Head	AIRCDRE Roy McPhail (to Oct 12) AIRCDRE Catherine Roberts (Oct 12–current)
Project Director	GPCAPT John Ibbotson
Project Manager	Mr Bill Greenwood

Project Data Summary Sheet¹⁶⁶

Project Name	ARMED RECONNAISSANCE HELICOPTER
Project Number	AIR 87 Phase 2
First Year Reported in the MPR	2007-08
Capability Type	New
Service	Australian Army
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Mar 99
Total Approved Budget (Current)	\$2,031.5m
2012-13 Budget	\$50.7m
Project Stage	Acceptance Into Service
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This project was approved to provide a reconnaissance and fire support capability for the Australian Defence Force (ADF). The project has contracted for delivery of 22 aircraft including an instrumented aircraft (permanently fitted with in-flight test instrumentation), a Full Flight and Mission Simulator, two Cockpit Procedures Trainer(s), Groundcrew Training Device(s), Electronic Warfare Mission Support System, Ground Mission Equipment, with supporting stores, facilities, and ammunition.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2013, the year end underspend was \$5.7m, of which \$1.9m was due to delayed delivery of spares and engineering modifications. The remaining underspend was predominantly as a result of modifications and spares cost estimates being overstated in the budget estimates exercises due to lack of robust financials being available at the time of review.

Project Financial Assurance Statement

As at 30 June 2013, project AIR 87 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

In August 2012, Australian Aerospace submitted a formal Notice of Delay for the achievement of the critical Operationally Capable Helicopter (OCH) Milestone by the contracted date of 30 September 2012 due to the availability of serviceable multi-functional displays which was preventing them from delivering the remaining retrofit aircraft. In September 2012, Australian Aerospace submitted a Postponement Claim for the achievement of the OCH Milestone and the Commonwealth approved the Contract Change Proposal (CCP) to amend the contracted OCH Milestone date from 30 September 2012 to 09 November 2012.

166 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

The OCH Milestone was achieved on 14 December 2012 following acceptance of the 22nd final configuration aircraft, A38-002, from retrofit.

The Final Acceptance Milestone was not achieved by the 14 December 2012 contracted date. The Final Acceptance Milestone was achieved on 28 May 2013, signifying completion of Australian Aerospace's obligations under the acquisition contract.

The project office is finalising the transition of materiel elements to the respective in-service support agencies in order to achieve Final Materiel Release (FMR). A FMR Gate Review was conducted 17 June 2013 to assess whether FMR had been achieved. A decision had not been agreed between the stakeholders at 30 June 2013.

The project office effectively closed 30 June 2013.

Materiel Capability Performance

As at 30 June 2013, all 22 Armed Reconnaissance Helicopter (ARH) have been accepted by the Commonwealth in the Initial Operational Test and Evaluation Readiness configuration; six are being used for training, one of which is also being used to support test activities; and 16 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. All aircraft have had the enhanced anti-collision light modification incorporated and four aircraft have had the additional ballistic protection modification incorporated.

The rebaselined schedule includes all planned engineering activities required to deliver a fully compliant ARH System. Full compliance or Service Release of all Engineering Change Proposals was achieved in May 2013.

Operational Evaluation of the delivered ARH capability is being progressed by Army. Operational Evaluation for the next Operational Capability 2 (OC2) milestone, a deployable squadron, continues with the capability conducting a Sustainment Surveillance Period from February to May 2013 to determine the effectiveness of the support system. Further Operational Evaluation is planned to be conducted during Exercise Talisman Sabre in July 2013 with a decision on the declaration of the OC2 milestone to be made by October 2013.

1.3 Project Context

Project 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. The project's acquisition strategy specified substantial Australian Industry Involvement, and in December 2001 the Commonwealth entered into separate contracts with Australian Aerospace for the Acquisition and Through Life Support (TLS) programs.

The first four aircraft were manufactured and assembled in France and the remaining 18 aircraft were manufactured in France and assembled in Brisbane. One ARH is fitted with flight test instruments to assist the test and evaluation of ARH capability upgrades.

The training system relies heavily on simulation devices using the Full Flight and Mission Simulator and Cockpit Procedures 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 experienced delays in achieving the Initial Operational Capability (IOC) critical contractual milestone, which was originally contracted for June 2007, resulting in the Commonwealth exercising its contractual right to stop all payments on the Acquisition Contract while maintaining payments on the TLS Contract.

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 TLS contracts. The dispute resolution process resulted in both parties signing a Deed of Agreement in April 2008 which established a revised Acquisition Contract Price and Delivery Schedule, a revised TLS Contract pricing structure that transitioned it to a Performance Based Contract, and established networks for work done by third-party support subcontractors. The re-plan included integration of a program necessary to retrofit all ARH to the final configuration where all mission systems are certified for employment by Army crews (known as the retrofit program). Partial payments to Australian Aerospace on the ARH Acquisition Contract were recommenced in April 2008, with full payment due on signing of the CCPs.

Project Data Summary Sheets

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Changes to the Acquisition Contract arising from the signing of the Deed of Agreement were agreed between the parties in February 2009, with full payment recommencing from this date. The commensurate major documentation amendment through a CCP was approved in May 2009, and the Contract Amendment was issued in June 2009.
Project 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, • 70mm rocket modifications, • Storage Bay and Digital Video Recorder, • Roof Mounted Sight multi-target tracking system, and • Helmet Mounted Sight and Displays in both cockpits. The ADF's Airworthiness certification of the ARH Tiger aircraft relies on the French airworthiness certification process undertaken by the French acquisition agency (Direction Générale de l'Armement). The ADF's Director General Technical Airworthiness recognises the French acquisition agency as a competent certification agency, and subsequently accepts the French acquisition agency certification of common Tiger systems used in the Australian ARH Tiger. In doing so, the French acquisition agency certification of the French aircraft became an integral part of the ADF's ARH certification plan. Consequently, delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This caused schedule slip in the aircraft and system certification, simulator development and aircrew training. The delays in the program resulted in the contractor failing to achieve the original contracted IOC critical milestone.
Project Major Challenges The most significant issue for the program continues to be the underperformance of maintenance and supply support networks. This is impacting the availability of serviceable Spares (Repairable Items and Breakdown Spares) and Support and Test Equipment at the required configuration to support the in-service fleet achieving required flying rates of effort.
Other Current Projects / Sub-Projects N/A

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Mar 99	Original Approved	1,584.0	
Oct 02	Real Variation – Transfer	(18.2)	1
Dec 03	Real Variation – Transfer	(59.1)	2
Aug 04	Real Variation – Budgetary Adjustments	(2.2)	3
Sep 04	Real Variation – Transfer	(3.0)	4
Jun 05	Real Variation – Transfer	(4.0)	5
Aug 05	Real Variation – Budgetary Adjustments	(4.5)	6
		(91.0)	
Jul 10	Price Indexation	418.2	7
Jun 13	Exchange Variation	120.3	
Jun 13	Total Budget	2,031.5	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – Australian Aerospace	(1,664.0)	8
	Other Contract Payments / Internal Expenses	(148.9)	9
		(1,812.9)	
FY to Jun 13	Contract Expenditure – Australian Aerospace	(40.2)	10
	Other Contract Payments / Internal Expenses	(4.8)	
		(45.0)	
Jun 13	Total Expenditure	(1,857.9)	
Remaining Budget			
Jun 13		173.6	
Notes			
1	Transfer to Defence Support Group (DSG) Oakey Redevelopment Project to develop ARH specific infrastructure.		
2	Transfer to DSG 1 Aviation Relocation Project (Darwin) to develop ARH specific infrastructure.		
3	Administrative Savings harvest.		
4	Transfer to Defence Science and Technology Organisation to fund studies in support of ARH.		
5	Transfer to DSG to fund AIR 87 facilities constructed as part of the Darwin 1 Aviation Relocation Project.		
6	Skilling Australia's Defence Industry harvest.		
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$414.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$3.3m having been applied to the remaining life of the project.		
8	Includes first five years support costs of the TLS Contract (two years Pre-Implementation and the first three Contract Years), Preliminary Engineering Proposals and Indefinite Quantity tasks performed in Acquisition.		
9	Other expenditure comprises: operating expenditure, External Service Providers , Foreign Military Sales, research and development costs and other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.		

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10	The two major contracts that make up the other expenditure are Nova Aerospace, for engineering support to the value of \$1.8m and a transfer of funding to the Command and Intelligence Support Systems Office of \$1.2m for the provision of computer hardware.

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The year end underspend was \$5.7m, of which \$1.9m was due to delayed delivery of spares and engineering modifications. The remaining underspend was predominantly as a result of modifications and spares cost estimates being overstated in the budget estimates exercises due to lack of robust cost estimates being available at the time of the budget estimates exercise.
			Overseas Industry	
		(5.1)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(0.6)	Commonwealth Delays	
50.7	45.0	(5.7)	Total Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes	
		Signature \$m	30 Jun 13 \$m				
Australian Aerospace	Dec 01	1,139.9	1,470.8	Variable	SMART 2000		
Contractor	Quantities as at			Scope		Notes	
	Signature		30 Jun 13				
Australian Aerospace	22		22	Tiger Armed Reconnaissance Helicopter			
Major equipment received and quantities to 30 Jun 13							
22 aircraft have been accepted by the Commonwealth. Engineering and maintenance arrangements established.							

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	ARH System	Mar 02	N/A	Feb 03	11	1
	Aircrew Training Devices	Jun 02	N/A	Feb 03	8	2
System Design	ARH System	Jun 02	N/A	Feb 03	8	1
	ARH System - Delta System Design Review	Mar 03	N/A	Apr 03	1	1
	Aircrew Training Devices	Apr 03	N/A	Jul 03	3	2
Preliminary Design	ARH Tiger	Oct 02	N/A	May 03	7	3
	Aircrew Training Devices	Mar 03	N/A	Oct 04	19	2
Critical Design	ARH Tiger	Mar 03	N/A	Jul 04	16	4
	Aircrew Training Devices	Sep 03	N/A	Jun 05	21	2
Notes						
1	Reliance on the certification of the French Tiger variant was critical to the Australian design review and acceptance program. The DMO's ability to leverage from the French program was adversely impacted because the French program had not achieved design approval outcomes in the timeframe expected.					
2	The Full Flight and Mission Simulator required customisation to both the visual system and the motion systems following contract signature in order to account for capability deficiencies associated with the proposed simulator design. A major cause of the delay in delivering training devices can be attributed to the efficacy with which the software provided from the aircraft manufacturer's test program was being managed to produce a high fidelity simulator.					
3	As the ARH is a variant of the French and German Tiger helicopters, the ADF Technical Airworthiness Authority planned to utilise the existing certification work undertaken by the French acquisition agency (Direction Générale de l'Armement).					
4	The maturity of the ARH design has required ongoing engineering changes to the approved ARH product baseline presented to the Airworthiness Board at the In Service Date. As a result, subsequent flight testing 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.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Full Flight and Mission Simulator Contractor In-plant	Jul 04	N/A	Oct 07	39	1
	Cockpit Procedures Trainer Oakey Contractor In-plant and On-Site	Jul 04	N/A	Jun 08	47	1
	Cockpit Procedures Trainer Darwin Contractor In-plant and Army In-plant	Jul 04	N/A	Dec 08	53	1
Acceptance	ARH					
	Type Acceptance Review Special Flight Permit	Oct 04	N/A	Jun 05	8	1
	Australian Military Type Certificate	Jun 05	N/A	Oct 05	4	1
	Aircrew Training Devices - Final Acceptance Test and Evaluation					
	Full Flight and Mission Simulator (Transition Training capability)	Feb 05	N/A	Nov 07	33	1
	Full Flight and Mission Simulator (Full Training capability)	Feb 05	N/A	Nov 09	57	1

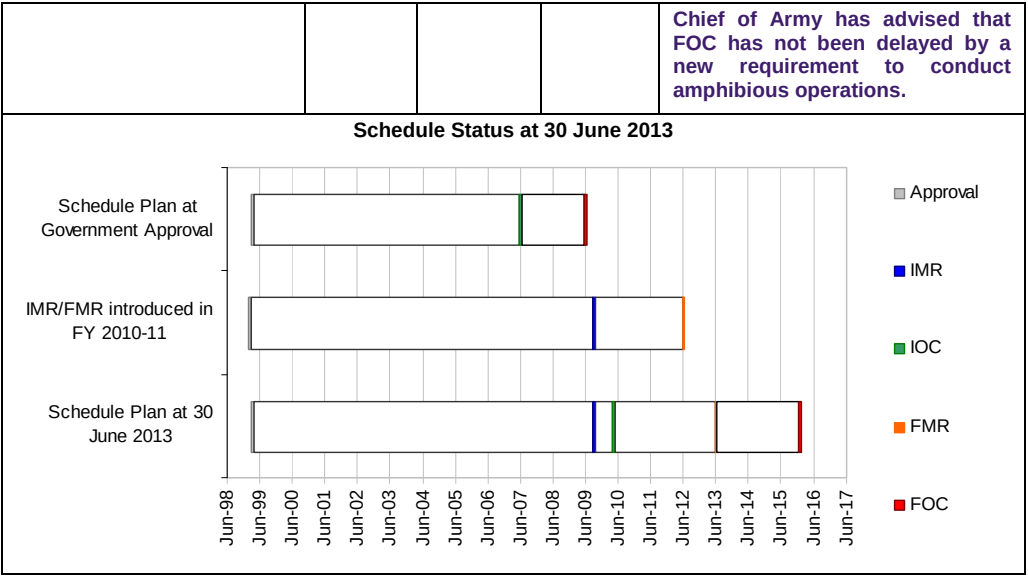
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	Cockpit Procedures Trainer Oakey	Feb 05	N/A	Nov 09	57	1
	Cockpit Procedures Trainer Darwin	Feb 05	N/A	Feb 10	60	1
	Acceptance					
	ARH #11	Jul 06	N/A	Apr 08	21	1
	ARH #22	Apr 08	N/A	Nov 11	43	1, 2
Notes						
1	The difference between the Original Planned and Achieved dates is due to contractor delays in delivering conforming supplies.					
2	The acceptance of the 22nd production ARH was contracted for July 2011. The milestone was achieved on 25 November 2011. Note: Production aircraft (#22) is the 22nd aircraft accepted by the Commonwealth which is not to be confused with the milestone for the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration under the Acquisition Contract. The 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration was achieved on 14 December 2012 following the delivery of A38-002 from retrofit.					

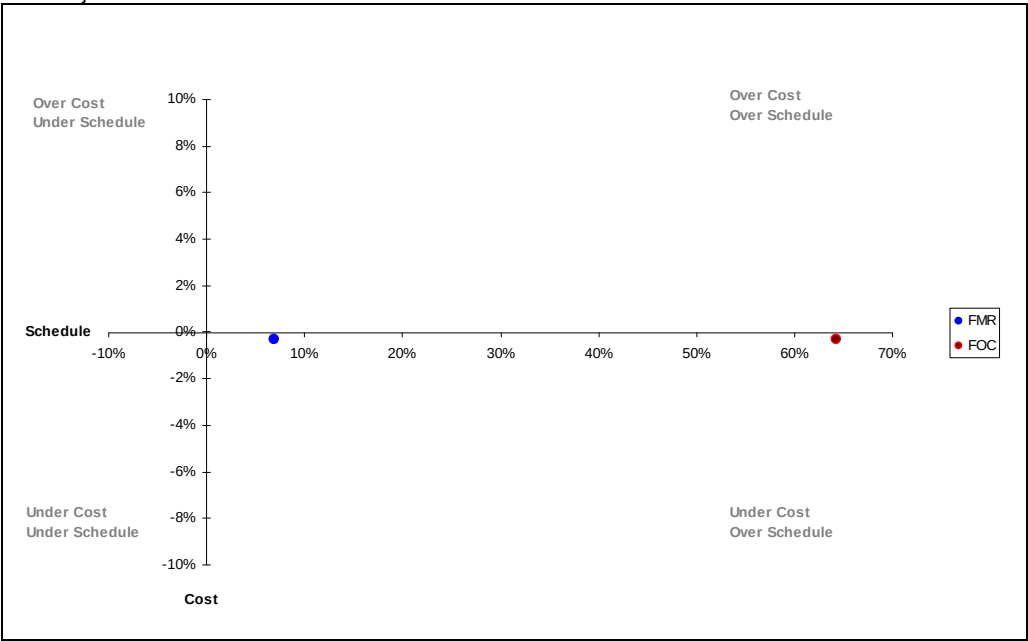
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Sep 09	N/A	
Initial Operational Capability (IOC)	Jun 07	Apr 10	34	Operational Capability 1 (OC1) (IOC) was granted by Chief of Army on 8 April 2010.
Final Materiel Release (FMR)	Jul 12	Jun 13	11	No FMR originally identified. Current FMR is the date agreed in Amendment No. 2 to the project AIR 87 Phase 2 Materiel Acquisition Agreement. This date was not achieved. Delays in the achievement of the Final Acceptance Milestone under the contract with Australian Aerospace and in the formal transition of capability components to the respective in-service management agencies have contributed to the delay in achieving FMR. FMR was planned to be achieved by 30 June 2013. As at 30 June 2013, a decision on FMR achievement had not been made.
Final Operational Capability (FOC)	Jun 09	Jan 16	79	As a result of the reduction in flying rate of effort experienced by the ARH fleet, as well as a requirement to conduct amphibious operations from LHD ships, Army has amended its Acceptance into Operational Service Plan, to reflect the associated training delays. Consequently, Chief of Army has advised that the previously anticipated achievement date of December 2012 will not be met, and that a date of January 2016 is now planned.



Section 4 – Project Cost and Schedule Status

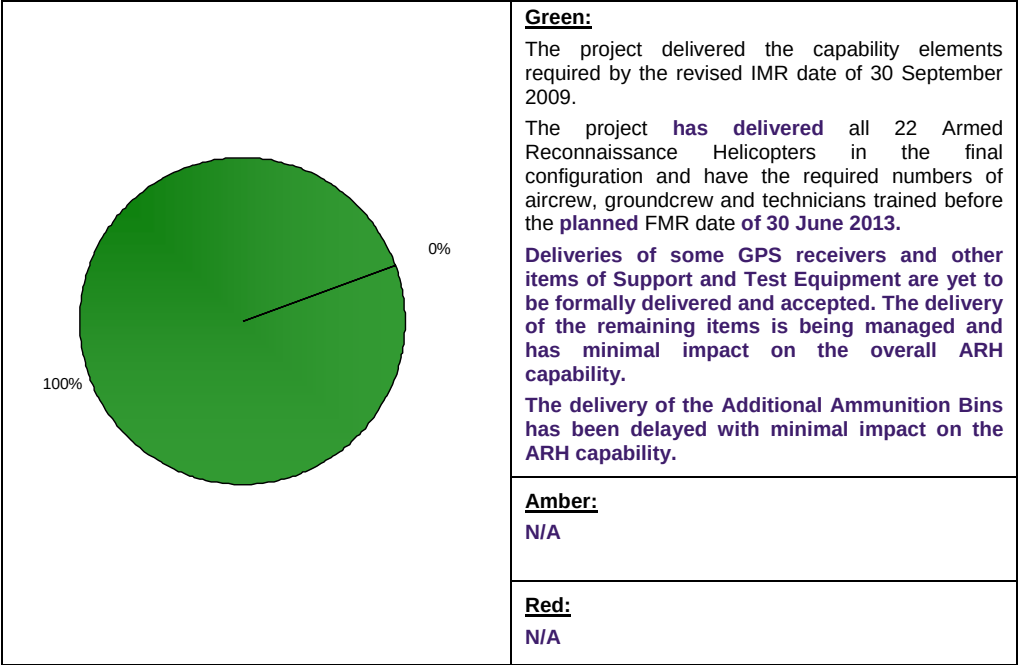
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that Aircrew Training and Operational Test and Evaluation will be affected by an inability to achieve required Rate of Effort leading to an impact on schedule and supportability.	Work with the Prime Contractor to improve supply chain management and performance. Risk retired following the achievement of the Final Acceptance Milestone under the Acquisition Contract on 28 May 13.
There is a chance that Aircrew Training will be affected by limitations of the Aircrew Training Device Night Vision System technical solution implementation leading to an impact on cost, supportability, safety and performance.	Risk retired following the achievement of the Final Acceptance Milestone under the Acquisition Contract on 28 May 13.
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.	Risk retired following acceptance of the last aircraft.
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.	Risk realised following contractor's failure to achieve Milestones by the contracted dates. Risk transferred and managed as an issue.
There is a chance that the ability to generate the required flying Rate of Effort will be affected by the enabling Supplies delivered leading to an impact on cost, schedule, performance and supportability.	Regular feedback through Project Management Stakeholder Group meetings and Operational Evaluation reporting. Offset a portion of aircraft Rate of Effort to training devices. Risk retired following the achievement of the Final Acceptance Milestone under the Acquisition Contract on 28 May 13.
There is a chance that the Project Scope baseline will be affected by the outcomes of Operational Evaluation leading to an impact on cost and schedule.	Monitor Operational Evaluation reports. Negotiate any additional scope requirements through Project Management Stakeholder Group meetings. Agreed scope inclusions to be documented in up-issued Materiel Acquisition Agreement as required. Risk to be retired following decision on whether FMR has been achieved.
There is a chance that acquisition staffing levels will be affected by delays to program delivery and additional acquisition requirements leading to an impact on cost.	Seek extension to existing project positions. Negotiate Full Time Equivalent funding inclusion with Capability Development Group for all new scope inclusions. Raise issues early with Branch Human Resource management staff and raise Establishment Variation Proposals as required. Seek funding for External Service Providers as required. Risk retired following the achievement of the Final Acceptance Milestone under the Acquisition Contract on 28 May 13.

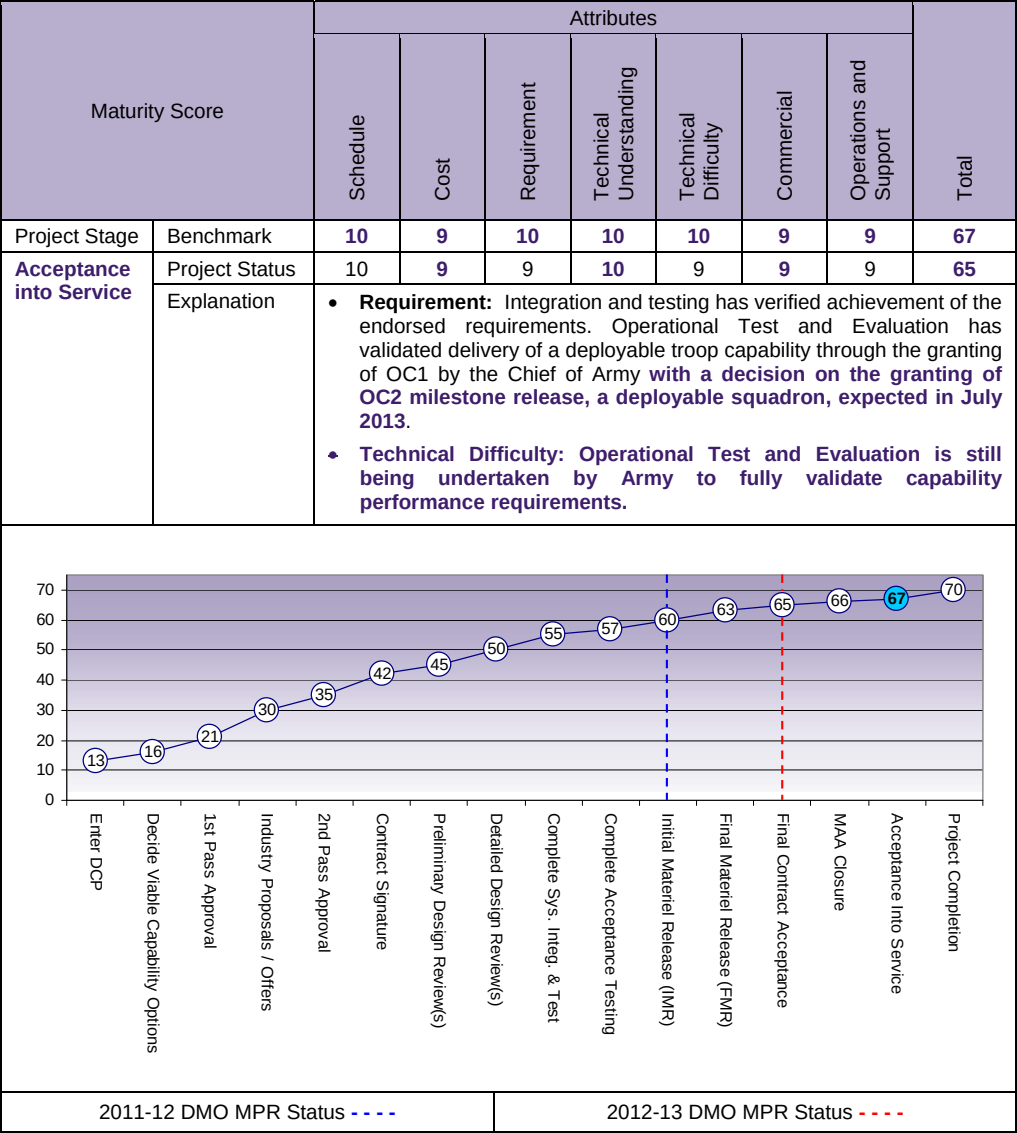
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
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.	Maintenance support subcontracts in the exit criteria for key milestones has assisted in mitigating this issue. Contractor incentivised to return all Commonwealth owned Repairable Items inducted for repair with European suppliers. 100% stocktake of all Commonwealth owned Repairable Items with European suppliers conducted. 100% stocktake of of all Commonwealth owned Repairable Items with Australian repair agencies or awaiting induction for repair with the Contractor conducted. Meetings conducted with Eurocopter and other European suppliers to facilitate improvements/establishment of repair pipelines. Issue closed following project office closure 30 June 2013. Ongoing issue for sustainment.
Assuring continuing staff supplementation to the Armed Reconnaissance Helicopter Project Office to ensure project outcomes are delivered.	Issue ongoing with additional resources being applied from other project and support areas within the Branch and Division or through the engagement of External Service Providers as required. Issue closed following project office closure 30 June 2013.
The achievement of the remaining major and critical milestones has been 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.	Contractor failed to meet the logistic requirements of three Milestones by the contracted dates. Repairable Items and Support and Test Equipment yet to be delivered and accepted are documented in the Deed of Closure with acceptance to occur in 2013-14. Delay in acceptance of the outstanding items has minimal impact to the capability. Issue closed following the achievement of the Final Acceptance Milestone on 28 May 2013.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Aircraft still undergoing development by their parent Defence force or Original Equipment Manufacturer should not be classed as off-the-shelf.	Off-the-shelf Equipment
Delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This has caused schedule slip in the aircraft and system certification, simulator development and aircrew training. The delays in the program have resulted in the contractor failing to achieve the IOC critical milestone.	Off-the-shelf Equipment
Resolve or escalate minor disputes as they arise to prevent escalation to major contract dispute.	Contract Management
Use integrated teams with strong processes and empowered staff facilitated by appropriate contractual arrangements.	Resourcing Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Mark Campbell (to Jul 12) RADM Tony Dalton (Jul 12-current)
Branch Head	BRIG Andrew Mathewson
Project Director	Mr Brett Worsley
Project Manager	Mr Brett Worsley

Project Data Summary Sheet¹⁶⁷

Project Name	F/A-18 HORNET UPGRADE
Project Number	AIR 5376 Phase 2
First Year Reported in MPR	2007-08
Capability Type	Upgrade
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	May 98
Total Approved Budget (Current)	\$1,878.6m
2012-13 Budget	\$25.4m
Project Stage	Project Completion
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The AIR 5376 Phase 2 project was established to upgrade the existing F/A-18 fleet to incorporate enhancements to the aircraft's air defence capability. Enhancements are being implemented in three distinct stages. The first stage is to enable the aircraft to more effectively perform its air defence role. The second stage involves enhancing pilot situational awareness, and the final stage is providing additional aircraft self protection.

In addition to these hardware upgrades of the F/A-18 Fleet, each stage includes new or upgraded aircraft software and ground support and training systems.

1.2 Current Status

Phase 2.1	Cost Performance The Project was completed within budget.
	Schedule Performance The Project was completed ahead of schedule.
	Materiel 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.
	Materiel Capability Performance Capability has been accepted into service.

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Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Phase 2.3	Cost Performance <u>In-year</u> Program expenditure in Financial Year 2012-13 was less than budgeted. The contributing factors were delayed deliveries for EL/L-8222 Long Lead Spares and cost savings associated with Engineering Support Service contracts. <u>Project Financial Assurance Statement</u> As at 30 June 2013, project AIR 5376 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.
	Schedule Performance Final Materiel Release (FMR) was achieved in September 2012 with all major elements in place to support both Initial and Final Operational Capability (FOC). Technical Completion is expected to be achieved in September 2013.
	Materiel Capability Performance All major elements provided by Phase 2.3 have demonstrated their fitness for purpose. The project achieved Supplemental Type Certificate and Service Release in November 2012.
HACTS	Cost Performance <u>In-year</u> Program expenditure in Financial Year 2012-13 was less than budgeted. The contributing factor was the delayed approval of Hornet Simulator Improvement Program. <u>Project Financial Assurance Statement</u> As at 30 June 2013, project AIR 5376 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope. Upon agreement to commence the Hornet Aircrew Training System (HACTS) Improvement Program (HIP), the project's approved scope and budget will be re-programmed. As of 30 Jun 2013, the HACTS Improvement Program was not yet approved.
	Schedule Performance The HACTS achieved FMR in January 2012. Assuming approval to commence the HIP is granted in 2013, then HACTS FOC is expected to be achieved by April 2016.
	Materiel Capability Performance Ongoing upgrades to the HACTS are required to align the system with developing Hornet capabilities introduced by continued aircraft and weapon system upgrades.

1.3 Project Context

Project Background

Following the decision to select the F/A-18 Classic Hornet as the Royal Australian Air Force's (RAAF) multi-role fighter in 1981, the need to address equipment obsolescence and develop aircraft capabilities has resulted in the establishment of the F/A-18 Hornet Upgrade Program AIR 5376 (known as the HUG Program).

Project AIR 5376 Phase 2 is comprised of three sub phases: Phase 2.1 Radar upgrade, Phase 2.2 Avionics upgrade, and Phase 2.3 Electronic Warfare upgrade. An additional sub phase was created for the associated upgrade of the HACTS.

AIR 5376 Phase 2.1 enabled the aircraft to more effectively perform their air defence role. This included provision of a new fire-control radar, and an Electronic Protection Collaborative Development Program with the United States (US) Navy to develop Electronic Protection techniques for the radar.

AIR 5376 Phase 2.2 provides aircrew with enhanced situational awareness by upgrading the avionics suite with the installation of the following equipment:

- LINK 16 secure data link. The LINK 16 equipment provides a multifunction information distribution system;
- An upgraded counter measures dispenser set;
- A multi-purpose colour screen display group upgrade;
- Upgraded digital moving map system including Tactical Air Moving Map Capability;
- A joint mission planning system; and
- A joint helmet-mounted cueing system.

AIR 5376 Phase 2.3 provides additional aircraft self protection with:

- Replacement of the radar warning receiver with an updated Raytheon radar warning receiver for the whole fleet;
- Supplementation of the counter measures dispenser system capability with a SAAB counter measures dispenser system thereby increasing expendable capacity;
- Supplementation of the radar 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 (two at Williamstown, one at Tindal) configured to simulate Air 5376 Phase 2.2 configured aircraft including instructor operator stations and instructor/student debrief stations; and
- Tactical readiness trainers incorporating advanced helmet mounted display.

Project Uniqueness

The Project Office performs the role of prime integrator for all AIR 5376 Phase 2 sub phases. Boeing (St Louis) is contracted for the aircraft integration aspects. The US Navy, through Foreign Military Sales (FMS), is responsible for developing core aircraft software upgrades. New equipment is sourced directly from suppliers, either through FMS or direct commercial contracts. Contracts and FMS cases are placed incrementally as requirements mature. Therefore, the Commonwealth retains a significant portion of risk throughout 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.

Project Major Challenges Major challenges associated with AIR 5376 Phase 2.3 have now been overcome, as all key elements have transitioned to In-Service use and operation. The remaining major challenge for AIR 5376 Phase 2 is approval and implementation of the HIP. HACTS achieved FMR in January 2012. However, when the capability was offered to the RAAF in the expectation of FOC declaration, it was found that certain HACTS elements were not suitable for operational training despite the AIR 5376 Phase 2 Materiel Acquisition Agreement (MAA) being satisfied. As a consequence, the RAAF identified the requirement for HIP and made an associated decision that FOC for HACTS would not be declared until HIP has been implemented. Currently, financial approval of the HIP is being progressed and although the HIP is not yet approved the date for HACTS FOC has been estimated to be April 2016.
Other Current Projects / Sub-Projects N/A. All sub phases are addressed in this report.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5416 Phase 1 Electronic Warfare Self Protection (EWSP)	AIR 5416 was a multi-phase project that was established to redress the EWSP limitations of selected ADF aircraft and therefore improve the survivability of these aircraft in combat.	AIR 5376 was dependent on AIR 5416 Phase 1 for the Full Scale Engineering Development of an indigenous Radar Warning Receiver and the Initial Design Activity and adaptability studies that focused on the design of a common EWSP suite that could be tailored for installation in the F/A-18 A/B aircraft.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
May 98	Original Approved	1,300.0	
Feb 99	Real Variation – Transfer	23.9	1
Aug 00	Real Variation – Transfer	11.3	2
Jul 01	Real Variation – Scope	(132.1)	3
Oct 02	Real Variation – Transfer	(0.2)	4
Oct 03	Real Variation – Scope	9.3	5
Aug 04	Real Variation – Budgetary Adjustment	(0.7)	6
Aug 04	Real Variation – Scope	(1.2)	7
Dec 04	Real Variation – Scope	(67.0)	8
Aug 05	Real Variation – Budgetary Adjustment	(2.7)	9
May 07	Real Variation – Scope	412.5	10
		253.1	
Jul 10	Price Indexation	323.5	11
Jun 13	Exchange Variation	2.0	
Jun 13	Total Budget	1,878.6	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government (AT-P-LZY)	(281.5)	
	Contract Expenditure – The Boeing Company	(297.1)	
	Contract Expenditure – Raytheon	(72.4)	
	Contract Expenditure – US Government (AT-P-LDG)	(128.8)	
	Contract Expenditure – ELTA Systems Ltd	(98.1)	
	Other Contract Payments / Internal Expenses	(734.5)	12
		(1,612.4)	
FY to Jun 13	Contract Expenditure – US Government (AT-P-LZY)	(0.5)	
	Contract Expenditure – The Boeing Company	(5.2)	
	Contract Expenditure – Raytheon	(0.0)	
	Contract Expenditure – US Government (AT-P-LDG)	(0.0)	
	Contract Expenditure – ELTA Systems Ltd	(11.2)	
	Other Contract Payments / Internal Expenses	(6.7)	13
		(23.6)	
Jun 13	Total Expenditure	(1,636.0)	
Jun 13	Remaining Budget	242.6	
Notes			
1	Transfer from other phases of AIR 5376.		
2	Transfer from AIR 5376 Phase 1 Hornet Aircrew Training System.		
3	White Paper considerations.		

4	Transfer to Facilities.
5	Scope increase for Hornet Aircrew Training System.
6	Administrative Savings Harvest.
7	Transfer to Facilities.
8	Decrease for Radio Frequency Jammer.
9	Skilling Australia's Defence Industry harvest.
10	Scope increase to include Hornet Electronic Warfare Self Protection Suite upgrade being conducted under Phase 2.3.
11	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$314.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$9.2m having been applied to the remaining life of the project.
12	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top five 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 23 FMS cases with the US Government to support various stages of the project. Other expenditure includes an amount of \$87.3m on operating expenditure; \$115.3m on aircraft software upgrade FMS cases and an additional \$178.2m on other major FMS cases for items such as the multifunctional information distribution system, joint helmet mounted cueing system, project risk reduction, and Hornet upgrade support activities. In addition, \$21.9m on counter measures dispenser sets and pylon modification kits from SAAB AB, \$52.4m on fleet modifications by Boeing Defence and \$30.7m by BAE Systems Australia, \$5.7m on Hornet data recorder acquisition from ELBIT, \$39.3m for the HUG Phase 2.1 Radar Collaborative Development program, \$18.3m on Project Management, Engineering, Technical and Contractor Support Services, \$7.7m on procurement of Infrared and Chaff countermeasures supplies, \$6.1m on Project related International and Domestic Travel, \$5.5m on the ALR2002 Upgrade with MICREO Ltd, \$4.6m on the upgrade to the Radio Frequency Stimulator at the Joint Electronic Warfare Operational Support Unit, \$2.6m on aircraft maintenance with Hunter Aerospace Corporation, \$1.1m on PLM-4 RSS Retrofits with Global Solutions, \$0.9m on project international and domestic freight charges and \$156.9m in other related capital expenditure.
13	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top 5 contracts and minor contract expenditure. In particular, \$0.6m on operating expenditure, \$0.6m on counter measures dispenser sets and pylon modification kits from SAAB AB, \$2.6m in aircraft and pylon modification expenditure, \$0.3m by BAE Systems Australia, \$1.3m on Project Management, Engineering, Technical and Contractor Support services, \$0.8m on the Laser Mask Update with Northrop Grumman, \$0.1m on Project International and Domestic Freight Charges and International and Domestic Travel, and \$0.5m in other related expenditure.

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Total variance is primarily due to contract signature for the Hornet Simulator Improvement Program being delayed to Financial Year 2013-14 as well as delayed receipt of EL/L-8222 Electronic Counter Measures (ECM) and BOL-518 Counter Measures Dispenser System spares shipments. Additional cost savings relating to Engineering Support Service contracts have also been achieved.
		(0.3)	Overseas Industry	
			Local Industry	
			Brought Forward	
		(0.1)	Cost Savings	
			FOREX Variation	
		(1.4)	Commonwealth Delays	
25.4	23.6	(1.8)	Total Variance	

Project Data Summary Sheets

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2012–13 Major Projects Report

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government (AT-P-LZY)	Oct 99	350.3	329.4	FMS	FMS	
The Boeing Company	Dec 01	50.4	323.3	Firm/Fixed	DEFPUR101	1
Raytheon	May 04	53.6	70.9	Fixed	ASDEFCON	1
US Government (AT-P-LDG)	Dec 06	206.8	148.2	FMS	FMS	
ELTA Systems Ltd	May 08	89.8	107.8	Fixed	ASDEFCON	
Notes						
1	Base Date dollars have not been provided for some contracts in this project. As the Prime Systems Integrator the Commonwealth has, as a risk management strategy, undertaken a process of incremental contracting, by way of both new contracts and changes to existing contracts, for work packages as they are defined. This strategy results in varying base dates for work packages contracted by each contract change. This strategy applies to The Boeing Company and Raytheon contracts, as a result expressing real price increases/decreases at a total prime contract level in base date dollars is not feasible. The Elta Systems Ltd contract and FMS however have been calculated at base date dollars.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
US Government (ATPLZY)	71	71	APG73 Radars			
The Boeing Company	Various	Various	Aircraft & Pylon modification kits			
Raytheon	3/0	3/3	Tactical Readiness Trainers and Tactical Operational Flight Trainers			
US Government (ATPLDG)	66	73	Radar Warning Receivers			
ELTA Systems Ltd	Various	Various	ECM Jammer Pods			
Major equipment received and quantities to 30 Jun 13						
Phase 2 Hornet Aircrew Training System – FMR delivered. Phase 2.1 Air Defence Upgrade – completed. Phase 2.2 Avionics Upgrade – completed. Phase 2.3 Electronic Warfare Upgrade – FMR delivered.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Feb 02	Feb 02	Feb 02	0	
	Phase 2.3	Jan 07	Jan 07	Jan 07	0	
	HACTS	Sep 04	Sep 04	Sep 04	0	
Preliminary Design	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Sep 02	Sep 02	Sep 02	0	
	Phase 2.3 (Systems Design Review)	Jan 07	Jan 07	Jan 07	0	
	HACTS	Jan 05	Jan 05	Jan 05	0	
Critical Design	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Mar 03	Mar 03	Mar 03	0	
	Phase 2.3	Jun 07	Jun 07	Jun 07	0	
	HACTS	Mar 05	Mar 05	Mar 05	0	

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Integration	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2 (First Article Contract / Project acceptance)	Feb 05	Jan 05	Jan 05	(1)	1
	Phase 2.3 (System Integration Lab Test)	May 07	May 07	May 07	0	
	HACTS (Factory Acceptance Test)	May 06	May 06	May 06	0	
Acceptance	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2 (Aircraft Modification DMO Acceptance – A&B model)	Nov 05	Nov 05	Nov 05	0	
	Phase 2.3 (Aircraft Verification and Validation)	Sep 08	Sep 08	Aug 08	(1)	1
	HACTS (Site Acceptance Test)	Jun 06	Jun 06	Jun 06	0	
Notes						
1	Modification of Validation and Verification aircraft completed earlier than anticipated.					

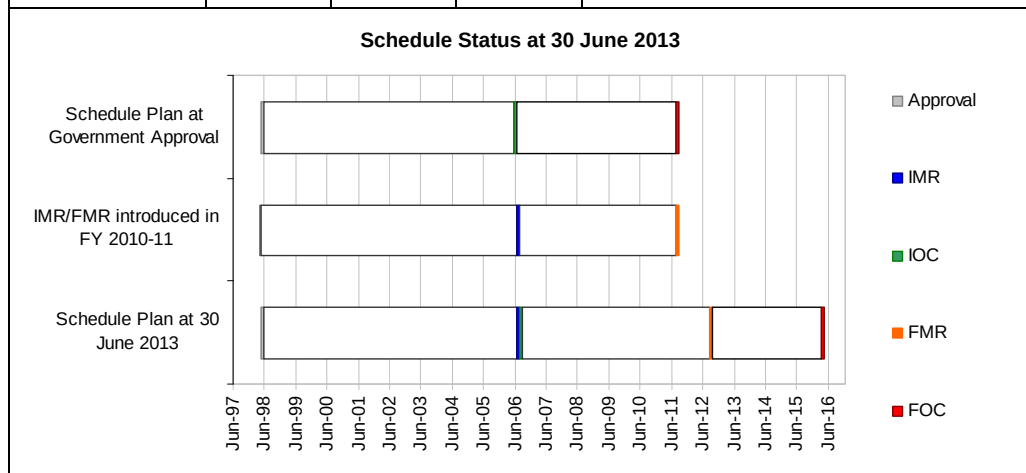
3.3 Progress toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)				
Phase 2.1 IMR	N/A	N/A	N/A	
Phase 2.2 IMR	N/A	Apr 07	N/A	
Phase 2.3 IMR	N/A	Dec 08	N/A	
HACTS IMR	N/A	Jul 06	N/A	
Materiel Release (MR) 2				
Phase 2.3 MR2	Aug 11	Aug 11	0	
Initial Operational Capability (IOC)				
Phase 2.1 IOC	N/A	N/A	N/A	
Phase 2.2 IOC	Apr 07	Apr 07	0	
Phase 2.3 IOC	Nov 09	Jul 13	44	IOC Project Office actions are complete, including achievement of Supplemental Type Certification and Service Release in November 2012. Awaiting RAAF IOC/FOC declaration.
HACTS IOC	Jun 06	Jul 06	1	Delays in the development and issue of Site Acceptance Report.
Final Materiel Release (FMR)				
Phase 2.1 FMR	N/A	N/A	N/A	
Phase 2.2 FMR	N/A	Dec 07	N/A	
Phase 2.3 FMR	Jun 11	Sep 12	15	The delivery of jammer pods and associated ground support equipment have delayed achievement of the FMR.
HACTS FMR	Aug 11	Jan 12	5	Delivery of the advanced helmet mounted display has delayed achievement of the FMR.

Project Data Summary Sheets

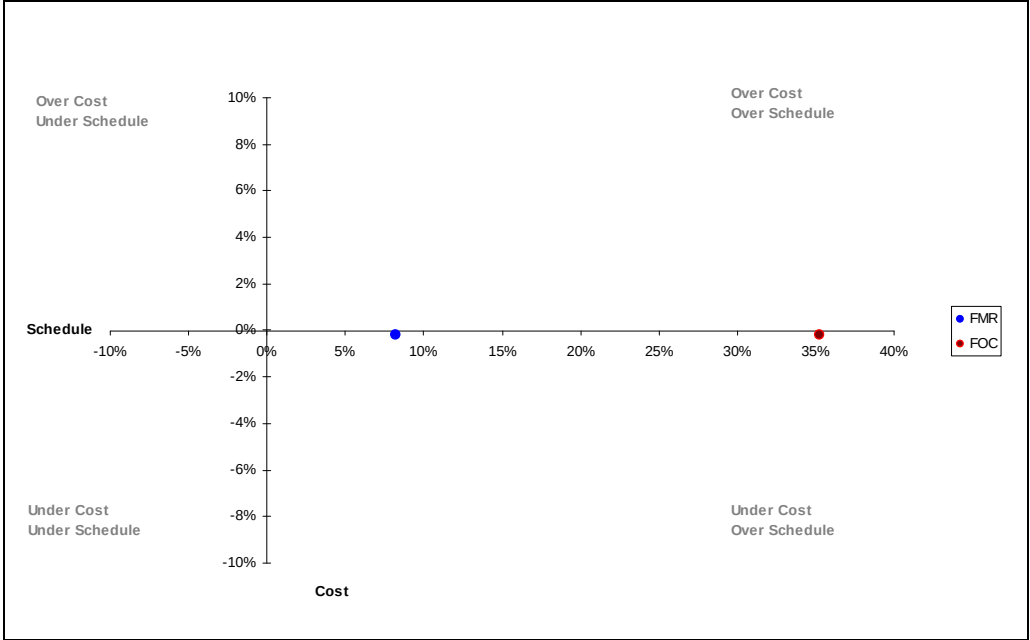
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Final Operational Capability (FOC)				
Phase 2.1 FOC	N/A	N/A	N/A	
Phase 2.2 FOC	Dec 07	Dec 07	0	
Phase 2.3 FOC	Aug 11	Jul 13	23	FOC Project Office actions are complete, including achievement of Supplemental Type Certification and Service Release in November 2012. Awaiting RAAF IOC/FOC declaration.
HACTS FOC	Mar 07	Apr 16	109	The delivery of upgrades to the HACTS system to HUG 2.2 aircraft configuration has been completed. A further upgrade to align HACTS configuration with fleet aircraft will be progressed.



Section 4 – Project Cost and Schedule Status

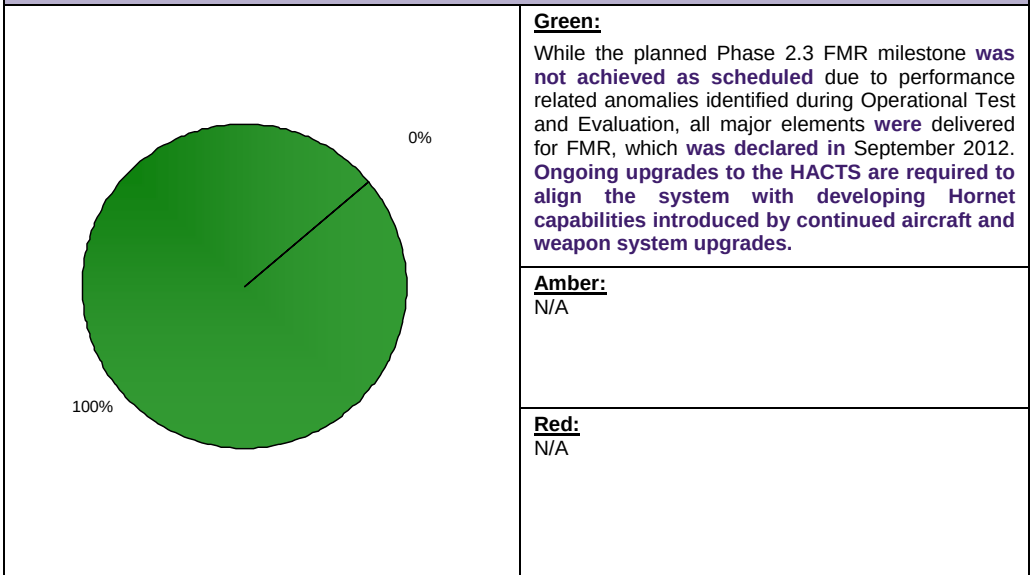
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

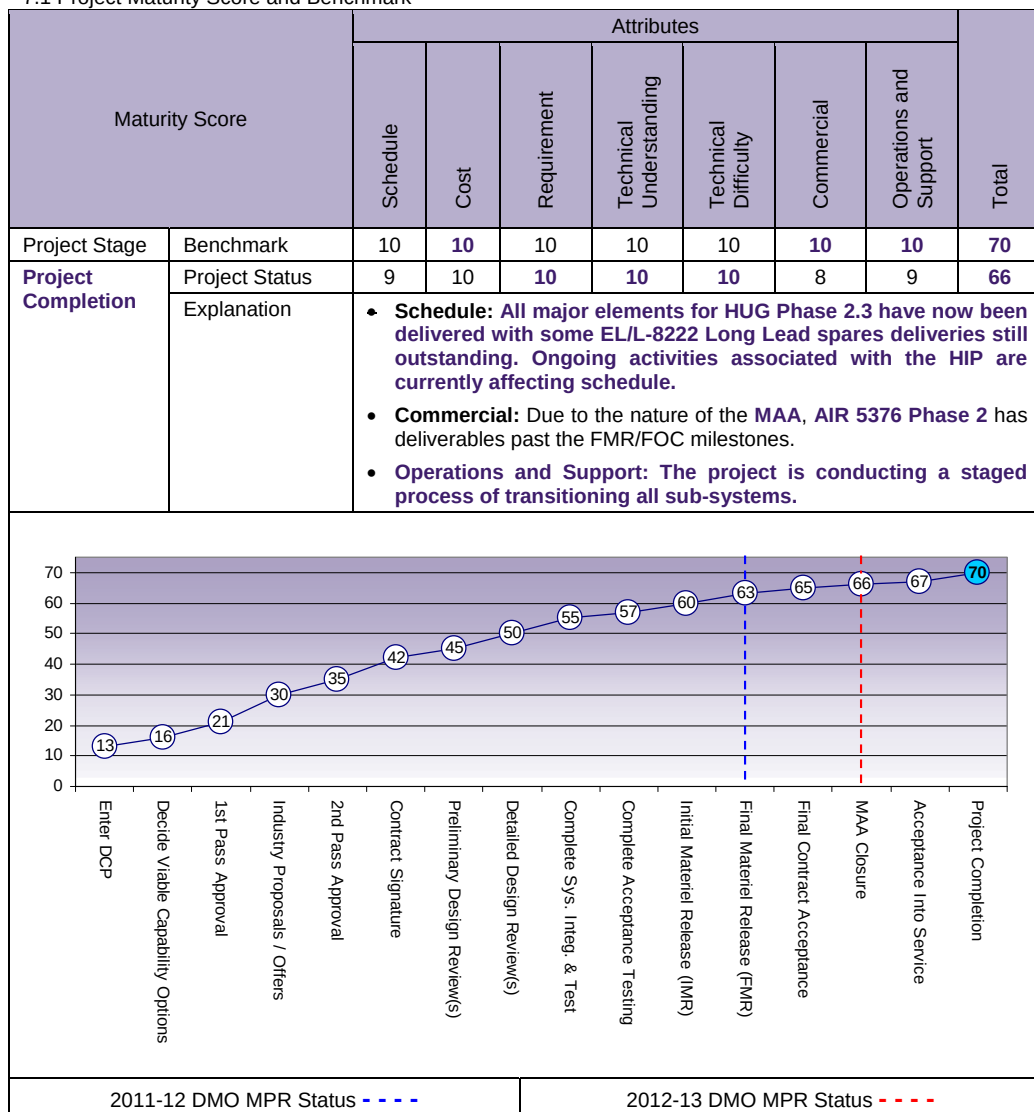
Identified Risks (risk identified by standard project risk management processes)		
Description		Remedial Action
Phase 2.3	N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2012-13)		
Description		Remedial Action
N/A		N/A

6.2 Major Project Issues

Description		Remedial Action
Phase 2.3	N/A	N/A
HACTS	There is a chance that HACTS capability will not be optimised and/or rectified leading to an impact on performance.	The acquisition strategy has been approved and work is continuing with all stakeholders to have the procurement solution in place by December 2013. This issue has been re-evaluated and is now assessed as moderate.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Integrated Product Teams: Integrated product teams for all project disciplines (engineering, logistics, commercial, test and evaluation, and display development) were established with members from all major stakeholders (Commonwealth, prime and sub contractors, US and Canadian Government representatives). These teams met formally on a regular basis and with significant issues being raised with the overarching management Integrated product team. As well as ensuring progress towards a common goal, the Teams enabled the implementation of many other project initiatives that relied on quick and honest communication between all parties.	Governance Resourcing

Project Data Summary Sheets

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2012–13 Major Projects Report

Joint Risk and Schedule Management: Through the integrated product teams a common risk and schedule management methodology was implemented for the entire project. Boeing, as the prime integrator, provided a vehicle to manage both risk and schedule in a common framework. Pro-active management of risks was encouraged and many mitigation strategies, particularly in respect to display development, were implemented to avoid schedule delays.	Governance Schedule Management
Proactive Contract Management: Due to the incremental contracting nature of the project, joint and proactive contract management was essential. Regular commercial integrated product teams provided an effective vehicle to manage the prime integration contract with Boeing and FMS cases with the US Government.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Axel Augustin
Project Director	GPCAPT Damien Keddie (to Jan 13) WGCDR Bruce Murray (Jan 13-current)
Project Manager	WGCDR Scott Parry (to Jan 13) SQNLDR Ewan Reid (Jan 13-current)

Project Data Summary Sheet¹⁶⁸

Project Name	AIR TO AIR REFUELLING CAPABILITY
Project Number	AIR 5402
First Year Reported in the MPR	2008-09
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	May 03
Total Approved Budget (Current)	\$1,802.6m
2012-13 Budget	\$117.6m
Project Stage	Complete Acceptance Testing
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This project will provide the Australian Defence Force (ADF) with five new generation Airbus A330 Multi Role Tanker Transport aircraft (MRTT), to be known as the KC-30A in Royal Australian Air Force (RAAF) service. The MRTT will be equipped with both hose and drogue and boom refuelling systems capable of in-flight refuelling of current and future aircraft, including F/A-18 Classic and Super Hornets, Hawk Lead-In Fighter, Wedgetail Airborne Early Warning and Control, C-17 Globemaster III, and Joint Strike Fighter (JSF). The MRTT will also provide significant Air Logistics Services capability for carriage of up to 270 passengers and cargo. The acquisition also establishes the infrastructure necessary to deliver services including engineering, maintenance, spares management, technical data, software and training support for the new fleet.

1.2 Current Status

On 15 October 2010, the Minister for Defence Materiel announced this project is a Project of Concern.

Cost Performance

In-year

The \$26.8m in-year underspend is primarily due to Airbus Military failing to achieve two milestones and the delayed delivery of remaining spares.

Project Financial Assurance Statement

As at 30 June 2013, project AIR 5402 has reviewed the projects approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

Concurrent with acceptance of the first aircraft, DMO and Airbus Military agreed the principles of a commercial settlement which, amongst other things, includes a plan for remediation of all non-conformances, a program of

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Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

improvements to the Aerial Refuelling Boom System (ARBS) and a re-baseline of the Contract Milestone Dates. The commercial settlement was signed concurrently with acceptance of the third aircraft (A39-004) in November 2011.

The prototype aircraft (MRTT#1) was accepted on 29 December 2011 following refurbishment to remove the extensive suite of flight test instrumentation, repair structural damage, install retrofit modifications, and to complete the interior fitout. In accordance with the commercial settlement, MRTT#1 was handed back to Airbus Military for use during 2012 for testing of modifications to the military avionics and boom refuelling systems.

Commencement of qualification flight testing was delayed due to additional inspections and repairs to MRTT#1 to correct quality and maintenance deficiencies. **Flight testing of the military avionics was completed in October 2012, with ongoing technical investigation of two functions.**

Certification of modifications to the boom refuelling system was further delayed due to completion of investigation into the in-flight loss of boom incident in September 2012 on a United Arab Emirates Air Force aircraft being operated by Airbus Military. Certification (safety) flight testing was completed February 2013.

Qualification (contract compliance) flight testing commenced in March 2013 but was unable to be completed prior to induction of the test aircraft into heavy maintenance in July 2013 due to a number of test anomalies. Testing is planned to resume in October 2013 following completion of heavy maintenance and implementation of additional changes to the boom system.

Interim Acceptance of the Simulation Devices was achieved in March 2013 following completion of formal accreditation testing. The first pilot and Aerial Refuelling Operator conversions using the Simulation Devices were completed in December 2012.

The fifth and final KC-30A aircraft was accepted from Airbus Military in Madrid in November 2012 and ferried to Australia by a RAAF crew.

Materiel Capability Performance

To meet Defence strategic goals, the DMO has worked closely with Airbus Military to ensure that the initial configuration at acceptance provides essential capability for Air Logistics Support (passengers and cargo) and pods (hose and drogue) air to air refuelling. A suitable framework to enable contractual acceptance of aircraft with non-critical non-conformances has been established. This framework also ensures that full compliance will be achieved by Final Materiel Release (FMR) in order to achieve Final Operational Capability (FOC). All issues identified to date have suitable processes and procedures in place to reduce the operational impact. The non-conformances will be carefully managed to meet minimum requirements of Initial Materiel Release (IMR) and Initial Operational Capability (IOC), **noting that IOC was declared in February 2013.**

Non-conformances to the contracted capability include, radio management, military avionics, mission planning and boom refuelling systems.

Although the aircraft has been certified (with limitations) for boom refuelling of small and large aircraft, an agreement has also been reached on improvements to the ARBS to provide an effective operational capability.

While delivery of an operational boom refuelling system has been significantly delayed, the capability impact is not considered significant provided FOC can be achieved prior to the JSF aircraft entering RAAF service.

The United States has also provided approval for the Electronic Warfare Self Protection system to be installed and tested (safety of flight and airworthiness only) in Australia, which will be completed by FOC.

1.3 Project Context

Project Background

Government gave the equivalent of second pass approval in May 2003 for a new generation air-to-air refuelling capability.

An open Request for Tender was released in June 2003 for both the Acquisition and Through Life Support (TLS) Contracts. In April 2004, Government announced that the Military Transport Aircraft Division of the European Aeronautic and Space Company Construcciones Aeronauticas S.A. (EADS CASA), teamed with Qantas Defence Services, had been selected as the preferred tenderer for the supply of five Airbus A330 MRTT aircraft and their associated support.

The Acquisition Contract was signed with Spanish company EADS CASA in December 2004. The TLS Contract was signed with Qantas Airways Limited in February 2007.

In April 2009, the Military Transport Aircraft Division of EADS was amalgamated with the Airbus Military Division, and commenced trading as Airbus Military.

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.

Project Uniqueness

AIR 5402 is the lead customer of the A330 MRTT platform, including the lead customer for the Airbus Military developed ARBS. 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 TLS Contractors for ongoing support of the new tanker capability.

Project Major Challenges

Airbus Military's ability to meet the rebaselined schedule milestones for delivery of the full contracted capability continues to be the greatest challenge.

Principal challenges expected during the next reporting period include:

- The timely completion of testing and DMO acceptance of the documentation for qualification (contract compliance) of changes to the military avionics systems, Mission Planning System, and improvements to the ARBS.
- Planning and implementation of a program to incorporate modifications to the military avionics and boom refuelling systems to in-service aircraft **and support to introduction into service of the boom.**

Other Current Projects / Sub-Projects

N/A

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
May 03	Original Approved	2,076.6	
Jun 04	Real Variation – Budgetary Adjustment	(149.4)	1
Aug 04	Real Variation – Budgetary Adjustment	(1.2)	2
Aug 05	Real Variation – Budgetary Adjustment	(3.0)	3
Nov 05	Real Variation – Transfer	(135.5)	4
		(289.1)	
Jul 10	Price Indexation	484.1	5
Jun 13	Exchange Variation	(469.0)	
Jun 13	Total Budget	1,802.6	
Project Expenditure			
Prior to Jul12	Contract Expenditure – Airbus Military	(1,377.1)	
	Other Contract Payments / Internal Expenses	(88.8)	6
		(1,465.9)	
FY to Jun 13	Contract Expenditure – Airbus Military	(75.0)	
	Other Contract Payments / Internal Expenses	(15.8)	7
		(90.8)	
Jun 13	Total Expenditure	(1,556.7)	
Remaining Budget			
Jun 13		245.9	
Notes			
1	Defence Capability direction regarding currency mix at approval and Government decisions.		
2	Administrative Savings harvest.		
3	Skilling Australia's Defence Industry harvest.		
4	Transfer to Defence Support and Reform Group for delivery of MRTT infrastructure at RAAF Amberley and at other RAAF bases.		
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$473.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$10.2m having been applied to the remaining life of the project.		
6	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure. The major component of this amount is for Tanker Hire costs (\$26.4m) associated with the delay to the program.		
7	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure. This amount includes \$1.4m for engineering services, \$1.3m for travel, \$4.4m for Project Office and Resident Project Team (RPT) salaries and living expenses, \$2.8m for spares related to Large Aircraft Infrared Countermeasures, and \$3.7m for training and related travel and other miscellaneous project costs.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Due to schedule delays Airbus Military failed to achieve two significant milestones and there were also delays in delivery of remaining spares. The cost saving occurred due to Air Force not requiring any additional tanker hire due to delays in the program which the project had been reimbursing through recovery of Liquidated Damages. The Commonwealth delays were due to delaying a spares acquisition program until 2013-14.
		(21.1)	Overseas Industry	
			Local Industry	
			Brought Forward	
		(3.6)	Cost Savings	
			FOREX Variation	
		(2.1)	Commonwealth Delays	
117.6	90.8	(26.8)	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Airbus Military (formerly EADS CASA)	Dec 04	1,413.4	1,620.4	Variable	ASDEFCON	1
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
Airbus Military (formerly EADS CASA)	5	5	Provision of a new generation air to air refuelling capability comprising five A330 MRTT aircraft and associated supplies and support.			
Major equipment received and quantities to 30 Jun 13						
Acceptance of the third aircraft (A39-004) was achieved on 7 November 2011. The fourth aircraft accepted (MRTT#1) by the Commonwealth was achieved on 29 December 2011 but retained in Madrid under Airbus Military care, custody and control during 2012-13 to be used for testing of modifications to the military avionics and boom refuelling systems, with acceptance of the fifth aircraft (A39-005) achieved on 30 November 2012.						
Initial Acceptance of the Simulation Devices (Full Mission Simulator, Part Task Trainer and Integrated Procedures Trainer) and Facility was achieved on 28 December 2011.						
Acceptance of additional deliveries of spares and support and test equipment were achieved during 2012-13.						
Notes						
1	The increase in contract value of \$207m is due primarily to a number of major CCPs including CCP-001 Simulator, CCP-074 Support and Test Equipment, CCP-078 Spares, CCP-053 Flight Management System, CCP-060 Training Course Development and CCP-102 Boom Enhancements.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements /Design	MRTT Aircraft	Feb 05	Feb 05	Mar 05	1	
System Requirements	Simulation Devices	May 06	May 06	Oct 06	5	
Preliminary Design	MRTT Aircraft	Jun 05	Jun 05	Jun 05	0	
	Simulation Devices	Sep 06	Sep 06	Jun 07	9	
	Simulation Devices Facility	Sep 06	May 07	Jul 07	10	
Critical Design	MRTT Aircraft	Feb 06	Mar 06	Jun 06	4	1
	Simulation Devices	Mar 07	Jan 08	Jan 09	22	2
	Simulation Devices Facility	Apr 07	Nov 07	Jan 09	21	3
	Aerial Refuelling Boom System	Sep 11	Sep 11	Dec 11	3	4
Final Design	MRTT Aircraft	Sep 06	Sep 06	Jul 07	10	1
	Aerial Refuelling Boom System	Dec 11	Dec 11	Jul 12	7	4
Notes						
1	The MRTT Aircraft Critical Design Review (CDR) was conducted over a series of meetings from February to May 2006. Although design for the majority of the aircraft systems had been satisfactorily completed, the design for key elements of the aircraft mission system was not yet mature. "Practical Completion" of the CDR Milestone was achieved in June 2006; with a follow-on milestone (designated as the Final Design Review (FDR). Concurrently, evaluations of the new Remote Aerial Refuelling Operator console identified the need for changes to the cockpit layout. These changes were agreed as part of the CDR close-out and required a change to the conversion and test process, which was split into two phases: Phase 1 for structural conversion and civil certification, and Phase 2 for installation of the military avionics and military certification. Closure of the residual activities to achieve the FDR proved problematic. These were progressively completed over the following 12 months.					
2	Delays to completion of the MRTT Aircraft design process had a knock-on impact to completion of the Simulation Devices CDR.					
3	Completion of the CDR for the Simulation Devices Facility was delayed due to redesign to accommodate increased security requirements.					
4	Additional design review milestones have been added for development of improvements to the ARBS. As with previous design reviews, closure of the contract milestone has lagged conduct of the design review activity in order to complete approval of documentation in accordance with the milestone exit criteria.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRTT Aircraft	Aug 08	Dec 08	May 11	33	1
	Simulation Devices	Feb 09	Dec 09	Apr 11	26	2
Acceptance	MRTT Aircraft – Milestone 18 - Acceptance of First Aircraft	Dec 08	Oct 10	Jun 11	29	1
	Simulation Devices and Simulation Devices Facility	May 09	Dec 11	Dec 11	31	2
	Full Mission Simulator Final Accreditation	Feb 10	Feb 14	Feb 14	48	2
	Aerial Refuelling Boom System	Dec 12	Dec 12	Jul 14	19	3
	Contract Final Acceptance	Feb 11	Feb 14	Nov 14	45	4

Project Data Summary Sheets

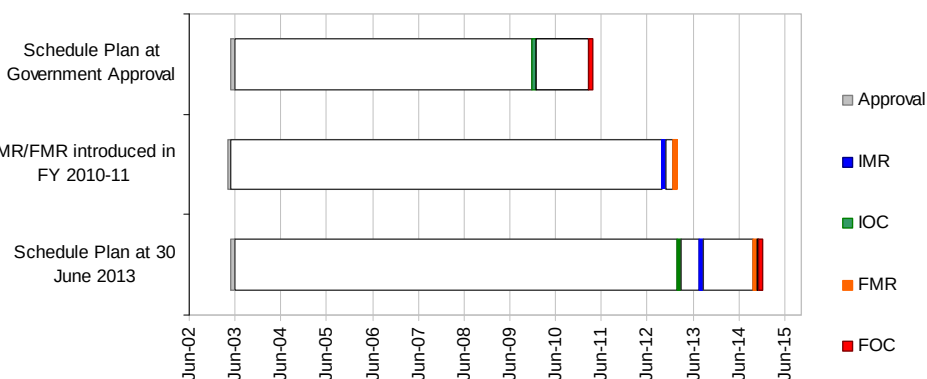
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Notes	
1	Originally planned as a single-phase activity, the system integration test program for the first-of-type A330 MRTT was split into two phases to accommodate changes to the Remote Aerial Refuelling Operator console. The first phase, for civil certification of the modified aircraft, was successfully completed in February 2008. The second phase, for military certification and qualification of the modified aircraft, commenced end of December 2008, approximately six months late due to the combination of delays to the first and second conversion phases. Unexpected and continued delays experienced in the development test phase during 2009 delayed commencement of the formal certification ground and flight testing program. A Technical Certificate for certification of the A330 MRTT was issued by the Spanish military certification authority Instituto Nacional de Tecnica Aeroespacial (INTA) in October 2010 and reissued in April 2011 to certify changes introduced following a serious in-flight incident and loss of the boom in January 2011 during a training flight with Portuguese F-16 fighters. Qualification testing was completed in December 2010; although two additional flights were necessary, and completed in May 2011, to complete test evidence necessary to demonstrate compliance with the contract specification. Acceptance Test and Evaluation of the first MRTT Aircraft (MRTT#3) was conducted during May 2011 as part of the Customer Acceptance Process following completion of all system integration testing and aircraft preparation for delivery.
2	Delays to completion of the MRTT Aircraft test process has a knock-on impact to completion of testing of the Simulation Devices as the data required for its final accreditation is dependent on a targeted flight test phase conducted at the end of the formal test program. The Simulation Devices were introduced in phased manner to recover schedule due to delays in the aircraft test program, enabling initial acceptance to be completed in 2011 and training to commence on the devices in 2012. Final accreditation was delayed due to the need for development and testing of further improvements to meet full capability and flow-through of changes to the Simulation Devices.
3	New milestone for acceptance of improvements to the ARBS. Unplanned work for remediation of aircraft quality issues identified at the time and subsequent to the Acceptance of MRTT#1 has impacted the boom improvement flight test program.
4	Rectification of all non-conformances at initial acceptance and provision of service bulletins for upgrade of delivered aircraft is required to be completed by Contract Final Acceptance. Delays to completion of the Mission Planning System, improvements to the boom and refurbishment and re-delivery of MRTT#1 are expected to further delay achievement of Contract Final Acceptance.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Oct 12	Aug 13	9	DMO milestone for delivery and acceptance of two aircraft, training and Australian military certification and initial service release in support of an IOC. Although IOC achievement has been declared, a declaration of IMR is delayed pending approval of amendments to the Materiel Acquisition Agreement Completion Criteria.
Initial Operational Capability (IOC)	Dec 09	Feb 13	38	IOC requires demonstration of an effective capability for Air Logistics Services (passengers and cargo) and pods (hose and drogue) air to air refuelling. Variance from the original planned date has been due to delays to the development, certification and qualification of the first-of-type aircraft and refinement of planning and identification of additional training and operational test and evaluation requirements. Delays to Acceptance of the first aircraft have required alternative arrangements for provision of aerial refuelling and air logistics services to meet Air Force operational and training commitments.
Final Materiel Release (FMR)	Feb 13	Nov 14	21	DMO milestone for delivery and acceptance of five aircraft and mature support system, including training devices, training materials, publications, spares and support and test equipment.
Final Operational Capability (FOC)	Mar 11	Dec 14	45	Further improvements to the military avionics and boom refuelling systems are necessary to achieve full capability and were impacted by additional inspections and repairs to MRTT#1 necessary to correct quality and maintenance deficiencies. Delays will impact the workup and achievement of the expected operational readiness for FOC.

Schedule Status at 30 June 2013

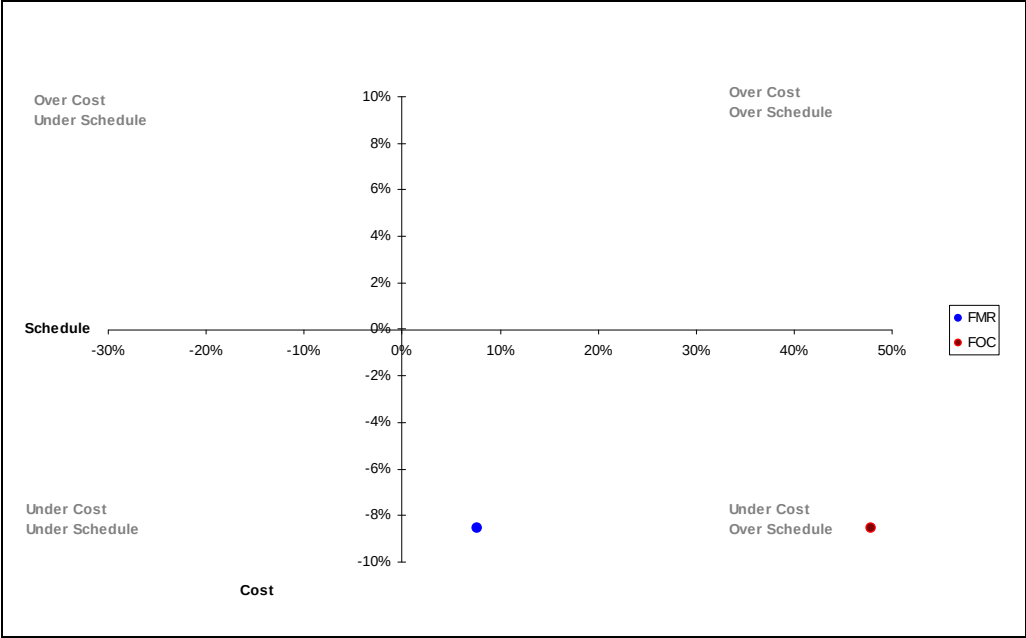


Project Data Summary Sheets

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Section 4 – Project Cost and Schedule Status

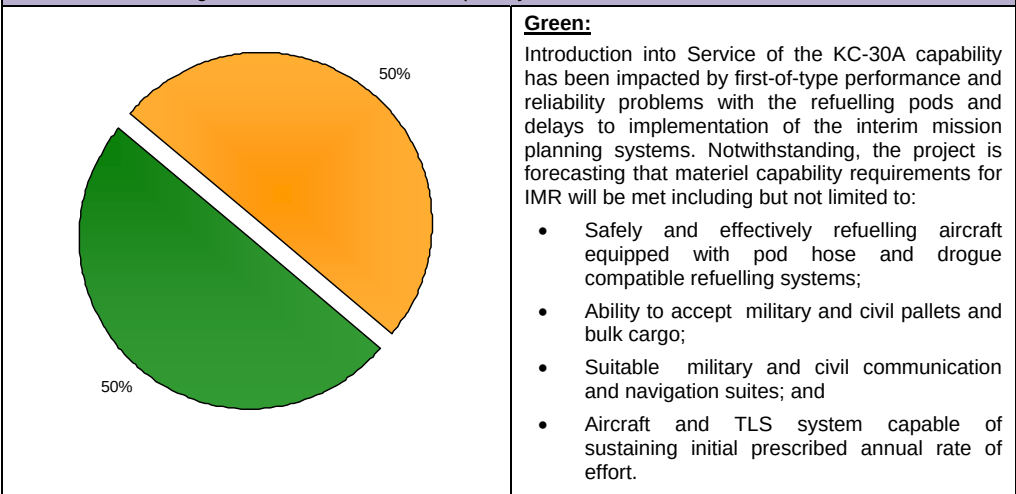
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



	Amber: There is risk to meeting all materiel capability requirements for FOC due to acceptance of aircraft in an initial configuration and the risk of successful remediation of all non-conformances and improvements to the ARBS. The capability impact and need for further remediation will be assessed as an outcome of qualification testing and review of compliance evidence in support of contractual acceptance of milestones for remediation of all non-conformances and improvements to the ARBS.
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Refuelling system technical, integration or performance envelope issues impacting achievement of Milestone 26a (redelivery of the last MRTT aircraft).	Actively monitor system design, development and testing and enforce performance goals. At the acceptance of the first aircraft non-compliances were documented, with rectification action and schedule agreed. Project continues to closely monitor contractor progress for the development, testing and delivery of the rectifications. Select RPT positions in Madrid have been extended to maintain close oversight of contractor activities, and also participation in design reviews, testing, and acceptance activities. United States Air Force (USAF) support is being maintained to provide the CoA with boom refuelling expert knowledge and test support.
Final Design and implementation of Human Machine Interface of systems is not fully effective impacting efficient and safe operation of the aircraft.	Continue to contribute to the Human Engineering Program to provide timely feedback. Actively manage and control Human Machine Interface (HMI) development with Subject Matter Experts to ensure contracted requirements are met. HMI deficiencies at initial acceptance were identified and a remediation plan agreed. Defence Science and Technology Organisation subject matter expert has re-engaged with the project to provide ongoing HMI expertise support.
Lack of operational testing and engineering experience by key stakeholders impacting the design and certification of the final product.	Secure expert support from RAAF and USAF for review of design and testing. 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.
Final delivery of a sub-optimal Mission Planning System (MPS) impacting final capability.	Clarification and agreement on a finite set of requirements with Airbus Military. Also liaise with other customers to maintain a common set of requirements across the customer base to assist with maintaining a common configuration. MPS non-compliances for aircraft acceptance have been documented and agreed with a remediation plan for the final capability. The impact of delays to the delivery of the final MPS capability has been mitigated by the availability of an interim MPS suite of applications and other

Project Data Summary Sheets

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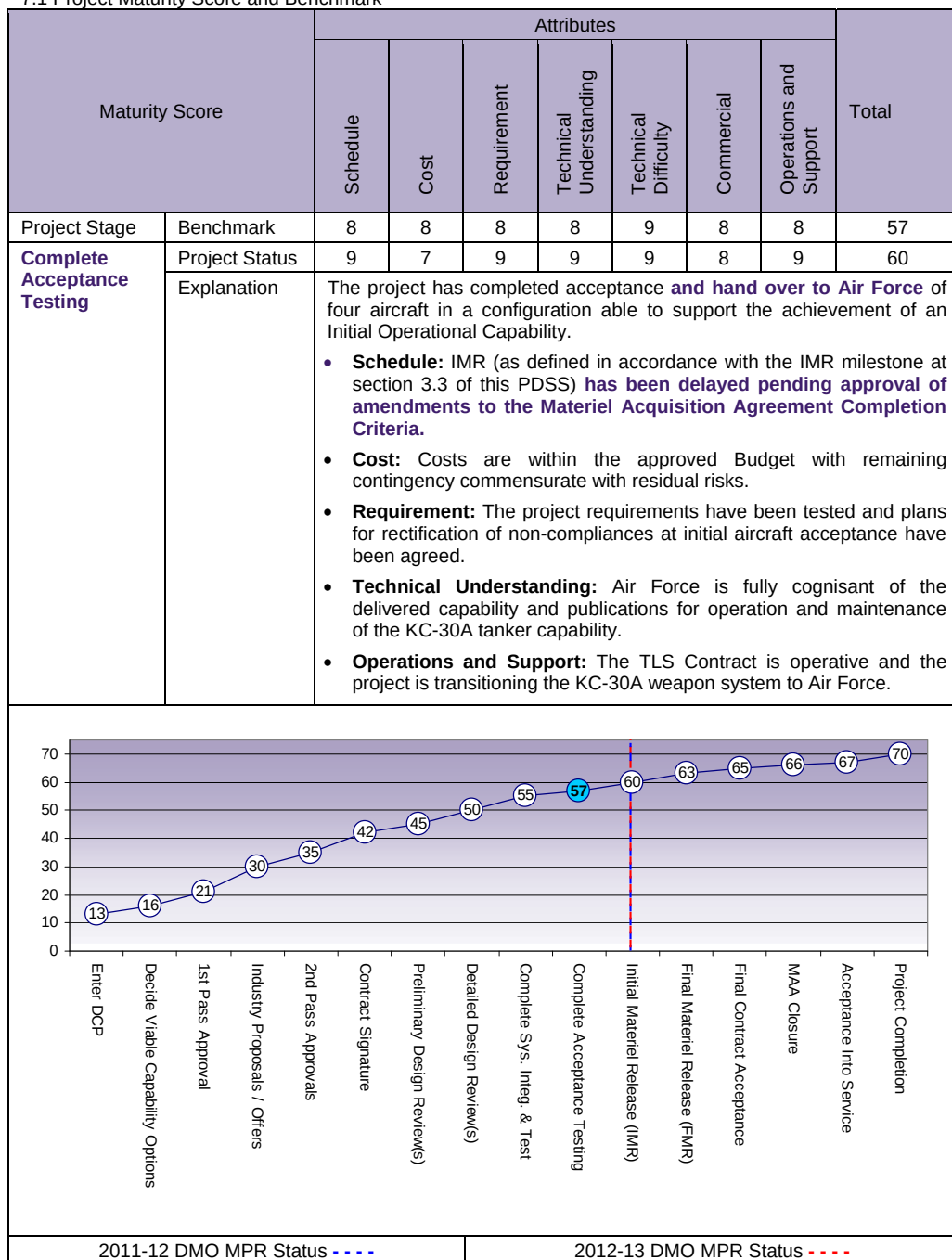
	workarounds. The project continues to closely monitor contractor activities for the development, testing and acceptance of the final MPS capability.
Unavailability of Simulation Subject Matter Experts for acceptance testing impacting acceptance of the Simulation Devices.	Coordinate requirements with the testing working group, identify solutions and provide training as necessary. RAAF flight test and USAF support is also available if required. This risk is now assessed as high. This risk is no longer assessed as high and has been retired. Interim acceptance and accreditation activities have been completed with support from both Air Force and Airbus Military aircrew and it is unlikely that resources will be unavailable for final accreditation.
In-service technical issues will complicate rectification of acquisition non-compliances due to new problems being identified.	The In-service TLS organisations are monitoring technical problems through the use of defect reports. These defect reports will be provided to the project office. Airbus Military to provide a holistic consideration of the system problems and ensure acquisition design changes are aware of any impacts. A combined acquisition and TLS Configuration Control Board will be operated until Australian Military Type Certification (AMTC) and Service Release (SR) is granted. Project Management Reviews with the contractor under the acquisition program will consider this issue and ensure coordination over both the acquisition and TLS programs.
Delay in the achievement of AMTC and SR.	Monitor progress of Operational Test and Evaluation objectives achievement required to support issue of an AMTC and SR. Liaise closely with the ADF airworthiness authority secretariat to understand Airworthiness Board requirements and schedule, and with Airbus Military to understand progress on rectification of non-compliances.
Delays in the rectification of Contractual Non – Conformances.	Actively monitor Airbus Military issue of Service Bulletins and completion of outstanding obligations that were agreed as part of each aircraft acceptance process and documented in accordance with the contract.
Delays in the development of Operational Airworthiness assessments.	Review and revise Operational Airworthiness strategy and procedures as necessary to ensure efficiency. Workshop suitable solutions with subject matter experts providing recommendations to the Operational Airworthiness Authority Representative to ensure requirements and schedule are understood and can be achieved.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
HMI Program.	The HMI program required Airbus Military to complete key development and test actions with Defence and the Spanish military certification authority, INTA. Airbus Military conducted workshops with Defence to complete the Cockpit Acceptance test procedures and in parallel worked with INTA, to resolve the HMI issues associated with the Flight Warning System (FWS) as identified in the INTA HMI report. The FWS was certified by INTA during October 2010 and an updated certification was provided during April 2011. The FWS will be monitored during the remainder of the acquisition test program and during RAAF in-service operations and Operational Test and Evaluation.
Difficulty in achieving contracted schedule.	Continue to contribute to maintaining a current and robust joint project schedule and foster commitment by both parties to it. Conduct a detailed schedule analysis at each Project Management Review. Commitment by both parties for open and honest communication for the joint management of schedule risks.
Maturity of Mission Planning System.	Detailed sub-system specification has been developed and agreed. System performance at initial acceptance has been tested and shortfalls documented and agreed. An interim MPS solution, with workarounds for shortfalls, has been agreed and implemented. Further development of the MPS will be undertaken under a more robust systems engineering approach.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 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, Function and Performance Specification and Test Concept Description), the intent of these documents was included in tender documentation and refined during contract negotiation for inclusion in the Acquisition Contract. The Contractor's internal requirements management process did not adequately support a robust process for customer clarification of the operational intent leading to protracted development and rework. There is a need to ensure that a robust process exists to achieve a common understanding of derived requirements and operational intent, and that it is agreed in the early stages of the project life-cycle.	Requirements Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne (to Feb 13, Apr 13–current) AIRCDRE Leigh Gordon (Acting Feb–Apr 13)
Branch Head	AIRCDRE Robert Lawson
Project Director	Mr Ewan Ward
Project Manager	Mr Cameron Stewart

Project Data Summary Sheet¹⁶⁹

Project Name	GUIDED MISSILE FRIGATE UPGRADE IMPLEMENTATION
Project Number	SEA 1390 Phase 2.1
First Year Reported in the MPR	2007-08
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jun 99
Total Approved Budget (Current)	\$1,450.1m
2012-13 Budget	\$4.2m
Project Stage	Final Contract Acceptance
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This project seeks to regain a comparative regional maritime capability by upgrading four (originally six) *Adelaide* Class Fast Frigate Guided (FFGs), and to ensure that they remain effective and supportable until their removal from service between 2015 and 2021. Royal Australian Navy (RAN) FFGs are a derivative of the United States (US) Navy *Oliver Hazard Perry* FFG-7 class Guided Missile Frigates. Each FFG is receiving an improved Anti-Ship Missile Defence system; an On Board Training System; an Electronic Support System; an upgraded Underwater Warfare System, upgraded diesel generators and other ship systems. The upgrade project is also establishing a shore-based Operator and Team Trainer system and a Warfare System Support Centre (WSSC).

1.2 Current Status

Cost Performance

In-year

As at 30 June 2013 project SEA 1390 Phase 2.1 has expended \$3.3m against a planned budget of \$4.2m with the remaining expenditure expected to occur by 30 June 2015.

Project Financial Assurance Statement

As at 30 June 2013 project SEA 1390 Phase 2.1 has reviewed the project's approved scope and budget for those elements required to be delivered by the Defence Materiel Organisation (DMO). Having reviewed the current financial contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete the agreed scope. **In June 2012 Chief of Navy (CN) endorsed the PANORAMA Torpedo Defence System (TDS) as the Navy directed solution intended to provide the TDS capability excluded at Operational Release (OR). Existing residual contingency is sufficient to cover costs associated with this work.**

169 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

In June 2006 a Deed of Settlement and Release was agreed between the Commonwealth and the Prime Contractor (Thales Australia Ltd) that amended the FFG Upgrade Contract reducing the scope of the contract from six to four upgraded FFGs (in line with the Government's decision in November 2003 to remove two ships from service prior to upgrade) and re-align the master schedule to account for significant delay to the original schedule. A subsequent Contract Close Out Deed was executed in June 2010 that specified Thales Australia's remaining obligations under the Contract to be performed by 28 February 2011. Thales Australia did meet all of its final obligations as agreed by February 2011 and the FFG Upgrade Prime Contract was formally completed 2 March 2011.

On 28 June 2012, after a period of Navy Test and Evaluation (commencing at Initial Operational Release (IOR) in January 2010 and concluding September 2011), CN endorsed the upgraded FFG capability for OR excluding the TDS, Le Scut Anti Submarine Warfare (ASW) Decoy and the Mine and Obstacle Avoidance System (MOAS) components of the Underwater Warfare System (UWS). An operational limitation has been placed on the Electronic Support (ES) System Long Range Chaff Rocket (LRCR), PIRATE Infra Red Decoy and the Electro-Optical Tracking System (EOTS) that has not precluded the OR of these systems.

To address the TDS capability shortfall CN has endorsed the proposal to roll-out a Defence Science and Technology Organisation (DSTO) developed passive sonar system utilising the PANORAMA processor in operation with the Albatross Towed Array. This proposal has been assessed as meeting the UWS TDS requirements of SEA 1390 Phase 2.1 and will allow progression of the closure of project SEA 1390 Phase 2.1 but will result in a further delay in achieving the Final Materiel Release (FMR) forecast for December 2014 and closure of the Materiel Acquisition Agreement (MAA) forecast for June 2015.

Materiel Capability Performance

All four FFGs have received their upgraded equipment. Under the provisions of a Deed of Amendment constituted between the Commonwealth and Thales Australia in November 2008, Contractual Acceptance of HMAS *Sydney* and *Darwin* was achieved in November 2008, and HMAS *Melbourne* in December 2008. Following closure of open software problem reports, Final Acceptance of FFG Upgrade Software occurred May 2009 in accordance with the Deed. HMAS *Newcastle*, the last FFG to enter the program, achieved Provisional Acceptance by the DMO and was handed back to Navy in May 2009 prior to achieving Contractual Acceptance in September 2009. Since acceptance all four HMA Ships *Sydney*, *Melbourne*, *Darwin* and *Newcastle* have been in operation with Navy. The Team Trainer also achieved acceptance in September 2009 and the WSSC achieved acceptance in December 2009.

Tactical Data Information Link, LINK 16, functionality testing was achieved in August 2008 and assessed suitable for operational use under waiver. The first 'live' LINK 16 Data Link to be established by a RAN unit was achieved in January 2009 between HMAS *Melbourne* and various US Navy units.

A three phased 'incremental' approach for IOR and OR was 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 except the TDS and by association, the Le Scut decoy system Mitigation for the current torpedo defence capability for FFGs has included the installation of an underwater active decoy system (AN/SLQ-25C, NIXIE) in HMA Ships *Melbourne* and *Newcastle* in 2011, and *Darwin* in 2012. In addition, the DSTO was engaged to further Navy's understanding of the demands of the FFG for torpedo defence in various operational environments.

A Naval Operational Test and Evaluation (NOTE) period was conducted in September 2010 for the UWS capability. Issues were identified with the availability and serviceability of the UWS, the human machine interface and operator experience. Remediation of these deficiencies have been undertaken and a further period of testing of the UWS capability, including experimentation with the TDS in September 2011 and subsequent analysis of trial results, has been conducted.

Similarly, an extensive five week NOTE period to baseline the upgraded FFG Air Warfare capability was conducted in quarter 4 of 2010, and again in June 2011 with HMAS *Sydney* undertaking the combined Acceptance Test and Operational Test and Evaluation (OT&E) live-fire events for the Standard Missile (SM-2) test program at the US Navy Pacific Range Facility (Hawaii). System performance for anti-ship missile detection during the combined test and evaluation period was very good.

On 28 June 2012 CN endorsed the upgraded FFG capability for OR excluding the TDS, Le Scut (rejected at IOR) and MOAS elements of the UWS, and placed an operational caveat on ES, LRCR, PIRATE Decoy and EOTS. CN has deferred a decision on MOAS OR subject to a further period of NOTE currently scheduled for late 2013. Rectification and follow-on test and evaluation mandated for upgraded systems under caveat has not precluded OR of these systems.

The use of PANORAMA in conjunction with the ALBATROSS towed array and existing ASW system has proven to provide a successful TDS in trials conducted to date on the FFGs and is the Navy directed solution, having been endorsed by CN as being suitable to provide the TDS capability excluded at OR in June 2012.

1.3 Project Context

Project 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 afforded Thales total contract performance responsibility and sole responsibility for the upgrade of each FFG. The role of the Systems Program Office (SPO) in relation to the technical aspects of the upgrade was 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 recognised that 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 the contractor's 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 impacted the delivery and agreement of the offered capability and development of the test program.

Nonetheless, significant progress resulted in the achievement of contractual acceptance of all four FFGs and facilitated the decision by the CN to approve IOR of this capability and begin planning for its operational employment. All four FFGs were offered for IOR in November 2009 and CN endorsed the IOR in January 2010 with a caveat on the TDS 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). 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 was clearly defined.

The RAN has inducted the FFGs into a formal program of NOTE to fully characterise the performance of the ships in a variety of contemporary operational environments. This Test and Evaluation program also supported 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. HMAS *Sydney* as lead ship for this program completed testing in the third quarter 2010 and second quarter of 2011. NOTE concluded in the fourth quarter of 2011.

Project Uniqueness

Complex and extensive weapon, sensor, combat, and command and control systems upgrades were required to be integrated into an Australian developed combat data system architecture. The integration work included the world's first FFG installation of a Vertical Launching System for firing Evolved Sea Sparrow Missiles (ESSM) and Mk 92 Mod 12 Fire Control System (FCS) into the *Adelaide* class FFG.

The FFG upgrade project included the development of the Australian Distributed Architecture Combat System (ADACS) software containing over one million source lines of newly developed computer code. The ADACS software was developed in conjunction with electronic system hardware development and integration, increasing technical complexity. The ADACS processes and displays radar, sonar and electronic support system data, assisted by a new Australian developed Radar Integrated Automatic Detection and Tracking system.

Project Major Challenges

Significant challenges were progressed in conjunction with progressive delivery of the capability.

IOR for the upgrade capability was approved by CN in January 2010 with the exception of the TDS and, by association, the Le Scut torpedo decoy, as the effectiveness of the decoy is dependent upon information provided by the torpedo detection and classification system.

This decision initiated the next significant challenge of NOTE of the delivered FFG capabilities and 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 was assessed and defined.

To mitigate the risk of not meeting the operational preparedness requirements of the rejected TDS and in consideration of the remaining service life of the ships of the class, an underwater active decoy system (AN/SLQ-25C, NIXIE) has been installed aboard HMA Ships *Melbourne* and *Newcastle*. A third decoy system **has been fitted to HMAS *Darwin* and will have sea-trials completed by mid-July 2013**. NIXIE will not be installed on HMAS *Sydney* being the first FFG to be withdrawn from service. **Three NIXIE systems are being procured via Foreign Military Sales (FMS) using SEA 1390 Phase 2.1 funds noting that for urgent operational reasons the three NIXIEs installed on the FFGs were sourced from the ANZAC class frigates;**

Implementing the PANORAMA TDS solution will address the UWS capabilities excluded at OR.

CN deferred decision for OR of the MOAS on the RAN Test, Evaluation and Acceptance Authority (RANTEAA) recommendation to conduct further NOTE of the system currently programmed for 2013-14. Progression of the realised UWS capability (including MOAS if rejected) to materiel release/in-service (or other determination) is an on-going issue and yet to be identified/agreed with Navy.

Other Current Projects / Sub-Projects

SEA 1390 Phase 4A: Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the SM-2 Missile at Defence Establishment Orchard Hills, Sydney.

SEA 1390 Phase 4B: Acquire and integrate the SM-2 into four RAN Adelaide Class FFGs at the Mid-Course Guidance standard, and acquisition of Initial Ship Outfit and Inventory Stock missiles.

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Dec 97	Original Approved	1,266.0	1
Nov 98	Real Variation – Budgetary Adjustments	(0.1)	2
Jul 99	Real Variation – Transfer	(152.6)	3
Aug 04	Real Variation – Budgetary Adjustments	(0.7)	4
Oct 11	Real Variation – Scope Reduction	(66.7)	5
Oct 11	Real Variation – Budget Cost Saving	(10.1)	5
		(230.2)	
Jul 10	Price Indexation	230.3	6
Jun 13	Exchange Variation	184.0	
Jun 13	Total Budget	1,450.1	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – Thales Contract	(1,228.6)	7
	Other Contract Payments / Internal Expenses	(120.2)	
		(1,348.8)	
FY to Jun 13	Other Contract Payments / Internal Expenses	(3.3)	
		(3.3)	
Jun 13	Total Expenditure	(1,352.1)	
Jun 13	Remaining Budget	98.0	
Notes			
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.		
2	Overseas travel not required.		
3	Transfer to project SEA 1428 Phase 2A for the procurement of ESSM on behalf of SEA 1390 Phase 2.		
4	Administrative Savings harvest.		
5	Real Cost Decrease: comprising \$66.7m for Prime Contract partial termination (reflecting the Government's decision in November 2003 to reduce the FFG fleet from six to four ships) and \$10.1m accumulated savings identified at the 2011-12 Portfolio Budget Estimates review for return to the Defence Capability Program.		
6	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$228.1m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$2.2m having been applied to the remaining life of the project.		
7	Other expenditure comprises: External Service providers (Compucat Research \$10.4m and HTR Pty Ltd \$0.9m), spares contract ES 3701 (\$4.5m), UWS Spares (\$2.1m), Test & Trials (\$1.7m) Operational Firings (\$1.2m) , other operating expenditure and other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		0.8	FMS	FMS overspend of \$0.7m on ATPGMG and \$0.1m on ATPLZT. Underspend due to delays in payments associated with a) PANORAMA TDS solution costings / schedule Business Case are currently undergoing internal review; b) Configuration remediation delays; c) Delays in testing and installation of ES3701 (Electronic Support (Warfare) System).
			Overseas Industry	
		(0.3)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(1.4)	Commonwealth Delays	
4.2	3.3	(0.9)	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Thales Australia	Jun 99	898.6	1,042.7	Variable	DEFPUR 101	1, 2
Notes						
1	The original contract was structured requiring price increases to be agreed at the time for each ships major refit concurrent with Upgrade production. \$29.1m of work for initial FFG Upgrade equipment spares were not included in the original contract.					
2	The Contract Final Acceptance formally occurred on 2 March 2011 after an extensive contract closure due diligence review and contractor completion of obligations as recorded in a Contract Close Out Deed established 25 June 2010. The final payment under the Thales Upgrade Contract, being final price variation on Milestone 71(b), was made in June 2011.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
Thales Australia	6	4	Upgraded ships and concurrent refit.	1		
Major equipment received and quantities to 30 Jun 13						
Four ships have been accepted. Engineering and maintenance arrangements established.						
Notes						
1	Other items of equipment under this contract include associated support facilities, training devices and spares, as noted in Section 1.1 of the PDSS.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Completion of all Software Specification Reviews	Aug 00	Aug 00	May 01	9	1
Preliminary Design	Completion of all Preliminary Design Reviews	Oct 00	Oct 00	May 01	7	1
Critical Design	Completion of all Critical Design Reviews	Apr 01	Nov 06	Apr 07	72	1

Notes	
1	Software development and design was delayed due to 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 completed to Baseline Build 2 software in December 2006 and to Baseline Build 3 in April 2007.

3.2 Contractor Test and Evaluation Progress

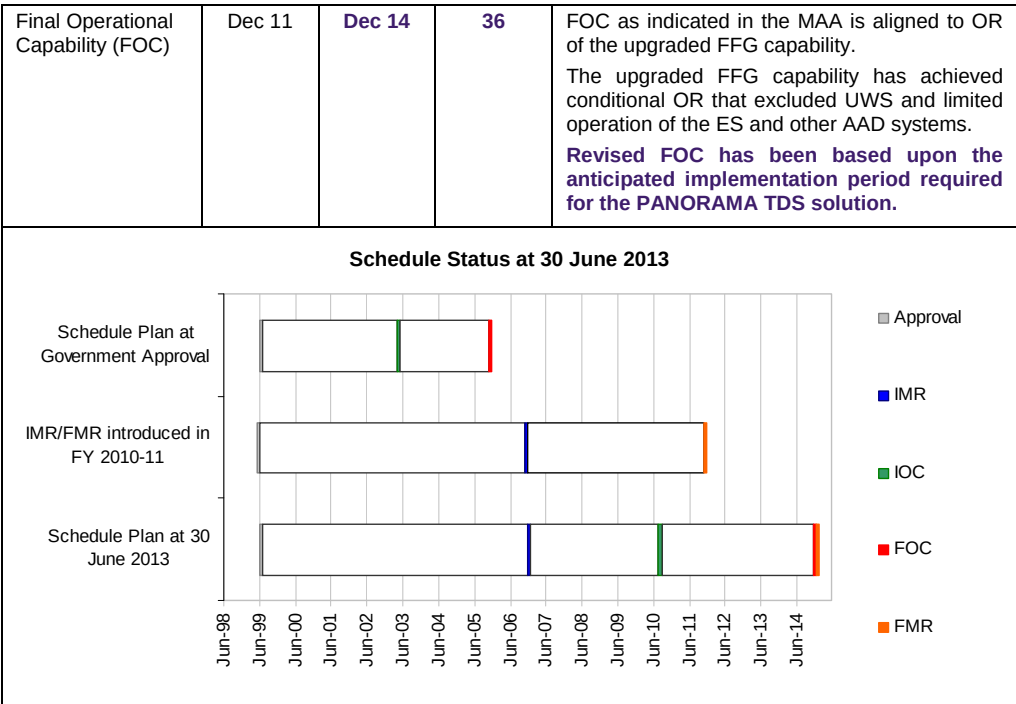
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	HMAS <i>Sydney</i>	Dec 02	Sep 05	Sep 05	33	1
	HMAS <i>Melbourne</i>	Jul 03	Feb 07	Jun 07	47	1
	HMAS <i>Darwin</i>	Feb 04	Feb 08	May 08	51	1
	HMAS <i>Newcastle</i>	Jul 04	Feb 09	Feb 09	55	1
Provisional Acceptance	HMAS <i>Sydney</i>	May 03	Dec 06	Dec 06	43	1
	HMAS <i>Melbourne</i>	Jan 04	Oct 07	Oct 07	45	1
	HMAS <i>Darwin</i>	Jul 04	Aug 08	Aug 08	49	1
	HMAS <i>Newcastle</i>	Jan 05	Jun 09	May 09	52	1
	Team Trainer	Apr 02	Feb 07	Nov 07	67	1
	Warfare Systems Support Centre	Apr 04	Nov 08	Nov 08	55	1
Acceptance	HMAS <i>Sydney</i>	Apr 04	Nov 08	Nov 08	55	1
	HMAS <i>Melbourne</i>	Sep 04	Nov 08	Dec 08	51	1
	HMAS <i>Darwin</i>	Mar 05	Nov 08	Nov 08	44	1
	HMAS <i>Newcastle</i>	Sep 05	Dec 09	Sep 09	48	1
	Team Trainer	Sep 06	Dec 09	Sep 09	36	1
	Warfare Systems Support Centre	Sep 06	Dec 09	Dec 09	39	1
	Contract Final Acceptance	Sep 06	Feb 11	Mar 11	54	1

Notes	
1	Schedule delays to this program have resulted from the program complexity being underestimated from the outset. The Prime Contract schedule has been re-baselined on two occasions, April 2004 and May 2006. Further schedule adjustment to project end date has not been required with the Contract formally closed in March 2011.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

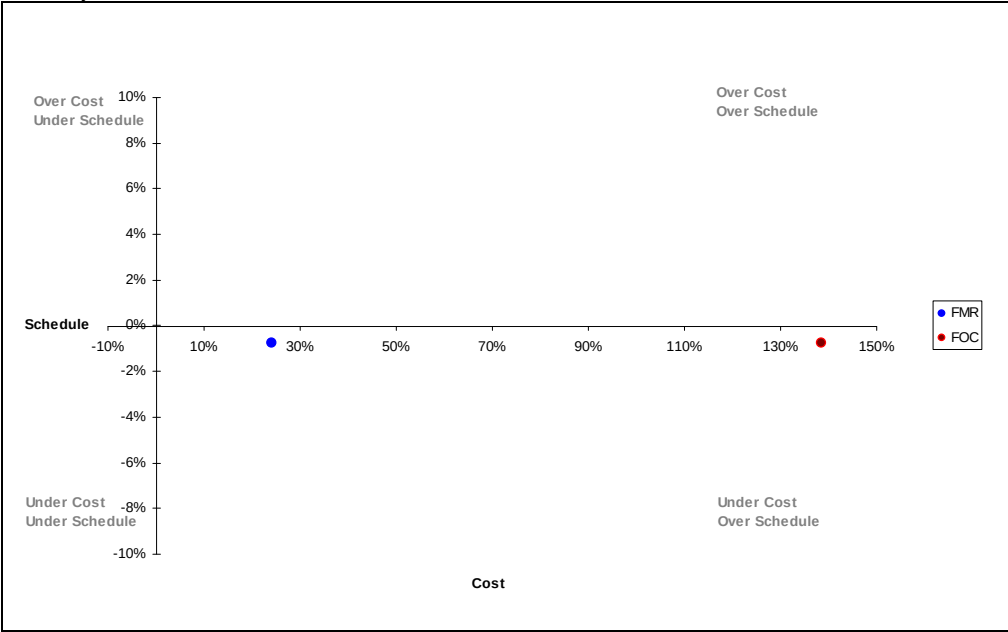
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 06	N/A	
Initial Operational Release				
HMAS <i>Sydney</i>	May 03	Jan 10	79	A three phased 'incremental' approach IOR was agreed by the DMO and Navy as the most pragmatic means by which to bring the FFG
HMAS <i>Melbourne</i>	Jan 04	Jan 10	71	
HMAS <i>Darwin</i>	Jul 04	Jan 10	65	

HMAS <i>Newcastle</i>	Jan 05	Jan 10	60	class to operational employment. The first three FFGs were at IOR Phase 1 (Maritime Interception Operations) in April 2009 and Phase 2 (Anti-Ship Missile Defence) in October 2009. All four FFGs achieved IOR third and final phase UWS when CN endorsed the complete upgraded capability (excluding the TDS) to proceed to a program of NOTE in January 2010. The TDS 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) were rejected as unlikely to achieve operational viability. To meet the operational preparedness requirements of the rejected TDS, the acquisition of an underwater active decoy system (AN/SLQ-25C, NIXIE) was initiated and, in consideration of the remaining service life of the ships of the class, installed in HMA Ships <i>Melbourne</i> and <i>Newcastle</i> being the final two ships to be removed from service.
Initial Operational Capability (IOC)	N/A	Aug 10	N/A	As a result of a revision to the original MAA, the project now has an endorsed IOC which has been disclosed accordingly.
Operational Release				
HMAS <i>Sydney</i>	Jul 04	Jun 12	95	On 28 June 2012 CN endorsed the upgraded FFG capability for OR excluding the TDS and Le Scut (rejected at IOR) and MOAS elements of the UWS, and placing an operational caveat on ES, LRCR, PIRATE Decoy and EOTS. CN has deferred a decision on MOAS OR subject to a further period of NOTE currently scheduled for late 2013. Rectification and follow-on test and evaluation mandated for upgraded systems under caveat has not precluded OR of these systems.
HMAS <i>Melbourne</i>	Dec 04	Jun 12	90	
HMAS <i>Darwin</i>	Jun 05	Jun 12	84	
HMAS <i>Newcastle</i>	Dec 05	Jun 12	78	
Final Materiel Release (FMR)	Dec 11	Dec 14	36	FMR is nominally considered prior to Contract Final Acceptance from the Prime Contractor. The FFG Upgrade Prime Contract Final Acceptance occurred 2 March 2011. The Navy Capability Manager has not yet endorsed FMR for the FFG Upgrade Project so this event has been aligned to the conclusion of NOTE activities and the achievement of OR/FOC included under a revision to the original MAA approved in June 2011. CN has endorsed OR of the upgraded FFG capability that excluded UWS and imposed an operational limitation on Electronic Support and some elements of Air Area Defence (AAD). Revised FMR date has been based upon the anticipated implementation period required for the PANORAMA TDS solution.



Section 4 – Project Cost and Schedule Status

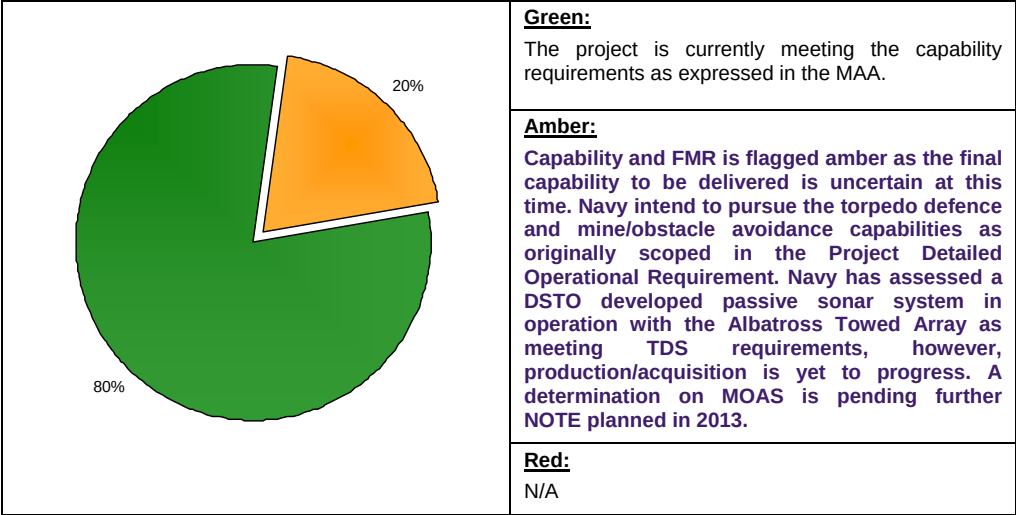
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
The absence of dedicated project resources is a risk to timely project completion and closure, to the business unit's continuity in long-term combat systems knowledge and on the Workforce Operating Expenses (WOE) budget.	Subsequent to Prime Contract Final Acceptance, Project management activities have been maintained by Project Office personnel that have transitioned to FFG SPO Sustainment functions and continuing contracted management support. A significant number of FFG SPO positions are currently vacant, making the conduct of SPO business difficult, particularly the level of effort associated with upgraded FFG capability OR and finalising the project. Contracted support is being utilised to supplement the permanent workforce whilst the imposed restriction on DMO recruitment remains. However this places risk on the WOE budget and on the ability to retain long-term knowledge of the combat systems.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues – need to update once the issues log is updated

Description	Remedial Action
For OR, the TDS integration and performance may not be met and is primarily associated with system grooming and population of supporting libraries.	IOR for the upgraded UWS capability was approved by CN in January 2010 with the exception of the TDS as the system was assessed as unlikely to meet operational viability. By association, the Le Scut torpedo decoy was also excluded from IOR as the effectiveness of the decoy is dependent upon information provided by the torpedo detection and classification system. The acquisition and installation requirement for an underwater active decoy system was initiated for HMA Ships <i>Melbourne</i> and <i>Newcastle</i> to satisfy operational preparedness requirements but with due regard to the remaining service life of the ships of the class. Navy OT&E of the UWS completed September 2011 and full analysis of the results have been finalised. CN approved the upgraded FFGs for OR on 28 June 2012 excluding the TDS Albatross Towed Array and Le Scut ASW Decoy rejected at IOR. A solution to achieve serviceability/materiel release (or other determination) for UWS components excluded at IOR/OR is yet to be identified/agreed with Navy. Combined use of PANORAMA, ALBATROSS Tail and NIXIE decoy has been endorsed by CN as a suitable directed solution to achieve adequate TDS capability. Changed to post-mitigation low level Issue.

For OR, the Hull Mounted Sonar (Spherion) performance may not be met.	Issues were identified with the availability and serviceability of the UWS capability, human machine interface and operator experience. Subsequent remediation has been undertaken and further testing conducted August/September 2011. The full analysis of the results of the UWS operational test and evaluation program have been finalised. CN approved the upgraded FFGs for OR on 28 June 2012 excluding the passive component of the Hull Mounted Sonar (HMS), TDS and Le Scut ASW Decoy. A solution to achieve serviceability/materiel release (or other determination) for UWS components excluded for OR is yet to be identified/agreed with Navy. The capability of the active components of the Spherion sonar achieved OR in June 2012. The work to be done with PANORAMA in terms of optimising software performance to match the FFG HMS frequencies will allow the PANORAMA processor in conjunction with the ALBATROS tail to better detect incoming torpedos passively, thereby addressing this noted deficiency with the 'passive' component of the HMS. The separate issue detailed above negates the requirement for this to remain open as a separate issue, thus it has been retired.
For Operational Release, the MOAS performance may not be met.	CN deferred decision for OR of the MOAS on the RAN Test, Evaluation and Acceptance Authority (RANTEAA) recommendation to conduct further NOTE of the system currently programmed for Financial Year 2013-14. Progression of the realised UWS capability (including MOAS if rejected) to materiel release/in-service (or other determination) is an on-going issue and yet to be identified/agreed with Navy.

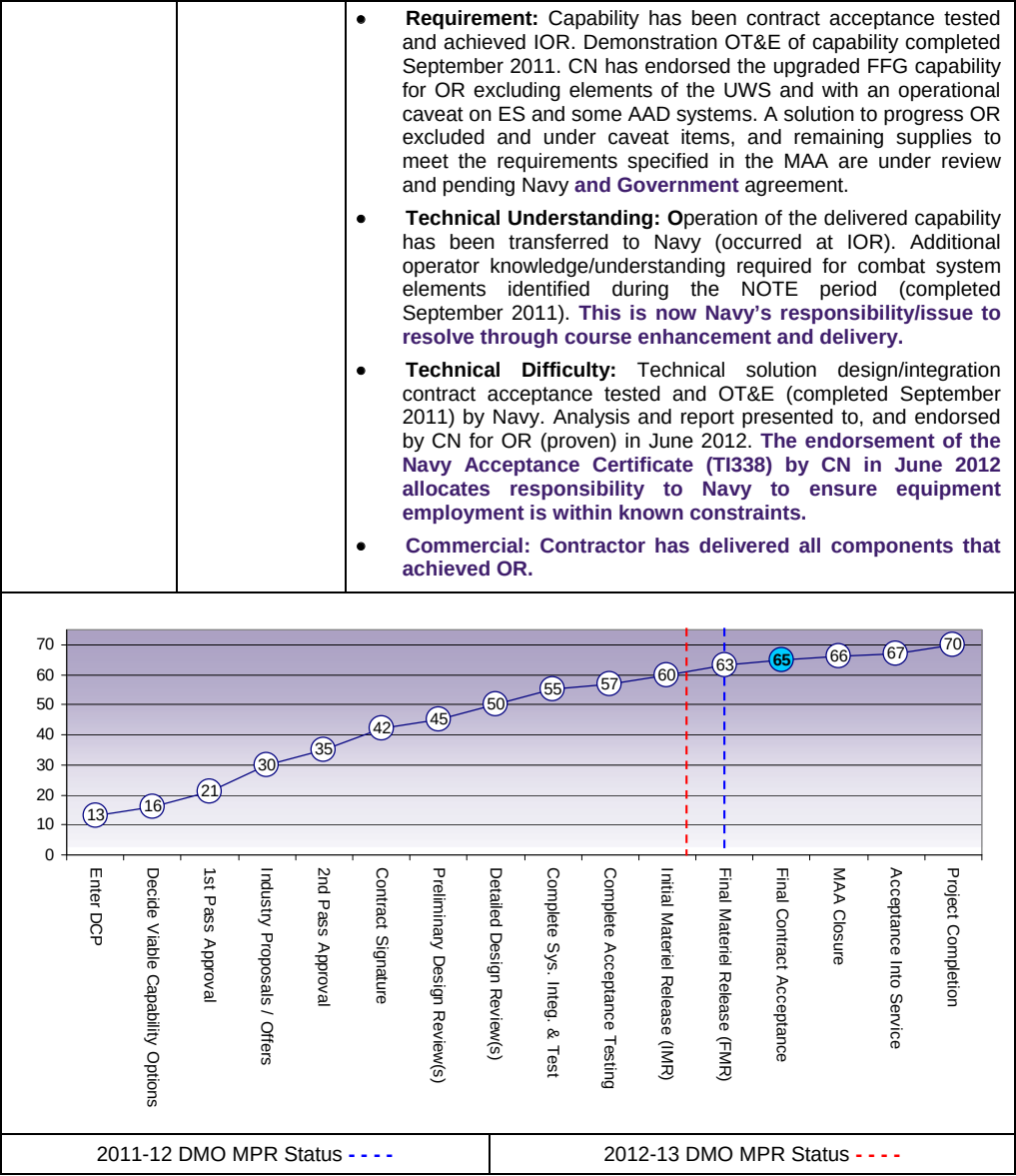
Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	9	9	9	9	65
Final Contract Acceptance	Project Status	5	8	9	10	10	10	9	61
	Explanation	Schedule: In-Service Delivery has not been achieved. CN has endorsed the upgraded FFG capability for OR but has excluded TDS, deferred a decision on MOAS post NOTE programmed for 2013, and placed an operational caveat on ES and other AAD systems. Finalisation of the MAA is dependent on resolution/determination for OR rejected/qualified items and remaining requirements to be met under the Agreement. Cost: The Project Office is confident that the FFG Upgrade will deliver within the approved total Project Cost. However some contingency will be required to satisfy Navy requirements for FMR/FOC.							

Project Data Summary Sheets

ANAO Report No.12 2013–14
2012–13 Major Projects Report



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Requirements and specifications must be well defined and agreed before contract signature. Where detailed specifications cannot be defined fully prior to contract signature, such as when systems definition and new design work must be undertaken within a developmental project phase, then the end capability requirements and priorities must be well defined and agreed.	Requirements Management

A fundamental issue to consider at the time of capability and project definition is how the capability should be acquired. If the project is developmental, then consideration should be given to methods other than a fixed price contract for achieving the capability. Contracts should include appropriate clauses that recognise the complexities of verifying and validating a software development project. Multi platform upgrades should allow for implementation and testing/acceptance of the first platform without committing to a full class upgrade of all platforms. Conducting an upgrade of an existing capability concurrent with scheduled maintenance availability requires very detailed planning and careful consideration of the supporting contract clauses.	Contract Management Schedule Management First of Type Equipment
Procurements that include significant change to software-intensive systems and complex system integration have many inherently high-risk activities, which must be analysed and appropriate risk mitigation processes applied. Such risks are often under-estimated in the planning phase.	First of Type Equipment
The contract schedule must be accepted by all parties as realistic and achievable from the outset. Each party must be committed to achievement of the schedule and aware of the consequences of non-achievement, plus any provisions for delay outside the contractor's control. The contract should contain: • milestones which enable the Commonwealth to unambiguously assess Contractor performance from the outset of the Contract; • with the exception of non-recurring engineering effort, payment of all or a substantial part of the contract price should be subject to achievement of clear project milestones; • milestones should reflect delivery of contracted requirements to the Commonwealth, not just reaching intermediate points on the timeline; • milestones which enable use of the equipment and supplies (such as ILS and training) should be given similar weight as delivery of the equipment itself; • payment on achievement of milestones should be conditional on achievement of previously scheduled milestones; • payment of milestones should also be tied to remedies under the contract to allow the Commonwealth to seek redress; and • clear entitlements of the Commonwealth to access all contractor project data (including internal workforce planning data) so as to be able to make informed assessments if a milestone is not achieved.	Contract Management
For very large developmental contracts, project managers must ensure that the contractor maintains sufficient focus and resourcing on documenting what is being delivered and how to use it (through ILS, configuration management and training). Milestones must be structured so that the contractor is not tempted to focus on equipment deliverables only. Payment for equipment milestones should be conditional on achievement of related ILS milestones. The contract should be clear on configuration management requirements of ILS products in an incremental delivery software development project. This should align to milestones and remedies in the contract.	Contract Management Requirements Management
Objective acceptance criteria are required to ensure there is no scope for dispute as to whether the criteria have been met. Criteria for determining contractual achievement should support those criteria used by Defence for determining achievement by DMO of the measures of effectiveness in the MAA.	Contract Management Requirements Management

Major maritime software development should be incremental and delivery does not have to be aligned with the platform modification program.	First of Type Equipment Requirements Management
Implement a progressive acceptance methodology from the outset for all project data / documentation supplies and requirements acceptance objective quality evidence in order to progressively increase confidence of all stakeholders involved with regard to project outcomes.	Contract Management
Close liaison and communication with Navy stakeholders is required throughout the project life. Navy regulator engagement must be open and transparent from project commencement to FOC so that the Navy Acceptance Certificate (T1338) residual issues/risks are well understood and easily accepted. Where capability delivered falls short of Navy customer initial expectations as agreed in the MAA, the process of securing concessions/agreement is needed to allow efficient and prompt project closure to avoid/limit inefficient use of resources.	Requirements Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) Mr Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13) AVM Chris Deeble (Acting Jun 13–current)
Division Head	RADM Peter Marshall (to Dec 12) RADM Mark Purcell (Dec 12–current)
Branch Head	CDRE Michael Houghton
Project Director	CAPT Mona Shindy, RAN
Project Manager	CAPT Mona Shindy, RAN

Project Data Summary Sheet¹⁷⁰

Project Name	BUSHMASTER PROTECTED MOBILITY VEHICLE
Project Number	LAND 116 Phase 3
First Year Reported in the MPR	2007-08
Capability Type	Replacement
Service	Australian Army and Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 98
Total Approved Budget (Current)	\$1,254.3m
2012-13 Budget	\$88.3m
Project Stage	Complete Acceptance Testing
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

This project is to deliver **1,015** vehicles in seven variants; troop, command, mortar, assault pioneer, direct fire weapon, air defence and ambulance as well as up to 184 trailers. The **1,015** vehicles being delivered consists of 737 vehicles that are to meet the capability requirement, an additional 70 to meet future operational attrition **and 208 to maintain the critical skills at the Thales Bendigo site**. The additional 70 vehicles are a component of an acquisition of an additional 101 vehicles that was announced by Government in May 2011, the remaining 31 additional Protected Mobility Vehicles (PMV) are to be managed as a sustainment activity outside of Project Bushranger. **The additional 208 vehicles are part of the 214 additional vehicles approved by government in June 2012, the remaining 6 vehicles are being procured by LAND 17 Phase 1A.** These vehicles will provide protected land mobility to Army units and Royal Australian Air Force Airfield Defence Guards. In addition to the acquisition of the vehicles through the Approved Major Capability Investment Program, a number of enhancements are being made to the vehicles through the Rapid Acquisition process. These enhancements do not form part of the Project LAND 116 Phase 3, but do impinge upon the project.

1.2 Current Status

Cost Performance

In-year

Current in-year performance indicates a minor underspend variation which was due to delays to External Composite Armour (ECA) and reduced costs for Middle East Area of Operations (MEA) upgrade activities.

Project Financial Assurance Statement

As at 30 June 2013, project LAND 116 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

¹⁷⁰ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

All Production Period 1 (PP1), PP2 and PP3 vehicle deliveries are now complete. Thales has completed delivery of the 31 additional PMVs which were being managed as a sustainment activity outside of Project Bushranger. Delivery of the Project's 70 PP4 vehicles commenced in May 2012 and **concluded in May 2013**.

Materiel Capability Performance

All variants are meeting their required specifications. The prototype for the Air Defence variant was completed by Thales and accepted by the project in October 2010.

The project is in contract with Thales for the Detailed Design of an ECA solution. **The ECA Detailed Design solution was completed in November 2012. The project entered a contract with Thales Australia for the production of 101 sets of Opaque Armour and 20 sets of Transparent Armour on 21 December 2012. These are expected to be delivered by October 2013.**

The PMV Trailer tender response from Thales on 22 May 2009 was evaluated and deemed non-compliant and not value for money. The project is **seeking Government approval to have the trailer capability removed from the project scope.**

1.3 Project Context

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 slip in the contract, shortly after the Production Option was exercised, leading to renegotiation of the Contract in July 2002 for 299 vehicles. This phase has been divided into **five** separate production periods that reflects the increase over time in the quantity of vehicles being acquired. The Production Periods are as follows:

Production Period One (PP1): During this Production Period 300 vehicles in six variants were acquired; troop, command, mortar, assault pioneer, direct fire weapon and ambulance. 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 Production 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): During this Production Period an additional 293 vehicles were acquired to meet the Medium Protected Mobility vehicle component of LAND 121 Phase 3 Project Overlander. This included all six variants and an air defence variant. In addition purpose designed Bushmaster trailers and ECA will also be acquired.

Production Period Four (PP4): In May 2011 the Government announced the acquisition of an additional 101 PMVs to replace 31 battle damaged PMVs and to accommodate future attrition. Project Bushranger is managing the delivery of all 101 PMVs, however 31 of these PMVs will be managed as a funded sustainment activity outside of Project Bushranger. As part of this requirement LAND 116 Phase 3 will also procure 70 MEAO upgrade kits (current standard blast kits as opposed to the improved blast protection). Delivery of the additional 101 PMVs **was** completed in **May 2013**.

Production Period Five (PP5): In June 2012 the Government approved the acquisition of a further 214 PMVs to maintain critical skills at Thales Bendigo, which would be required for the possible production of Hawkei. The approval identified that LAND 116 Phase 3 would acquire 50 Command Variants and up to 158 Troop Variants and that LAND 17 Phase 1A would acquire 6 Troop variants.

Project Data Summary Sheets

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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 PMV.
Project Uniqueness The Bushmaster PMV has been developed and built in Australia by Thales to meet a niche requirement of Australian forces.
Project Major Challenges Major challenges for the project include achieving Towing Certification and the Introduction into Service of an ECA solution. Satisfaction of the PMV Towing Certification is a precursor to the PMV trailer acquisition activity. In addition, managing the integration and configuration of the baseline vehicle while incorporating upgrades to meet current operational threats will continue to be a challenge.
Other Current Projects / Sub-Projects N/A

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Nov 98	Original Approved	295.0	
Jul 07	Real Variation – Scope	154.8	1
Aug 07	Real Variation – Scope	360.6	2
Oct 11	Real Variation – Scope	103.9	3
Mar 13	Real Variation – Scope	221.2	4
		840.5	
Jul 10	Price Indexation	124.6	5
Jun 13	Exchange Variation	(5.8)	
Jun 13	Total Budget	1,254.3	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – Thales Australia (Prime)	(612.0)	6
	Contract Expenditure – Thales Australia (SOTASip)	(28.6)	
	Other Contract Payments / Internal Expenses	(130.1)	
		(770.7)	
FY to Jun 13	Contract Expenditure – Thales Australia (Prime)	(63.5)	7
	Contract Expenditure – Thales Australia (SOTASip)	(1.6)	
	Other Contract Payments / Internal Expenses	(22.2)	
		(87.3)	
Jun 13	Total Expenditure	(858.0)	
Jun 13	Remaining Budget	396.3	
Notes			
1	Additional PMV for Enhanced Land Force requirements.		
2	Additional PMV for Overlander requirements.		
3	Additional PMV to replace Battle Casualty Vehicles.		
4	Additional Protected Mobility Vehicles to maintain critical skills.		
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$118.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$5.7m having been applied to the remaining life of the project.		
6	Other expenditure comprises: Integrated Logistic Support (ILS) deliverables (\$52.3m) , facilities (\$7.1m), Professional Service Providers (\$0.9m), project management and operating expenses (\$14.7m) , Automatic Fire Suppression Kits (\$9.4m), ancillary equipment (\$19.9m), support test equipment (\$0.1m), Signal Onboard Two-Wire Audio System (SOTAS) headsets (\$6.1m) , system engineering (\$5.6m), test and evaluation (\$6.1m) , ECA (\$7.2m) and travel (\$0.7m).		
7	Other expenditure comprises: ILS deliverables (\$6.7m) , project management and operating expenses (\$0.9m) , ancillary equipment (\$7.0m) , SOTAS headsets (\$1.1m) , and ECA (\$6.5m) .		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Year ending spend is \$87.3m, against approved plan of \$88.3m. Variance of (\$1.0m) was due to Local Industry as a result of the early delivery of PP5 Long lead time parts \$5.1m, delay in PP5 vehicle delivery (\$1.9m), delays to ECA (\$3.0m), early Price Variation payments \$0.6m, and Cost Savings for MEAO upgrade activities (\$1.8m).
			Overseas Industry	
		0.8	Local Industry	
			Brought Forward	
		(1.8)	Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
88.3	87.3	(1.0)	Total Variance	

2.3 Details of Project Major Contracts

2.6 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Thales Australia	June 99	170.0	855.5	Variable	DEF PUR 101	1
Thales Australia (SOTASip)	Feb 09	35.8	35.8	Fixed	ASDEFCON Vol 2	
Notes						
1	The date of the original tender and therefore the base dollar date of the original contract was October 1995.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
Thales Australia	370	1,015	Bushmaster Protected Mobility Vehicles			
Thales Australia (SOTASip)	737	737	Communication System			
Major equipment received and quantities to 30 Jun 13						
During PP1 300 vehicles in six variants were acquired; troop, command, mortar, assault pioneer, direct fire weapon and ambulance. During PP2, 144 vehicles were acquired in five variants; troop, command, mortar, direct fire weapon and ambulance. During PP3 a further 293 vehicles were acquired in 7 variants. In PP4 70 additional troop variants were acquired by the Project. Thales completed delivery of the 31 additional PMVs which were being managed as a sustainment activity outside of Project Bushranger and Delivery of the Project's 70 PP4 vehicles in May 2013. In PP5 50 command variants and up to 158 troop variants (plus an additional six being procured by LAND 17 Phase 1A) will be acquired by the project with delivery commencing in the third quarter of 2013.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Requirements	Troop Vehicle	N/A	N/A	Aug 03	N/A	1
	Assault Pioneer Vehicle	N/A	N/A	Oct 06	N/A	
	Command Vehicle	N/A	N/A	Jan 06	N/A	
	Mortar Vehicle	N/A	N/A	Feb 09	N/A	
	Direct Fire Weapon Vehicle	N/A	N/A	Feb 09	N/A	
	Ambulance Vehicle	N/A	N/A	Feb 09	N/A	
	Air Defence Variant	N/A	N/A	Oct 10	N/A	
Preliminary Design	Troop Vehicle	Oct 99	N/A	Oct 99	0	
	Assault Pioneer Vehicle	Nov 99	N/A	Feb 00	3	
	Command Vehicle	Oct 99	N/A	Oct 99	0	

Critical Design	Mortar Vehicle	May 03	N/A	Mar 03	(2)	
	Direct Fire Weapon Vehicle	May 03	N/A	Mar 03	(2)	
	Ambulance Vehicle	Jul 03	N/A	May 03	(2)	
	Air Defence Variant	April 10	N/A	Dec 09	(4)	
	Troop Vehicle System Verification Review	Oct 02	N/A	Sep 02	(1)	
	Assault Pioneer Vehicle Initial Production Vehicle Review	Oct 04	N/A	Dec 06	26	
	Command Vehicle Initial Production Vehicle Review	Oct 04	N/A	Mar 06	17	
	Mortar Vehicle Initial Production Vehicle Review	Apr 06	N/A	May 07	13	
	Direct Fire Weapon Vehicle Initial Production Vehicle Review	Apr 06	N/A	Apr 07	12	
	Ambulance Vehicle System Verification Review	Oct 05	N/A	Feb 07	16	
	Air Defence Variant Initial Production Vehicle Review	Sep 11	N/A	Aug 11	(1)	
Notes						
1	Initial testing of the first variant revealed a number of deficiencies against the specification that required rectification and design changes prior to acceptance and production. This had a consequential effect on the system and design review progress for the subsequent variants. As a result additional testing was required which impacted on completing critical design review and contractor test and evaluation.					

3.2 Contractor Test and Evaluation Progress

3.2 Contractor Test and Evaluation Progress

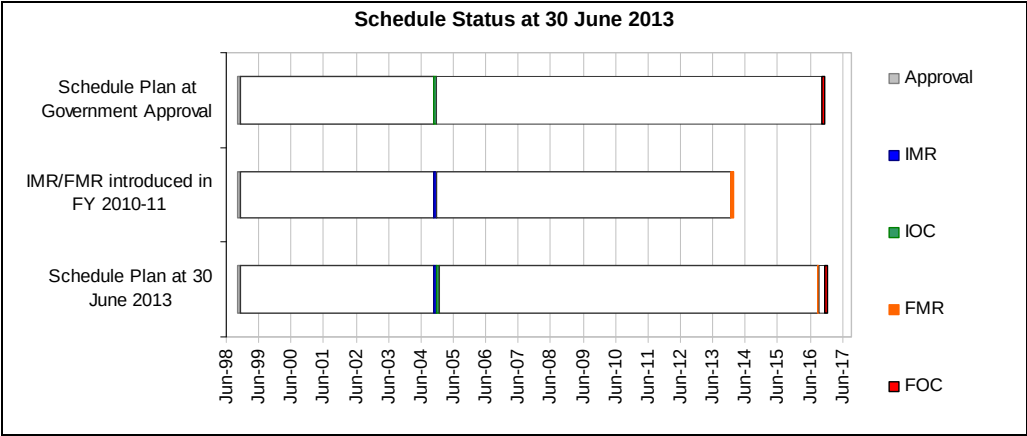
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Troop Vehicle	Jun 04	N/A	Dec 04	6	1
	Command Vehicle	Sep 04	N/A	Mar 06	18	
	Assault Pioneer Vehicle	Oct 04	N/A	Dec 06	26	
	Mortar Vehicle	Apr 06	N/A	May 07	13	
	Direct Fire Weapon Vehicle	Apr 06	N/A	Apr 07	12	
	Ambulance Vehicle	Aug 07	N/A	Feb 08	6	
	Air Defence Vehicle	Sep 11	N/A	Jul 11	(2)	
Acceptance	All PP1 vehicles except Ambulance	Jun 06	N/A	Jul 07	13	
	PP1 – Ambulance	Jul 07	N/A	May 08	10	
	Troop Vehicle	May 06	N/A	Jun 09	37	
	Command Vehicle	Jul 06	N/A	Jun 09	35	
	Assault Pioneer Vehicle	Jan 07	N/A	Jun 09	29	
	Mortar Vehicle	May 07	N/A	Jun 09	25	
	Direct Fire Weapon Vehicle	Mar 07	N/A	Jun 09	27	
	Ambulance Vehicle	Jul 07	N/A	Jun 09	23	
	Air Defence Vehicle	Apr 12	N/A	Apr 12	0	
Notes						
1	Additional reviews and testing requirements impacted the ability of Thales to conduct Production Acceptance Testing and Evaluation in the original timeframe. The situation was also impacted by the priority to support vehicles deployed on operations. Technical issues that resulted in design changes impacted on the ability to finalise Production and Acceptance Testing and Evaluation.					

Project Data Summary Sheets

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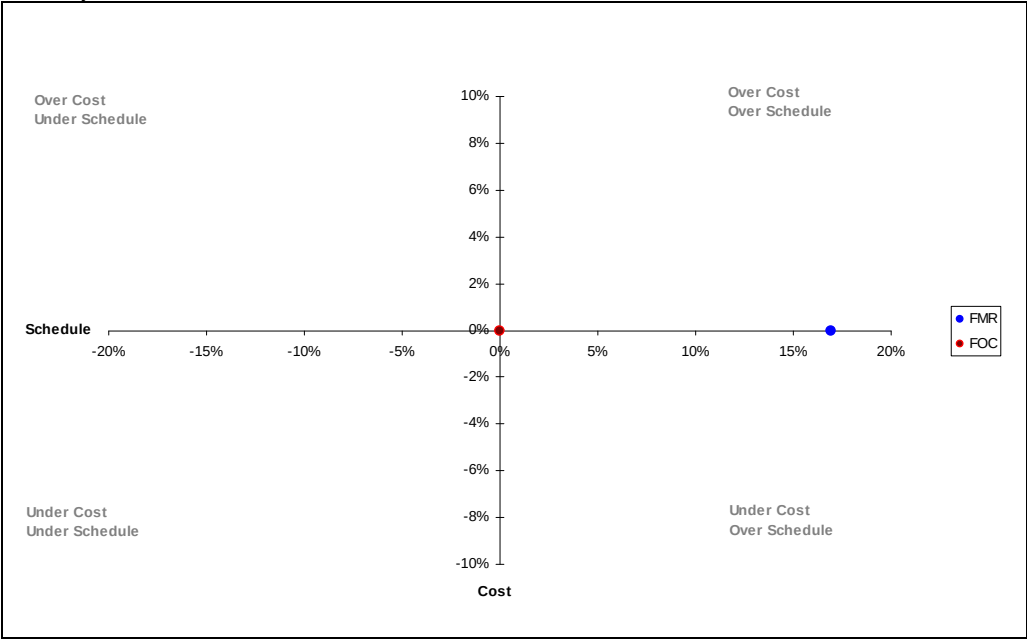
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 04	N/A	IMR was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
Initial Operational Capability (IOC) - PP1	N/A	Dec 04	N/A	IOC was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
Final Operational Capability (FOC) - PP1	Oct 07	Nov 10	37	Delays in the acquisition and installation of communications harness equipment (SOTASip) resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles are being retrofitted before issue to Army.
Initial Operational Capability (IOC) - PP2	Jul 08	Nov 08	4	This was due to the restructure of Army under Enhanced Land Force not fully completed and the unavailability of the communications harness. Army have accepted the initial vehicles without the communications capability.
Final Operational Capability (FOC) - PP2	Apr 09	Nov 10	19	Delays in the acquisition and installation of communications harness equipment (SOTASip) resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles are being retrofitted before issue to Army.
Initial Operational Capability (IOC) - PP3	Oct 11	Oct 11	0	DMO no longer tracks multiple IOCs due to a change in policy.
Final Operational Capability (FOC) - PP3	Apr 12	Mar 13	11	This variance is due to clarification of the requirements in reaching FOC. FOC was achieved when the final subset of PP3 vehicles was operationally employed by Army.
Initial Operational Capability (IOC) - PP4	Jul 12	Jul 12	0	IOC will be achieved when the first subset of LAND 116 PP4 vehicles was operationally employed by Army.
Initial Operational Capability (IOC) – PP5	Dec 13	Dec 13	0	IOC will be achieved when the first subset of LAND 116 PP5 vehicles will be employed by Army.
Final Operational Capability (FOC) - PP4	Apr 14	Dec 13	(4)	FOC will be achieved when the final subset of PP4 vehicles will be operationally employed by Army.
Final Materiel Release (FMR)	Feb 14	Sep 16	31	Completion of delivery of supplies listed in the Projects MAA at section 4 – Supplies, to the Customer. Variance is due to creation of additional production period.
Final Operational Capability (FOC) – PP5	Dec 16	Dec 16	0	



Section 4 – Project Cost and Schedule Status

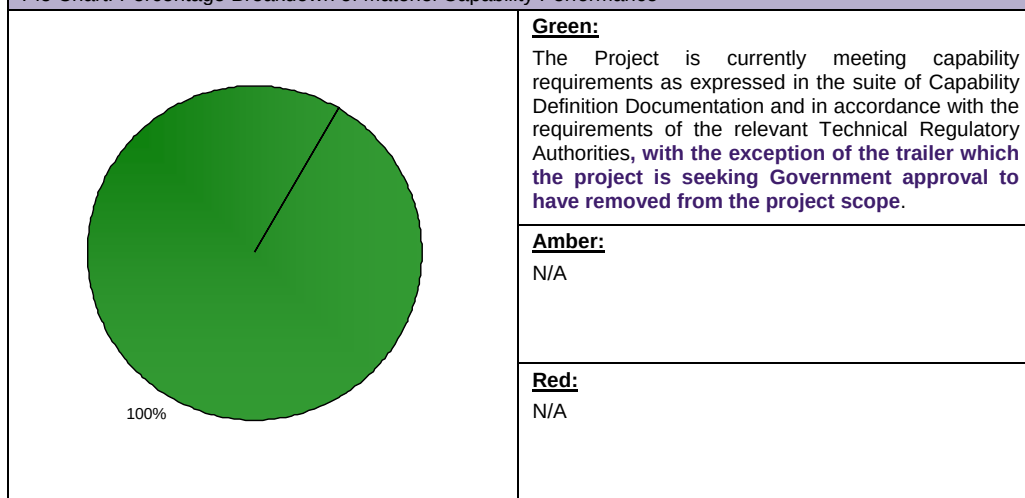
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that fitment of the ECA buttons to the PMV will be affected by vehicle availability impacting on the Project's scheduled completion date.	Liaise with Contractor and Army to establish fitment priorities and schedule.
There is a chance that the ECA production will be affected by delays in Detailed Design Review (DDR) and implementation delays leading to an impact on schedule.	On going engagement with Thales for resolution of outstanding issues. Engage Capability Development Group to determine number of kits and Army Registration Numbers to be fitted for ECA. This risk has been retired, as DDR has been completed and accepted.
There is a chance that the availability of vehicles will affect the installation of SOTAS to vehicles leading to an impact on schedule.	Conduct additional fitment of SOTAS utilising the support services contract. Critically manage the rollout out SOTAS in accordance with the Capability Managers priorities.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
There is a chance that funding will not be available in Financial Year 2013-14 to cover any schedule slip in ECA hardware (\$3.6m) from Financial Year 2012-13 leading to an impact on schedule and cost.	Liaise with Contractor to closely monitor and control the planned delivery schedule.

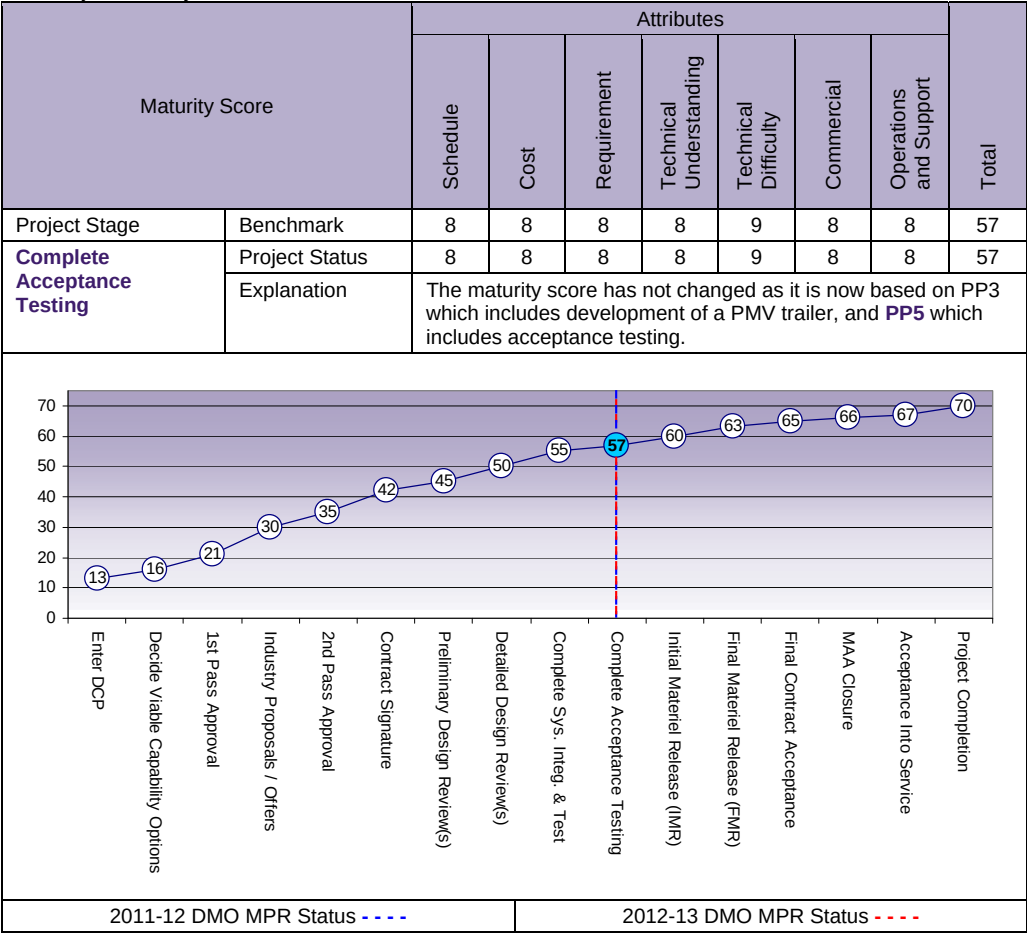
6.2 Major Project Issues

Description	Remedial Action
There is a backlog of engineering changes such as the design and integration of blackout curtains, due to the Commonwealth and Thales reprioritising engineering effort to higher priority operationally focused tasks. This backlog needs to be addressed in order to baseline the PMVs configuration.	The application of a more active management approach and the commitment of additional resources by the Commonwealth and Thales in an effort to reduce the backlog.

The achievement of Detailed Design for the ECA solution has taken longer than anticipated due to the requirement for Thales to readdress mass and temperature aspects of their proposed solution.	Engage stakeholders on a regular basis and ensure on-going clarity regarding system requirements. This issue has been retired, as DDR has been completed and accepted.
Issuing of PMVs to the Army has been impacted by the availability of communications harnesses.	The SOTASip communications harness and headsets are currently being introduced into service.
The PMV is not able to be certified for towing as per the value for money guidelines. This has an impact on the PP3 requirement to procure a PMV trailer.	It will be recommended to Government that the trailer and towing requirement be removed from the project scope.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
In the early planning phases of the project, the operational concept and functional performance requirements were not clearly defined, making it difficult to understand and undertake appropriate cost-capability trade-offs.	Requirements Management
Cost Estimating – there was a lack of industry capability to provide adequate cost estimates and inability by Defence to evaluate the validity of the cost data.	Contract Management
Testing program – significant contingency planning should be conducted for compliance testing of a new capability.	First of Type Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13–Jun 13) AVM Chris Deeble (Acting Jun 13–current)
Division Head	MAJGEN Grant Cavenagh (to Dec 12) MAJGEN Paul McLachlan (Dec 12–current)
Branch Head	BRIG David Shields
Project Director	Mr James Palmer
Project Manager	Mr Steven Brown

Project Data Summary Sheet¹⁷¹

Project Name	OVERLANDER VEHICLES
Project Number	LAND 121 Phase 3A
First Year Reported in the MPR	2012-13 2009-10 (as Phase 3)
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Jun 04 – Phase 3 Aug 11 – Phase 5A Dec 11 – Phase 3A
Government 2nd Pass Approval	Aug 07 – Phase 3 Aug 11 – Phase 5A Dec 11 – Phase 3A
Total Approved Budget (Current)	\$990.5m
2012-13 Budget	\$151.6m
Project Stage	Acceptance Into Service
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

In December 2011, Government approved the splitting of LAND 121 Phase 3 into two projects: LAND 121 Phase 3A – Lightweight and Light Capability (LLC) (incorporating the approved Phase 5A); and LAND 121 Phase 3B – Medium and Heavy Capability (MHC).

LAND 121 Phase 3A will deliver 2,146 lightweight (4x4) and light (6x6) Mercedes-Benz Geländewagen (G-Wagons) and 1,799 matching Haulmark trailers that were intended to be delivered under LAND 121 Phases 3 and 5A. Phase 3A will replace approximately two thirds of the current Land Rover 4x4 and 6x6 vehicle fleets that have been in service since the mid-1980s (the remainder to be replaced under Phase 4, if approved). The new G-Wagons will be used primarily for tactical training, but will also be available to support humanitarian assistance or disaster relief operations, and to help secure Australia's coastline.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2013, financial year 2012-13 expenditure was \$153.8m against the forecast expenditure of \$151.6m.

Project Financial Assurance Statement

As at 30 June 2013, project LAND 121 Phase 3A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current financial and contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

171 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

Between July 2012 and June 2015 2,146 G-Wagons are scheduled to be rolled out to units throughout Australia. The roll-out 1,799 of Haulmark trailers is scheduled to take place between July 2012 and mid-2016.

Following the pre-delivery work conducted under Phase 3, the roll-out began on 2 July 2012 with the delivery of 20 G-Wagons and 18 trailers to the 7th Brigade in Brisbane. The roll-out is proceeding at a rate of around 60 vehicles and 30 trailers per month; as of 30 June 2013, 759 G-Wagons and 537 trailers had been delivered to ADF units.

The Initial Materiel Release Milestone (IMR) milestone, pending finalisation and Army acceptance of the IMR Report, is expected to be achieved by August 2013. Final Materiel Release (FMR) milestone is on schedule.

Materiel Capability Performance

The Project is currently meeting capability requirements as expressed in the Materiel Acquisition Agreement (MAA) and in accordance with the requirements of the relevant Technical Regulatory Authorities. As of 30 June 2013 the Contractors have delivered to the project 1079 production vehicles and 679 production trailers.

1.3 Project Context**Background**

Project LAND 121 is a multi-phased Project to provide the ADF with the Field Vehicles, Modules and Trailers (FVM&T) and associated support systems to meet ADF mobility requirements including logistic distribution, command and liaison, casualty evacuation, troop lift, and the provision of mobility to specialist assets such as command shelters and communications terminals.

The ADF's existing FVM&T fleet consists of some 7,300 vehicles and 3,700 trailers acquired progressively from 1959. By 2008, 98% of the current assets had exceeded their life of type. The fleet is increasingly costly to maintain, repair and operate. Furthermore, an increased operational tempo from 1999 has compounded the challenges.

LAND 121 Phase 3 was approved in August 2007 to acquire 1,187 Mercedes-Benz G-Wagons, and 973 matching trailers from Haulmark Trailers (Australia). In August 2011, Government approved the acquisition of an additional 959 G-Wagons and 826 trailers under LAND 121 Phase 5A via the contracts negotiated for Phase 3.

Phase 3 was also intended to acquire medium and heavy FVM&T; however, following the collapse of negotiations under the original tender, a tender resubmission process was initiated in December 2008 for the Medium and Heavy Capability (MHC). In December 2011, Defence announced new negotiations with Rheinmetall MAN Military Vehicles Australia for the vehicle and module requirements, and with Haulmark Trailers Australia for the MHC trailer requirements.

In a related decision at the same time, Government approved the splitting of LAND 121 Phase 3 into two projects: LAND 121 Phase 3A for the Light and Lightweight Capability (LLC) approved under Phase 3 and amalgamating this with the additional scope approved under Phase 5A; and LAND 121 Phase 3B to progress the Phase 3 MHC scope elements along with the planned (but unapproved) Phase 5B scope (additional MHC).

This decision effectively closed Phase 3 and amounted combined pass approval for the new Phase 3A and an 'interim pass' approval for the new Phase 3B. The December 2011 approval allowed the continuation of contracted activities toward the LLC acquisition and the ongoing negotiations for the MHC contracts for Phase 3B. Phase 3B was required to seek a supplementary second pass approval following contract negotiations.

The Phase 3A LLC Contract Amendments were executed in January 2012 and Phase 3B achieved second pass approval in July 2013.

Uniqueness

LAND 121 Phase 3A is to roll-out the FVM&T capability to multiple locations throughout Australia. This presents a unique logistic challenge requiring a robust Support System to achieve stated availability requirements at the lowest life cycle cost.

Major ChallengesIntegration of Command, Control, Communication, Computer and Intelligence (C4I) systems.

Whilst the vehicle integration is largely mitigated, it is possible that the command-post mobile variant will present affordability issues. The project office is investigating ways of mitigating this problem, including revision of the Basis of Issue and reconsideration of the communications suite requirement.

Air transportability

Defence is validating the data from Mercedes-Benz to confirm the company's tender claims against ADF requirements for air transportability (external airlift under a CH-47 Chinook helicopter and internal airlift in a RAAF C-130 Hercules transport).

Ambulance variant

This variant is the only G-Wagon variant that is yet to reach production. Prototype testing has identified two main concerns:

- Climate control system performance. The performance requirement identified in the specification for the module climate control system is proving to be difficult to achieve and the internal noise level for the ambulance module is considered excessive by users. The project office, in conjunction with Mercedes-Benz Australia/Pacific and Army, is seeking to identify more appropriate performance parameters.
- Stretcher loading height. A user-evaluation trial in May 2012 concluded that the lifting height for stretcher loading was too high and posed an unsafe work practice. The project office is working with Mercedes-Benz Australia/Pacific to formulate and implement a solution that conforms to the more stringent requirements of recently introduced federal Work Health and Safety legislation while minimising schedule delay and cost increases.

Other Current Projects/Sub-Projects

LAND 121 Phase 3B will provide the ADF with a range of protected and unprotected medium and heavy vehicles which, along with their matched trailers, will provide payloads of between four and seventy tonnes for a range of logistics functions including vehicle recovery, freight, bulk liquid distribution and personnel carriage.

LAND 121 Phase 4, currently post Interim Pass Approval, proposes to provide around 1300 Protected Mobility Vehicles (PMV) – Light with companion trailers for command, liaison, utility and reconnaissance roles. This phase will replace around one third of the Land Rover fleet.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
LAND 75 Battle Management System	LAND 75 Phase 3.4 will deliver a Battle Management System (BMS) to over 1000 vehicles and 1500 soldiers, enabling increased situational awareness to every Commander in the Battle Group.	LAND 121 is dependant on LAND 75 for the integration of BMS into the G-Wagon.
JP 2072 Battlespace Communications	JP 2072 is a multi-phased project to progressively define and acquire an integrated Battlespace Communications System for the ADF's land elements (BCS(L)) including Army land forces, RAAF air field defence, expeditionary combat support units and Royal Australian Navy (RAN) landing parties.	LAND 121 is dependant on JP 2072 for the integration of radios into the G-Wagon.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Dec 11	At Original Approval (Phase 3 Project Budget prior to split into 3A and 3B)	3,237.7	1
Jun 12	Exchange Variation	(66.5)	
Jun 12	Budget as at 30 Jun 2012	3,171.2	
Jul 12	Real Variation – Scope	362.7	2
Jul 12	Real Variation – Scope (Transfer of funds to 3B)	(2,549.2)	3
		(2,186.5)	
Jun 13	Exchange Variation	5.8	
Jun 13	Total Budget	990.5	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	(162.8)	
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Support)	(2.0)	
	Contract Expenditure – Haulmark (Aust) Pty Ltd (Acquisition)	(16.6)	
	Contract Expenditure – Haulmark (Aust) Pty Ltd (Support)	(1.3)	
	Other Contract Payments / Internal Expenses	(49.9)	4
		(232.6)	
FY to Jun 13	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	(108.7)	
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Support)	(1.1)	
	Contract Expenditure – Haulmark (Aust) Pty Ltd (Acquisition)	(21.3)	
	Contract Expenditure – Haulmark (Aust) Pty Ltd (Support)	(1.7)	
	Other Contract Payments / Internal Expenses	(21.0)	5
		(153.8)	
Jun 13	Total Expenditure	(386.4)	
Jun 13	Remaining Budget	604.1	
Notes			
1	Phase 3 project budget prior to the split into Phase 3A and Phase 3B.		
2	Additional scope from LAND 121 Phase 5A.		
3	Removal of Medium/Heavy Capability scope to LAND 121 Phase 3B.		
4	Other expenditure comprises Phase 3A Contractors and Consultants (\$8.5m), Salaries (\$10.2m), and \$14.0m for other Project Office costs not associated with the prime contracts. Also includes \$17.2m for expenditure on Medium and Heavy Capability activities for Phase 3B that could not be recorded as being against Phase 3B due to financial system and reporting constraints.		
5	Other expenditure comprises: Outsourced Services \$5.5m, Embedded Service Fee \$3.6m and other project office costs not associated with the prime contracts \$11.9m.		

Project Data Summary Sheets

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2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The variation of \$2.2m is primarily due to the fall in the Australian Dollar to Euro Dollar exchange rate during Jun 13 (\$1.3m), vehicle spares paid earlier than planned (\$0.4m) and higher than planned payments for out-sourced services and Introduction into Service freight (\$0.5m).
			Overseas Industry	
		0.5	Local Industry	
		0.4	Brought Forward	
			Cost Savings	
		1.3	FOREX Variation	
			Commonwealth Delays	
151.6	153.8	2.2	Total Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Mercedes Benz Australia Pacific Pty Ltd	Oct 08	321.8	602.5	Variable	ASDEFCON	
Mercedes Benz Australia Pacific Pty Ltd	Oct 08	45.1	45.5	Variable	ASDEFCON	
Haulmark Trailers (Australia) Pty Ltd	Apr 10	42.0	68.9	Variable	ASDEFCON	
Haulmark Trailers (Australia) Pty Ltd	Apr 10	22.2	22.1	Variable	ASDEFCON	
Contractor		Quantities as at		Scope	Notes	
		Signature	30 Jun 13			
Mercedes Benz Australia Pacific Pty Ltd		1,187	2,146	LLC: Vehicles with associated modules	1	
Mercedes Benz Australia Pacific Pty Ltd		N/A	N/A	LLC: Support Contract for vehicles and modules		
Haulmark Trailers (Australia) Pty Ltd		979	1,799	LLT: Production Trailers		
Haulmark Trailers (Australia) Pty Ltd		N/A	N/A	LLT: Support Contract for Trailers		
Major equipment received and quantities to 30 Jun 13						
- All design reviews completed under Phase 3. - Seven of the eight mission system variants (exception being Ambulance) have completed Production Readiness Review. 13 prototypes delivered. 1079 production vehicles delivered to the project by the Contractor. 679 production trailers delivered to the project by the Contractor.						
Notes						
1	The quantity figures being communicated publically exclude modules and prototypes. The figures presented here align to avoid confusion.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Design reviews were completed under LAND 121 Phase 3.

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design Review (PDR)	Trucks	Apr 09	N/A	Jun 09	2	1
	Modules	Mar 09	N/A	Mar 09	0	
	Trailers	Oct 10	N/A	Oct 10	0	
Critical Design Review (CDR)	Trucks	Jun 10	N/A	Jun 10	0	
	Modules	Jul 10	N/A	Oct 11	15	2, 3
	Trays and Trailers	Mar 11	N/A	Aug 11	5	2
Notes						
1	Vehicle PDR occurred as planned from 22 April 2009 to 6 May 2009, however, exit was unable to be granted until 12 June 2009 when the Commonwealth was satisfied with the way ahead for issues identified during the review.					
2	Critical Design Review variance was due to a change in specification by the Commonwealth.					
3	All work on the Personnel/Cargo Restraint System (PCRS) Module ceased post CDR following advice from Capability Development Group (CDG) that removed the requirement for a PCRS Module. CDG recommended the acquisition of 15 additional Modules (Light Cargo) in lieu of the PCRS module. Army Headquarters and Air Force Headquarters concurred with this change.					

3.2 Contractor Test and Evaluation Progress

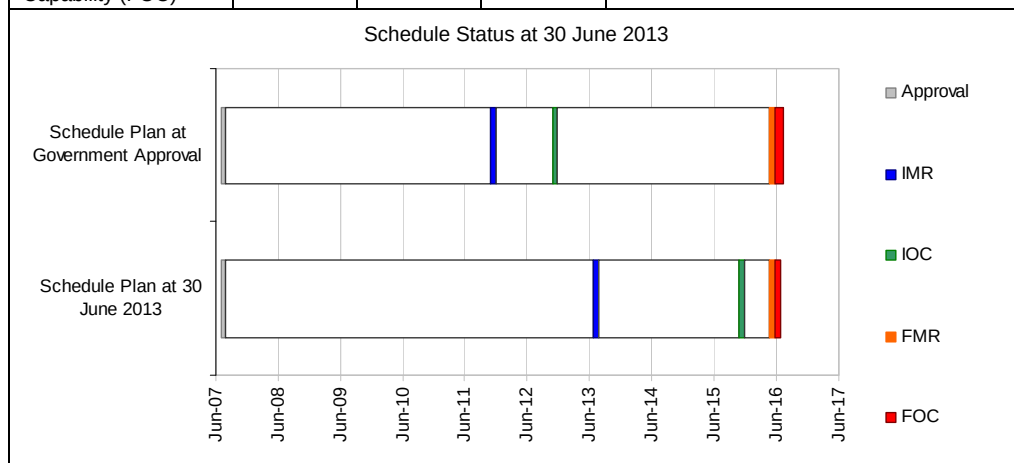
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	Module (Light Ambulance, Cab Chassis)	Oct 10	Jan 12	Feb12	16	1
	All other Vehicle, Module (except Ambulance) and trailer variants had passed TRR under Phase 3	Jul 11	Dec 11	Dec 11	5	2
Functional Configuration Audit	Module (Light Ambulance, Cab Chassis)	Apr 11	Aug 12	May 14	37	2
	Tray (Light Surveillance and Reconnaissance)	Feb 11	Sep 12	Nov 12	21	2
	All other vehicles and modules completed under Phase 3	Feb 11	Oct 11	Oct 11	8	2
Acceptance Verification and Validation	Light and Lightweight Trailers completed under Phase 3	Jul-Oct 11	N/A	Jul-Nov 11	1	3
Notes						
1	Delayed from originally planned first week of January 2012 to February 2012 due to collective availability and conduct of Surveillance and Reconnaissance User Trial in mid to late January 2012.					
2	Variances are due to specification changes by the Commonwealth.					
3	One extra month taken for retesting.					

Project Data Summary Sheets

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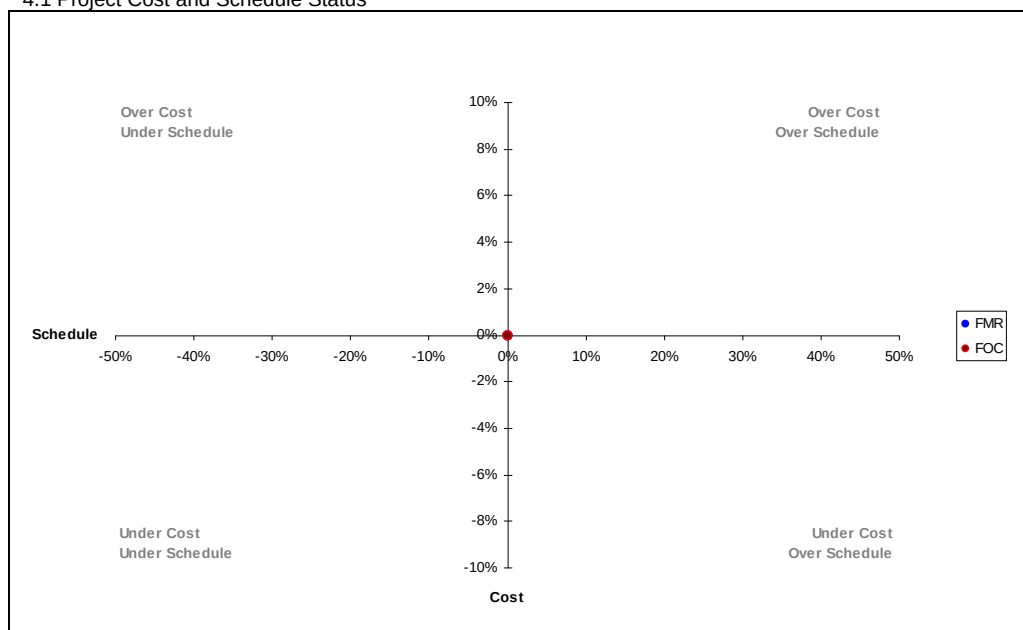
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Dec 11	Aug 13	20	Delay to the implementation of the vehicle support system.
Initial Operational Capability (IOC)	Dec 12	Dec 15	36	Delays due to the development required for module components.
Final Materiel Release (FMR)	May-Jul 16	May-Jul 16	0	
Final Operational Capability (FOC)	Mid 16	Mid 16	0	



Section 4 – Project Cost and Schedule Status

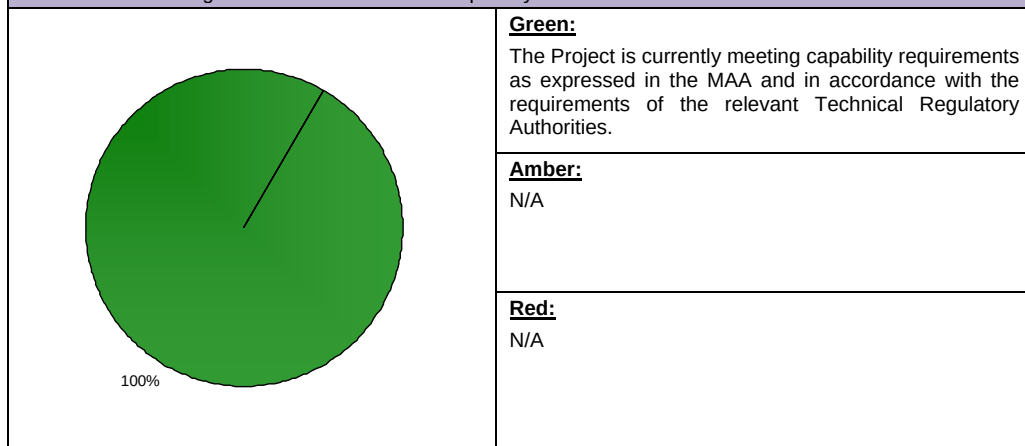
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)

Description	Remedial Action
A number of factors have the potential to impact on the LLC vehicle cost, schedule and capability requirements. These include: • Delivery of equipment according with specifications; • Introduction into service; • 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: • Constant interface with Army and Joint Logistic Units; • Constant interface with the Prime Contractor; • Involvement of subject matter experts; and • Continual review of risks and issues.
In the last reporting period, under Phase 3, a number of factors had the potential to impact on the LLC trailer cost, schedule and capability requirements. These included: • IIS costs may increase; • Trailer may not meet air drop capability (noting that the Capability Manager is currently reviewing the requirement for air drop); and • Interactive Electronic Technical Publications (IETP) won't be delivered as policy and guidance is yet to be developed by Defence.	The project is 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. The risks to trailer cost, schedule and capability are largely mitigated and are now rated at low to medium risk.

Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

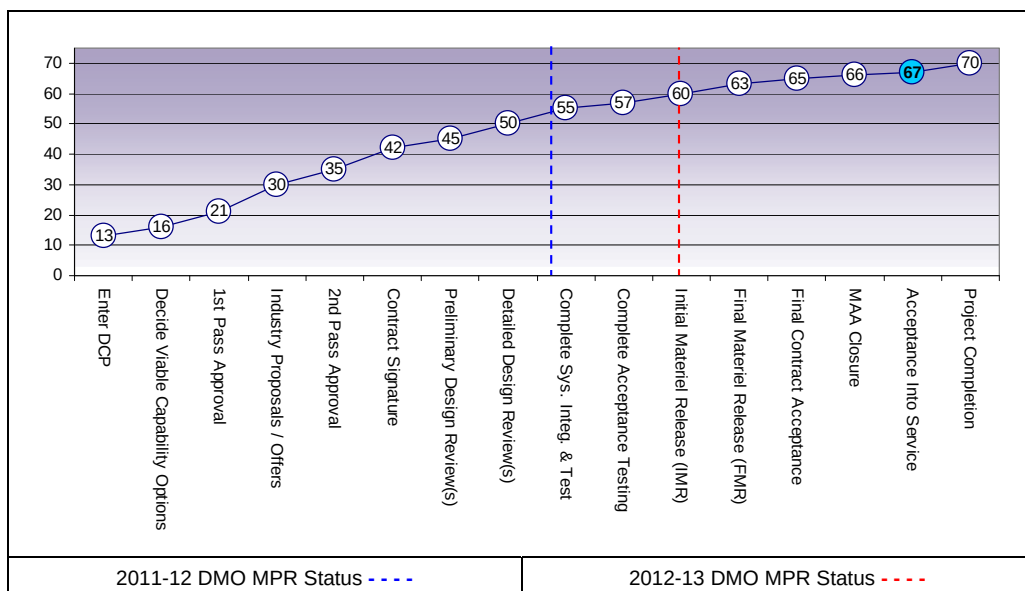
6.2 Major Project Issues

Description	Remedial Action
A number of factors have had an impact on the LLC vehicle cost, schedule and capability requirements. These include: • Maturity of platforms design and outcomes from testing and evaluation; and • Delivery of equipment according to specifications.	These issues have been managed by the project through the redirection of internal resources and constant interface with the Prime Contractor to deliver an optimised product to the ADF.

Section 7 – Project Maturity

7.1 Phase 3A Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Acceptance Into Service	Project Status	10	7	9	9	8	8	9	60
	Explanation	• Cost: Cost is tracking within Project Contingency. There are still some risks which are being managed. • Requirement: The Ambulance module is still in the Design Phase and has not been accepted in production. • Technical Understanding: Interim logistic data has been issued, however is not completely finalised. • Technical Difficulty: Verification and Validation and Operation Test and Evaluation has commenced but is not yet complete. • Commercial: Contract not yet complete.							



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
To avoid costly and time consuming Contract Change Proposals (CCP), due to requirement variations, it is critical that Defence stakeholders provide clarity in terms of the OCD and FPS.	Requirements Management
The time required to negotiate contracts for the LAND 121 project is a significant driver of the schedule.	Contract Management Requirements Management
When the organisation is under pressure to compress schedule so as to hasten the delivery of capability to the war-fighter, key decisions must be taken in light of potential impact on the ability of the project to achieve this aim.	Schedule Management Resourcing
It is important to ensure the <u>early</u> involvement of ALTC staff in the development of the Training requirement. This includes reviewing the ASDEFCON template DID ILS-910 and relevant clauses pertaining to training and participation in preliminary meetings to the Initial Training Conference. Suggest preliminary brief by ALTC for them to define their expectations, and 'fit' to contractual requirements.	Resourcing
The effort involved with the vehicle / trailer interface (and any other interface with the prime equipment - eg wheels, required payload, etc) should not be underestimated even for apparently simple equipments. The early formation of interface working groups is important.	Requirements Management
No matter how attractive it is to rush equipment into service or no matter how strong the desire/pressure is to shorten the project schedule, proper and fulsome verification and validation of manufacturer's claims must be undertaken prior to giving approval for production. This is particularly relevant now as equipment/vehicles become more complex with more electronic components being installed such as on-board computers, electronic control units, on-board diagnostic equipment, etc.	Requirements Management

Project Data Summary Sheets

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Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13–Jun 13) AVM Chris Deeble (Acting Jun 13–current)
Division Head	MAJGEN Grant Cavenagh (to Dec 12) MAJGEN Paul McLachlan (Dec 12–current)
Branch Head	BRIG Gregory Downing (to Oct 12) BRIG Nagy Sorial (Nov 12–current)
Project Director (LLC)	Mr Ken Butler

Project Data Summary Sheet¹⁷²

Project Name	NEXT GENERATION SATCOM CAPABILITY
Project Number	JP 2008 Phase 4
First Year Reported in the MPR	2009-10
Capability Type	New
Service	Joint Services
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 07
Total Approved Budget (Current)	\$863.7m
2012-13 Budget	\$88.9m
Project Stage	Integration and Test
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The JP 2008 Phase 4 project seeks to deliver high priority components of the next generation (NEXTGEN) satellite communication (SATCOM) system that will support the Australian Defence Force (ADF) from 2008 onwards. The NEXTGEN SATCOM system will introduce a flexible and sustainable SATCOM capability that supports a network centric ADF operating independently or as part of a coalition.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2013 the current approved scope, budget and contractual obligations have been reviewed and met. The \$13.9m variation is primarily due to an underspend against Local Industry, relating to a combination of Interim and Offshore Anchoring and Satellite Systems Expert. The remaining variance is a cost savings to Wideband Global SATCOM and associated with the finalisation of the booster contract.

Project Financial Assurance Statement

As at 30 June 2013, project JP 2008 Phase 4 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The milestones achieved so far include: Wideband Global SATCOM (WGS) System Service Initial Operational Capability (IOC); Interim Anchor Capability (backhaul); Situational Awareness Tools & Infrastructure training; and WGS Training for ADF personnel. **The Interim Anchoring System (IAS) has achieved Materiel Release (MR) 3 and 4, and is now fully operational as of December 2012. May 2013 saw the successful launch of WGS 5.** No change is anticipated to the Project Completion Date.

172 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Materiel Capability Performance

The first **four** satellites are meeting their operational requirements **with WGS 5 successfully launched in May 2013 and currently undergoing in orbit testing**. Australia used United States (US) infrastructure from June 2008 via the Simpson Trunk (undersea cables) to gain access to the first WGS satellites. This capability was augmented incrementally through the placement of Australian equipment in US satellite anchor stations (offshore anchoring) situated in Hawaii and Landstuhl (Germany) to support increased levels of capability. The mature offshore anchoring capability was set to work October 2009. The IAS **System** has been set to work and is available for operational use.

1.3 Project Context

Project Background

In 2007 the Australian Government considered a range of options to deliver a wideband satellite communications capability for the ADF. The US had an approved program for a five wideband satellite constellation, and in early 2007 offered the Commonwealth the opportunity of partnering in the program on the basis that the Commonwealth would fund the production of a sixth WGS satellite in return for a share of the services provided by the expanded constellation of six WGS Satellites (which is approximately 10% of the overall program).

Negotiations of the WGS Memorandum of Understanding (MOU) between the Commonwealth and the US Government began in March 2007, and in September 2007 the JP 2008 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 WGS6 on 1 December 2007.

WGS1 with a footprint over the Pacific Ocean and Australia has been operational since early 2008, with progressive launches culminating with the sixth satellite (WGS6) becoming operational in 2013.

Outside the MOU, the project is delivering interim anchoring capability to provide access to the WGS satellite constellation from Australia's eastern and western seaboard. This will be achieved through the delivery of ground stations in Western Australia and at HMAS Harman in the Australian Capital Territory. Complementing the onshore anchoring capability is an offshore anchoring capability that is now operational in Hawaii and Germany.

The project is also managing the provision of training of ADF personnel to operate the WGS system through a Foreign Military Sales (FMS) Case with the US Government to enable ADF personnel to operate the WGS system as part of the integrated US Wideband Satellite Communications Operations Centres (WSOC).

Project 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 WGS6, which is being funded by Australia. The acquisition of the WGS constellation is governed by two contracts, Block I for satellites WGS1, WGS2 and WGS3, and Block II for satellites WGS4, WGS5 and WGS6.

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.

The steady-state provision of services will occur once WGS6 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.

Project Major Challenges

A major challenge of this program is the execution of the program under a dependable undertaking where the US Government is the prime contractor. Under the terms of the MOU, the Commonwealth has no legal relationship with the satellite provider (Boeing), and receives only limited insight into the program constrained by pre-existing commercial terms within the MOU and International Traffic in Arms Regulations.

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.

Other Current Projects / Sub-Projects

JP 2008 Ph 3F ADF SATCOM Terrestrial Enhancements: This project will provide the mature Australian western seaboard anchoring capability for the WGS constellation.

JP 2008 Ph 5A Indian Ocean Region UHF SATCOM: This project will provide the ADF with twenty 25kHz UHF SATCOM channels on an Intelsat satellite to provide coverage of the Indian Ocean Region.

JP 2008 Phase 3E Advanced SATCOM Terrestrial Infrastructure System: This project provides the supporting ground infrastructure for Satellite Communications including UHF, X and Ka band communication services.

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Sep 07	Original Approved	884.9	1
Jul 10	Price Indexation	132.4	
Jun 13	Exchange Variation	(153.6)	
Jun 13	Total Budget	863.7	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – WGS MOU	(434.3)	2
	Contract Expenditure – TBN	(12.4)	
	Other Contract Payments / Internal Expenses	(21.2)	
		(467.9)	
FY to Jun 13	Contract Expenditure – WGS MOU	(67.6)	2
	Contract Expenditure – TBN	(1.0)	
	Other Contract Payments / Internal Expenses	(6.4)	
		(75.0)	
Jun 13	Total Expenditure	(542.9)	
Jun 13	Remaining Budget	320.8	
Notes			
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$107.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$25.1m having been applied to the remaining life of the project.		
2	Other expenditure comprises: operating expenditure, other minor capital expenditure not attributable to the aforementioned top two contracts and minor contract expenditure.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The total variation for JP2008 Phase 4 (\$13.9m). The underspend is made up of Local Industry worth (\$5.9m) relating to a combination of Interim and Offshore Anchoring and Satellite Systems Expert activities that have been delayed, cancelled or moved to the next financial year. Remaining (\$8.0m) is cost savings relating to WGS savings associated with the finalisation of the booster contract.
			Overseas Industry	
		(5.9)	Local Industry	
			Brought Forward	
		(8.0)	Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
88.9	75.0	(13.9)	Total Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government	Nov 07	866.2	866.2	Firm	MOU Agreement	
The Bridge Network	Nov 08	11.2	12.7	Firm	ASDEFCO (Complex)	

Project Data Summary Sheets

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Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 13		
US Government	1	1	WGS6	1
The Bridge Network	2	2	Ground Station	2
Major equipment received and quantities to 30 Jun 13				
Four satellites successfully launched and in operation. WGS 5 was successfully launched May 2013 and due for operation late 2013.				
Notes				
1	The MOU will provide access to a constellation of six satellites; however, Australia's contribution is limited to funding the production of WGS6 and associated supplies.			
2	The quantity of two Ground Stations comprises single separate ground stations on the eastern and western seaboard.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Design	WGS6 and WGS Constellation	N/A	N/A	N/A	N/A	1
Mission System Review	Interim Anchoring Mission System Review	Dec 08	N/A	Nov 09	11	2
Notes						
1	The MOU construct does not provide the project with insight into the design review process or design data. A Monthly Status Report is provided to the Commonwealth detailing only summary high level progress status.					
2	The Interim Anchoring Mission System Review (MSR) delay was attributed to the unfamiliarity of the contractor with Defence contract requirements in relation to documentation and process. Through a contracted requirement, the Contractor experienced difficulties in meeting the quality requirements of the contract resulting in a requirement for re-work to be performed by the contractor. MSR was essentially a combined Preliminary Design Review, System Requirement Review and Critical Design Review that was expected to span three days.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
US Government Acceptance	WGS6	Nov 13	N/A	Nov 13	0	
System Integration	WGS6	Sep 11	N/A	Sep 11	0	
Test Readiness Review	IAS – East	Jul 09	N/A	Jun 11	23	1
	IAS – West	Jul 09	N/A	Mar 10	8	1
Acceptance	IAS – East	Sep 09	N/A	Dec 12	39	3, 4
	IAS – West	Sep 09	N/A	Aug 10	11	2
Notes						
1	Test Readiness Review (TRR) and Acceptance milestones for the IAS have slipped . This is primarily due to the determination that the configuration of both Anchor Stations was sufficiently different to warrant a secondary certification event for IAS East. The achievement of IAS East TRR has involved a more extensive and demanding level of engineering process than originally anticipated by the project office and has required that the Interim Anchoring contract be modified to reflect increases in test scope.					

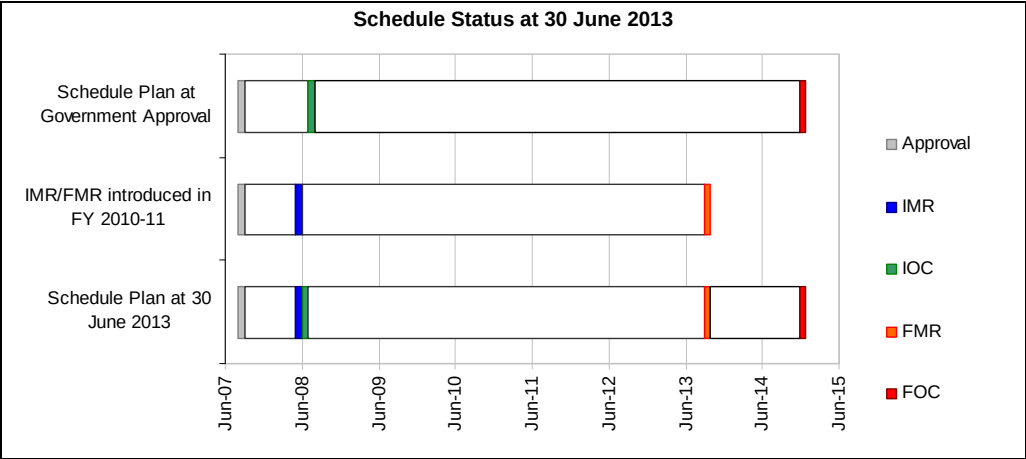
2	IAS – West Acceptance occurred 11 months beyond the original planned date because the Acceptance Test Report was late due to delays associated with the issue of the WGS Certification, letter of certification and report. Several contractor generated reiterations required prior to Verification Cross Reference Matrix and Acceptance Test Report acceptance, were also delayed.
3	Delays to IAS – East Acceptance have occurred due initially to delays in WGS certification and Engineering Change Proposal. This was then compounded by Commonwealths delay due to engineering workforce issues. Further to this there have been delays in activating a maintenance support contractor in the East.
4	Acceptance of East requires Engineering Change Proposal (ECP) approval and subsequent contractor work was rebaselined in March 2012. IAS East has achieved material release and is fully operational.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
WGS – Initial Materiel Release (IMR)	N/A	Jun 08	N/A	
WGS Service Initial Operational Capability (IOC)	Aug 08	Jun 08	(2)	Achieved ahead of schedule upon activation of WGS1.
MR2 – Hawaii & Germany offshore/Backhaul Anchoring Stations realised to CIOG for operational use	Nov 09	Nov 09	0	
MR3 – AUST West IAS	Nov 10	Nov 10	0	
MR4 – AUST East IAS	Apr 11 – Jun 11	Dec 12	18	Delays to IAS East acceptance have occurred due initially to delays in WGS certification and ECPs, this was then compounded by Commonwealths delay due to engineering workforce issues. Further to this there have been delays in activating a maintenance support contractor in the East. Combined MR 3&4 achieved in December 2012 and system has been released and is operational.
MR5 – Activation of 104E Slot	Mar 12 – May 12	Jul 12	2	WGS4 Activated East Indian Ocean Region (EIOR) slot as advised by US.
Final Materiel Release (FMR) US Airforce acceptance of WGS6	Jul 13 – Sep 13	Sep 13	0	
Final Operational Capability (FOC) Operational acceptance of WGS6	Oct 14 – Dec 14	Dec 14	0	

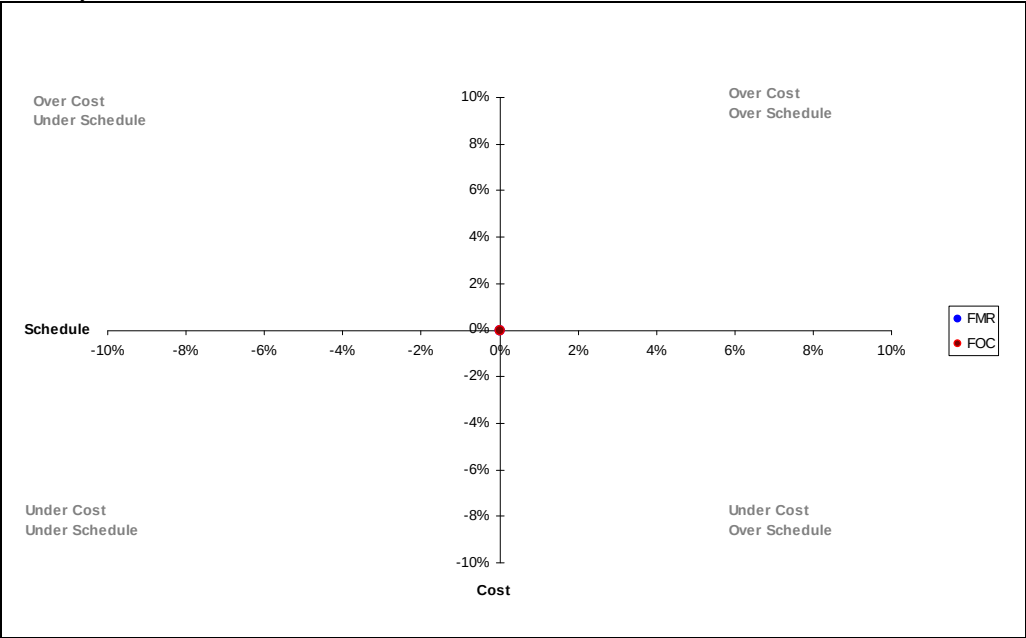
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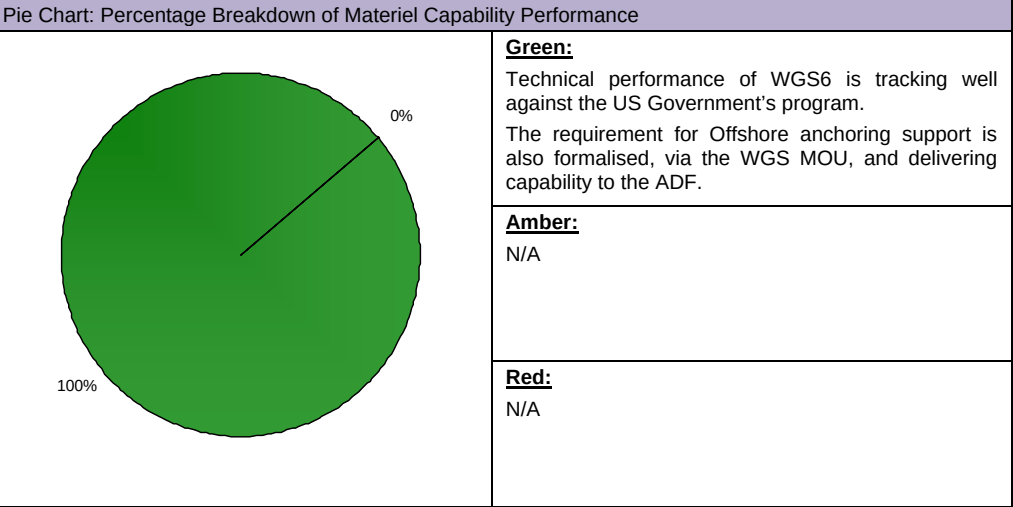
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

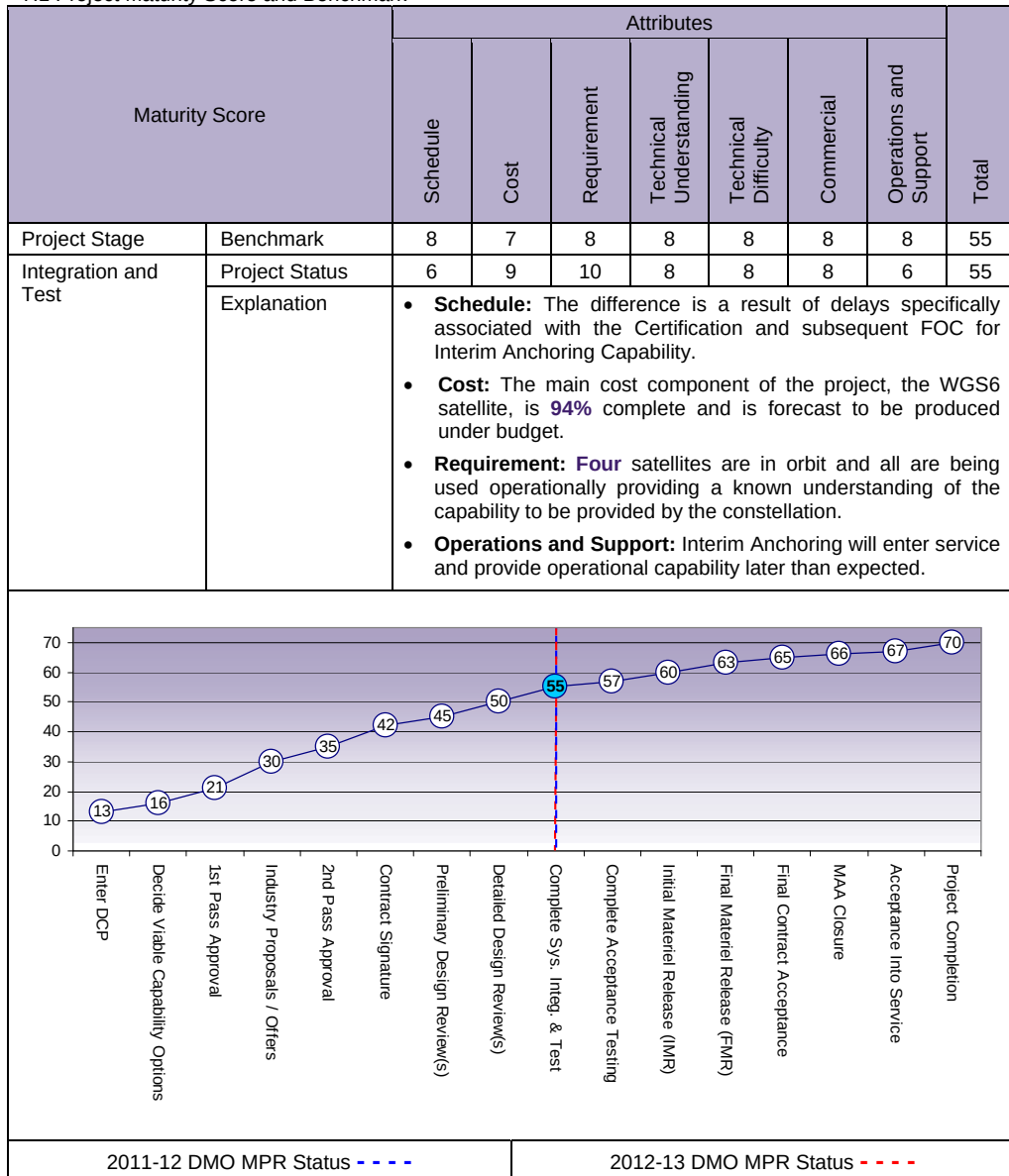
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
Failure of IAS to be delivered to the original schedule.	Issue retired - IAS has now been delivered and is operational as per MR 3&4.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 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. As a result of the 2012 Gate Review the project has arranged a high level meeting with the IAS contractor to ensure continued support for the system.	Resourcing
Considerable acceleration of the acquisition cycle for the WGS program necessitates a strengthening of the governance process to ensure lines of authority and responsibility are clear in the formation in the definition of business need and option analysis.	Governance

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward (Jul 12–Feb 13, May 13–current) Mr Mark Devlin (Acting Mar 13–Apr 13)
Branch Head	Mr Ivan Zlabur (to Feb 13) Mr Greg McKinnon (Acting Feb 13–Mar 13) Mr Gunsagaron Gounder (Mar 13–Jun 13)
Project Director	Mr Greg McKinnon

Project Data Summary Sheet¹⁷³

Project Name	ANZAC ANTI-SHIP MISSILE DEFENCE
Project Number	SEA 1448 Phase 2B
First Year Reported in the MPR	2009-10
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	Nov 03
Government 2nd Pass Approval	Sep 05
Total Approved Budget (Current)	\$675.9m
2012-13 Budget	\$66.5m
Project Stage	Complete Acceptance Testing
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA 1448 Phase 2 project will provide the ANZAC Class Frigates with an enhanced level of self-defence against modern anti-ship missiles.

There are two sub-phases of SEA 1448 Phase 2. Phase 2B of the ASMD Project, will introduce an indigenous, leading edge technology, phased array radar (CEAFAR) and missile illuminator (CEAMOUNT) – collectively referred to as the Phased Array Radar (PAR) System. The PAR System delivers enhanced target detection and tracking that allows Evolved Sea Sparrow Missiles to engage multiple targets simultaneously. A new dual ship-set I-Band Navigation radar will coincidentally be provided under this Phase to replace the navigation function performed by the Target Indication Radar, at the same time replacing the obsolescent Krupp Atlas 9600.

1.2 Current Status

This Project has been a Project of Concern since June 2008, but was removed in November 2011 as part of the Real Cost Increase (RCI) decision made by Government in November 2011.

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Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Cost Performance

In-year

As at 30 June 2013 the current approved scope, budget and contractual obligations have been reviewed and met. Current in year performance indicates an underspend of \$1.7m, with the Industry materiel management remaining an ongoing issue. DMO and Industry are working together to re-align the financial spend profile.

Project Financial Assurance Statement

As at 30 June 2013, project SEA 1448 Phase 2B has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

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 ships) Government approval of the project in September 2005 is 19 months. With the RCI for Phase 2B approved for the follow on ships 2-8 in November 2011, there is a 10 month variance to the delivery of the final capability as advised in the 2009 Cabinet Submission. This equates to a 55 month variance to the original approvals for this phase of the project. **During 2012–13, schedule has continued to be maintained, with recent activities including the successful completion of Stage 2, CAT 3 and CAT 4 system testing on HMAS Perth. The second ship to undergo the ASMD upgrade is progressing on schedule and is due to re-enter service in early 2014.**

Materiel Capability Performance

Initial Material release (IMR) was claimed for Stage 1 Capability on HMAS Perth on 24 June 2011. The Chief of Navy formally provided Initial Operational Release (IOR) for ASMD upgrade capability delivered to HMAS Perth and its associated support systems in 16 August 2011. The Project is continuing to progress Stage 2 Capability and is on track.

1.3 Project Context

Project Background

The need for an ASMD capability in the Royal Australian Navy's (RAN) surface fleet was first foreshadowed in the 2000 Defence White Paper.

SEA 1448 Phase 2B is the final Phase of the ANZAC ASMD Program, where the addition to the Class of the phased array radar technology is being undertaken by the Australian Company CEA Technologies and the overall integration into the ANZAC Class is being performed by the ANZAC Alliance (Commonwealth plus BAE Systems (previously Tenix) and Saab Systems).

SEA 1448 Phase 2B was approved by Government in September 2005. SEA 1448 Phases 2A (the initial phase of the ASMD Project which is procuring the combat management system hardware and the infra-red search and track capability) and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. Phase 2A is a low risk component whilst it remains part of the confederated project and there are no Phase 2A risks that will migrate to the ASMD Project as enterprise risk. Due to its leading edge and developmental technology, Phase 2B is a high risk phase either as a stand-alone component or as part of the confederated ASMD Project, and these risks do migrate as enterprise risks to the confederated ASMD Project. Originally planned for installation into all eight ANZAC Class ships under a single contract, a further review in 2007 of the technical risks associated with the introduction of the leading edge radar led Government in August 2009 to revise the acquisition strategy to a single ship installation. This strategy allows the project to prove this capability at sea before seeking Government approval to commence installation into subsequent ships. The lead ship, HMAS Perth, successfully underwent acceptance testing between October 2010 and June 2011 with the Chief of Navy accepting IOR in August 2011.

Project Uniqueness

The phased array radar component of the ASMD Project is highly developmental and has not previously been fielded in this form before, although the system components are fourth generation derivatives of fielded CEA systems. The RAN is the first to operate a ship with the Australian designed and manufactured CEA Technologies low power active PAR System.

Project Major Challenges

The major challenges for SEA 1448 Phase 2B have been:

- During 2007, it was determined from system engineering reviews and Defence Science and Technology Organisation (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.
- **Integration of highly technical systems within a single ship platform.**
- **Managing additional engineering changes required to be incorporated into the platform during an ASMD upgrade period.**

Other Current Projects / Sub-Projects

SEA 1448 Phase 2A – This initial phase of the ASMD Project is to upgrade all eight of the ANZAC Class Ship's existing ANZAC Class Combat Management Systems (CMS) and fire control systems, and install an Infra-Red Search and Track (IRST) System which will provide improved detection of low level aircraft and anti-ship missiles when the ship is close to land.

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Sep 05	Original Approved	248.8	
Mar 06	Real Variation – Transfers	155.4	1
May 06	Real Variation – Transfers	(6.7)	2
Nov 11	Real Variation – Scope	214.7	3
		363.4	
Jul 10	Price Indexation	76.1	4
Jun 13	Exchange Variation	(12.4)	
Jun 13	Total Budget	675.9	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – BAE Systems Australia	(62.8)	
	Contract Expenditure – SAAB Systems Pty Ltd	(69.6)	
	Contract Expenditure – CEA Technologies (P3 Contract)	(69.7)	5
	Contract Expenditure – CEA Technologies (PAR Production)	(119.9)	6
	Contract Expenditure – ICWI Membership	(12.3)	
	Other Contract Payments / Internal Expenses	(6.1)	7
		(340.4)	
FY to Jun 13	Contract Expenditure – BAE Systems Australia	(0.4)	
	Contract Expenditure – BAE Systems Australia (Follow On (FON))	(25.1)	
	Contract Expenditure – SAAB Systems Pty Ltd	(6.2)	
	Contract Expenditure – CEA Technologies (PAR Production)	(21.1)	6
	Contract Expenditure – ICWI Membership	(3.6)	
	Other Contract Payments / Internal Expenses	(8.4)	7
		(64.8)	
Jun 13	Total Expenditure	(405.2)	
Jun 13	Remaining Budget	270.7	
Notes			
1	\$155.4m transferred from SEA 1448 Phase 2A after Government agreed that initial Very Short Range Air Defence (VSRAD) was to be replaced with the PAR System from CEA.		
2	Transfer to DSTO (Maritime Operations Division) for phased array radar risk mitigation activities in line with original Government approval in September 2005.		
3	RCI of \$214.7m approved for the follow on ships 2-8 in November 2011.		
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$71m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$5.1m having been applied to the remaining life of the project.		
5	(P3 = Preliminary Phased Array Radar Program); This contract was officially closed in April 2010 and was aimed at development and initial production of the first PAR System.		

Project Data Summary Sheets

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6	This is the production contract for the delivery of the first PAR System into HMAS <i>Perth</i> (lead ship). Following the approval of an RCI in November 2011, options were exercised to increase the scope to the remaining seven ships and spare system. In order to manage acquisition obsolescence of phased array radar components and retention of the strategic workforce related to the phased array radar, this contract also included forward component buys.
7	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.

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Industry materiel management remains an ongoing issue. Commonwealth of Australia (CoA) and Industry are working together to re-align the financial spend profile.
			Overseas Industry	
		(1.7)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
66.5	64.8	(1.7)	Total Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts						
Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
BAE Systems Australia	Jul 05	2.1	57.7	Variable	Alliance	
SAAB Systems Pty Ltd	Jul 05	3.1	67.0	Variable	Alliance	
CEA Technologies P3 Contract	Dec 05	8.9	69.6	Variable	ASDEFCON	
CEA Technologies PAR Production Contact	Dec 08	16.0	161.5	Variable	ASDEFCON	
BAE Systems Australia	Jan 12	164.9	164.9	Variable	Alliance	
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 13				
BAE Systems Australia	0	2	Research and Development and Ship 1 system			
SAAB Systems Pty Ltd	0	2	Research and Development and Ship 1 system.			
CEA Technologies P3 Contract	1	2	Phased array radar developmental systems			1
CEA Technologies PAR Production Contact	1	9	PAR Systems for Ship 1 - 8 and spare system			2
BAE Systems Australia	7	7	Ships 2-8 Installation			
Major equipment received and quantities to 30 Jun 13						
Equipment has been delivered into store and is being appropriately maintained until required by Phase 2B for its installation. Installation has been completed for First Of Class ship, HMAS Perth, and is now being installed on the second ship, HMAS Arunta.						
Notes						
1	(P3 = Preliminary Phased Array Radar Program); This contract was officially closed in April 2010 and was aimed at development and initial production of the first PAR System.					

2	This is the production contract for the delivery of the first PAR System into HMAS <i>Perth</i> (lead ship). Following the approval of an RCI in November 2011, options were exercised to increase the scope to the remaining seven ships and spare system. In order to manage acquisition obsolescence of phased array radar components and retention of the strategic workforce related to the phased array radar, this contract also included forward component buys.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Requirements Review)	Mar 06	N/A	May 06	2	1
	Mk3E Combat Management System – Stage 2 (Requirements Review)	N/A	N/A	Aug 09	N/A	1
	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Functional Review)	Jun 06	N/A	Aug 06	2	1
Preliminary Design	Mk3E Combat Management System/Phased Array Radar Preliminary Design Review	Dec 06	N/A	Aug 07	8	1
	ASMD Shore Facilities (HMAS <i>Stirling</i>)	N/A	N/A	Aug 08	N/A	
Critical Design	Mk3E Combat Management System (Phased Array Radar integration) - Stage 1 Critical Design Review – Part 2	Dec 07	N/A	Aug 08	8	1
	Mk3E Combat Management System - Stage 2 Critical Design Review	Nov 10	Sep 11	Sep 11	10	2
	ASMD Shore Facilities (HMAS <i>Stirling</i>)	N/A	N/A	Dec 08	N/A	
	Phased Array Radar	Oct 07	N/A	Oct 07	0	
Notes						
1	Variance in design reviews is directly related to the change of acquisition strategy (movement from an eight ship program to a single ship program) or delay in initial contract award for phased array radar system.					
2	Variance in Stage 2 Critical Design Review (CDR) date has been as a result of delays in finalising Defence's requirements in the Software update. This was completed in April 2011 with CDR appropriately rescheduled. There is no impact to final Stage 2 software release date.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS <i>Perth</i> with upgraded ASMD System (Mk3E Combat Management System/Phased Array Radar System/Navigation Radar System - Harbour Phase)	Dec 08	Aug 10	Aug 10	20	1
Acceptance (Initial Operational Capability)	HMAS <i>Perth</i> with upgraded ASMD System (Mk3E Combat Management System/Navigation Radar System)	Dec 09	Nov 13	Nov 13	47	2

Project Data Summary Sheets

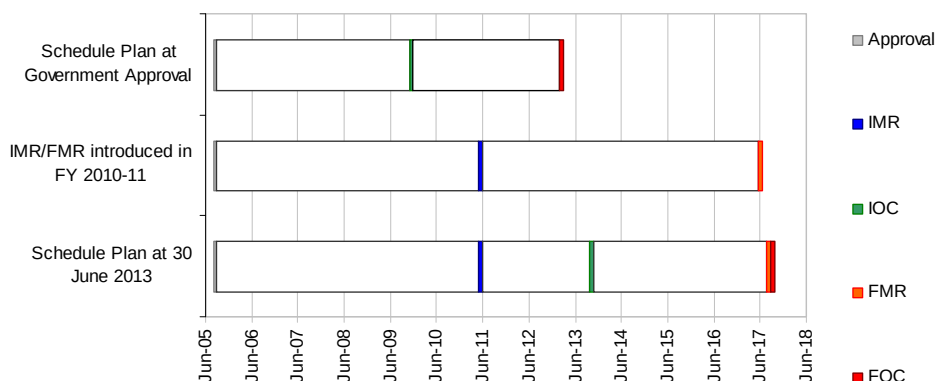
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Notes	
1	Variance in both the test readiness review and acceptance of the first upgraded ASMD ship is directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program.
2	Initially the variance in the acceptance of the first upgraded ASMD ship is directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program. As part of the RCI process it was agreed by Navy, Capability Development Group and DMO to move Initial Operational Capability (IOC) until after PAR had been proven against Super Sonic Targets.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

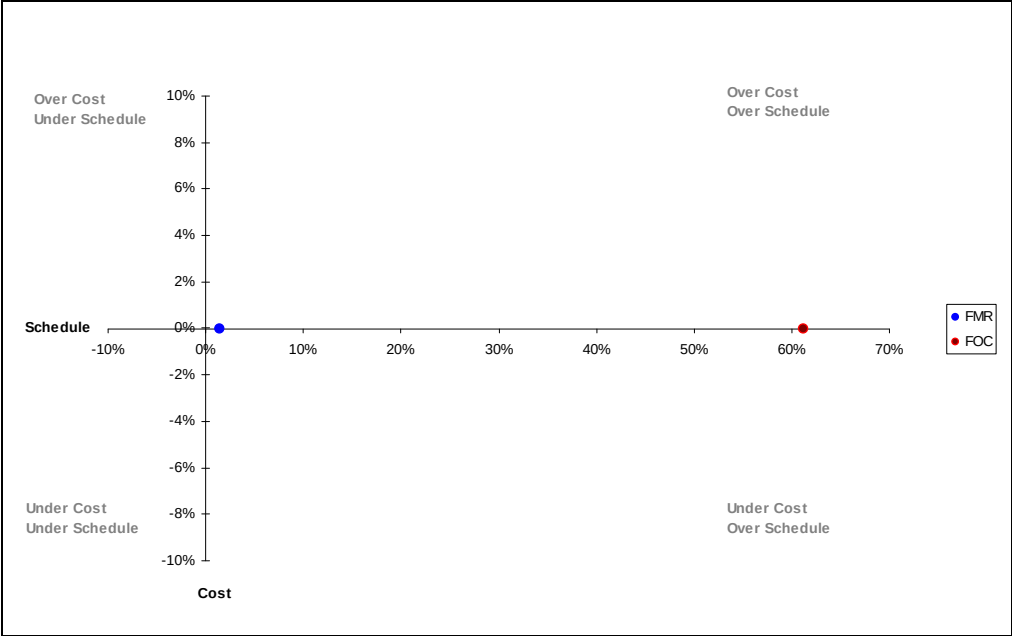
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Jun 11	N/A	N/A
Initial Operational Capability (IOC)	Dec 09	Nov 13	47	Variance is directly linked to updated Materiel Acquisition Agreement which moved IOC until after PAR System had been proven against Super Sonic Targets.
Final Materiel Release (FMR)	Jul 17	Sep 17	2	Variance is due to approval of ships 2-8 by Government.
Final Operational Capability (FOC)	Mar 13	Oct 17	55	Variance is directly linked to the change of acquisition strategy - movement from a one plus seven ship program to an eight ship program.

Schedule Status at 30 June 2013



Section 4 – Project Cost and Schedule Status

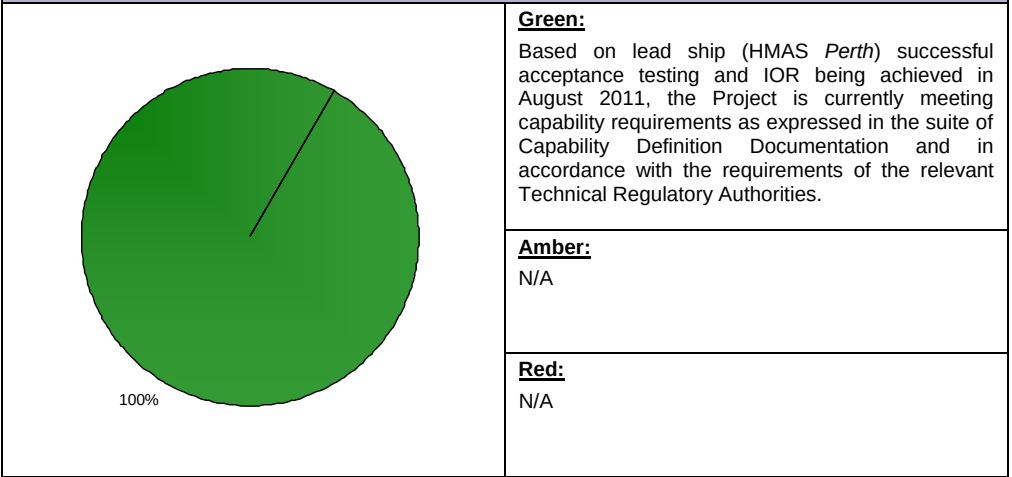
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

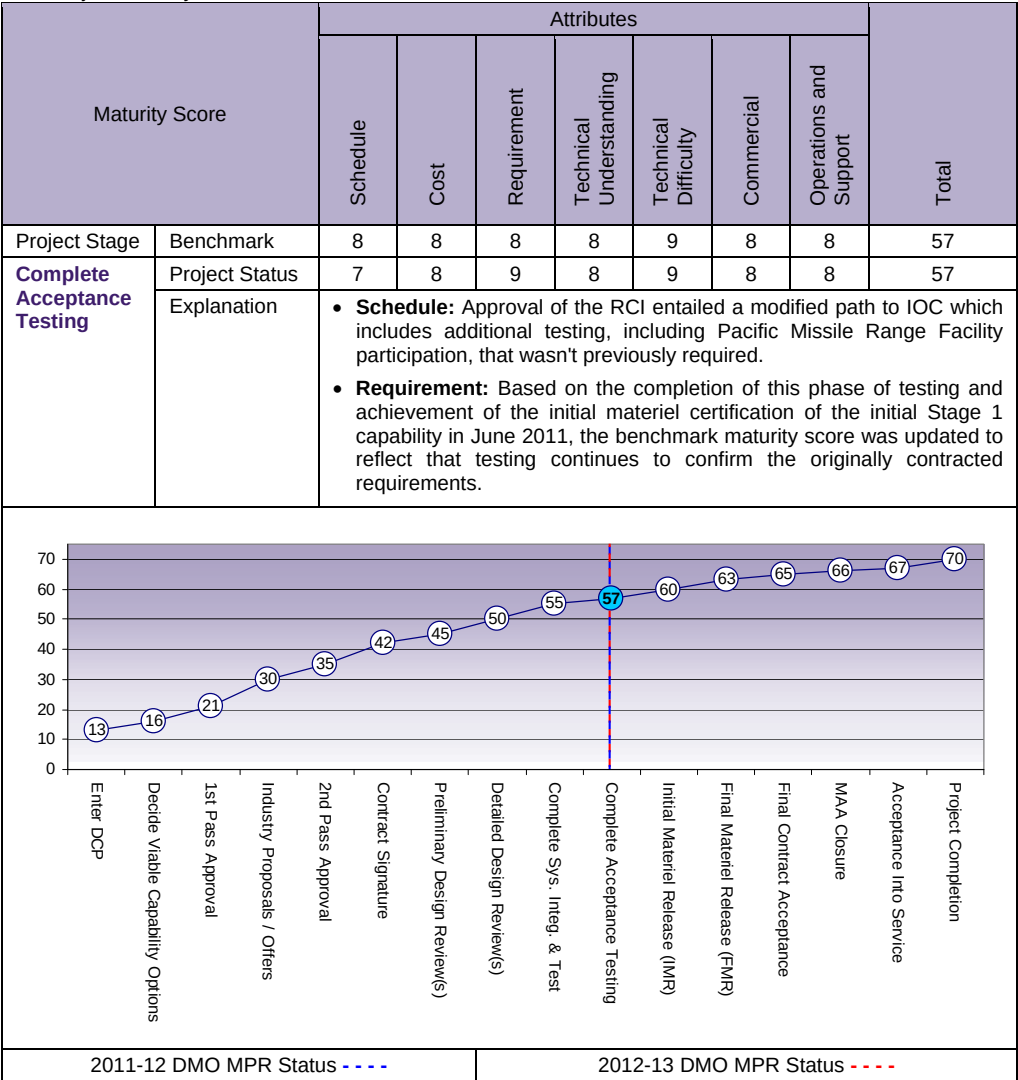
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the phased array radar will not meet the required functional performance specifications and its integration complexity into the upgraded ANZAC Combat Management System may be underestimated.	Project has developed a Confidence Level Demonstration Program that has been actively demonstrating the functional performance of the phased array radar since November 2007 utilising a land based test site that has been established at the CEA premises (Fyshwick, ACT). These tests continue to provide evidence that the PAR System is meeting the expected functional performance specifications and is able to integrate with the upgraded ANZAC Combat Management System. Successful completion of acceptance testing for HMAS <i>Perth</i> has seen the Stage 1 capability of the phased array radar technology achieve IOR; however this risk will not be retired until all capability is realised, following the Stage 2 software upgrade in late 2013.
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.	This has been mitigated by a forward purchase of critical components. Introduced under the Follow On Support Contract in October 2012, the Commonwealth introduced a Contractor acquisition obsolescence monitoring program that advises of component obsolescence and any requirement to procure. This risk has now been retired.
There is a risk that indices used in the prime contract, particularly labour rates, may exceed current predictions.	This risk is currently considered manageable, but is being monitored closely by the project. Commonwealth to work with industry to manage impacts of increased costs flow-on from increases in labour and overhead costs for all contracts associated with ASMD.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
There is a chance of an inability to resource the ASMD Project correctly (includes availability, conflicts, personnel, training and quality (CoA, CEA, ANZAC IMS, Industry, Test and Trials).	Planning of resource profiles against known constraints and schedules using close liaison with Navy through ANZAC Systems Program Office (SPO), and with our key industry participants.
There is a chance of unplanned work being activated during an ASMD upgrade period such as emergent work arising from planned ASMD installation activities, other maintenance activities and unplanned work scheduled during the ASMD installation work period.	The project and ANZAC SPO engineering group are actively managing the introduction of additional work packages into the ASMD upgrade period, with priority on maintaining the approved ASMD schedule.

6.2 Major Project Issues

Description	Remedial Action
N/A	N/A

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that technically complex developmental projects that have high levels of risk as part of the new system or integration of the new system into existing systems, demands that a prototype (lead platform) be agreed up-front and used for proving the capability before agreeing to additional platforms.	First of Type Equipment
Adequate communication between, and engagement of, critical stakeholders to ensure that a common understanding of Project status is maintained.	Governance

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13–Jun 13) AVM Chris Deeble (Acting Jun 13–current)
Division Head	RADM Peter Marshall, RAN (to Dec 12) RADM Mark Purcell (Dec 12–current)
Branch Head	CDRE Michael Houghton, RAN
Project Director / Manager	Mr John Runge (to Sep 12) Mr Mark Simmonds (Sep 12–current)

Project Data Summary Sheet¹⁷⁴

Project Name	HIGH FREQUENCY MODERNISATION
Project Number	JP 2043 Phase 3A
First Year Reported in the MPR	2007-08
Capability Type	Upgrade
Service	Joint Services
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Aug 96
Total Approved Budget (Current)	\$580.1m
2012-13 Budget	\$4.2m
Project Stage	Complete Acceptance Testing
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The JP 2043 Phase 3A project provides for the procurement of a Modernised High Frequency (HF) Communications System for Defence long-range communications. The Fixed Network component comprises four HF stations in the Riverina, Townsville, Darwin and North West Cape areas together with primary and backup Network Management Facilities in Canberra. The project was also to provide upgrades to selected Australian Defence Force (ADF) sea, land and air mobile platforms to make them compatible with the capabilities of the modernised network. As a result of the May 2012 Budget decisions, no further mobile platform upgrades will be undertaken under JP 2043 Phase 3A.

The Fixed Network capability has been provided in two major stages, Core and Final. The Core System replaced the prior Navy and Air Force HF systems from November 2004 with the Final System taking over support to ADF operations since **October 2009**. **The Null Steering Signal Enhancement (Nullarbor) capability will continue as programmed along with work to address obsolescence issues resulting from delays to delivery of the Final System.**

1.2 Current Status

Cost Performance

In-year

The in-year underspend can be attributed to the delivery of a detailed schedule for IT Refresh Payment Milestones which identified a greater than anticipated spread into 2013-14 and on-going delays in Nullarbor negotiations that led to the initial milestone slipping into 2013-14.

Project Financial Assurance Statement

As at 30 June 2013, project JP 2043 Phase 3A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

174 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

The Request for Tender (RFT) for implementation of the Nullarbor capability was released in September 2011. Two tenders were received, which have undergone detailed evaluation. A preferred tenderer has been identified and contract negotiations **are currently underway**. Costs for this capability are expected to be achieved within budget estimates.

Schedule Performance

The project is working with Capability Development Group to implement a revised Materiel Acquisition Agreement (MAA) to remove the remaining mobiles scope from the Project.

Milestones for the delivery of the Nullarbor capability being negotiated fall within the current Final Operational Capability (FOC) period. Additionally, work to address obsolescence issues resulting from delays to final acceptance will be completed prior to FOC.

Materiel Capability Performance

Capability includes a Core System and the Final Defence HF Communications System (DHFCS).

Operators and maintenance personnel report a good degree of satisfaction with the Final Fixed Network System.

The Nullarbor scope and other work to address obsolescence issues resulting from delays to final acceptance are currently being progressed.

1.3 Project Context

Project Background

The Defence Communications Corporate Plan of May 1991 directed that existing ADF HF networks be rationalised and modernised. Satellite communications is now the primary system for high and medium data rate communication with mobile ADF platforms (Mobiles) such as ships, aircraft and vehicles, however HF provides a secure alternative means of long range communications for Satellite communications fitted platforms and a primary long-range communication capability for platforms not Satellite communications fitted. The HF Modernisation Project was established in May 1993 and originally envisaged four implementation phases:

- Phase 1 (completed 1994) – a preparatory phase including a Network Definition Study to determine the basic requirement and an Invitation to Register Interest process;
- Phase 2 (completed 1996) – a more detailed definition phase involving parallel Project Definition Studies undertaken by short-listed Phase 1 companies following a Request for Proposal process;
- Phase 3A (commenced 1997) – an implementation phase involving selection of the Prime Contractor through a restricted RFT process, provision of a modernised HF communication network and its follow-on support, and HF upgrades to an initial range of Mobiles; and
- Phase 3B (cancelled 1999) – an implementation Phase involving HF upgrades to selected remaining Mobiles.

The Phase 3A Prime Contract was signed in December 1997 with Boeing Australia (now Boeing Defence Australia).

The Prime Contract has undergone several major amendments and currently provides for the implementation in two stages:

- a Core System (accepted October 2004), to provide an upgraded Fixed Network having a capability no less than that provided by the networks being replaced; and
- a Final System (accepted April 2010) including enhanced features for the upgraded Fixed Network and a Mobiles Upgrade component.

As reflected in the 2010-11 MPR, project approval provided for 87 platforms to be upgraded. The Prime Contract was originally scoped for First-of-Type installations and Upgrade Modification Kits for a total of 56 Platforms. However, amendments made in 2004 reduced the Contract scope to a single First-of-Type Upgrade (CH47 Chinook helicopter), five HF Upgrade Kits for follow-on Chinook installations, plus two Generic HF Upgrade Systems. The Generic Systems were to be used to demonstrate functional performance and to verify the suitability of System software and hardware components for platform use prior to implementation of Mobiles upgrades. The Chinook platform upgrade was subsequently removed from the prime contract scope due to no aircraft being available for upgrade.

In the Budget of May 2012, the Government directed that elements of the mobiles program not in contract be removed from JP 2043 Phase 3A scope, which reduced the project budget by \$91.1m. As a result, only the Blackhawk mobile program **continued** under JP 2043 Phase 3A; this **provided a standard Automatic Link Establishment upgrade to 22** of the 35 Blackhawk mobile platform upgrades.

The Nullarbor capability and work to address obsolescence issues resulting from delays to final acceptance will continue as programmed. The Nullarbor package of work has been developed and will be installed and integrated using an independent contract to the Prime Contract. Planned delivery date is by end 2015.

Project Uniqueness

The HF Modernisation Project is a complex software intensive and high risk project involving geographically diverse sites at five major locations across Australia. Implementation of the Fixed Network has involved civil infrastructure development, electrical power generation and transmission, telecommunications infrastructure extension, communications system hardware and antenna installation. It has involved the engineering disciplines of systems engineering, software development, system design and integration, system test and evaluation.

Because of the complex nature of the project, Integrated Product Development Teams which included contractor and Commonwealth personnel were established. These provided project insight and reduced risk, particularly in the important areas of requirements clarification, systems engineering and acceptance, test and evaluation. The System provided is designed to be one of the most advanced of its type in the world.

Project Major Challenges The project is now focused on the Nullarbor capability . Commercial negotiations are causing significant delays in entering into a contract with the preferred tenderer which is directly impacting on delivery of the FOC.
Other Current Projects / Sub-Projects N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2069 Phase 2 High Grade Cryptographic Equipment	JP 2069 is a multi phased project to modernise Defence's high grade cryptographic equipment.	JP 2069 will provide cryptographic equipment to be integrated into the DHFCS which was procured under JP 2043.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Aug 96	Original Approved	505.0	
Jul 98	Real Variation – Transfers	2.3	1
Feb 99	Real Variation – Transfers	0.1	1
Feb 99	Real Variation – Scope	11.0	2
May 02	Real Variation – Transfers	0.9	3
Feb 03	Real Variation – Transfers	(6.1)	4
May 03	Real Variation – Transfers	(2.0)	5
Aug 04	Real Variation – Budgetary Adjustments	(0.2)	6
Aug 05	Real Variation – Budgetary Adjustments	(0.7)	7
May 12	Real Variation – Scope decrease	(91.1)	8
		(85.8)	
Jul 10	Price Indexation	148.1	9
Jun 13	Exchange Variation	12.8	
Jun 13	Total Budget	580.1	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – Boeing Defence Australia	(358.6)	10
	Other Contract Payments / Internal Expenses	(79.7)	
		(438.3)	
FY to Jun 13	Contract Expenditure – Boeing Defence Australia	(0.5)	11
	Other Contract Payments / Internal Expenses	(2.7)	
		(3.2)	
Jun 13	Total Expenditure	(441.5)	
Remaining Budget			
Jun 13	Remaining Budget	138.6	
Notes			
1	Transfer from other phases of JP 2043.		
2	Scope change to include Wideband HF Direction Finding capability.		
3	Transfer for installation at Robertson.		
4	Transfer to Defence Support and Reform Group as contribution to construction of Defence Network Operations Centre and infrastructure support.		
5	Transfer to facilities.		
6	Administrative Savings harvest.		
7	Skilling Australia's Defence Industry harvest.		
8	In the Budget of May 2012, the government directed that elements of the mobiles program not in contract be removed from JP 2043 Phase 3A scope. Implementing the direction in relation to the mobiles program has reduced the project budget by \$91.1m.		
9	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$139.6m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$8.5m having been applied to the remaining life of the project.		

10	Other expenditure comprises \$18.1m for Government Furnished Equipment for use by the contractor, \$9.0m for Radios and ancillary Radio equipment for issue to users, \$7.8m for Harris Radio System, \$6.9m attributable to expenditure in DEFMIS, \$1.7m for Blackhawk Aircraft upgrades , \$1.2m for Rockwell Collins purchases, \$1.2m for Land Mobiles work , \$0.9m for Land HF Communications System prototype, \$0.7m for Nullarbor Phase 3A, \$0.6m for Nullarbor Capability and \$0.4m for Blackhawk Simulator . The remaining is attributable to operating expenditure, contractors, consultants, contingency and other capital expenditure not attributable to the aforementioned.
11	Other expenditure comprises: \$0.1m for Land mobiles work \$0.3m for Blackhawk Simulator, \$0.3m for Blackhawk Aircraft upgrades, \$1.3m for IT Refresh for DHFCS , and other minor contract expenditure.

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The detailed schedule for IT Refresh Payment Milestones identified a greater than anticipated spread (approximately \$0.5m) into 2013-14. Secondly, delays in Nullarbor negotiations has led to initial milestone (approximately \$0.5m) slipping into 2013-14.
			Overseas Industry	
		(0.5)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(0.5)	Commonwealth Delays	
4.2	3.2	(1.0)	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts						
Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Boeing Defence Australia	Dec 97	309.6	320.4	Variable	DEFPUR 101 v46	
Contractor	Quantities as at			Scope	Notes	
	Signature	30 Jun 13				
Boeing Defence Australia		1	1	HF Communications Network		
Major equipment received and quantities to 30 Jun 13						
Final System level of capability achieved.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Core System	Apr 98		Jun 98	2	1
	Final Systems (Fixed Network)	Jul 99		Jun 04	59	1
	Mobile Generic (In Contract)	Jul 99		Mar 05	68	1
Preliminary Design	Core System	Nov 98		Jan 00	14	2
	Final Systems (Fixed Network)	Jul 00		Aug 05	61	2
	Mobile Generic (In Contract)	Feb 00		Jul 05	65	2
Critical Design	Core System	Nov 99		Dec 00	13	3
	Final Systems (Fixed Network)	Dec 01		Nov 06	59	3
	Mobile Generic (In Contract)	Dec 02		Nov 06	47	3
Notes						
1	System Requirements Review delayed due to requirements instability which was acknowledged by the June 1999 Deed of Agreement.					
2	Preliminary Design Review: Requirements instability & scope changes.					

Project Data Summary Sheets

ANAO Report No.12 2013–14
2012–13 Major Projects Report

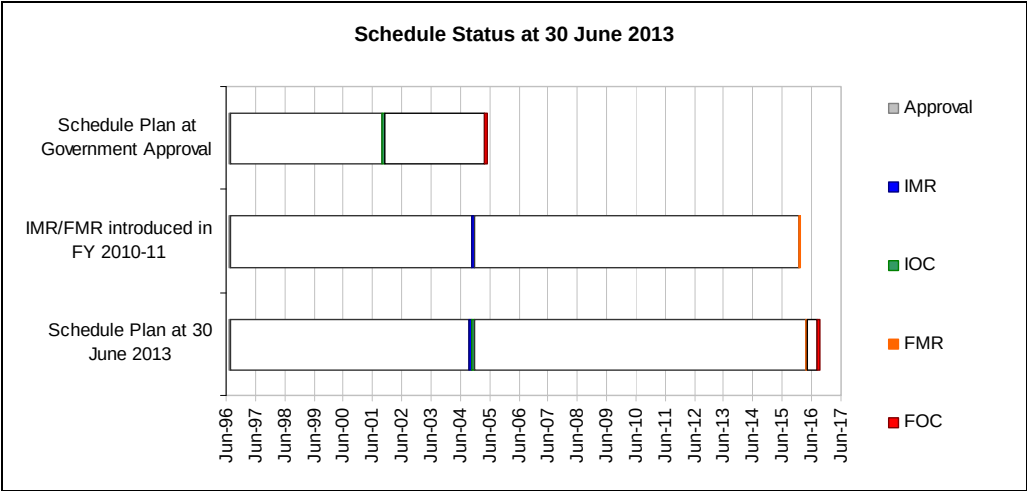
3	Critical Design Review Final Systems and Mobile: Contractor delays with software development and system integration design.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Final System (Fixed Network)	Sep 03		May 08	56	2
Acceptance	Core System	Mar 01		Jun 04	39	1
	DMO Acceptance – Core System	Nov 01		Oct 04	35	1
	Final System (Fixed Network)	Feb 04		Apr 10	74	2
	DMO Acceptance – Final System	May 04		Apr 10	71	2
	Generic Mobiles	Dec 03		Dec 09	72	2
Notes						
1	Core System: Contractor delays with software development and system instability.					
2	Final Systems and Mobiles: Contractor delays with software development, resource shortages and technical reviews.					

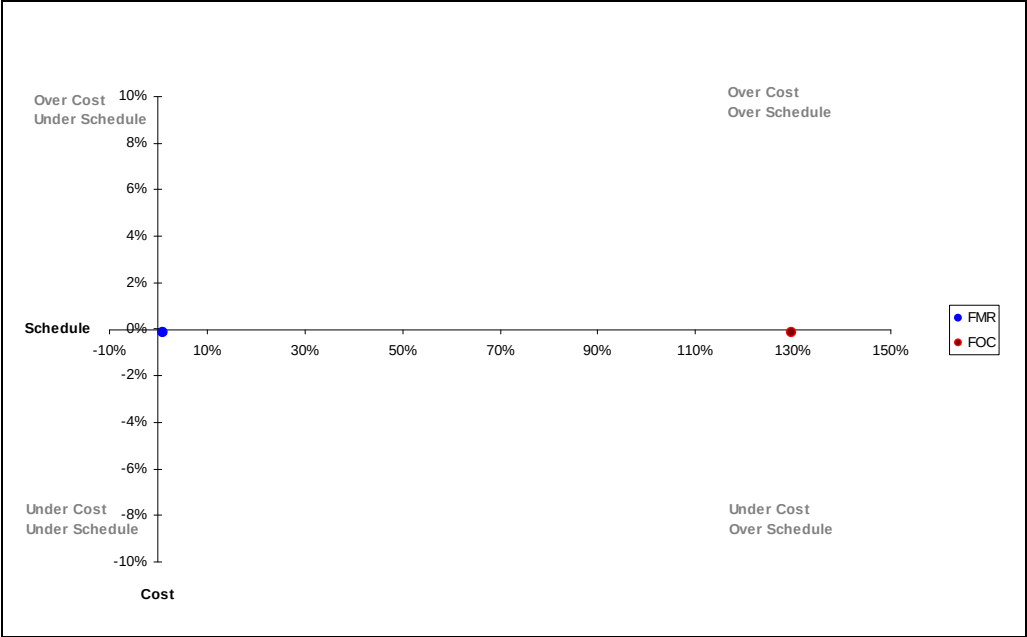
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Nov 04	N/A	
Initial Operational Capability (IOC) – Core System	Nov 01	Nov 04	36	Variance due to Contractor delays with software development and system instability. Core System supported operations until IOC of Final System. No formal Operational Release, leading to FOC, was conducted on the Core System.
IOC – Final System	May 04	Oct 09	65	Contractor delays with software development and system instability. Deferral of operational capability.
Final Materiel Release (FMR)	Feb 16	Apr 16	2	The forecast FMR is based upon the current MAA and remains subject to negotiations and date of contract commencement.
Final Operational Capability (FOC)	May 05	Sep 16	136	Delays in IOC led to consequent delays in FOC. The forecast FOC is based upon the current MAA and remains subject to negotiations and date of contract commencement.



Section 4 – Project Cost and Schedule Status

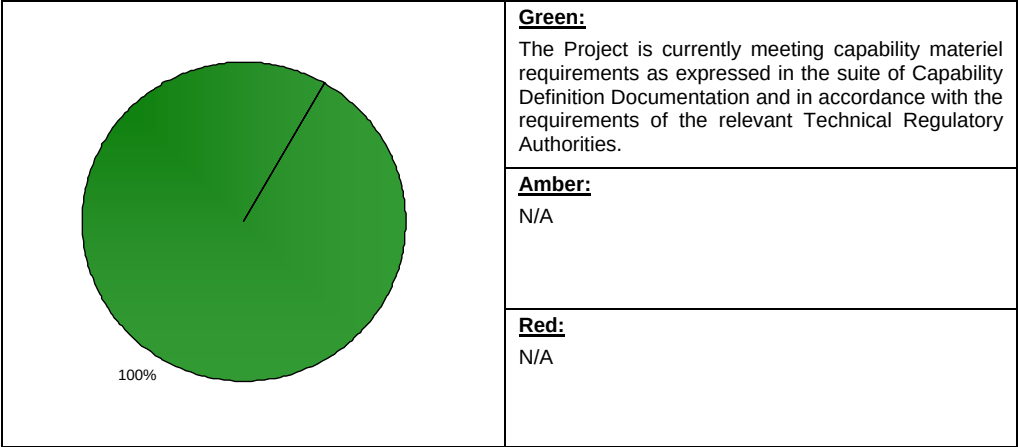
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

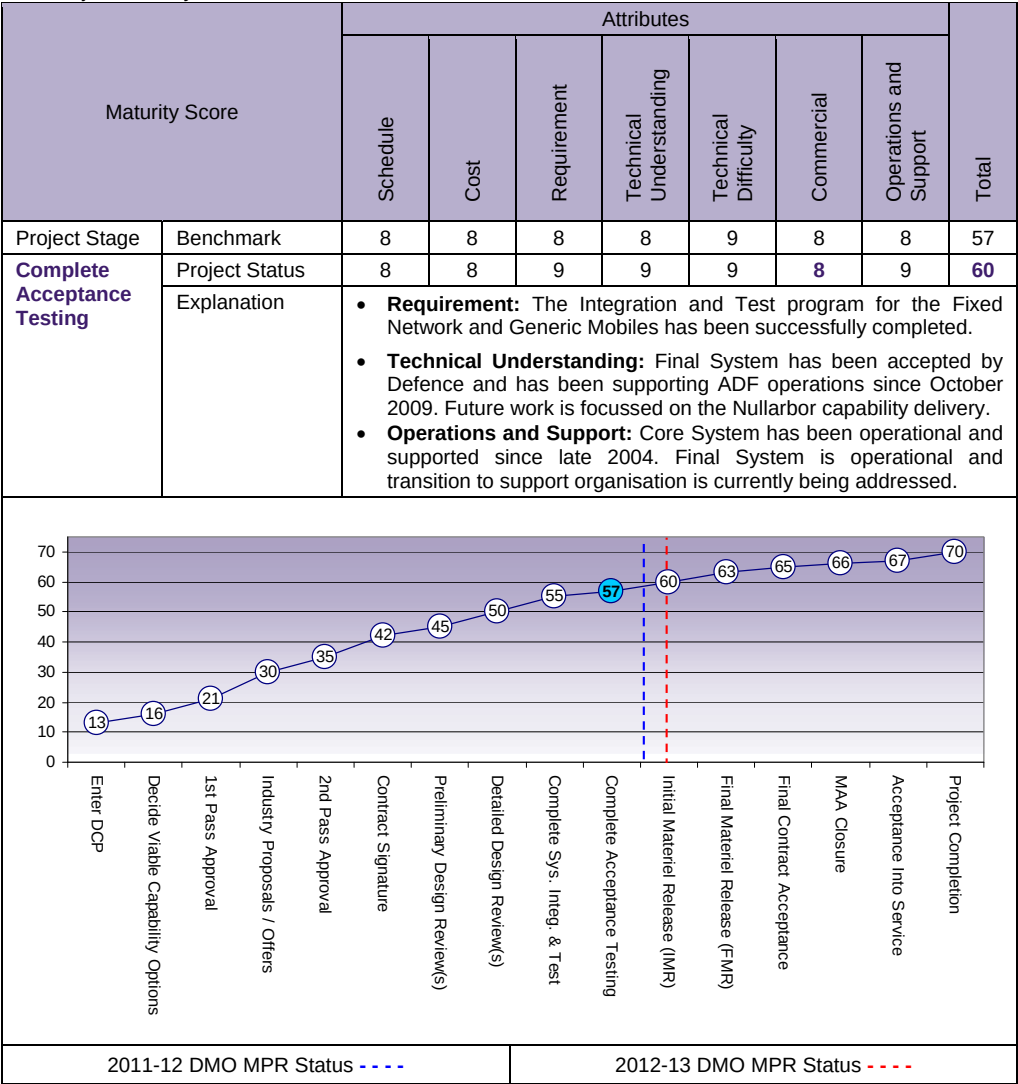
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the system delivered under Nullarbor Phase 4 may not integrate with the Modernised HF Communications System (MHFCS) without significant changes to the MHFCS.	Currently in the tender phase.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
There is a chance that equipment in the operational DHFCS may become obsolete prior to suitable replacement plans being established, funded and implemented.	An engineering task is in progress to identify the current supportability horizon for each of the DHFCS equipment items. This will inform decisions to procure additional spares or plan for upgrades to parts of the System.

6.2 Major Project Issues

Description	Remedial Action
N/A	N/A

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Risks associated with requirements instability, software development and systems engineering were known at the time of contract signature but in the light of subsequent events were clearly not adequately addressed in pre-contract negotiations. The experience underlines the importance of having well-defined and stable requirements at contract award, and of contractors having sound systems engineering and software development processes.	Requirements Management

A proper balance needs to be kept between proper engineering processes and contractor-perceived commercial imperatives to minimise risk that unrealistic technical programs will actually result in delays to the overall schedule.	Contract Management
Accessibility requirements should be agreed, specified and documented early in the contracting process to minimise risk of incurring excusable delays when access to the system to be upgraded is constrained due to operational reasons.	Contract Management Schedule Management
Best practice would suggest that for a capability acquisition that includes significant software development, a contract that allows for both fixed price elements as well as alternative cost structures which include appropriate controls, incentive and penalty models that can be applied to the highly developmental elements involving significant risk, may be appropriate. Milestone payments could be selected for those deliverables that have well defined objectives and the alternative payment method with incremental work packages could be applied to the software aspect of the project. This approach would require strict controls and metrics to limit the risk to the Commonwealth.	Contract Management
Substantial developments in the information technology field over the extended term of the project means that some elements of the system could now be delivered via off-the-shelf solutions or by other contemporary products, rather than attracting extended software development, thereby reducing risk, schedule and possibly cost. The proposed approach for capability development involving substantial software or software systems development over an extended period needs to be considered carefully to enable best use of emerging developments within appropriate risk, schedule and cost constraints.	First of Type Equipment Off-the-Shelf Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward (Jul 12–Feb 13, May 13–current) Mr Mark Devlin (Acting Mar 13–Apr 13)
Branch Head	Ms Myra Sefton
Project Director	Mr Anthony Burger

Project Data Summary Sheet¹⁷⁵

Project Name	ADDITIONAL MEDIUM LIFT HELICOPTERS
Project Number	AIR 9000 Phase 5C
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Sep 07
Government 2nd Pass Approval	Feb 10
Total Approved Budget (Current)	\$564.0m
2012-13 Budget	\$5.5m
Project Stage	Detailed Design Review
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

This project seeks to replace the extant Australian Defence Force (ADF) Medium Lift Helicopter capability of CH-47D Chinook helicopters with seven new modernised CH-47F Chinook helicopters, two Transportable Flight Proficiency Simulators (TFPS) and associated supporting systems.

1.2 Current Status

Cost Performance

In-year

This year the variation is primarily due to a minor overspend due foreign exchange rate variations relating to payments against a Foreign Military Sales (FMS) Case.

Project Financial Assurance Statement

As at 30 June 2013, Project AIR 9000 Phase 5C has reviewed the project's approved scope and budget, for those elements required to be delivered by the DMO. Having reviewed the current financial contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The Project successfully achieved Government Second Pass approval on schedule in February 2010. Shortly thereafter and ahead of schedule, a FMS case was signed with the United States (US) Government in March 2010.

Due to a Project budget re-phasing in 2012 and changes to the aircraft production schedule by the US Army, the Project schedule has undergone a complete rebaselining activity through late 2012 and early 2013. This activity is now complete with minor changes forecast for capability milestones. Capability Manager endorsement of these revised capability milestones is currently being sought and agreement is expected to be reached in the first quarter of 2013-14.

¹⁷⁵ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Materiel Capability Performance

The CH-47F Chinook helicopter being acquired is a Military-Off-The-Shelf (MOTS) procurement of a US specification CH-47F Chinook, with only minimal essential ADF unique modifications. The CH-47F Chinook has been employed operationally by the US Army for over **five** years and the capability has achieved outstanding results in Iraq and in particular the Afghanistan theatre, where its hot and high altitude performance are unmatched by any other rotary wing aircraft. The ADF has yet to take delivery of any aircraft; however, there are currently no impediments to the Project achieving the materiel capability performance requirements.

1.3 Project Context

Project Background

Support to the extant ADF CH-47D Chinook fleet is heavily leveraged off the US Army and supporting US industrial base. The US Army is **currently several** years into a program to replace its entire CH-47D fleet with the modernised CH-47F Chinook helicopter. Beyond 2017, adequate in service logistics and training support from the US Army for the ADF CH-47D will no longer be available. Procurement of the CH-47F will ensure the ongoing viability of a Medium Lift Helicopter capability to the ADF.

The ADF CH-47D fleet is small and loss or severe damage of a single aircraft would result in a significant capability loss. The growth in fleet size (to seven) will enhance the robustness of the ADF Medium Lift Helicopter capability.

With the current ADF CH-47D fleet operationally committed in Afghanistan, a MOTS procurement strategy via the government-government FMS program, offered the lowest risk capability solution in terms of project cost and schedule.

Following Government Second Pass in February 2010, the Commonwealth signed a FMS case with the US Government in March 2010. The US Army **has finalised its** contracts with suppliers for the provision of the aircraft and all other supporting systems specified in the FMS case. Boeing is the principal Original Equipment Manufacturer (OEM) for the CH-47F Chinook.

Project Uniqueness

The CH-47F aircraft sought through the Project is a MOTS US Army specification CH-47F Chinook helicopter. The only production configuration difference with the ADF aircraft is the inclusion of a rotor brake to allow for embarked amphibious operations. The rotor brake is a mature design that has been previously certified on other US Army and international variants of the Chinook.

A minimal number of ADF unique modifications will be installed on the aircraft following delivery. All of these modifications are mature designs which have previously been integrated and certified on the ADF CH-47D Chinook. Integration of these ADF modifications carries very low technical risk due to the high degree of commonality between the CH-47D and CH-47F aircraft.

The CH-47F is a modern digital aircraft. The Common Avionics Architecture System and Digital Automatic Flight Control are the two most significant upgrades included on the CH-47F Chinook over its predecessor. These systems have been certified by the US Army and Boeing and are currently in service.

The Project includes delivery of two TFPS to provide an organic ADF CH-47F simulator capability. Previous simulator training support for the CH-47D has been provided by the US Army.

The Cargo Helicopter Management Unit (CHMU) is the organisation responsible for acquiring the CH-47F capability. The CHMU is also responsible for the in-service support to the extant CH-47D capability as well as the CH-47F model following transition into service. Having the CHMU as the single acquisition and sustainment organisation provides synergistic benefits due to the high degree of commonality between the CH-47D and CH-47F aircraft.

Project Major Challenges

The current ADF CH-47D Chinook fleet is operationally committed in Afghanistan on Operation SLIPPER. Fielding a replacement CH-47F Chinook fleet in parallel with an operational deployment provides transition and capability realisation challenges. **These challenges are further exacerbated by the very small size of this niche capability and disproportionate effects of minor changes within each of the Fundamental Input to Capability elements.**

Whilst the FMS program affords a significant number of advantages, delegation of many project management and contracting functions to the US Government, coupled with restrictive communications protocols, provides some management challenges to the ADF Project team for this schedule critical Project.

The facilities program, which seeks to redevelop the operational unit maintenance and training facilities, has continued to delay. Based on the most current schedule, the facilities are likely to be mid way through construction at the time of aircraft delivery and the training complex will not be available at the time of simulator delivery. This will pose some significant challenges to the transition and introduction to service effort. While the schedule for completion of the facilities has not been agreed upon, the introduction into service strategies without completed facilities is being negotiated between key stakeholders.

Constraints on both workforce recruitment and overseas travel will continue to be major challenges for the Project for the foreseeable future. Whilst these challenges are currently being effectively managed, further constraints may start to adversely affect the Project.

Other Current Projects / Sub-Projects

Project AIR 9000 Phase 5C2: When AIR 9000 Phase 5C achieved Second Pass Approval in February 2010, a small element of the Project only achieved First Pass due to a lack of tender quality data. This element includes all upgrades to the CH-47F fielded by the US Army between delivery of the seventh ADF aircraft and achievement of Final Operational Capability (FOC). This element is referred to as Phase 5C2 and is scheduled for Government second pass in mid 2014.

Project AIR 9000 Chinook Capability Alignment Program (CH CAP): A pre-Second Pass project that seeks to provide continuous upgrades to the ADF CH-47F fleet to ensure configuration alignment is maintained with the US Army CH-47F fleet. The benefits of configuration alignment are primarily reduced cost of ownership through the ability to leverage off US Army CH-47F support arrangements, increased interoperability and reduced obsolescence risks/costs attributable to operating a small orphan fleet of aircraft. **It is intended that CH CAP will follow on seamlessly from AIR 9000 Phase 5C2.**

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Sep 07	Original Approved	3.4	1
Feb 10	Government Second Pass Approval	634.2	
		637.6	
Jul 10	Price Indexation	46.9	2
Jun 13	Exchange Variation	(120.5)	
Jun 13	Total Budget	564.0	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government (AT-B-UDK)	(86.7)	
	Contract Expenditure – US Government (AT-B-UGB)	(4.4)	
	Other Contract Payments / Internal Expenses	(4.2)	3
		(95.3)	
FY to Jun 13	Contract Expenditure – US Government (AT-B-UDK)	0.0	
	Contract Expenditure – US Government (AT-B-UGB)	(2.6)	
	Contract Expenditure – US Government (AT-B-BAH)	(2.9)	
	Other Contract Payments / Internal Expenses	(0.2)	3
		(5.7)	
Jun 13	Total Expenditure	(101.0)	
Jun 13	Remaining Budget	463.0	
Notes			
1	This project's original DMO budget amount is that prior to achieving Second Pass Government Approval.		
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$16.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$30.6m having been applied to the remaining life of the project.		
3	Major items of expenditure include development of crashworthy seats, Workforce and Operating expenses, Research and Development costs, office expenses, and travel and training expenses.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Variation relates to payments against FMS Case AT-B-BAH at signature.
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		0.2	FOREX Variation	
			Commonwealth Delays	
5.5	5.7	0.2	Total Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government (AT-B-UDK)	Mar 10	513.5	451.0	FMS	FMS	1
US Government (AT-B-UGB)	Dec 11	18.0	18.0	FMS	FMS	2
US Government (AT-B-BAH)	Jun 13	41.6	41.6	FMS	FMS	3
Notes						
1	FMS Case AT-B-UDK, Amendment 3, signed in June 13, reduced the overall case value through improved pricing definition and the removal of the provision of spares from the case to create FMS Case AT-B-BAH.					
2	FMS Case AT-B-UGB was created to allow greater management of the aircraft production retrofit activities required to ensure all aircraft are delivered at the same configuration as the final aircraft.					
3	FMS Case AT-B-BAH was created through the removal of the spares package from FMS Case AT-B-UDK. The creation of this case provides DMO with greater control over the procurement of spares required for the project.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
US Government (AT-B-UDK)	7	7	CH-47F	1		
US Government (AT-B-UGB)	N/A	N/A	CH-47F aircraft production retrofit kits			
US Government (AT-B-BAH)	N/A	N/A	Spare parts package			
Major equipment received and quantities to 30 Jun 13						
No equipment has been received as at 30 June 2013.						
Notes						
1	First aircraft delivery is expected in 2015.					

Section 3 – Schedule Performance

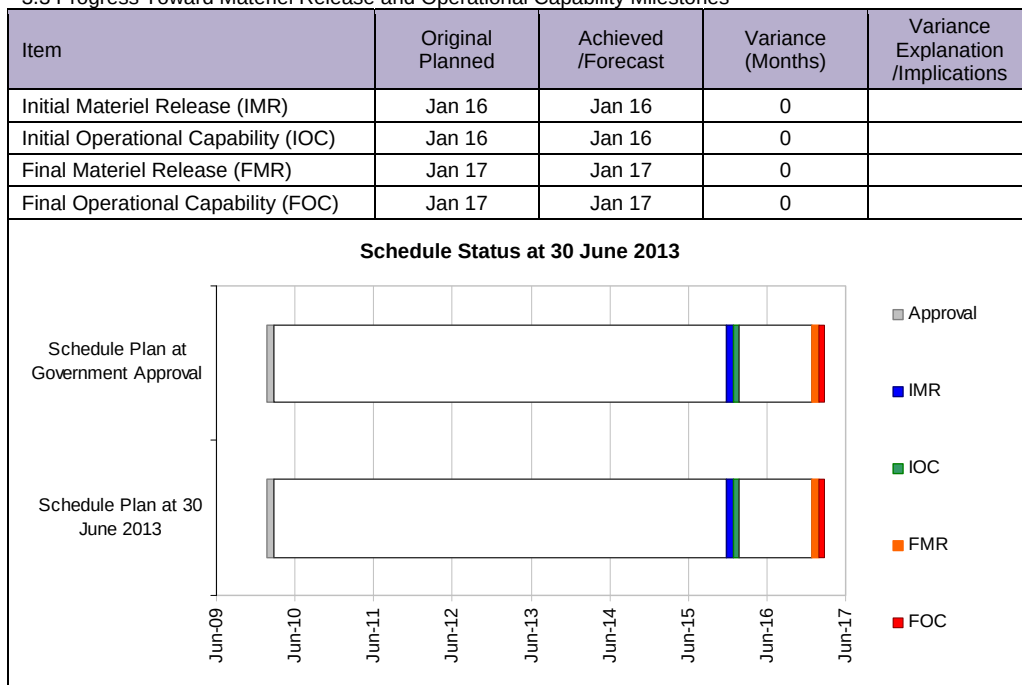
3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Feb 12	N/A	Apr 12	2	2
	ADF Unique Modifications	Jul 11	N/A	Jul 12	12	3
Preliminary Design	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Sep 12	N/A	Feb 13	5	2
	ADF Unique Modification	May 13	N/A	Dec 13	7	3
Critical Design	CH-47F Chinook helicopter	N/A	N/A	N/A	N/A	1
	Rotor Brake	Mar 13	N/A	Jun 13	3	2
	ADF Unique Modifications	Apr 14	N/A	Jun 14	2	3
Notes						
1	CH-47F Chinook helicopter system requirements and design reviews not required as it is a MOTS aircraft.					
2	Rotor brake design has been contracted to Boeing by the US Army. Rotor brake design is a mature design that has been previously certified on other US Army and international Chinook variants. Variance from previous report is associated with changes to aircraft production schedule.					
3	All ADF unique modifications except blade fold kit are mature designs that have been previously certified on the ADF CH-47D Chinook. Variance from previous report is associated with changes to aircraft delivery schedule.					

3.2 Contractor Test and Evaluation Progress

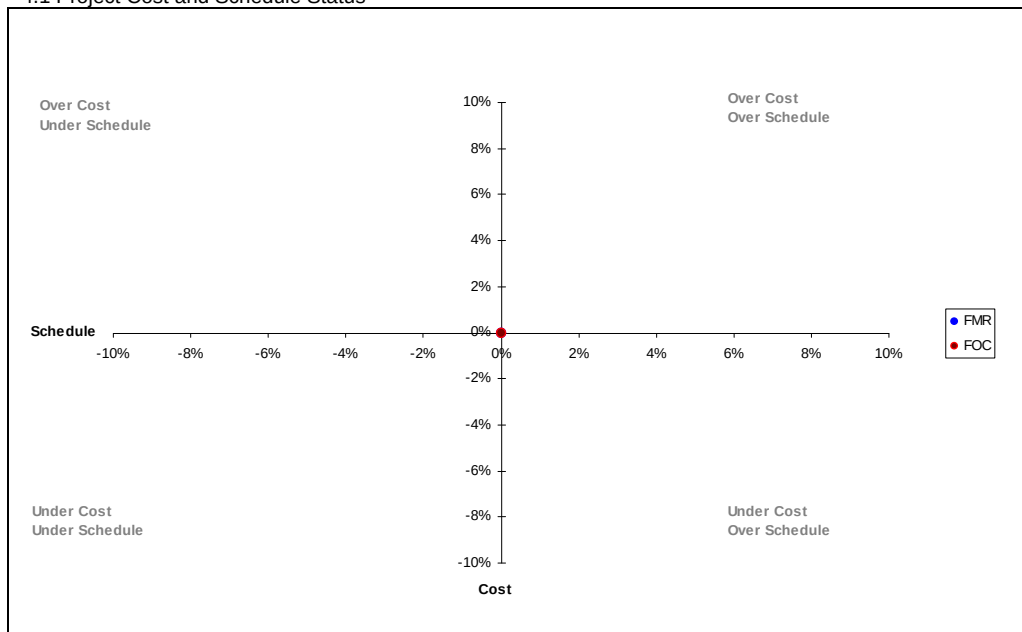
Test and Evaluation	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Rotor Brake	Nov 11 – Feb 14	N/A	Jul 14 – Oct 14	8	2
Acceptance	CH-47F Chinook helicopter	Mar 14 – Nov 15	N/A	Mar 15 – Aug 15	(3)	1
	Rotor Brake	Apr 14	N/A	Mar 15	11	2
Notes						
1	ADF acceptance dates provided by US Army. In September 2012 the US Army advised of a change to the aircraft acceptance dates that delayed early deliveries but brought forward later deliveries. US Army acceptance activities with Boeing will occur in the month prior to DMO acceptance.					
2	Rotor brake acceptance dates are currently estimates only based on information presented by Boeing and US Army at CDR. The variance is due to the delay of the initial aircraft deliveries.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones



Section 4 – Project Cost and Schedule Status

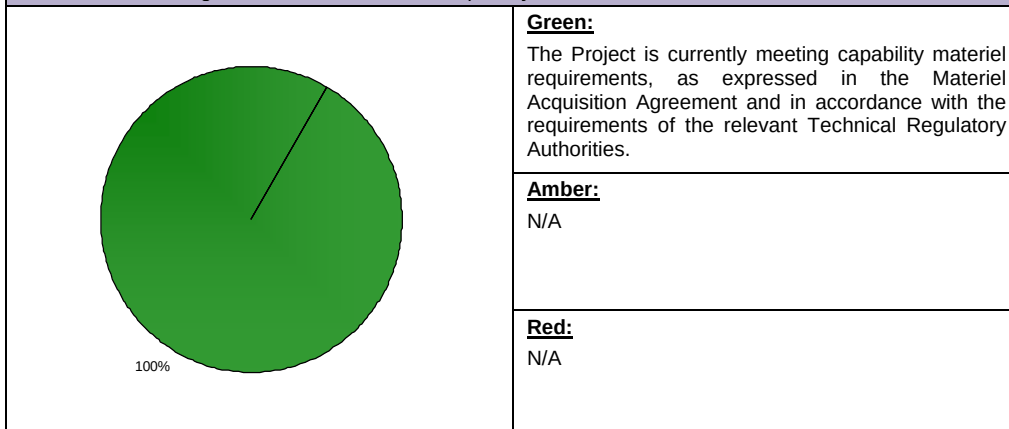
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)

Description	Remedial Action
There is a chance that the Australian Military Type Certification will be affected by differences / deficiencies in US certification requirements leading to an impact on schedule.	Access technical data and US Army Subject Matter Experts early to ensure any issues are identified and rectified in a timely manner. Continue engagement with other countries to leverage off their experience and certification efforts. Maintain configuration commonality with the US Army to prevent ADF unique certification efforts. Continue to engage ADF support agencies to ensure possible issues or testing requirements are identified early. Risk treatment strategies partially effective. Current residual risk remains moderate.
There is a chance that aircraft delivery will be affected by delays in aircraft production at Boeing leading to an impact on schedule.	Continued liaison with US Army on ADF delivery schedule and configuration requirements until US Army contract 'definitisation' with Boeing is completed and production slots are secured. Risk treatment strategies partially effective. Current residual risk remains moderate.
There is a chance that the Australian Transportable Flight Proficiency Simulator (TFPS) accreditation will be affected by lack of prior US qualification / certification leading to an impact on schedule.	TFPS assessment by ADF Subject Matter Experts conducted January 2011. US Army has been contracted to develop TFPS Australian Visual Database which will meet Australian accreditation requirements. Development of TFPS Qualification Plan detailing accreditation requirements and schedule. Risk treatment strategies partially effective. Current residual risk remains moderate.
There is a chance that the ongoing support of the ADF CH-47F will be affected by an inadequate transfer of technology and information leading to an impact on capability.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Risk treatment strategies partially effective. Current residual risk remains moderate.

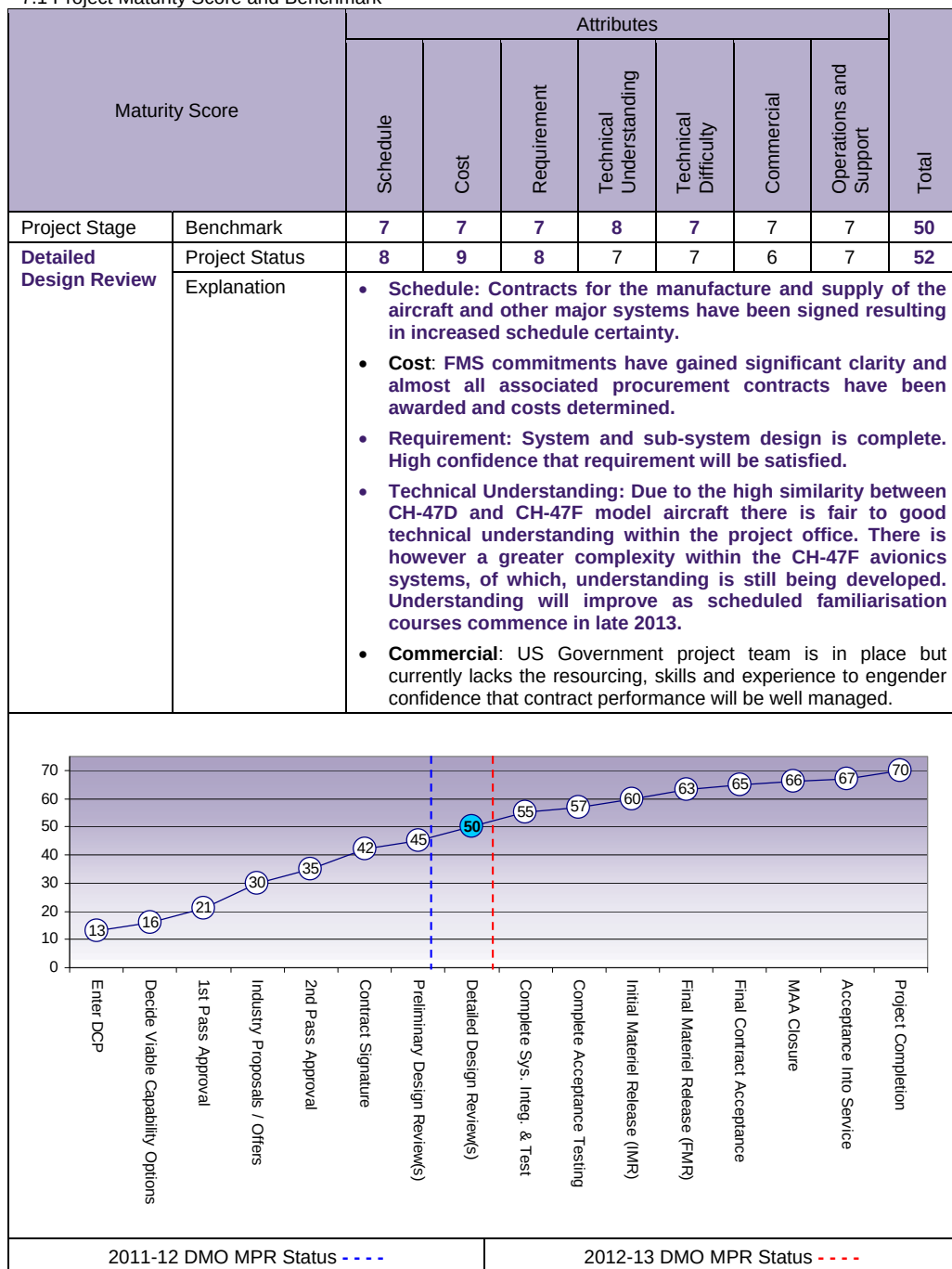
There is a chance that the project budget will be affected by prime equipment costs exceeding those provided in the Letter of Acceptance leading to an impact on cost.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Risk treatment strategies effective. Current residual risk remains low. Risk will be retired when next FMS case amendment is implemented.
There is a chance that project management and performance will be affected by overseas travel constraints that may lead to inadequate direct engagement between DMO project staff and the US Army, other US suppliers and stakeholders leading to an impact on cost, schedule, performance and reputation.	Early identification of overseas travel requirements and the development of robust business cases for travel. Raising risks where overseas travel is not approved and referring that risk higher in the DMO for acceptance or further treatment. Establishment of increased ADF Resident Project Team representation in the USA. Risk treatment strategies partially effective. Current residual risk remains major.
There is a chance that the Australian TFPS capability will be affected by a delay in Visual Database (VDb) completion leading to an impact on schedule and capability.	Continued close engagement with US Army on VDb contracting and development. Early and continued engagement with TFPS VDb developers by DMO project team through a program of design reviews. Procurement of an interim VDb solution to enable TFPS qualification and commencement of training. Risk treatment strategies effective. Current residual risk has been reduced to minor.
There is a chance that project execution will be significantly affected by the re-phasing of the Project budget post the 2012 Government budget leading to an impact on cost and schedule.	The Project has conducted detailed negotiation with the US Army to mitigate the risk to cost and schedule. Securing an adequate Project budget over the next three years that meets the minimum funding level required by the US Army is the only way to fully mitigate this risk. The negotiated minimum spend profile formed the basis of the Project's Additional Estimates bid. No further mitigation is possible until the Additional Estimates process is finalised and Project budget phasing adjusted. The Financial Year 2012-13 Additional Estimates process returned sufficient funding to the Project to continue without impact to cost or schedule. This risk has been retired.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
There is a chance that the project workforce and resourcing will be inadequate leading to an impact on schedule, cost and reputation.	Develop fully resourced schedule to identify true workforce requirements. Continue to push for critical Australian Public Service recruitments. Contract workforce as required to execute project. Risk treatment strategies partially effective. Current residual risk is moderate.

6.2 Major Project Issues

Description	Remedial Action
Inadequate performance in project management of the FMS case by the US Army is currently impacting on cost and schedule for the CH-47F Mission and Support Systems and may also impact on capability and reputation if this issue is not appropriately managed.	Continued performance monitoring of US Army project management efforts by the in country ADF Project Liaison Officer. Increased overseas travel to enable greater level of direct interaction between ADF and US Army. Maintain Resident Project Team, co-located with US Army implementing organisation to provide further oversight. Pursue increased resourcing and project management qualification of the US Army project team. Increased ADF oversight through monthly telecon meeting between Directors, quarterly Interim Program Reviews and establishment of Specialist Integrated Product Teams.
Inadequate resourcing of the US Army project team is currently impacting on cost and schedule for the CH-47F Mission and Support Systems and may also impact on capability and reputation if this issue is not appropriately managed.	Develop an integrated master schedule and conduct resource analysis and levelling. Conduct detailed review of resourcing with US Government and request additional resourcing as required to meet ADF program outputs. Increase funding on FMS case to procure additional resourcing as required. Increased size of ADF Resident Project Team co-located with US Army implementing organisation to provide further oversight and assist with critical aspects of program. US Army project team has recruited sufficient additional workforce and redistributed tasking. Issue resolved and retired.
Indecision regarding the future of Victoria Barracks Brisbane (VBB) accommodation, or the establishment of an alternate DMO office facility in Brisbane, is preventing staff transition planning for the collocation of DMO CH-47 sustainment staff to Brisbane. This issue is directly related to DMO's ability to provide efficient and effective support to Initial Operational Capability.	Progress VBB redevelopment design to 100% so that construction phase can be initiated quickly once redevelopment approval is given. Continued high level engagement between DMO and Defence Support and Reform Group (DSRG) to pursue a determination on the use of VBB or another site. Develop detailed schedule to identify available options; redevelop, new build or lease. DMO Accommodation Section to develop an accommodation and workforce transition plan within the limitations of the unknown facility location. The project office has relocated from VBB to new facilities at Gallipoli Barracks, Enoggera. Issue resolved and retired.
Delays to the commencement of the Parliamentary Works Committee review and approval process for the construction of maintenance facilities at 5 Aviation Regiment Townsville has resulted in an overlap between CH-47F Introduction into Service and the facilities construction phase. This issue will impact on the efficient and effective Introduction into Service of the CH-47F and may impact the schedule to Initial Operational Capability.	As co-sponsor (with Army and Capability Development Group) of the facilities program, DMO to maintain ongoing oversight of the facilities program managed by DSRG. Influence the DSRG project approval program to minimise potential delays to Parliamentary Works Committee approval through appropriate engagement at all levels. Implement effective decanting and construction phases to maximise construction efficiency whilst minimising impact to extant operations. Seek alternative temporary facilities for use during transition period.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Whilst the FMS program affords a number of advantages, it should be recognised that the transfer of a significant majority of ADF Project Management functions to the US Government implementing agency and the weak bargaining position of the Commonwealth, increases the project's exposure to risk (technical, schedule and cost). The resultant level of risk and complexity is often understated and the level of Commonwealth contract management involvement and oversight is very low in comparison to that mandated for other forms of procurement such as Direct Commercial Sale contracts. The early establishment of a robust project contract management regime between the project office and US Government implementing agency is essential to ensure an adequate level of contract management oversight.	Contract Management
A reasonable presence of project staff in the US is required for large or technically complex FMS procurements to enable the Commonwealth adequate insight, influence and progress reporting of the US Army and major OEM activities. In-country presence is required prior to Government second pass approval, particularly during FMS case development and negotiation.	Resourcing
Project Government approval schedules are independent to, and can be out of synch with military posting cycles. This can create significant extended vacancies within the Project workforce following Government Second Pass approval, including key positions such as Project Director and Project Manager.	Resourcing
The recruitment process lead times for candidates not already within the ADF or Australian Public Service can create significant extended vacancies within the Project workforce.	Resourcing
Where replacement capabilities are sought, significant synergetic benefits can be achieved through combining or co-locating the acquisition project team with the extant in-service support organisation.	Resourcing
Recognition of prior certification of MOTS equipment by other airworthiness and technical regulatory authorities should be maximised where possible in order to minimise technical and schedule risk. Early ADF regulator involvement in the formal recognition process is considered essential.	Off-the-shelf Equipment
Supporting science and technology outcome requirements will continue to evolve throughout the Project. These requirements need to be reviewed and updated regularly to ensure they remain relevant in the dynamic project environment.	Requirements Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Anthony Dalton
Branch Head	BRIG Andrew Mathewson
Project Director	GPCAPT David Scheul
Project Manager	LTCOL Tyron de Boer

Project Data Summary Sheet¹⁷⁶

Project Name	ARMIDALE CLASS PATROL BOAT
Project Number	SEA 1444 Phase 1
First Year Reported in the MPR	2007-08
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	Jun 01
Government 2nd Pass Approval	Oct 02
Total Approved Budget (Current)	\$537.2m
2012-13 Budget	\$0.6m
Project Stage	Acceptance Into Service
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

This project is to deliver 14 Armidale Class Patrol Boats (ACPB) and provide 15 years in-service support. In addition the project is providing funding to Defence Support and Reform Group (DSRG) to deliver patrol boat facilities at Cairns and Darwin.

The new patrol boats will improve the Navy's capability to intercept and apprehend vessels suspected of illegal fishing, quarantine, customs or immigration offences and will provide 3500 days availability with the scope to surge up to 600 days per annum.

1.2 Current Status

Cost Performance

In-year

Expenditure for Financial Year 2012-13 resulted in an underspend of \$0.2m against the in-year budget which was due to late submission and approval of Contract Change Proposals (CCP), and delays in the rendering of invoices by the Contractor.

Project Financial Assurance Statement

As at 30 June 2013, project SEA 1444 Phase 1 has reviewed the projects approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The ACPB Class achieved Final Operational Capability (FOC) on 18 October 2012.

¹⁷⁶ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Materiel Capability Performance

Closure of the Acquisition Phase of the project has commenced. The Project Management Stakeholder Group (PMSG) met on 28 November 2012 and approved the transfer of outstanding CCPs from the project to Sustainment.

1.3 Project Context

Project Background

In June 2001 Government required Defence to analyse private finance and direct purchase options and to recommend a preferred procurement strategy. Defence requested tenders for private finance and/or direct purchase. After Government approval of the preferred acquisition strategy, Stage 1 short-listing occurred, then a Stage 2 Request For Tender was released to the short-listed companies.

In June 2002 after the Stage 1 bids from nine tenderers were evaluated, Government decided not to proceed with private financing as there was no clear financial advantage in pursuing that option.

The Stage 2 Request For Tender for direct purchase closed in November 2002 and in August 2003 the Minister for Defence announced the preferred tenderer as Defence Maritime Services (DMS). In December 2003 Defence signed a contract with DMS for the supply and support of 12 ACPB. The scheduled delivery for the vessels was to be from May 2005 to June 2007.

In May 2005 further funding was provided for an additional two vessels to be acquired under project SEA 1444, to operate as part of the Government's Securing the North West Shelf policy.

All 14 vessels have been delivered and achieved Initial Operational Release (IOR) and commissioned into the Navy. The last vessel achieved IOR in November 2007 and commissioned in February 2008.

Project 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 the 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.

Project Major Challenges

The ACPB extended rectification program was successfully completed on schedule in December 2011 and all vessels have now achieved Operational Release (OR) and FOC on 18 October 2012, which represents the final project deliverable. Closure of the Acquisition Phase of the project has commenced; however, delay by the Prime Contractor in completing the remaining production work continues to impact the schedule. To facilitate timely closure the PMSG on 28 November 2012 approved the transfer of outstanding CCPs from projects to be funded through Contracted Services.

No further challenges remain for the project; however, system sustainment issues continue to affect operational performance.

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 now been installed on all vessels. However, problems continue to be experienced with the fuel supply system. This is a multi-faceted problem that continues to challenge the Prime Contractor and Original Equipment Manufacturer.

ACPB propulsion system reliability has been compromised by stern tube bearing design failures. These failures and the resultant withdrawal of boats from service for unscheduled maintenance have significantly impacted vessel availability for operational tasking. This issue was highlighted in the recent ACPB Seaworthiness Board and is the subject of Seaworthiness Corrective Action Report (SCAR) ACPB-11-01. The maintenance contractor, DMS Maritime, now has a rectification program in place scheduled for completion by end of 2013.

Other Current Projects / Sub-Projects

N/A

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Jun 02	Original Approved	436.8	
Jun 04	Real Variation – Budgetary Adjustment	2.6	1
Aug 04	Real Variation – Budgetary Adjustment	(0.4)	2
Nov 04	Real Variation – Transfer	(0.2)	3
Jun 05	Real Variation – Transfer	(1.8)	4
Jun 05	Real Variation – Scope	67.1	5
Aug 05	Real Variation – Budgetary Adjustment	(1.5)	6
Aug 08	Real Variation – Transfer	(27.8)	7
		38.0	
Jul 10	Price Indexation	74.5	8
Jun 13	Exchange Variation	(12.1)	
Jun 13	Total Budget	537.2	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – DMS	(435.4)	
	Contract Expenditure – BAE	(15.5)	
	Other Contract Payments / Internal Expenses	(37.0)	9
		(487.9)	
FY to Jun 13	Contract Expenditure – DMS	(0.4)	
		(0.4)	
Jun 13	Total Expenditure	(488.3)	
Jun 13	Remaining Budget	48.9	
Notes			
1	Real adjustment due to incorrect currency mix used at time of approval.		
2	Administrative Savings harvest.		
3	Transfer to Joint Materiel Agency for supply of medical allowance list.		
4	Joint Ammunition Logistic Organisation for Typhoon (gun) 22mm rounds.		
5	Increased scope for the number of Patrol Boats from 12 to 14.		
6	Skillings Australia's Defence Industry harvest and transfer to DSRG for office fit out in Darwin.		
7	Transfer to DSRG for upgrades of wharf facilities at Darwin and Cairns.		
8	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$72.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$1.6m having been applied to the remaining life of the project.		
9	Other expenditure comprises: Legal Services \$1.3m, Purchase of Rafael Typhoon Cannons \$5.3m, Purchase of Cryptographic equipment \$2.4m, Consultant Activities \$7.1m, Fuel Settlement Deed \$1.4m and other operating and capital expenditure not attributable to the aforementioned top two contracts.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Variance due to late submission and/or approval of CCPs and delays in the rendering of invoices by the Contractor.
			Overseas Industry	
		(0.2)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
0.6	0.4	(0.2)	Total Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
DMS	Dec 03	316.6	391.6	Variable	SMART 2000/ ASDEFCON	1
BAE	Sep 04	13.0	16.2	Fixed	SMART 2000/ ASDEFCON	2
Notes						
1	The majority of the variation in price is as a result of the additional 2 vessels. There have been other minor contract changes that have not had a significant impact on the price.					
2	The variation in price is as a result of the PRISM III acquisition and installations on the additional 2 vessels.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
DMS	12	14	Armidale Class Patrol Boats			
BAE	12	14	PRISM III System			
Major equipment received and quantities to 30 Jun 13						
All 14 boats accepted at Initial Operational Capability. Engineering and maintenance arrangements established.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	ACPB	Feb 04	N/A	Feb 04	0	
Critical Design	ACPB	May 04	N/A	Apr 04	(1)	

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Acceptance	ACPB 01 (HMAS ARMIDALE)	May 05	N/A	Jun 05	1	1
	ACPB 02 (HMAS LARRAKIA)	Oct 05	N/A	Nov 05	1	1
	ACPB 03 (HMAS BATHURST)	Nov 05	N/A	Dec 05	1	1
	ACPB 04 (HMAS ALBANY)	Mar 06	N/A	Apr 06	1	1
	ACPB 05 (HMAS PIRIE)	Mar 06	N/A	Apr 06	1	1
	ACPB 06 (HMAS MAITLAND)	Jun 06	N/A	Jun 06	0	
	ACPB 07 (HMAS ARARAT)	Jul 06	N/A	Jul 06	0	
	ACPB 08 (HMAS BROOME)	Oct 06	N/A	Oct 06	0	

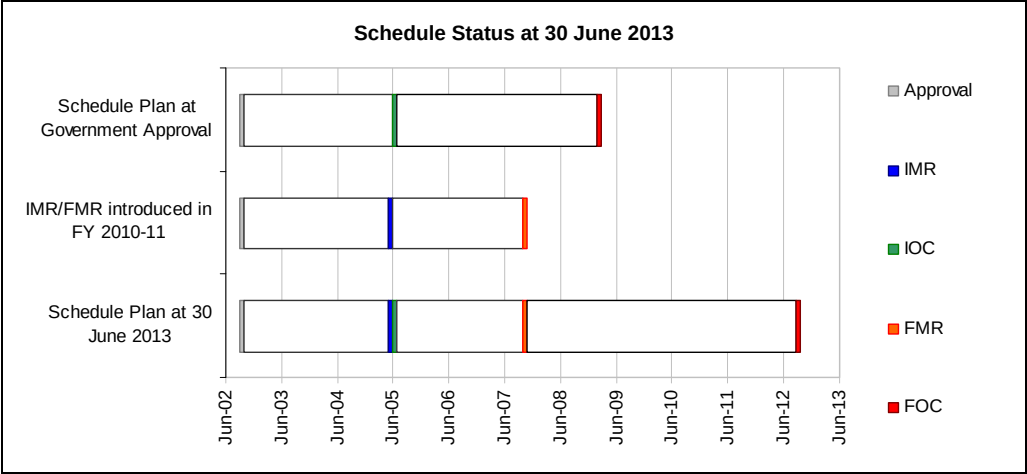
Project Data Summary Sheets

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	ACPB 09 (HMAS BUNDABERG)	Nov 06	N/A	Nov 06	0	
	ACPB 10 (HMAS WOLLONGONG)	Mar 07	N/A	Apr 07	1	2
	ACPB 11 (HMAS CHILDERS)	Mar 07	N/A	May 07	2	2
	ACPB 12 (HMAS LAUNCESTON)	Jun 07	N/A	Jul 07	1	2
	ACPB 13 (HMAS MARYBOROUGH)	Sep 07	N/A	Sep 07	0	
	ACPB 14 (HMAS GLENELG)	Nov 07	N/A	Nov 07	0	
Notes						
1	Boats 1-5 delayed due to contractor labour shortages - permissible delays.					
2	Boats 10-12 delayed due to configuration changes and change to delivery location – permissible delays, plus defect rectifications by the Contractor.					

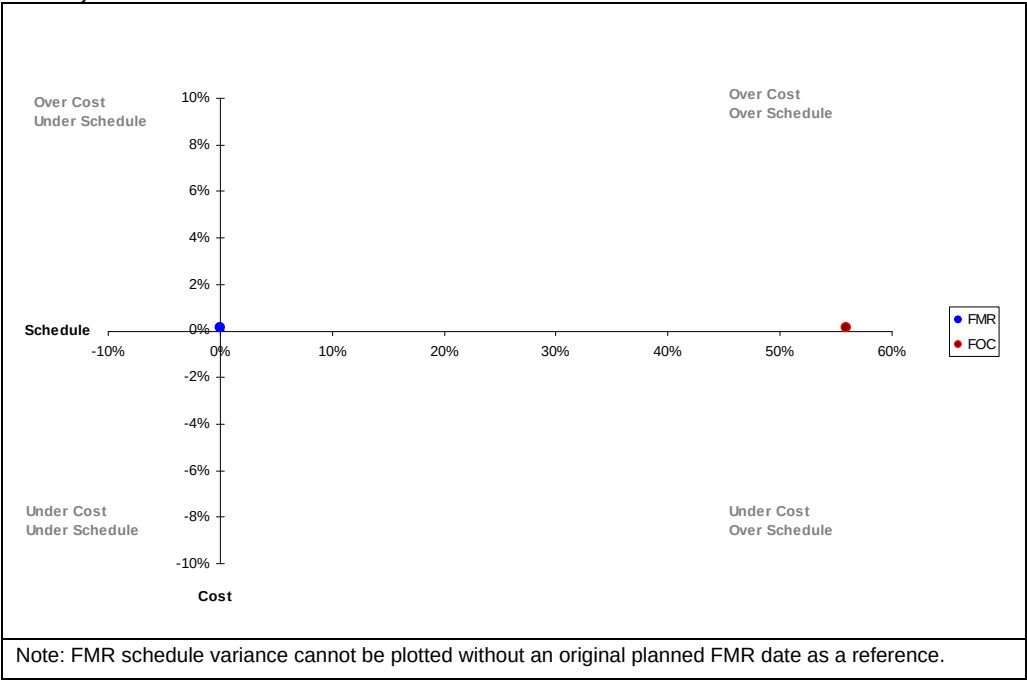
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Jun 05	N/A	Boats 1-5 delayed due to contractor labour shortages - permissible delays.
Initial Operational Capability (IOC)				
ACPB 01	N/A	Jul 05	N/A	The IOC date for each boat was not specified by Navy until after boat acceptance had been achieved.
ACPB 02	N/A	Jan 06	N/A	
ACPB 03	N/A	Feb 06	N/A	
ACPB 04	N/A	May 06	N/A	
ACPB 05	N/A	May 06	N/A	
ACPB 06	N/A	July 06	N/A	
ACPB 07	N/A	Aug 06	N/A	
ACPB 08	N/A	Nov 06	N/A	
ACPB 09	N/A	Nov 06	N/A	
ACPB 10	N/A	May 07	N/A	
ACPB 11	N/A	Jul 07	N/A	
ACPB 12	N/A	Aug 07	N/A	
ACPB 13	N/A	Oct 07	N/A	
ACPB 14	N/A	Nov 07	N/A	
Final Materiel Release (FMR)	N/A	Nov 07	N/A	
Final Operational Capability (FOC)	Mar 09	Oct 12	43	Delay in achieving FOC was due to the requirement to rectify outstanding latent defects to satisfy Navy OR requirements. The extended rectification program was completed on schedule in December 2011 bringing all vessels to the GLENELG product baseline. All vessels have now achieved OR and FOC was achieved on 18 October 2012.



Section 4 – Project Cost and Schedule Status

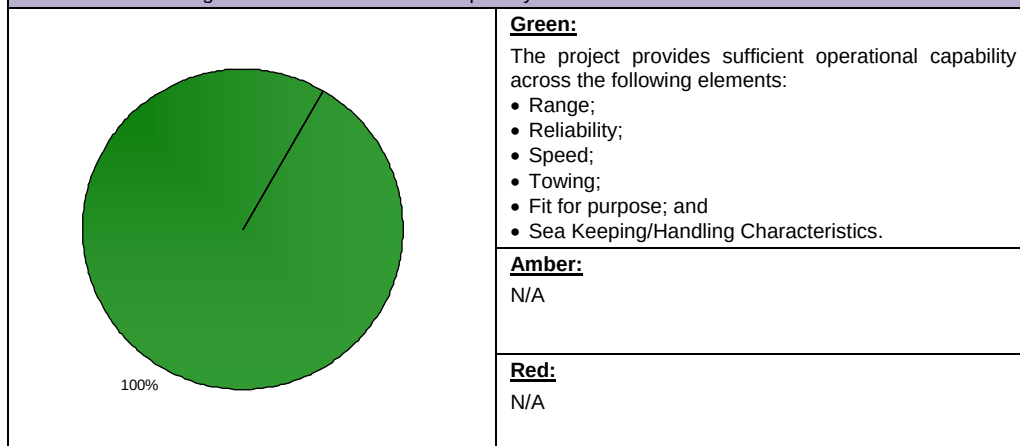
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Contractor inability to provide or support vessels throughout the life of the in-service phase of the contract (performance risk).	Actively manage and monitor performance under the contract through the partnering governance framework and Quarterly Progress Reviews and as necessary exercise contractual remedies.
There is a chance that the FOC for the ACPB Class will be affected by RAN Operational Commitments leading to an impact on cost and schedule.	This risk has been retired as the FOC was achieved in October 2012.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

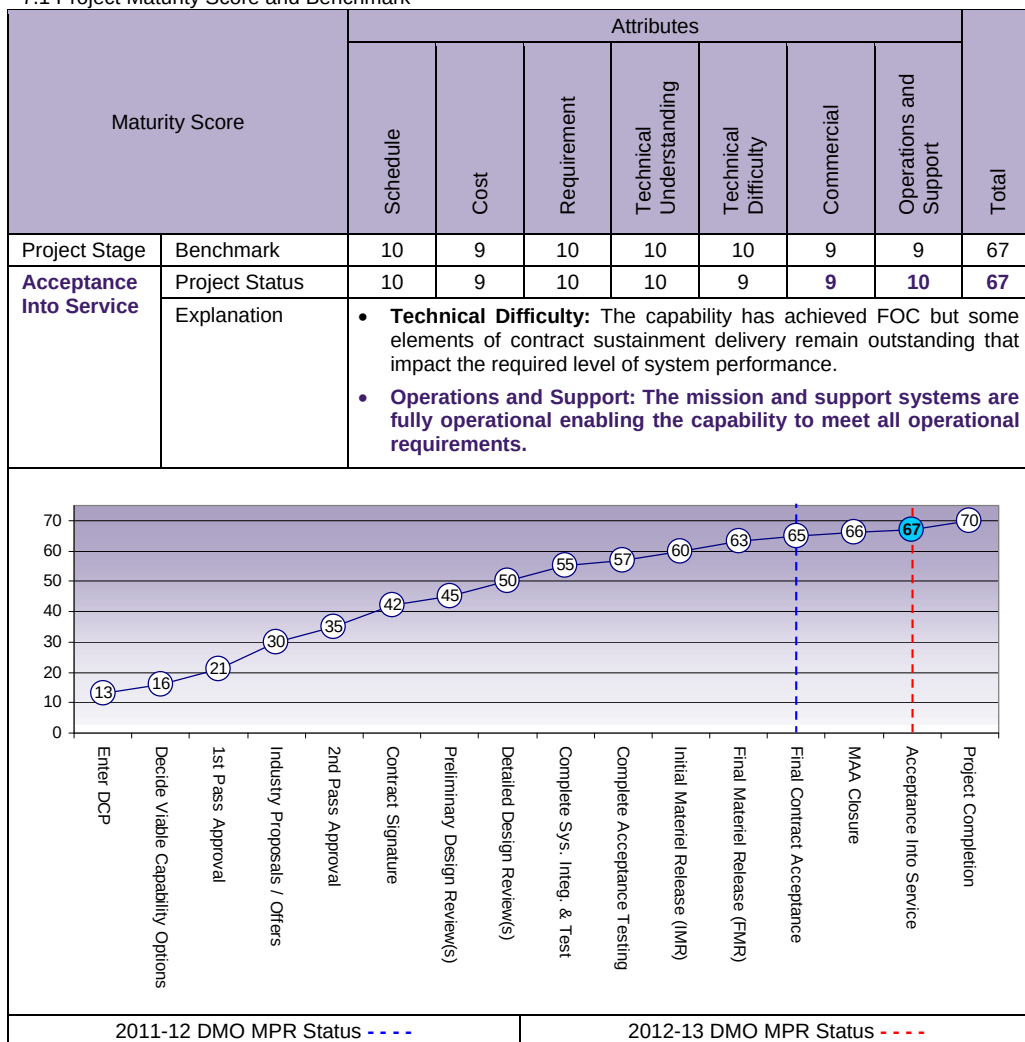
With the achievement of FOC as the final deliverable under SEA 1444 Phase 1, all issues are now managed under the sustainment phase of the project and are no longer applicable to Phase 1. Patrol Boat Systems Program Office Sustainment staff continue to manage the following issues.

Description	Remedial Action
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 were fitted to the fuel pumps to mitigate risk should a failure occur. Modified fuel oil purifier sets have now been fitted to all vessels. However, defects continue to be experienced with the fuel supply system leading to HP fuel pump failures. A trial conducted on HMAS MARYBOROUGH with modified fuel pumps demonstrated no value add to a different production run of pumps with changed bearings. This is a multi-faceted problem that remains under investigation.

Limitations on the use of ACPB Austere Accommodation due to Toxic Hazard.	All vessels have completed the Extended Rectification Program where modifications to exhaust systems, black/grey water systems and H ₂ S and CO sensors were implemented. This has enabled Navy to lift the restrictions on the use of the Austere Accommodation Compartment on all vessels for appropriately trained Defence personnel therefore, this issue has now been retired.
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 <i>MARYBOROUGH</i> in 2011; however, test results indicated that the modified system was still unable to meet the contracted ship specification. Due to the ongoing failure by AUSTAL to deliver an acceptable solution, DMS engaged a specialist hydraulic company to carryout system redesign and modifications. As these modifications were unable to deliver a compliant system the Commonwealth agreed to accept a modified system that delivers a performance that enables safe sea boat launch and recovery operations under operational conditions. The project has submitted to Navy a proposed lesser lift rate of 0.3m/sec at 4500kgs, which Navy has stipulated as the minimum performance required for operations. The proposal remains under consideration by Head Naval Engineering.
A range of evaluations conducted on the ACPB training delivered by the contractor have consistently highlighted that the training management regime does not satisfy the ACPB contract with Defence.	The remaining main deficiency is the continued reliance on the ACPB platform to conduct training and lack of simulation training facilities.
The reliability of the ACPB Propulsion System has been compromised by stern tube bearing failures which are significantly impacting on the vessels' availability.	Deficiencies in design of the ACPB Propulsion System are impacting reliability. This issue was highlighted in the ACPB Seaworthiness Board Report in September 2011 and is the subject of SCAR ACPB-11-01. DMS completed a detailed review of the ACPB shaft line and associated interfaces and engaged a specialist engineering contractor to conduct an independent investigation into the recent stern tube bearing failures and the high level of corrosion being experienced within stern tubes on the ACPB. Based on the results of the review, DMS has now developed an engineering package focusing on shaft alignment, bearing tolerances and lubricating water supply. The physical implementation of these modifications has been completed on six vessels with the final installation by the end of the third quarter of 2013. This issue is being managed under the ACPB Remediation Plan that is addressing a range of issues to improve ACPB availability.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
For a new or significantly modified design there will be a number of design changes emanating from initial sea trials. The aggressive delivery schedule for the ACPB did not allow time for changes from initial sea trials to be built into the follow-on build boats prior to their construction. This resulted in an evolving design baseline throughout the production phase that was not stabilised until after delivery of the last boat. Consequently the redesign, build, test and acceptance aspects of boats built after the first of class became unnecessarily complicated, expensive and inefficient. Time should be allowed after the first (or second depending on the size of the class) boat build to conduct sea trials and modify and stabilise the design as appropriate prior to the main production run.	First of Type Equipment

Failure at project inception to articulate, tailor and agree naval standards to be applied to a ship designed and built to commercial 'Classification Society' standards has resulted in considerable debate and potential cost increase.	Requirements Management
An acquisition strategy combining the acquisition and support of the fleet in one single contract rather than the traditional acquisition model followed by a separate support contract can lead to significant disputation and complications in closing out latent defects where the prime contractor is not also the builder. Invariably, once the capability is delivered and being operated and the contract is into the sustainment phase, there is a greater reluctance on the part of the prime contractor to progress rectification of build-related defects that may result in a cost to the contractor and disputation with the builder.	Contract Management
The ACPB In Service Support (ISS) contract is principally a 15 year fixed price contract with the option for a 5 year extension. Existing contract provisions provide no incentive to the contractor to improve or implement changes in the delivery of support activities that would deliver benefits/savings to both the contractor and the Commonwealth. In particular, there is no incentive to make savings over the life of the contract that would generate a reduction in the ISS Fee. Incentives need to be built into contracts beyond the acquisition phase.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb 13-Mar 13) Mr Michael Aylward (Acting Mar 13-Apr13) Mr Andrew Cawley (Acting May 13) AVM Chris Deeble (Acting Jun 13-current)
Division Head	RADM Peter Marshall (to Dec 12) RADM Mark Purcell (Dec 12-current)
Branch Head	Mr Alan Evans
Project Director	Mr Frank Kresse

Project Data Summary Sheet¹⁷⁷

Project Name	COLLINS REPLACEMENT COMBAT SYSTEM
Project Number	SEA 1439 Phase 4A
First Year Reported in the MPR	2007-08
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 02
Total Approved Budget (Current)	\$449.9m
2012-13 Budget	\$4.6m
Project Stage	Acceptance Into Service
Complexity	ACAT IV



Section 1 – Project Summary

1.1 Project Description

The SEA 1439 Phase 4A Replacement Combat System (RCS) project was established to provide each of the Royal Australian Navy (RAN) COLLINS Class submarines with the United States (US) Navy (USN) Tactical Command and Control System, minor improvements to the combat system augmentation sonar, and shore facilities for integration, testing and training. Shore based systems are located at the Submarine Training and Support Centre at HMA Submarine *STIRLING* (WA) and a reference laboratory in the US at the Naval Undersea Warfare Centre. The project required the development of system commonality between the RAN and USN.

1.2 Current Status

Cost Performance

In-year

This year the variation is due to an underspend due to delays with ASC Pty Ltd work, primarily surrounding HMA Submarine *COLLINS* Full Cycle Docking (FCD).

Project Financial Assurance Statement

As at 30 June 2013, project SEA 1439 Phase 4A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

Project 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 RCS schedule has also been impacted by emergent work during each submarine docking. The final boat installation is scheduled for completion in **2018**, with Final Materiel Release (FMR) in **2019**.

¹⁷⁷ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Materiel Capability Performance

The RCS baseline (CS04) installed in HMA Submarines *WALLER* and *FARNCOMB* was approved for Initial Operational Release (IOR) by Chief of Navy (CN) in May 2008 and September 2009 respectively. CN subsequently approved Operational Release (OR) of that baseline in December 2009. The capability delivered in *WALLER* and *FARNCOMB* is consistent with that identified in the project. Sonar towed array trials scheduled for *DECHAINEUX* were completed with OR of the COLLINS Towed Array Processor (CTAP) being awarded on 20 January 2011.

Installations and Harbour Acceptance Testing for the upgraded combat system baseline (CS05) installed in HMA Submarines *DECHAINEUX* and *SHEEAN* are complete. Installation of the upgraded baseline in HMA Submarine *RANKIN* is progressing consistent with the FCD schedule. Installation in HMA Submarine *COLLINS* will be completed in conjunction with the FCD program. The project schedule is dependent on the boat FCD program, consequently the completion date may vary. IOR of the upgraded baseline as installed in *DECHAINEUX*, scheduled for December 2010, was finalised by the project office in August 2010. With completion of the external review process IOR approval occurred on 8 March 2011.

IOR marks the point at which the RAN is satisfied that the capability is fit for purpose and when management passes from DMO to the RAN. Following IOR the capability enters a period of Navy Operational Test and Evaluation (OT&E) to determine the performance boundaries and if the capability is suitable for OR.

OR is the milestone which represents the In-Service date at which CN is satisfied that the equipment is in all respects ready for operational service.

1.3 Project Context

Explanation

Project Background

Risks associated with rapid technology change have been treated by adopting a project management strategy that aligns with the US continuous update program and its two-year update cycle.

The standard DMO acquisition approach was adapted to enable the project office to establish itself as prime contractor with a series of Integrated Project Teams working at various levels within DMO and industry. This role has required close collaborative relationships to be formed between the DMO, the USN and industry partners in Australia and the US.

In July 2001 the Minister for Defence terminated the original tender process for the COLLINS Class RCS.

In September 2002 the Government approved the project based on the procurement of the following off-the-shelf sub-systems:

- the US Tactical Command and Control sub-system, consisting of the Combat Control System and the Virginia Class Weapons Integration Panel, to be acquired by Foreign Military Sales (FMS);
- minor improvements to the sonar processing solution currently installed in HMA Ships *SHEEAN* and *DECHAINEUX* as part of the Combat System Augmentation initiative; and
- other system support infrastructure and project support.

The USN Tactical Command and Control System is being supplied under an Armaments Cooperative Project (ACP) which provides for system upgrades developed on a bi-annual basis. The project will provide one system baseline for the first two submarines and a later baseline for the remaining four submarines. These initial baselines will be upgraded at some later date as a sustainment activity.

Australian systems are being provided under a combination of contracts. The main Australian contractors include ASC Pty Ltd, Raytheon Australia, Thales Australia and Sonartech Atlas Pty Ltd. Installation is being undertaken in conjunction with SEA 1429 Phase 2 Heavyweight Torpedo at locations in South Australia and Western Australia. Installation in all submarines is coordinated with the FCD program.

The combat system capability enhancement required a significant change to submarine infrastructure that could only be achieved during a major docking. Furthermore, to ensure the required submarine availability was not impacted adversely and to work within the existing workforce at ASC Pty Ltd, it was necessary to couple the installation program to the existing submarine docking program. Although there are significant benefits in coupling the RCS installation schedule to the submarine docking program, that coupling has dictated the delivery schedule of the RCS capability.

Project Uniqueness

The Commonwealth has undertaken the functions of a prime systems integrator. This role placed additional pressure on the Commonwealth project team to manage and coordinate a number of separate contracts and ultimately the integration, installation and testing of the delivered products.

Participation in a Joint Development Program with the USN to introduce hardware and software upgrades for Tactical Command and Control System and implementing that evolving system baseline into RCS.

Project Data Summary Sheets

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Project Major Challenges

Changes to the submarine docking program challenge the completion of the RCS installation schedule. This is being managed by engaging with the RAN to maximise compatibility between the submarine docking cycle and installation schedules.

Other Current Projects / Sub-Projects

SEA 1439 Phases 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 other current phases, excluding project Phase 4A RCS are:

- Phase 3 Reliability and Sustainment Improvement;
- Phase 4B Weapon and Sensor Enhancement Program;
- **Phase 5B2 COLLINS Class Improvement Program; and**
- **Phase 6 Sonar Improvement Program.**

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1429 Phase 2 Replacement Heavyweight Torpedo System	To acquire a replacement Heavyweight Torpedo for the COLLINS class submarine to replace the USN Heavyweight Torpedo currently in service with the RAN.	Required to provide Heavyweight Torpedoes compatible with RCS.
SEA 1430 Phase 2A Navigation Display Systems	To provide Electronic Chart Display and Information Systems for the navigation of RAN ships and submarines. The project also delivers Navigation Display Systems to selected command and training shore establishments.	Navigation Display System installed in conjunction with RCS.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Sep 02	Original Approved	455.3	
May 03	Real Variation – Transfer	(0.9)	1
Aug 04	Real Variation – Budgetary Adjustments	(0.8)	2
		(1.7)	
Jul 10	Price Indexation	56.5	3
Jun 13	Exchange Variation	(60.1)	
Jun 13	Total Budget	450.0	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government (FMS)	(79.3)	4
	Contract Expenditure – US Government (ACP)	(58.6)	5
	Contract Expenditure – Raytheon Australia	(100.1)	
	Contract Expenditure – Thales Underwater Systems	(26.6)	
	Contract Expenditure – Sonartech Atlas	(26.8)	
	Other Contract Payments / Internal Expenses	(138.0)	6
		(429.4)	
FY to Jun 13	Contract Expenditure – US Government (ACP)	(0.4)	
	Contract Expenditure – Raytheon Australia	(0.2)	
	Other Contract Payments / Internal Expenses	(1.9)	7
		(2.5)	
Jun 13	Total Expenditure	(431.9)	
Jun 13	Remaining Budget	18.1	
Notes			
1	Transfer to the Defence Science Technology Organisation (DSTO).		
2	Administrative savings harvest.		
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$55.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$1.0 m having been applied to the remaining life of the project.		
4	The FMS case value is \$79.2m (written back from \$143.9m - see Note 1 in Section 2.3 below). The supplies remaining under the most significant FMS case would then be delivered under the ACP.		
5	The ACP is the main vehicle for supplying equipment and services for the Tactical Command and Control hardware and software development.		
6	Other expenditure of \$138.0m includes an amount of \$48.2m to ASC Pty Ltd for platform design and installation; \$10.2m to Engineering and Scientific Systems for engineering and testing support ; a total of \$32.9m on supplies and services provided by other Contractors. The remaining \$46.7m of expenditure comprises operating expenditure, consultants and contingency.		
7	The amount of \$1.9m is predominantly ASC Pty Ltd contract \$1.4m , with remainder as sundry contractor services.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	End of Year spend is lower than budgeted due to delays with ASC Pty Ltd work, primarily surrounding HMA Submarine COLLINS FCD.
			Overseas Industry	
		(2.1)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
4.6	2.5	(2.1)	Total Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 (current) \$m (Note 1)			
US Government (FMS)	Jun 03	143.9	79.2	Fixed	FMS	2
US Government (ACP)	Nov 04	92.7	121.0	Fixed	ACP	3
Raytheon Australia	Aug 03	53.9	101.6	Variable	ASDEFCON Strategic	4
Thales Underwater Systems	Oct 03	22.9	26.5	Variable	ASDEFCON Strategic	
Sonartech Atlas	Jun 03	22.5	35.8	Variable	ASDEFCON Strategic	
Notes						
1	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.					
2	Included on-going involvement in the Tactical Command and Control hardware and software development process for the duration of the ACP . The FMS Case valued at \$143.9m was written back to \$79.2m with the introduction of the ACP.					
3	Includes on-going involvement in the Tactical Command and Control hardware and software development process for the duration of the ACP . 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 Phase 2-Heavyweight Torpedo and Combat System Sustainment. The SEA 1439 Phase 4A component of the original \$92.7m was \$51.8m and has a current value of \$68.7m.					
4	Includes on-going involvement in the Tactical Control and Command hardware and software development process for the duration of the ACP . This contract also provided for the integration of Electronic Chart Display Information System (ECDIS) master navigation into the combat system at a cost of \$2.8m which was not funded by SEA 1439 Phase 4A.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
US Government (FMS)	7	7	US Tactical Control Command Subsystem			
US Government (ACP)	7	7	US Tactical Control Command Subsystem			
Raytheon Australia	7	7	Tactical System sub-systems and components			
Thales Underwater Systems	7	7	Scylla Sonar and associated sub-systems			

Sonartech Atlas	4	7	Sonar subsystem equipment	1
Major equipment received and quantities to 30 Jun 13				
Six RCS Ship Sets delivered. Category 5 Sea Acceptance Testing completed. Engineering and maintenance arrangements established.				
Notes				
1	The RCS project was funded originally for four Submarine Acoustic Transitory Event Processing System units. The in-service support organisation took advantage of an option in the RCS project acquisition contract with Sonartech to replace the ageing Submarine Acoustic Transitory Event Processing System units fitted to the existing submarine combat system. Although the contract value was increased, the additional sets were not funded from project funds.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Combat System	Nov 04	N/A	Nov 04	0	1
System Design	Combat System	May 05	N/A	May 05	0	1
Preliminary Design	20 Separate sub-systems or major components	Oct 03 – Oct 06	N/A	Nov 03 – Oct 06	1	1
Critical Design	20 Separate sub-systems or major components	Nov 03 – Apr 07	N/A	Nov 03 – Apr 07	0	1,2
Notes						
1	The above data represents rolled up information as the project consists of many subsystems each of which have independent Preliminary Design Review, Critical Design Review or associated activities. Additionally, these system engineering activities were applied across two system baselines. As a result, there were many individual events within each of the above activities where the schedule was allowed to move provided the critical path for the delivery of capability was not impacted adversely. The critical path was based on the FCD program. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the FCD program. In some instances schedule slip has occurred as a result of project management intervention to delay finalisation of sub-system and major component design until the evolving US 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 slip has not impacted capability delivery because of the dependency on the FCD program to install the RCS equipment.					
2	Some sub systems or major components have several Critical Design Reviews or US equivalent.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Combat System - System Integration Test Phase 1-6	Jun 06 - Apr 08	N/A	Jun 06 - Apr 08	0	
	Combat System - Harbour Acceptance Trials Stage1-3	Nov 06 - May 08	N/A	Nov 06 - May 08	0	
	Combat System-Sea Acceptance Trials Stage 1-2	Dec 07 - Jun 08	N/A	Dec 07 - Jun 08	0	
	Category 3 System Integration Testing Combat System CS05.00.01 (TI06/APB06)	Apr 09	N/A	Apr 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.00 (TI06/APB06)	Nov 09	N/A	Dec 09	1	1

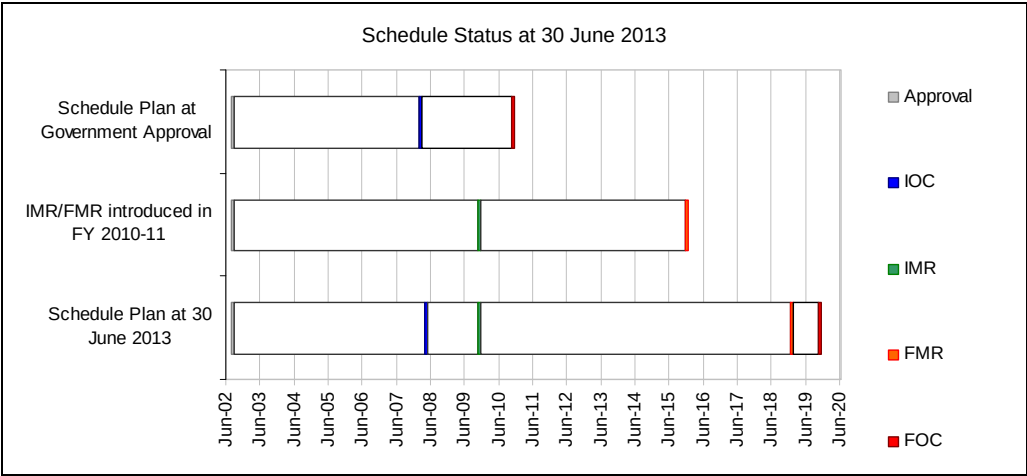
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	Category 3 System Integration Testing Combat System CS05.01 (TI06/APB06)	Jan 09	N/A	Jan 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.01 (TI06/APB06)	Feb 10	N/A	Feb 10	0	
	Category 5 Sea Acceptance Trials Combat System CS05.01 (TI06/APB06)	Apr 10	N/A	Aug 10	4	1
Notes						
1	Combat System CS05.01 baseline Sea Acceptance Trials and associated shore based analysis were completed in August 2010. The variance for testing is due to HMA Submarine <i>DECHAINEUX</i>'s FCD schedule delays and the need to complete additional testing of the Towed Array (TA) (previously delayed because of non project related equipment malfunction) and the ECDIS. The ECDIS and the TA increased the scope of the subsequent sea trials. Combat System CS05 baseline Sea Acceptance Trial tests were conducted in two stages to account for weather, submarine defects and support vessel defects. In general, the project test and evaluation program was carried out in conjunction with other post docking activities and the planned testing schedule has been impacted to some extent. The outcome of the CS05.01 trials including the ECDIS and TA were successful, with some minor trouble reports noted but not affecting capability. The CS05.01 System Design Certificate was issued 10 September 2010. CS05 Initial Materiel Certification for <i>DECHAINEUX</i> was achieved 22 September 2010. CS05 IOR was awarded by CN on 8 March 2011. OR of the CS04 CTAP was awarded on 20 January 2011.					

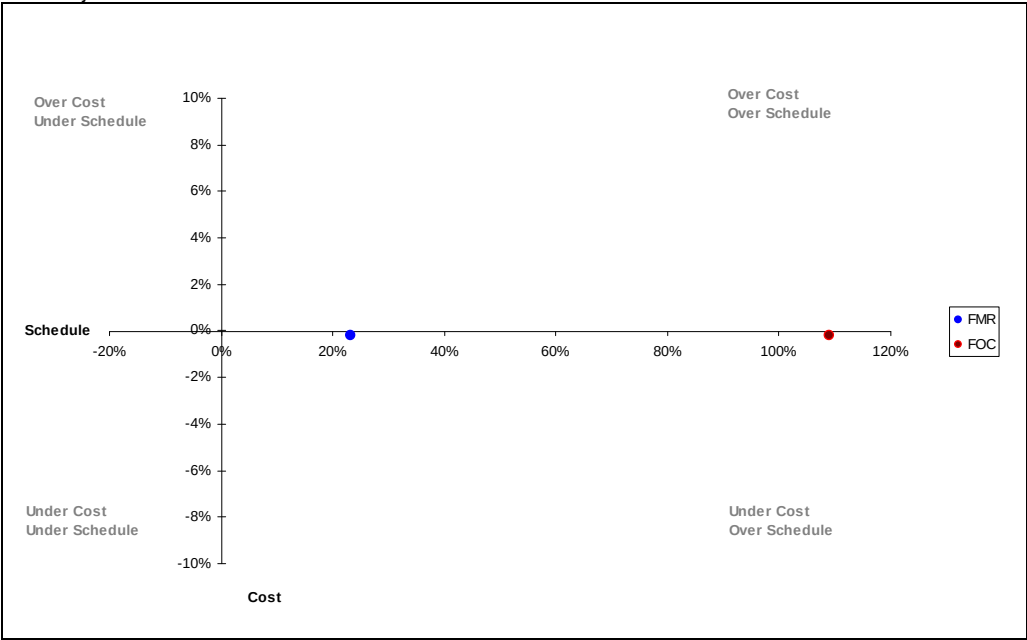
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 09	N/A	The RCS baseline (CS04) installed in HMA Submarines <i>WALLER</i> and <i>FARNCOMB</i> was approved for IOR by CN in May 2008 and September 2009 respectively. CN subsequently approved OR of that baseline on 9 December 2009. The capability delivered by the project is consistent with the MAA.
Initial Operational Capability (IOC)	Mar 08	May 08	2	
Final Materiel Release (FMR)	Jan 16	Feb 19	37	FMR 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.
Final Operational Capability (FOC)	2010	2019	Up to 108	<i>WALLER</i> and <i>FARNCOMB</i> have achieved OR and are awaiting confirmation by the Capability Manager that other Fundamental Inputs to Capability 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 <i>COLLINS</i> in 2018, with FOC currently expected to occur in 2019.



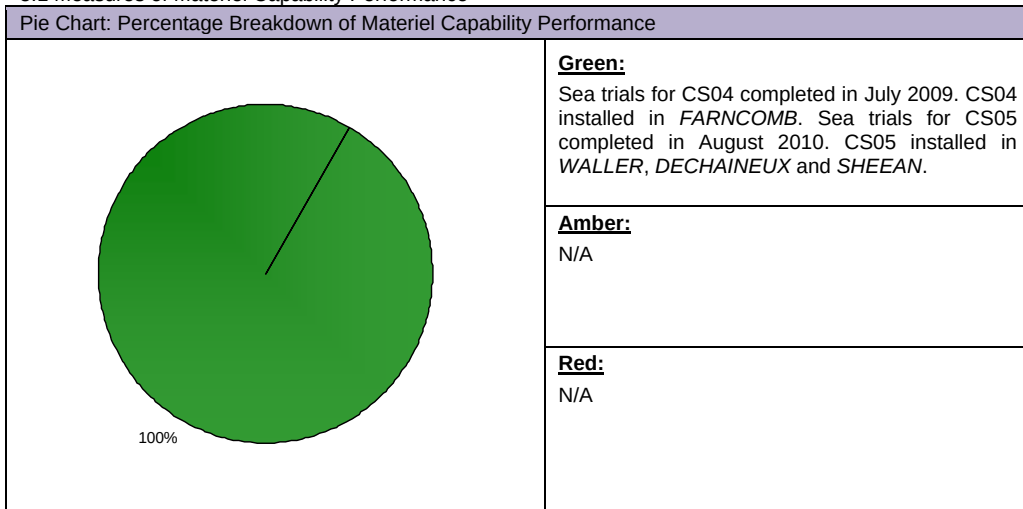
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk that delays to the submarine docking program as a result of higher operational priorities or material defects will adversely affect the Project platform integration program creating schedule delays and cost increases.	This risk is being mitigated by: - Active and frequent engagement with RAN, DMO and industry stakeholders to ensure that any proposed changes to planned maintenance activities properly consider the potential impact on project schedule and/or cost. - Through line management, the project team ensures that when considering changes to the <i>COLLINS</i> Integrated Master Schedule (IMS), committees such as the Sustainment Control Board and the Program Review Board are properly informed about potential impact on project schedule and/or cost.
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	This risk is being mitigated by: - Recruitment of appropriately skilled staff to fill vacant positions; - Training of staff to maintain requisite skills and knowledge; - Engaging with project stakeholders and Submarine Branch resources to mitigate loss of corporate knowledge; and - Engagement of contractors for specific tasks where expertise is not available in house.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
N/A	N/A

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Acceptance into Service	Project Status	9	9	9	8	9	9	9	62
	Explanation	Schedule: The last boat installation for the project to achieve FMR is HMA Submarine <i>COLLINS</i>. FCD timings have changed substantially in the past, however with the introduction of a CM controlled <i>COLLINS</i> IMS, the project is now confident that schedule will be met. Requirements, Technical Understanding and Technical Difficulty: These elements are slightly lower than the benchmark to reflect that the final version of software being developed under the Project has not yet been fully tested and installed. Additionally the technical understanding is at variance because transitioning of CS05 into service has not yet occurred. Transitioning of the final baseline on HMA Submarine <i>COLLINS</i> is expected in early 2018.							

Project Stage	Maturity Score
Enter DCP	13
Decide Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Offers	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ. & Test	55
Complete Acceptance Testing	57
Initial Materiel Release (IMR)	60
Final Materiel Release (FMR)	63
Final Contract Acceptance	65
MAA Closure	66
Acceptance into Service	67
Project Completion	70

2011-12 DMO MPR Status - - - -	2012-13 DMO MPR Status - - - -

Project Data Summary Sheets

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Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing is available, in particular if DMO is to be the prime system integrator.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule Management
Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US International Traffic in Arms Regulation can require up to a year to progress.	Requirements Management
Engaging in a joint development project where Australia is the junior partner can introduce project management, cost, technology and schedule risk that needs to be addressed.	First of Type Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Mr David Gould
Division Head	AVM Chris Deeble
Branch Head	Mr David Cochrane
Project Director	Mr David Connolly
Project Manager	Mr Walt Daly

Project Data Summary Sheet¹⁷⁸

Project Name	BATTLESPACE COMMUNICATIONS SYSTEM
Project Number	JP 2072 Phase 2A
First Year Reported in the MPR	2012-13
Capability Type	Replacement
Service	Joint Services (Army lead)
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 11
Total Approved Budget (Current)	\$441.2m
2012-13 Budget	\$99.3m
Project Stage	Acceptance Into Service
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

Joint Project 2072 Battlespace Communications System (Land) (BCS(L)) Phase 2A is delivering Combat Radios and ancillary equipment to replace the Raven, Wagtail and Pintail fleets for the majority of the Land Force. Phase 2A will also establish the mature support system for the new generation Combat and Tactical Data Radios.

1.2 Current Status

Cost Performance

In-year

The project achieved under the in-year budget to within 0.5 per cent of planned expenditure due to some minor cost savings in freight/shipping and some minor ancillaries were deferred while specific quantities are being finalised within the Basis of Provision.

Project Financial Assurance Statement

As at 30 June 2013, project JP 2072 Phase 2A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

Contract Signature (Acquisition) was achieved in March 2012. The first delivery of Phase 2A Combat Radios and ancillaries into service was achieved in November 2012. Contract Signature (Support) is now forecast for third quarter 2013 for Combat Radios and second quarter 2014 for Tactical Data Radios. Note that Interim support is in place until mid 2015.

178 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Materiel Capability Performance

The radio equipment and components that form this capability were already introduced into service under JP 2072 Phase 1 as bearers for the Battle Management System. Phase 2A extends the utility of the radio equipment for dismounted voice communications; rollout has already commenced to Army at 7 Brigade and 16 Air Land Regiment and to the Royal Australian Air Force (RAAF) at Amberley. Priority Training Establishments are currently receiving equipment for commencement of in-service training on the Phase 1 and 2A capability. This will complete the Initial Materiel Release (IMR) capability requirements.

1.3 Project Context

Project Background

Program Overview

- The overall JP 2072 program, BCS(L), will provide an integrated communications system to support forces deployed in the land environment through a combination of new equipment to replace aging radio fleets and enhancements/upgrades to current communications systems. Phase 1 provided communication systems for integration into the Battle Group and Below Command, Control and Communications (BGC3) capability being delivered in conjunction with LAND 75 and LAND 125 (the three projects commonly known as LAND 200).

Phase 2A

- Phase 2A is continuing the rollout of products selected during Phase 1 to primarily provide voice services to dismounted users. Phase 2A will also establish a mature support system for ongoing sustainment of the Phases 1 and 2A materiel systems and contribute to ongoing Prime System Integration activities to evolve the BCS(L) design. Investigation and/or market survey activities will be conducted to specify and identify products for potential procurement in future phases.

Acquisition

- The primary objective of Phase 2A is to replace and enhance the existing dismounted voice communications capability currently provided by Wagtail, Pintail and Raven High Frequency (HF) and Ultra High Frequency/Very High Frequency (UHF/VHF) radios for Army, Air Force and Navy units. Phase 2A is also providing equipment for mounted (vehicle) installation and base station (RAAF) however the integration of these is outside the scope of JP 2072.
- To achieve this objective Phase 2A will maximise commonality and minimise ongoing support costs through delivery of 'more of the same' of the Phase 1 capability including radios, ancillaries, cryptographic management equipment, load carriage equipment, training and interim support services.

In-Service Support Contract

- Under Phase 1, a three year interim support contract for the support of acquired materiel was executed early 2011. The interim support contract contained provisions for maintenance, training and capability introduction services from both Harris Corporation and Raytheon Australia as the Original Equipment Manufacturers. The mechanism for interim support consists of Field Service Representatives, plus support staff and three facilities in Southern Queensland at Newstead, Pinkenba (Harris) and Amberley (Raytheon). The mature support acquisition strategy aligns with this interim support model due to United States (US) International Trade in Arms Regulations (ITAR) constraints.
- Phase 2A enhanced the contract with Harris Corporation to include management and storage of the increased equipment order. Phase 2A will establish mature support contracts for the ongoing sustainment of the Phases 1 and 2A equipment. Phase 2A will also transition management of the mature support contracts to sustainment by Battlespace Communications Operations Group (BCOG).

Project Uniqueness

Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1 and originally defined for interoperability with the Battle Management System. However, the configurations of Phase 2A 'Nodes' or how the equipment will be employed needed to be defined prior to achievement of Initial Operational Capability (IOC) for the Battle Management System. Changes to the Battle Management System may have follow on effects to the systems being rolled out under JP 2072. Interim support has therefore been set up to handle mass upgrades of equipment in minimal timeframes.

Unlike Phase 1, the equipment being delivered under Phase 2A is mainly for use in standalone voice communications role, which requires different ancillaries such as load carriage pouches, headsets and battery chargers. Many of these items required amendment/inclusion into existing design acceptance without affecting fundamental design or introducing new risks.

Project Data Summary Sheets

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Project Major Challenges

The radios delivered in JP 2072 are subject to US ITAR restrictions and other handling and management requirements. This has limited the options for sourcing of equipment suppliers; has required change to the methodologies for supporting and maintaining equipment; affected the transfer of equipment into country and introduced different end user skills, training and working requirements.

The radios and ancillary equipment requirements were defined and approved for Phase 2A prior to finalisation under Battle Management System IOC. As a result some ancillary requirements were not defined under JP 2072 Phase 1 / LAND 75 for dismounted voice operation, including standalone headsets, load carriage pouches/backpacks, waterproof variants, batteries and chargers, retransmission cables and various training requirements. With the capability being post-design, the sourcing and procurement of these items is limited to Commercial Off The Shelf solutions and end user trial to ensure value for money and functional fit for purpose.

Other Current Projects / Sub-Projects

JP 2072 Phase 1, BCS(L): The initial phase of the JP 2072 program, this project is delivering communications bearers to the Battle Management System, and enhancing communications for Australian Defence Force Land elements through the development of an holistic battlespace communications architecture for the Land environment.

1.4 Linked Projects

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

Section 2 – Financial Performance**2.1 Project Budget (out-turned) and Expenditure History**

Date	Description	\$m	Notes
	Project Budget		
Nov 11	Original Approved	436.4	
May 13	Exchange Variation	4.8	
Jun 13	Total Budget	441.2	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – Harris Corp	(58.6)	
	Other Contract Payments / Internal Expenses	(0.1)	1
		(58.7)	
FY to 30 Jun 13	Contract Expenditure – Harris Corp	(97.5)	
	Other Contract Payments / Internal Expenses	(1.4)	1
		(98.9)	
Jun 13	Total Expenditure	(157.6)	
	Remaining Budget	283.6	
Notes			
1	Other expenditure comprises: travel, introduction into service training expenses, contractor support and JP 2072 Prime Systems Integrator capability studies.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Financial Year budget achieved within 0.5 per cent. DMO processes resulted in reduced freight and shipping costs and some minor ancillaries were deferred while specific quantities are being finalised.
			Overseas Industry	
			Local Industry	
			Brought Forward	
		(0.4)	DMO Processes	
			FOREX Variation	
			Commonwealth Delay	
99.3	98.9	(0.4)	Total Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Harris Corporation	Jan 12	226.3	226.9	Firm	ASDEFCON	1
Harris Corporation	Mar 12	14.6	14.6	Firm	ASDEFCON	1
Notes						
1	The contract with Harris Corporation already established under Phase 1 was utilised to order the Phase 2A supplies. Two key orders were placed under the standing offer provisions of this contract to acquire the Phase 2A equipment and extend the Phase 1 interim support to Phase 2A equipment, including: - Order for acquisition of Phase 2A equipment. - Order for extension of interim support to cover Phase 2A equipment. Harris Corporation utilise US expatriate personnel and an Australian Subsidiary combined to meet requirements.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
Harris Corporation	11,638	11,638	Combat Net Radios, ancillaries and interim support.	1		
Major equipment received and quantities to 30 Jun 13						
8,369 radios (72 per cent of total Phase 2A radios) comprising: - 6,475 AN/PRC 152 VHF/UHF radios (71 per cent of type) - 1,894 AN/PRC 150 HF radios (76 per cent of type)						
Notes						
1	Figures including number of radios; excluding numbers of ancillaries items (eg antennas, headsets, batteries etc).					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	N/A	N/A	N/A	N/A	N/A	1
Preliminary Design	N/A	N/A	N/A	N/A	N/A	1
Critical Design	N/A	N/A	N/A	N/A	N/A	1
Support System Detailed Design Review	N/A	N/A	N/A	N/A	N/A	1
Notes						
1	As Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1 there is no design review.					

Project Data Summary Sheets

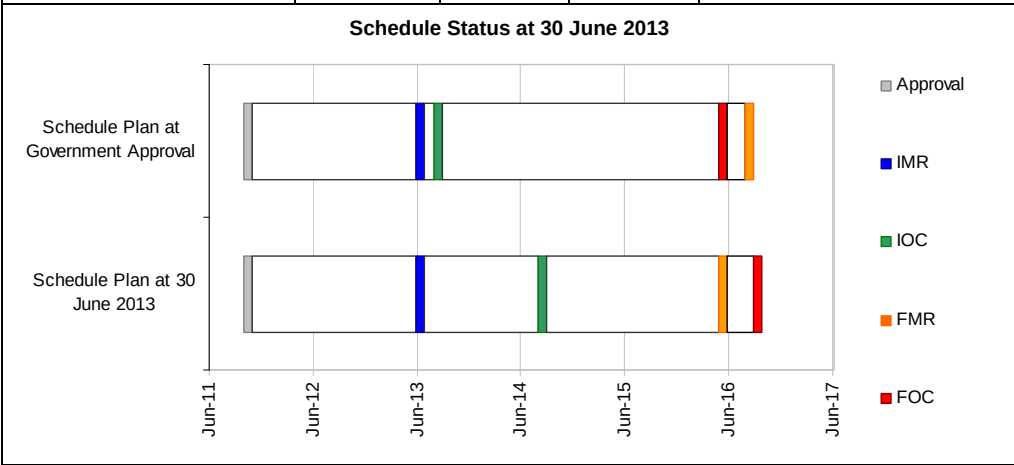
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3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	N/A	N/A	N/A	N/A	N/A	1
Acceptance	N/A	N/A	N/A	N/A	N/A	1
Notes						
1	As Phase 2A is procuring 'more of the same' radios as originally delivered in Phase 1 there is no test and evaluation.					

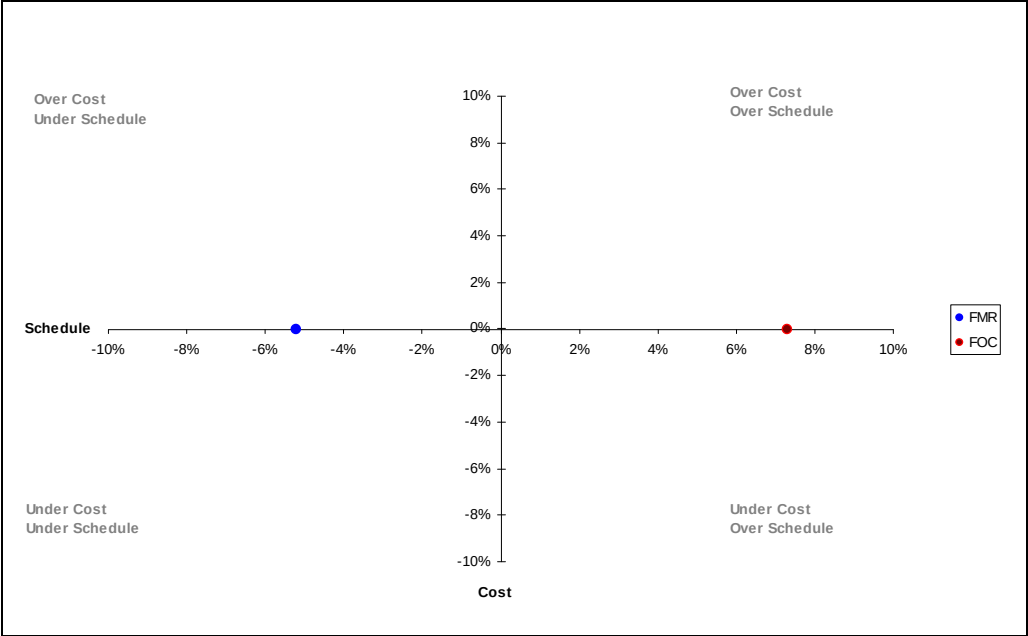
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul – Sep 13	Jul 13	0	
Initial Operational Capability (IOC)	Jul - Sep 13	Sep 14	11	Forecast date is to the project's best knowledge due to the limited visibility of Capability Manager milestones.
Final Materiel Release (FMR)	Jul – Sep 16	Jun 16	(3)	
Final Operational Capability (FOC)	Apr – Jun 16	Oct 16	4	Forecast date is to the project's best knowledge due to the limited visibility of Capability Manager milestones.



Section 4 – Project Cost and Schedule Status

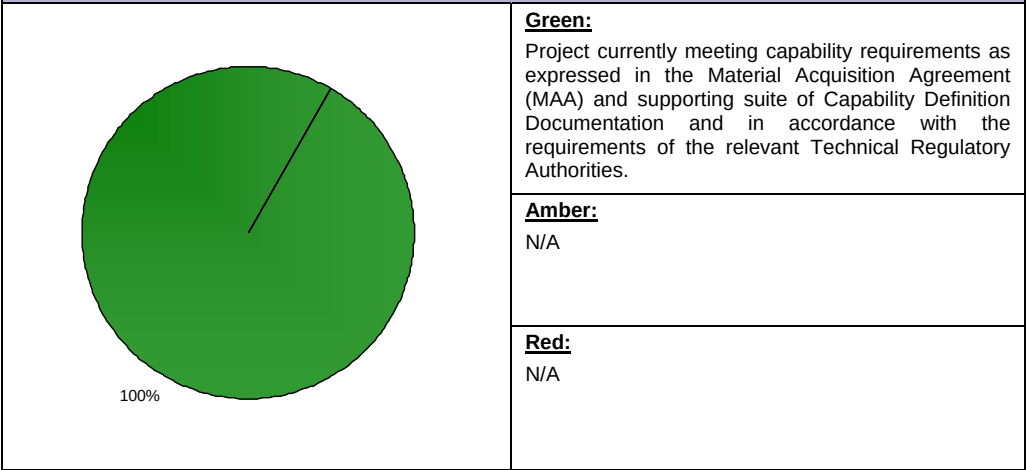
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

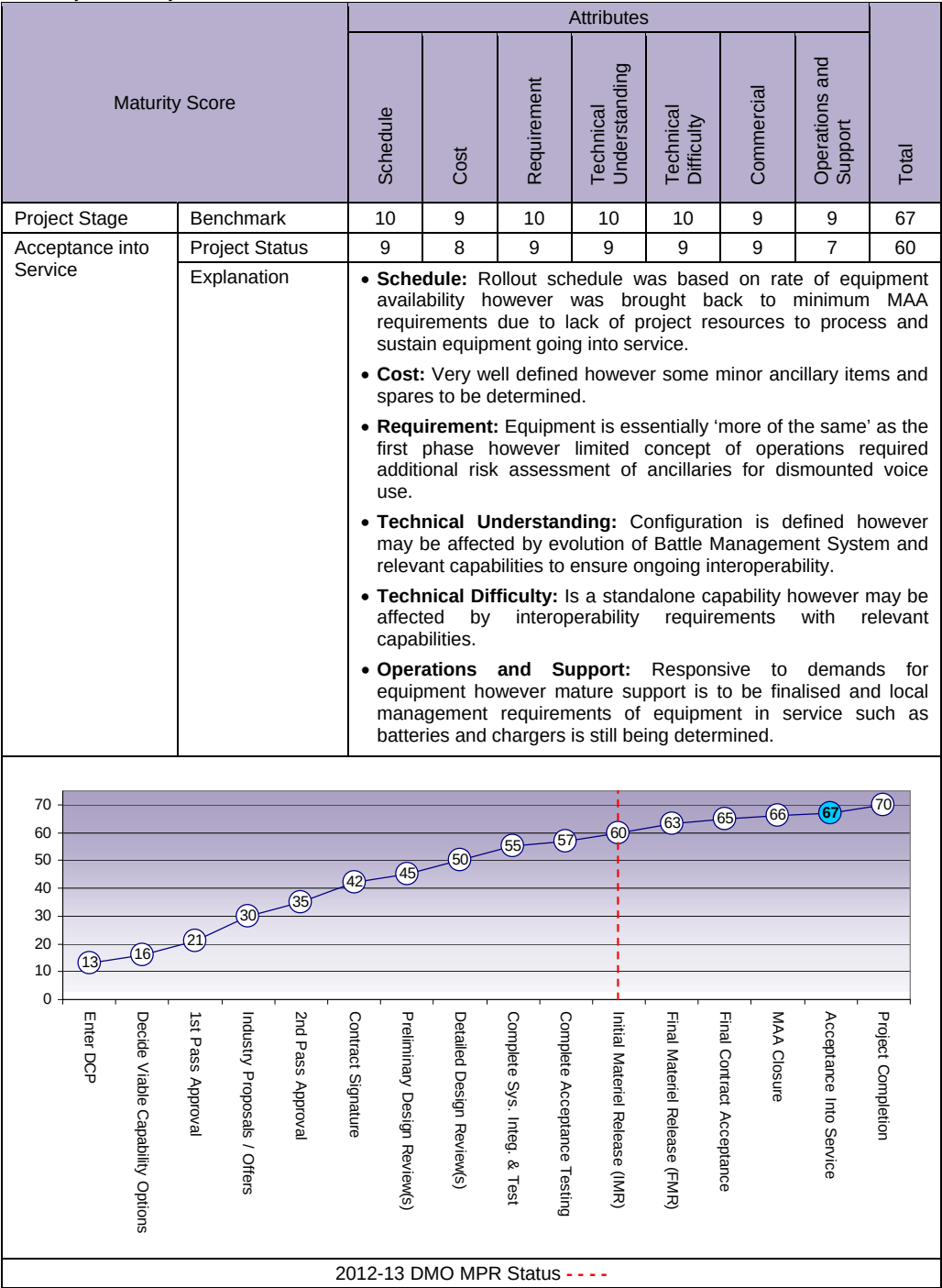
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that transition of mature support to the sustainment organisation (BCOG) will be affected by the sustainment organisation capacity to accept management of mature support contracts in addition to existing contracts for legacy fleets, leading to an impact on supportability	Increase ongoing relationship with the sustainment office. Provide JP 2072 resources as far as possible to assist optimal transition to sustainment. Communicate mature support management requirements to ensure new responsibilities understood whilst maintaining legacy contracts.
There is a chance that loss/exit of personnel within JP 2072 program will impact on Phase 2A core responsibilities.	Delay Introduction Into Service as far as allowable within defined IMR and FMR timeframes to alleviate pressure on Phase 1 and Phase 2A staff (shared resources). JP 2072Ph1 and Phase 2A have been consolidated into one team to focus on priorities across the phases. Further delays or inability to undertake core functions may result if this risk is not mitigated.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
Harris unable to conduct Military Integrated Logistics Information System transactions at the planned rate.	Upgrade of remote access is being sought for the Harris Communications Logistics Centre. Defence Chief Information Officer Group have been engaged and implementation is planned to finish in Financial Year 2013-14.
Preparation of mature support contracts drafting and tendering affected by limited availability of contracting/legal support personnel, impacting on schedule.	Continue to include contracting services in review of draft contract documentation; provide schedule of tender activities to Contracting Services in advance and follow up; coordinate with other projects utilising the same services, noting the concurrent activities of JP 2072 Phase 2B.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Shireane McKinnie
Division Head	Michael Aylward (Jul 12–Feb 13, May 13–current) Mr Mark Devlin (Acting Mar 13–Apr 13)
Branch Head	Myra Sefton
Project Director	Bob Hutchinson
Project Manager	Steve Wardle

Project Data Summary Sheet¹⁷⁹

Project Name	INDIAN OCEAN REGION UHF SATCOM
Project Number	JP 2008 Phase 5A
First Year Reported in the MPR	2010-11
Capability Type	Upgrade
Service	Joint Services
Government 1st Pass Approval	March 09
Government 2nd Pass Approval	March 09 and March 10
Total Approved Budget (Current)	\$435.8m
2012-13 Budget	\$17.6m
Project Stage	Integration and Test
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This project will provide the Australian Defence Force (ADF) with twenty 25kHz UHF SATCOM channels on a hosted payload on a commercial Intelsat Satellite (IS-22), to provide coverage of the Indian Ocean Region, and associated ground infrastructure to provide network control.

1.2 Current Status

Cost Performance

In-year

This year the variation (\$1.0m) is primarily due to an underspend in the project achieving savings associated with the Network Control System (NCS). The saved funding has been reallocated to other project requirements. The remaining variation and underspend is due to delays with orders and activities including the NCS support task and contractor capital costs.

Project Financial Assurance Statement

As at 30 June 2013, project JP 2008 Phase 5A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The IS-22 satellite was successfully launched on 25 March 2012. **In May 2012, additional NCS design review and test and evaluation milestones were added to the project.**

¹⁷⁹ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Materiel Capability Performance

The IS-22 satellite is currently meeting all performance measures, including:

- the hosted payload,
- the Communications System Monitor (CSM).

The NCS contract was executed on 16 May 2012, factoring United States (US) requirements of Defense Information Systems Agency and Space and Naval Warfare System Command. The implementation strategy was reported to Government.

1.3 Project Context**Project Background**

The JP 2008 Phase 5 project was created to provide capability originally planned for under the JP 2008 Phase 4 Next Generation SATCOM Capability project (a result of Phase 4 of the project being re-scoped to provide access to the Wideband Global Satellite (WGS) capability).

UHF SATCOM provides critical tactical radio coverage over the Middle East Area of Operations, particularly to Special Forces in Afghanistan. Coverage was provided by leases on two commercial satellites and channels loaned by the United States (US) Government on an availability basis, which proved to be significantly less than the capability needed by the ADF. This project was also formed on the basis that LEASAT 5 would reach end of life in 2011. LEASAT 5 now has an extended life beyond 2013 due to a change in orbital location, however, only a single channel is available on LEASAT 5.

A market survey was conducted in September 2008 to inform cost and capability options for JP 2008 Phase 5. It revealed an opportunity for Defence to host a payload on an Intelsat commercial satellite over the region in mid 2012. A Restricted Request For Tender was subsequently let to ten companies for the capability in November 2008 and Intelsat was selected as the preferred tenderer.

Combined first and second pass Government Approval was given in March 2009 and a contract was signed with Intelsat for eight 25 kHz channels and 15 years support in April 2009.

First pass Government approval was given in March 2009 for the project to pursue a Memorandum Of Understanding with the US to provide global UHF SATCOM coverage using US satellites in return for access to ten 25 kHz channels on IS-22.

A subsequent second pass approval was given in March 2010 which allowed the project to procure the full payload on IS-22.

With the signature of the NCS contract with ViaSat Inc in May 2012, additional design review and test and evaluation milestones were added to the project. These milestones relate to the development and procurement of the UHF Channel Control System.

Project Uniqueness

The contract with Intelsat is based on the standard DMO ASDEFCON template; however, it required significant tailoring based on input from specialist space lawyers. There are also a number of unique aspects to a contract for a satellite, including the unusual risk profile of the Launch and the corresponding high degree of schedule uncertainty which is typical of a satellite program where product quality requires a high priority.

A UHF Channel Control system **is being** designed and developed to meet the requirements of Australian and US forces.

Project Major Challenges

A major challenge for the project resulted from a compressed Government approval process, which impacted on the timely generation of the Capability Development Documentation suite. This compressed approvals process also meant that ancillary parts of the capability such as the NCS were not fully considered for cost and schedule as would have occurred if a full first to second pass process had occurred. Notwithstanding this, these sub-systems represent relatively small parts of the capability and cost of the project.

There still remains a major challenge on the delivery of the UHF Network Control System and meet its essential interoperability requirement to meet the operational needs of the ADF and US forces.

Other Current Projects / Sub-Projects

JP 2008 Phase 3E Advanced SATCOM Terrestrial Infrastructure System: This project provides the supporting ground infrastructure for Satellite Communications including UHF, X and Ka band communication services.

Project Data Summary Sheets

ANAO Report No.12 2013–14
2012–13 Major Projects Report

JP 2008 Phase 3F ADF SATCOM Terrestrial Enhancements: This project will provide the mature Australian Western Seaboard anchoring capability for the WGS constellation.

JP 2008 Phase 4 Next Generation SATCOM Capability: Provision of WGS.

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Feb 09	Original Approved	4.0	
Apr 09	Real Variation – Government Initial Second Pass Approval	269.1	
Apr 10	Real Variation – Government Subsequent Second Pass Approval	187.8	
		456.9	1
		460.9	
Jul 10	Price Indexation	18.0	2
Jun 13	Exchange Variation	(43.1)	
Jun 13	Total Budget	435.8	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – Intelsat Prime	(293.3)	
	Contract Expenditure – ViaSat Prime	(4.1)	3
	Other Contract Payments / Internal Expenses	(14.4)	4
		(311.8)	
FY to Jun 13	Contract Expenditure – ViaSat Prime	(13.1)	3
	Other Contract Payments / Internal Expenses	(3.5)	5
		(16.6)	
Jun 13	Total Expenditure	(328.4)	
Jun 13	Remaining Budget	107.4	

Notes

1	The Initial Second Pass Approval was for 8 channels and the Subsequent Second Pass Approval was for the remaining channels of the hosted payload.
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$16.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further (\$19.6m) having been applied to the remaining life of the project. For this project, that process was incorrectly executed but corrected in January 2012 by returning \$30.9m to the budget; \$21.1m and \$9.9m for impacts of price and exchange variations respectively.
3	This contract was previously disclosed as NCS Prime.
4	Other expenditure comprises project operating expenditure not attributable to the aforementioned contracts.
5	Other expenditure comprises of Capital (\$2.5m) and Workforce Operating Expenditure expenses (\$1.0m).

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The underspend of (\$1.0m) is made up of the project achieving savings associated with the NCS incorporation valued at (\$0.2m), the saved funding has been reallocated to other project requirements. The remaining variation of (\$0.8m) is due to delays with orders and activities including the NCS support task and contractor capital costs.
			Overseas Industry	
		(0.2)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(0.8)	Commonwealth Delays	
17.6	16.6	(1.0)	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Intelsat	Mar 09	202.5	422.9	Firm	ASDEFCON (COMPLEX)	
ViaSat	May 12	36.5	36.5	Firm	ASDEFCON (COMPLEX)	1
Contractor	Quantities as at		Scope			Notes
	Signature	30 Jun 13				
Intelsat	8	20	25kHz UHF SATCOM channels on IS-22 Hosted Payload			
Major equipment received and quantities to 30 Jun 13						
All 20 channels were delivered successfully on 25 May 2012 and are now operational.						
Notes						
1	This contract was previously disclosed as NCS Prime.					

Section 3 – Schedule Performance

3.1 Design Review Progress

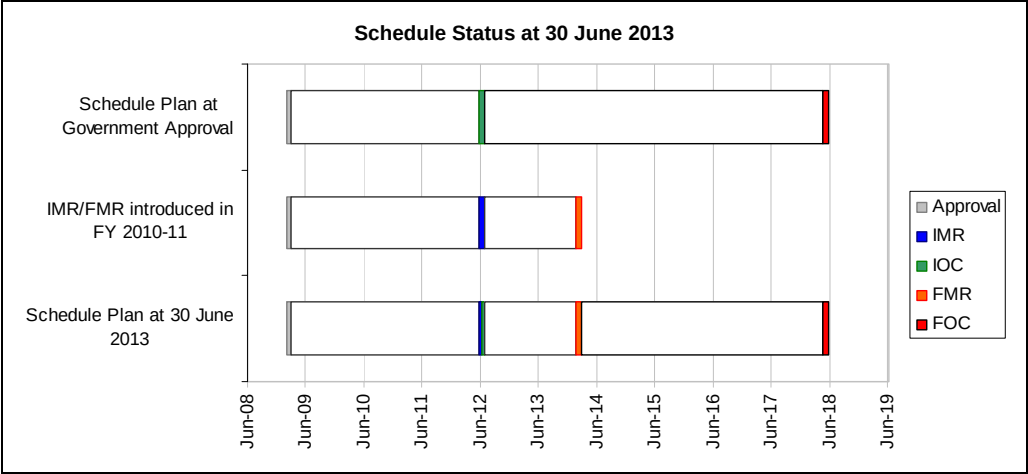
Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	IS-22 Hosted Payload	Jun 09	N/A	Jun 09	0	
	NCS	Aug 12	N/A	Aug 12	0	
Preliminary Design	IS-22 Hosted Payload	Nov 09	N/A	Oct 09	(1)	
	CSM	Oct 10	N/A	Nov 10	1	1
Critical Design	IS-22 Hosted Payload	Sep 10	N/A	Sep 10	0	
	CSM	Mar 11	N/A	Mar 11	0	
	NCS	Mar 13	N/A	Mar 13	0	
Notes						
1	The review was conducted in October 2010 but approval by the Project Office did not occur until November 2010 due to a number of issues with requirements traceability that required rectification.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	IS-22 Hosted Payload	Nov 10	N/A	Feb 11	3	1
	CSM	Sep 11	N/A	Oct 11	1	2
	NCS	Nov 13	Nov 13	Nov 13	0	
Acceptance	IS-22 Hosted Payload	Jun 12	N/A	May 12	(1)	3
	CSM	Jul 12	N/A	Jun 12	(1)	3
	NCS	Mar 14	Mar 14	Mar 14	0	
Notes						
1	Delay to commencement of integration was driven by a number of delays in sub system deliveries forming part of the hosted payload including C and Ku antennas (not forming part of this capability) and the UHF antenna.					
2	While installation commenced in September 2011, testing to confirm that the installation met requirements was completed in October 2011.					
3	IS-22 and CSM Acceptance 1 month ahead of schedule.					

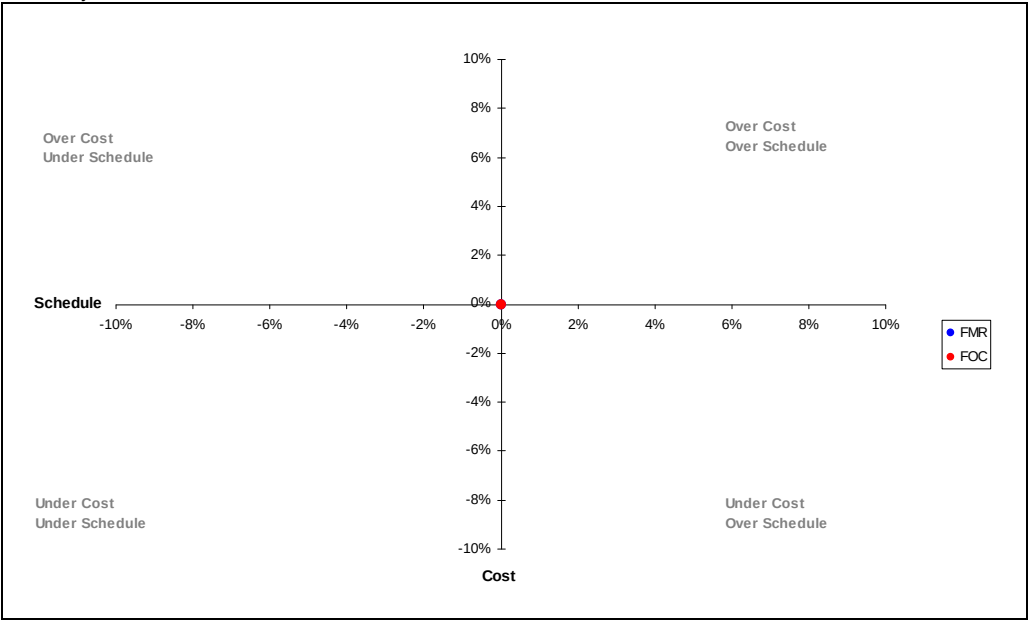
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul 12	Jul 12	0	Achieved
Initial Operational Capability (IOC)	Jul 12	Jul 12	0	Achieved
Materiel Release (MR) # 1 (Indian Ocean)	Sep 12	Dec 12	3	MR was claimed on 28 September 2012. Chief Information Officer Group (CIOG) requested additional information. Additional information was supplied and MR was achieved on 21 December 2012.
Operational Capability (Indian Ocean)	Sep 12	Aug 14	23	In December 2012, CIOG agreed that IOR (FMR) for the Indian Ocean capability could be declared once some administrative processes had been completed. These processes do not impact delivered capability.
Final Materiel Release (FMR) # 2 (Pacific Ocean)	Mar 14	Mar 14	0	
Final Operational Capability (FOC) (Pacific Ocean)	Jun 18	Jun 18	0	CIOG will be in a position to acquire agreed UHF capacity from the United States as their capacity builds up in the region. A review of project submission documents to Government highlighted the omission of some key milestone dates in the PDSS.



Section 4 – Project Cost and Schedule Status

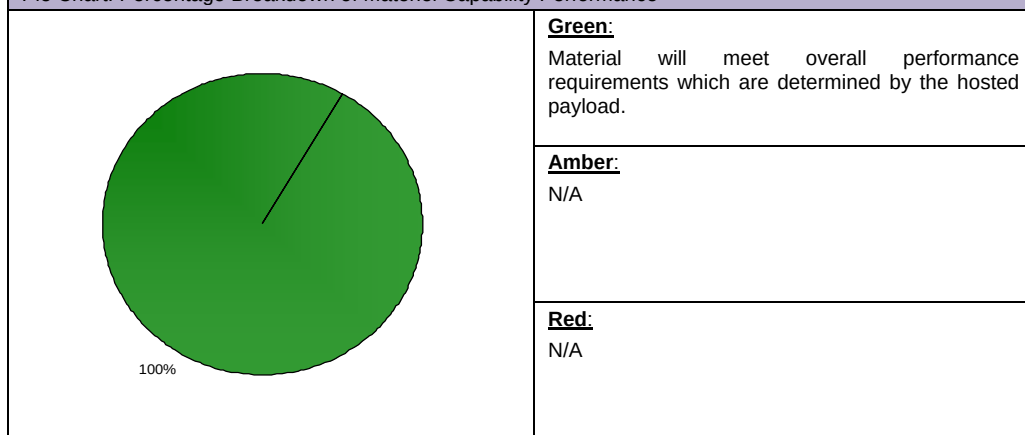
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

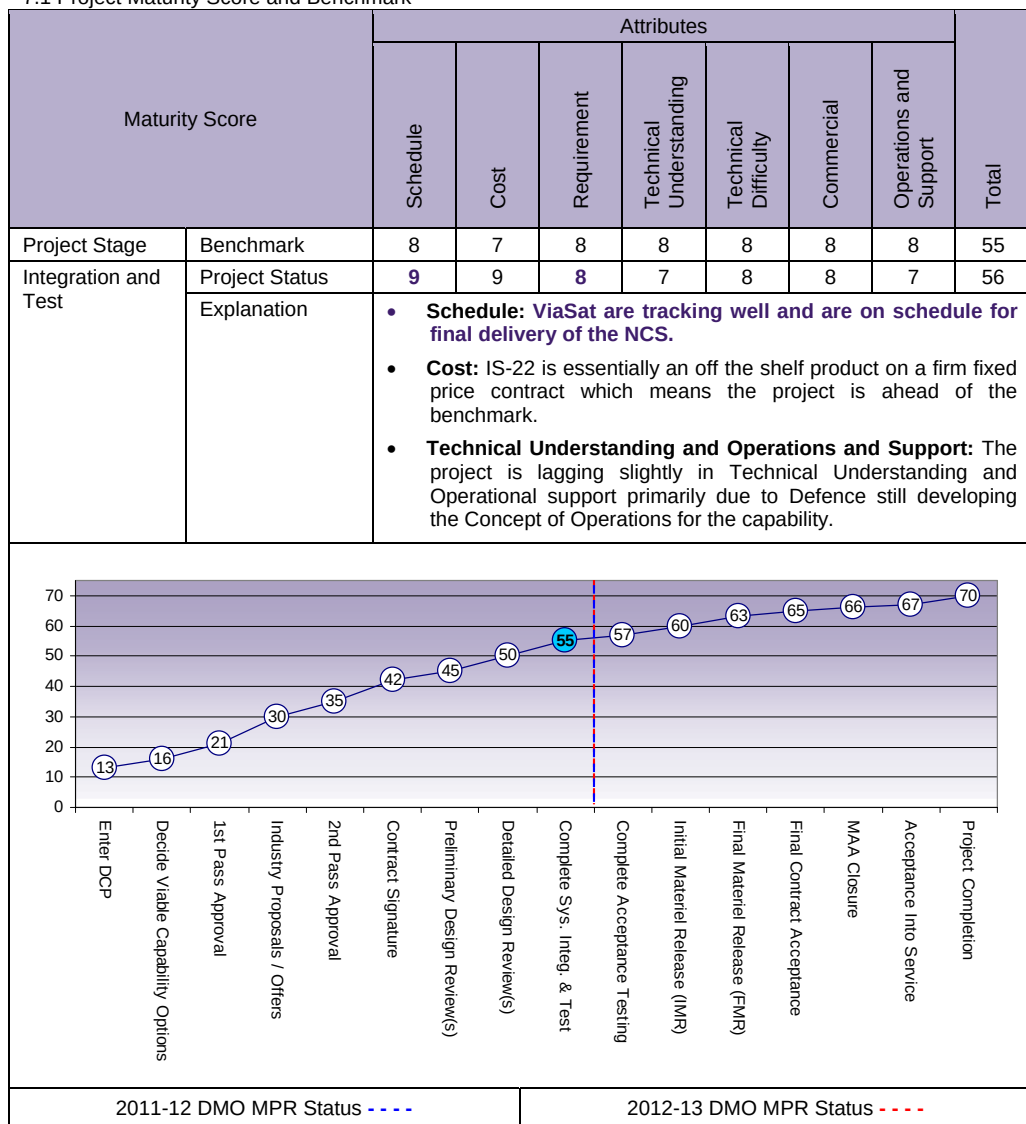
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk the Project Office will not gain approval to remotely operate the CSM due to inability to gain necessary security accreditation leading to delay in IMR.	Risk is now retired as it is currently being used in operations.
There is a risk that due to there being a lack of an agreed set of requirements from Defence for the Reduced Radio Configuration, the project office will not be able to deliver a capability that is suitable.	This risk has been downgraded to medium due to change in likelihood with the Project Office engaging a contractor to develop a Functional and Performance Specification.
Risk that contractors are unable to provide contracted services due to bankruptcy, loss of staff, litigation etc.	Risk is now retired due to NCS contract being signed.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
The training requirements are not clearly defined in the projects scope of work. The current training is inadequate.	Project Office has provided feedback to the Contractor to make changes to the training pack. Project is also running an additional payload course and conducting requirements review for all training.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Shireane McKinnie
Division Head	Mr Michael Aylward (Jul 12–Feb 13, May 13–current) Mr Mark Devlin (Acting Mar 13–Apr 13)
Branch Head	Ivan Zlabur Mr Greg McKinnon (Acting Feb 13–Mar 13) Mr Gunsagaron Gounder (Acting Mar 13–June 13)
Project Director	Greg McKinnon

Project Data Summary Sheet¹⁸⁰

Project Name	REPLACEMENT HEAVYWEIGHT TORPEDO
Project Number	SEA 1429 Phase 2
First Year Reported in the MPR	2009-10
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jul 01
Total Approved Budget (Current)	\$425.3m
2012-13 Budget	\$6.6m
Project Stage	Complete Acceptance Testing
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

This project is acquiring a Heavyweight Torpedo (HWT) for the Collins Class submarine to replace the United States Navy's (USN) Mk 48 Mod 4 HWT currently in service with the Royal Australian Navy (RAN). The torpedo is being supplied by the United States (US) Government under a Memorandum of Understanding (MOU), with work performed by Raytheon US and the US Naval Undersea Warfare Center. The project is also acquiring associated logistic support, weapon system interface equipment, and operational support and test equipment. ASC Pty Ltd is undertaking integration to the Collins Class submarine platform.

1.2 Current Status

Cost Performance

In-year

This year the variation is primarily due to an underspend related to delays in local industry associated with changes to the Full Cycle Docking (FCD) program.

Project Financial Assurance Statement

As at 30 June 2013, project SEA 1429 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

180 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

The HWT project consists of two separate components to deliver the full HWT capability to the RAN. The first component is the modification of each submarine to accommodate and launch the HWT; the second component is the spiral development of the HWT software.

Boat installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the 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 **2018**.

Development of the HWT software is progressing to schedule and the Spiral 1 software baseline has achieved Operational Release (OR). The next software baseline to be implemented by the RAN will be Advanced Processor Build (APB) 4 and that development is progressing to schedule.

The final weapons were delivered to Australia in January 2012.

Materiel Capability Performance

The replacement HWT with Spiral 1 software and the integration modifications to Collins Class Submarines were approved for OR by the Chief of Navy (CN) on 10 March 2010.

The replacement HWT with APB 4 software was approved for Initial Operational Release (IOR) by CN on 8 March 2011.

OR is the milestone which represents the In-Service date at which CN is satisfied that the equipment is in all respects ready for operational service.

Platform modifications have been completed in HMA Submarines *WALLER*, *FARNCOMB*, *DECHANEUX*, and *SHEEAN* and are progressing in concert with the FCD for *RANKIN*. Platform modifications in HMA Submarine *COLLINS* will be completed in conjunction with the FCD program. As first of class specific testing was carried out for *WALLER*, all subsequent testing for platform modifications will be undertaken in conjunction with standard post docking testing.

1.3 Project Context

Project Background

Project SEA 1429 Phase 1 was approved in December 1997 to investigate the acquisition of an enhanced torpedo capability; including, weapon performance, integration, risk, costs, through-life support, intellectual property and Australian Industry Involvement. In September 1998 the US Government invited the Defence Capability Committee (DCC) to consider pursuing a collaborative development program for the Mk48 Advanced Capability (ADCAP) HWT as the replacement HWT for the RAN. The DCC, although noting the potential benefits, decided against the collaborative program in favour of a competitive tender process.

The solicitation process, which included a Project Definition Study commenced in 1999, but was subsequently abandoned when the Government decided in July 2001 to terminate the **competitive tendering** process in favour of entering into a cooperative agreement with the US Government.

A Statement of Principles outlining the strategic alliance between the RAN and USN on submarine related issues was signed in Washington DC in September 2001. At the same time, negotiations began with the US Government on a MOU to develop an Armaments Cooperative Project (ACP) for the joint development of the 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 Pty Ltd, a Torpedo Analysis Facility (TAF) at the Defence Science 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 maintenance, has been transitioned to Navy Guided Weapons System Program Office. A Portable Tracking Range was completed in December 2006 and responsibility formally transitioned to Maritime Ranges System Program Office. The MOU has been extended for a period of ten years to 2019 following successful negotiation with the US Government.

Project Uniqueness

Commonwealth participation in a Joint Program with the US Government to develop, produce and support the Mk 48 Advanced ADCAP/CBASS torpedo, through an ACP, including evolving capability enhancements, introduced additional complexity to the project. The additional complexity included requiring effective coordination of requirements management, integration, testing, torpedo deliveries and their installation in each boat according to their respective FCD schedule. The performance of the ACP is overseen by an Executive Steering Committee with senior executives from both partners.

Project Major Challenges

Major challenges associated with the Project include the stability of the installation schedule when that schedule is dependent on the FCD program. To date, emergent maintenance problems, not related to HWT, have resulted in significant schedule slip of the FCD program and, as a result, significant schedule slip in the SEA 1429 Phase 2 HWT Project installation programs. A second challenge is the management of the certification of the US developed Spiral software baselines for the torpedo within the Naval Technical Regulatory Framework. RAN operational schedules and priorities may also present a challenge to the testing program.

Other Current Projects / Sub-Projects

N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1439 Phase 4A Collins Replacement Combat System	Replacement Combat System	Installation of the Replacement Combat System (RCS) is to be completed on each boat, including modifications for the replacement torpedo, prior to commencement of the torpedo installation program.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Jul 01	Original Approved	238.1	1
May 03	Real Variation – Scope	213.3	
Aug 04	Real Variation – Budgetary Adjustments	(0.2)	2
Sep 04	Real Variation – Transfers	1.0	3
		214.1	
Jul 10	Price Indexation	99.4	4
Jun 13	Exchange Variation	(126.3)	
Jun 13	Total Budget	425.3	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – US Government Initial MOU	(194.9)	
	Contract Expenditure – US Government Follow-on MOU	(31.4)	
	Other Contract Payments / Internal Expenses	(67.1)	5
		(293.4)	
FY to Jun 13	Contract Expenditure – US Government Follow-on MOU	(3.4)	
	Other Contract Payments / Internal Expenses	(2.1)	6
		(5.5)	
Jun 13	Total Expenditure	(298.9)	
Remaining Budget			
Jun 13		126.4	
Notes			
1	Heavyweight Torpedoes purchase under the ACP with the US.		
2	Administrative Savings Harvest.		
3	Transfer from SEA 1429 Phase 1.		
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$91.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$7.9m having been applied to the remaining life of the project.		
5	Other expenditure of \$67.1m includes an amount of \$26.1m to ASC Pty Ltd for platform design and installation (under the Through Life Support Agreement - Submarine Sustainment Contract); \$4.2m paid to DSTO; \$5.0m RCS/MOU USN; \$3.2m to FMS Case (AT-P-GZU), and \$10.0m to L3 Nautronics Pty Ltd. The remaining expenditure of \$18.6m covered sundry operating expenditure.		
6	The amount of \$2.1m is predominantly ASC Pty Ltd contract \$0.8m ; \$0.4m paid to DSTO with remainder \$0.9m being for sundry contractor services and operating expenditure.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The underspend against the budget is primarily due to changes to the scope of work undertaken by ASC Pty Ltd.
			Overseas Industry	
		(1.1)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
6.6	5.5	(1.1)	Total Variance	

2.3 Details of Project Major Contracts

2.6 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government Initial MOU	Mar 03	336.7	336.7	Fixed	MOU	1
US Government Follow-on MOU	Nov 09	43.8	50.8	Fixed	MOU	2
Notes						
1	US Government Initial MOU was closed in March 2013.					
2	US Government Follow-on MOU was reported as \$131.9m in the 2009-10 MPR, however, this figure included sources of funding other than SEA 1429 Phase 2. The Price Base at Signature has been revised to reflect the SEA 1429 Phase 2 contribution to the Follow-on MOU. An additional \$6.4m to the SEA 1429 Phase 2 contribution to the Follow-on MOU was approved in July 2010.					
Contractor		Quantities as at		Scope	Notes	
		Signature	30 Jun 13			
US Government Initial MOU		Classified	Classified	Heavyweight Torpedoes		
US Government Follow-on MOU		Classified	Classified	Heavyweight Torpedoes		
Major equipment received and quantities to 30 Jun 13						
All weapon deliveries complete. Spiral 1 Software baseline achieved. Platform modifications in four submarines completed.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Final Design Review	Weapon Handling & Discharge Training Rig Modifications	Jun 05	N/A	Oct 05	4	1
	Submarine Weapon Handling & Discharge System Modifications	Jan 06	N/A	Nov 06	10	1
Acceptance	Weapon Handling & Discharge Training Rig Modifications	Nov 05	N/A	Nov 07	24	1
	Submarine Weapon Handling & Discharge System Modifications	Mar 06	N/A	Jun 07	15	1
Design Review	MK48 ADCAP Torpedo Specification Compliance	Dec 07	N/A	Feb 08	2	1
	Explosive Ordnance Approval Process (Spiral 1)	Mar 08	N/A	Mar 08	0	1

	Explosive Ordnance Approval Process (APB 4 – Exercise)	Nov 12	N/A	Feb 11	(21)	1
	Explosive Ordnance Approval Process (APB 4 – Warshot)	Jul 13	Jul 13	Jul 13	0	
Incorporation Approval	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating Spiral 1	May 08	N/A	May 08	0	2
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Exercise	Dec 12	N/A	Mar 11	(21)	
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Warshot	Jul 13	Jul 13	Jul 13	0	
Notes						
1	The above data represents rolled-up information as the project consists of many subsystems each of which has independent design review activities. As the critical path for these activities was defined by the FCD program, individual events within each of the above activities were allowed to move provided the delivery of the capability was not adversely impacted. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the FCD program. Additionally, the reported achieved dates are based on the signature of meeting minutes or reports by external organisations. As such, minor variance in the achievement dates can be attributed to the review and the subsequent approval process as recorded in meeting minutes and reports.					
2	The Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate, the RAN independent assessment of the suitability of the weapon for use on Collins Class submarines, was not separately scheduled but was dependent on the issue of the US Torpedo Specification Compliance (issued 22 February 2008) and was a pre-requisite for granting IOR (7 May 2008). The Compatibility Certificate was issued on 1 May 2008.					

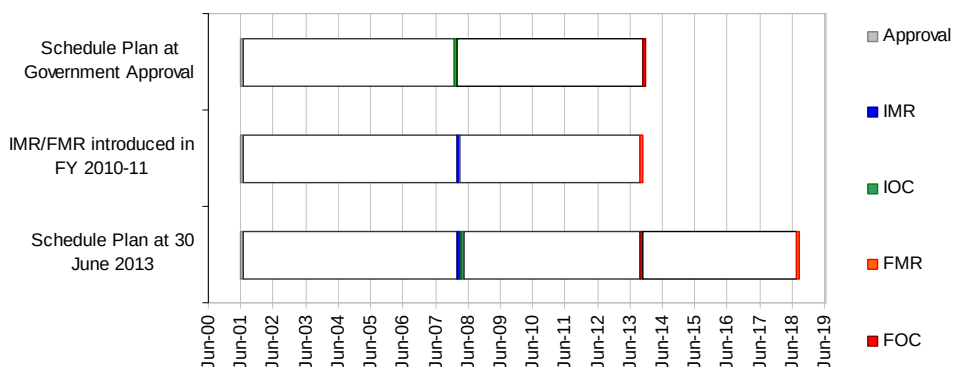
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Harbour Acceptance Tests	Weapon Handling and Discharge Systems Post MK 48 Mod 7 HWT Modification Test for HMAS WALLER	Jan 07	N/A	Apr 07	3	1
Sea Acceptance Trials	Weapon Discharge System MK 48 Mod 6/7 HWT Modification for HMAS WALLER	Oct 07	N/A	Dec 07	2	1
Notes						
1	Variance is attributable to the Navy Regulatory Review process and submarine program.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

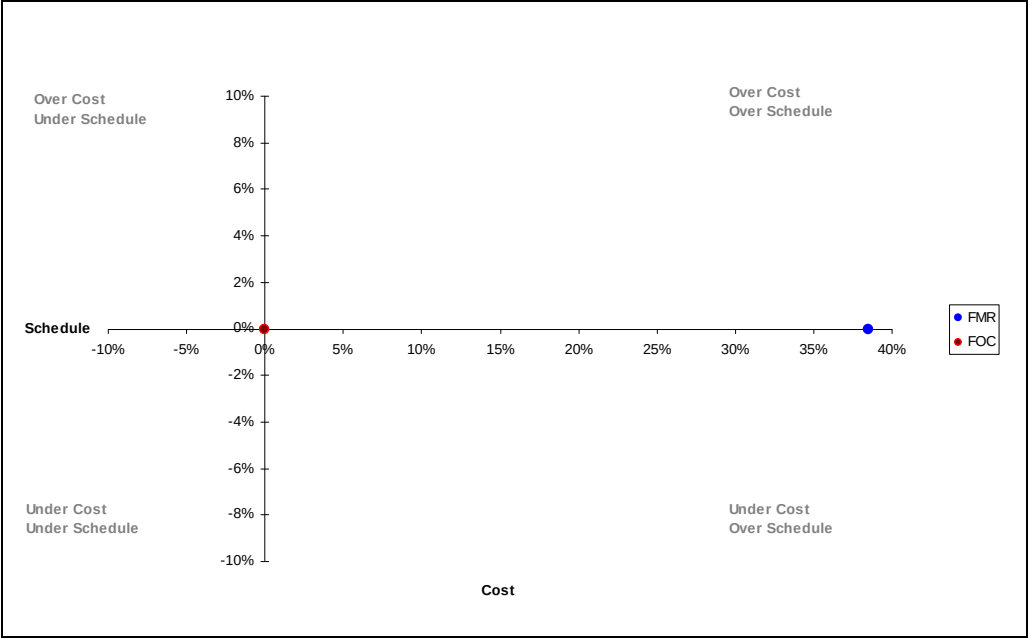
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Mar 08	N/A	
Initial Operational Capability (IOC)				
Platform Modifications and Spiral 1	Feb 08	May 08	3	Variance is attributable to the Navy Regulatory Review process.
APB 4	Nov 12	Mar 11	(20)	Dependent upon US Government acquisition process.
Final Materiel Release (FMR)	Nov 13	Aug 18	56	FMR date was set before the FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the HWT installation schedule has been delayed.
Final Operational Capability (FOC)				
Platform Modifications and Spiral 1	Jan 10	Mar 10	2	Variance is attributable to the Navy Regulatory Review process.
APB 4	Nov 13	Nov 13	0	Achievement of FOC is dependent on Navy. The capability delivered by the project is consistent with the MAA and FOC will be achieved when the Capability Manager confirms all other Fundamental Inputs to Capability are complete.

Schedule Status at 30 June 2013



Section 4 – Project Cost and Schedule Status

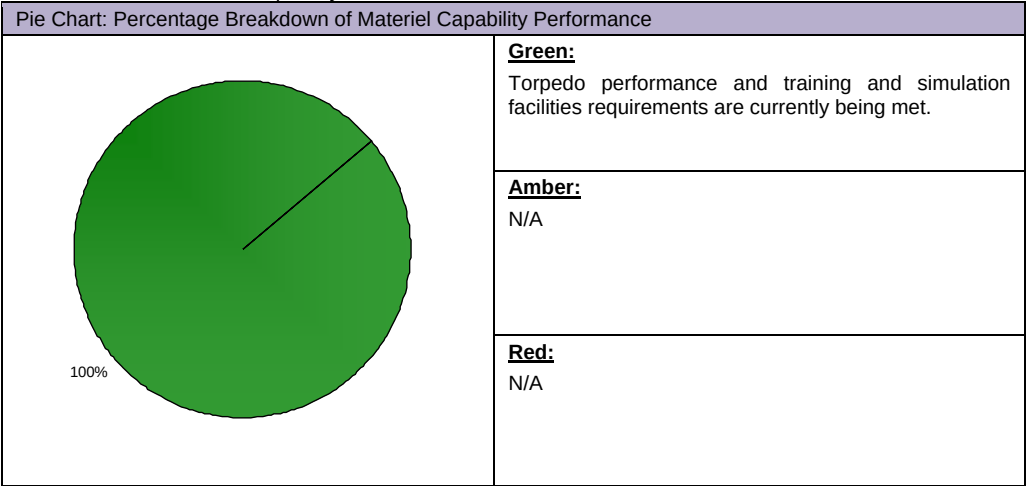
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the project weapon testing program will be affected by limitations in production capacity at the TMF, leading to an impact on scheduled turn-around times for weapon preparation, and cost increases.	This risk is being treated by Engaging with Submarine Force (SUBFOR) and Navy Guided Weapons System Program Office to maximise weapon output to meet test schedule requirements. This risk has been reassessed by the Project and is now rated as a medium risk.
There is a chance that the weapon software development and testing program will be affected by submarine operational demands and priorities, leading to an impact on schedule and cost increases.	This risk is being actioned by: - Engaging with stakeholders and SUBFOR to coordinate weapon testing and operational demands and priorities; and - Engaging with SUBFOR to maximise weapon testing in order to maintain schedule. This risk has been reassessed by the Project and is now rated as a medium risk.
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	This risk is being mitigated by: - Recruitment of appropriately skilled staff to fill vacant positions; - Training of staff to maintain requisite skills and knowledge; - Engaging with project stakeholders and Submarine Branch resources to mitigate loss of corporate knowledge; and - Engagement of contractors for specific tasks where expertise is not available in house.
There is a chance that Final Operational Release will be affected by non-compliance with the Certification Basis, leading to an impact on cost and schedule.	This risk is being mitigated by: - Working collaboratively with the USN to incorporate Australia's requirements in the requirements and testing documentation; - Constant engagement at the Executive Steering Committee level to ensure the USN maintains a focus on meeting Australia's requirements; - Using USN performance measures, which exceed those in current use for Australian weapons, to meet IOR requirements; - Develop traffic light report to agree requirements baseline with stakeholders; - Maintaining a management reserve to cater for change and re-testing of failed requirements; and - The RAN conducting a number of the in-water runs.

There is a risk that delays to the submarine docking program as a result of higher operational priorities or material defects will adversely affect the Project platform integration program creating schedule delays and cost increases.	This risk is being mitigated by: - Active and frequent engagement with RAN, DMO and industry stakeholders to ensure that any proposed changes to planned maintenance activities properly consider the potential impact on project schedule and/or cost. - Through line management, the project team ensures that when considering changes to the Collins Integrated Master Schedule, committees such as the Sustainment Control Board and the Program Review Board are properly informed about potential impact on project schedule and/or cost.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

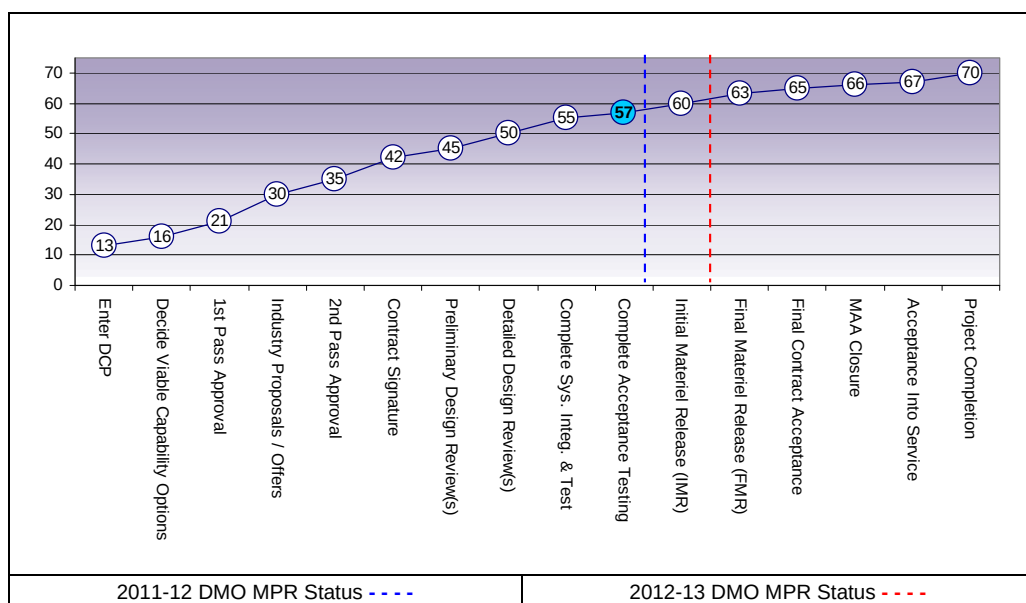
6.2 Major Project Issues

Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the HWT installation schedule.	Monitor Submarine Availability Group outcomes. The Project Office is not in a position to treat this issue, but is monitoring opportunities to install systems earlier.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Complete Acceptance Testing	Project Status	8	9	9	9	9	9	9	62
	Explanation	• Cost: The completion of APB 4 software operational testing completes a major deliverable. The remaining Project budget and contingency is considered adequate to cover any remaining project cost risk. Therefore, the assessment score is marginally ahead of the benchmark score for this particular maturity grade. • Requirement: System integration and testing processes have verified the platform modification requirements and those modifications apply to later Spiral baselines. The APB 4 baseline has also been accepted for IOR. Therefore, the assessment score is marginally ahead of the benchmark score for this particular maturity grade. • Technical Understanding: APB 4 software has completed operational testing. Therefore, the assessment score is marginally ahead of the benchmark score for this particular maturity grade. • Commercial: All major Project deliverables are completed with the exception of the platform installations on the remaining two submarines. • Operations and Support: APB 4 software has been granted IOR and has completed operational testing. Therefore the maturity score is marginally ahead of the benchmark score for this particular maturity grade.							



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing is available to execute the project particularly in the start up phase.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule Management
Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US Government International Traffic in Arms Regulation can require up to a year to progress.	Requirements Management
Engaging in a joint development project where Australia is the junior partner and largely dependent on the US Government program, can introduce project management, cost, technology and schedule risk that needs to be addressed.	First of Type Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Mr David Gould
Division Head	AVM Chris Deeble
Branch Head	Mr David Cochrane
Project Director	Mr David Connolly
Project Manager	Mr Walter Daly

Project Data Summary Sheets

ANAO Report No.12 2013–14
2012–13 Major Projects Report

Project Data Summary Sheet¹⁸¹

Project Name	COLLINS CLASS SUBMARINE RELIABILITY AND SUSTAINABILITY
Project Number	SEA 1439 Phase 3
First Year Reported in the MPR	2009-10
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 00
Total Approved Budget (Current)	\$411.4m
2012-13 Budget	\$10.6m
Project Stage	Detailed Design Review
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

SEA 1439 Phase 3 is a program of upgrades to Collins Class platform systems and shore infrastructure to improve the Class reliability, sustainability, safety and capability.

1.2 Current Status

Cost Performance

In-year

In year expenditure was \$7.8m against a planned budget of \$10.6m resulting in an underspend of \$2.8m. The underspend is primarily due to delays in local industry associated with changes to the Full Cycle Docking (FCD) program.

Project Financial Assurance Statement

As at 30 June 2013, project SEA 1439 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the Defence Materiel Organisation (DMO). Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

¹⁸¹ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

The project consists of 22 separate sub-projects of which the outstanding elements are aligned to the Collins Class Submarine Integrated Master Schedule (IMS). The IMS depicts the submarine maintenance availabilities where project implementation can be performed. Submarine installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the FCD program, consequently completion dates vary according to maintenance availability.

Installation of engineering enhancements on HMA Submarine *SHEEAN* completed with the FCD concluding August 2012 and implementation continues on HMA Submarine *RANKIN*. HMA Submarine *COLLINS* FCD has been re-scheduled to commence in 2016 due to a baseline change to the IMS. The project has progressed non-platform activities pertaining to the Diesel Land Based Test Facility with completion of the upgraded seismic concrete slab and manufacture of the mounting assembly.

Materiel Capability Performance

Only two sub-projects provide new capabilities; Special Forces upgrade and the Torpedo Decoy. The remaining sub-projects are medium to low complexity engineering enhancements. The Special Forces upgrade provides three capabilities. Two have achieved Operational Release (OR), while the remaining capability (Exit & Re-entry) has been delayed due to the requirement to implement safety modifications identified during the manned Sea Verification Trial. **These safety modifications have been developed and are awaiting implementation during** HMA Submarine *DECHAINEUX* Mid-Cycle Docking.

Project has **satisfied all DMO requirements and is awaiting Navy Regulator authorisation of the Technical Instruction 338 required to achieve Initial OR for the Torpedo Decoy.**

Five engineering enhancements have been completed by the project. The remaining enhancements will be implemented progressively until 2022 subject to the submarine availability and the FCD program.

1.3 Project Context

Project Background

In 1999, Government sponsored the '*McIntosh and Prescott Report*' into submarine capability, which was followed by a subsequent review by Head Submarine Capability Team who identified capability, reliability and sustainability issues with the Collins Class platform and associated shore infrastructure. In 2000, Government approved project funds to design and implement engineering enhancements for as many of these capability and materiel deficiencies as possible within the allocated budget. Government also approved a "global budget" whereby Head Maritime Systems could approve transfer of funding between SEA 1439 Phase 3, SEA 1439 Phase 4B (Improvements to Collins Sensors), SEA 1439 Phase 4A (Replacement Combat Systems) and SEA 1429 (Replacement Heavyweight Torpedo) to achieve optimum capability. Under the global budget there have been reductions in funding allocations to SEA 1439 Phase 3 in favour of SEA 1439 Phase 4A and SEA 1429, with a commensurate reduction in the number of engineering enhancements to be implemented through SEA 1439 Phase 3.

The scope of this project is limited to the reliability and sustainability issues identified in the 1999 review and not the more contemporary reliability and sustainability issues relating to diesel engines, generators, batteries or the main motor; those issues are being addressed under the submarine sustainment program.

Many of the engineering enhancements can only be installed during the submarine FCD program and although most design and development activities are complete, submarine upgrades are contingent on the FCD program, which will run to 2022.

A total of 24 platform upgrades were originally identified in the initial MAA. However, two were removed due to one being technically infeasible and the other overlapping with another project. The remaining 22, consisting of two new capabilities and 20 engineering enhancements, have been identified for action under the project. Five engineering enhancements have been completed and the two new capabilities are being implemented. However, completion of the remaining 15 engineering enhancements is priority driven and will be continually reassessed throughout the project.

The two new capabilities and core engineering enhancements managed by the SEA 1439 Phase 3 project, which represent the highest priority and spend profile, and specifically disclosed in this report include:

- **Special Forces Upgrade (New Capability):** To provide three basic levels of capability and to further enhance the capabilities to a fully deployable state in two submarines.
- **Torpedo Counter Measures Internal Stores (Torpedo Decoy) (New Capability):** To provide a programmable counter measure against torpedos.
- **Fire Fighting Upgrade (Engineering Enhancement):** Upgrade to the fire fighting systems onboard, including greater protection from fire and its toxic by-products.

- **Sewage System Upgrade (Engineering Enhancement):** Automation of the sewage discharge system and thereby reduce the risks of exposure to toxic gases.
- **Fast-Track modifications to Submarines 1, 2, 3 and 6 (Engineering Enhancement):** Address platform build deficiencies in a holistic get-well program.

Details outlining the remaining 19 platform upgrades (engineering enhancements) were provided in ANAO Report No. 17 2010-11: 2009-10 Major Projects Report.

Project Uniqueness

Project SEA 1439 Phase 3 installs prioritised engineering enhancements and acquires replacement materiel as a part of ensuring continuous improvement of the **Submarine fleet**. Engineering enhancements **were** undertaken by ASC Pty Ltd (ASC) under an annualised cost-plus Through Life Support Agreement (TLSA); **however as of 1 July 2012 this work is now contracted under an In Service Support Contract (ISSC) as a cost-reimbursement arrangement**. Implementation of the ASC contract scope of work is linked to the boat **IMS** and driven by availability requirements mandated by Chief of Navy and Program Manager Collins (**Division Head**).

Project Major Challenges

Engineering enhancements are managed on a prioritised basis within the limited funding available, with implementation aligned to the IMS which is not controlled by the project. Where schedule slip occurs, there is the potential for impact on project cost performance.

Budget management under the cost reimbursement arrangement of the ISSC will present a major challenge for the project in achieving monthly expenditure. This is due to the alignment of phased expenditure and the supplier's ability to move work within the total work program to achieve contracted performance goals.

Other Current Projects / Sub-Projects

N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1439 Phase 4A Replacement Combat System	To provide Collins Class submarines with the US Navy Tactical Command and Control System; minor improvements to the Combat System Augmentation; sonar and shore facilities for integration, testing and training.	SEA 1439 Phase 3 has provided Global Positioning Systems to SEA 1439 Phase 4A for installation with each Replacement Combat System implementation.
SEA 1446 Phase 1 Interim Minimum Operating Capability	Combat System Augmentation and a number of platform system modifications to two submarines and shore infrastructure.	SEA 1446 Phase 1 supplied approved and verified fast track platform designs for implementation into four submarines.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Sep 00	Original Approved	72.0	
Apr 01	Real Variation – Transfers	3.7	1
Jul 01	Real Variation – Scope	302.8	2
Sep 02	Real Variation – Transfers	(42.0)	3
Aug 04	Real Variation – Budgetary Adjustments	(0.3)	4
Aug 05	Real Variation – Budgetary Adjustments	(0.5)	5
Oct 06	Real Variation – Scope	7.5	6
		271.2	
Jul 10	Price Indexation	74.4	7
Jun 13	Exchange Variation	(6.2)	
Jun 13	Total Budget	411.4	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – ASC Pty Ltd	(216.4)	8
	Other Contract Payments / Internal Expenses	(110.5)	
		(326.9)	
FY to Jun 13	Contract Expenditure – ASC Pty Ltd	(7.6)	9
	Other Contract Payments / Internal Expenses	(0.2)	
		(7.8)	
Jun 13	Total Expenditure	(334.7)	
Remaining Budget			
Jun 13		76.7	
Notes			
1	Transfer from SEA 1439 Phase 1B.		
2	Implementation of a reliable and sustainable Platform (full scope).		
3	Transfer to SEA 1439 Phase 4A as part of initial approval.		
4	Administrative Savings harvest.		
5	Skilling of Australia's Defence Industry harvest.		
6	Real Cost Increase of \$7.5m for Special Forces modification to an additional Collins Class submarine.		
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$66.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$7.7m having been applied to the remaining life of the project.		
8	Other expenditure comprises \$54.6m against multiple minor contracts with Defence companies (including Australian companies), contractor and consultancy services associated with the delivery of this project and project specific travel expenses . Other examples of significant expenditure include \$3.7m with Thales for the Underwater Telephone and \$9.3m for the Towed Array Handling System. It includes \$11.7m to L3 Nautronix Ltd for the underwater communications system (HAIL) and sonobuoy (PASOR), \$12.3m for the Propulsion Control Reference System, \$3.1m for Torpedo decoy procurement , and \$4.7m for contractor service providers . Remaining expenditure relates to general operating expenditure of approximately \$5.7m and minor contracts totalling approximately \$4.1m .		
9	Other expenditure comprises: operating expenditure, contractors and consultants.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	Local Industry variance is due to the supplier not completing the planned work scope predominantly due to the supplier electing to allocate resources to other tasks within the submarine program.
			Overseas Industry	
		(0.6)	Local Industry	
			Brought Forward	
		(1.4)	Cost Savings	
			FOREX Variation	
		(0.8)	Commonwealth Delays	Cost Saving variance is due to reduced effort on COLLINS FCD by the supplier. Commonwealth Delays attributed to the invoice for cost incurred in June 2013 not being paid before the end of financial year.
10.6	7.8	(2.8)	Total Variance	

2.3 Details of Project Major Contracts

2.3 Details of Project Major Contracts						
Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
ASC Pty Ltd	Jul 12	N/A	N/A	Variable (Cost Reimbursement)	ASDEFCON	1
Notes						
1	The contract is structured as follows; Initial two year Transition Period - Cost Reimbursement arrangements with Direct Project Costs (DPCs) reimbursed subject to defined rules and constraints and an agreed Budget Cost Estimate of DPCs for the Period. Subsequent five year mature Performance Periods - Target Cost Incentive Model arrangements with DPCs reimbursed subject to defined rules and constraints and an agreed Target Cost Estimate of DPCs for the five year Period, reset at the end of three years.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
ASC Pty Ltd	N/A	N/A	See 1.3 Project Context: Background for further information.			
Major equipment received and quantities to 30 Jun 13						
A total of 22 platform upgrades (consisting of two new capabilities and 20 engineering enhancements) continue to be progressed for each of the six submarines - subject to the FCD Program.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned (Note 1)	Achieved /Forecast (Note 1)	Variance (Months)	Notes
Final Design Review	Special Forces	N/A	N/A	Dec 04	N/A	2
	Torpedo Decoy	Jun 10	N/A	Jul 10	1	
	Fire Fighting Upgrade	N/A	N/A	Jun 04	N/A	2
	Sewage System Upgrade	N/A	N/A	Nov 04	N/A	2
	Fast Track Enhancements	N/A	N/A	N/A	N/A	

First of Class Implementation	Special Forces (COLLINS)	Jun 05	N/A	Oct 07	28	3, 4
	Torpedo Decoy (DECHAINEUX)	Jun 10	N/A	Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Jul 06	N/A	Oct 07	15	
	Sewage System Upgrade (WALLER)	Jul 06	N/A	Jul 08	24	
	Fast Track Enhancements (RANKIN)	May 01	N/A	Jun 06	61	
Full Class Implementation	Special Forces (COLLINS)	May 08	May 18	May 18	120	3, 4, 5
	Torpedo Decoy (RANKIN)	Oct 13	N/A	Oct 13	0	
	Fire Fighting Upgrade (SHEEAN)	Sep 22	N/A	Sep 22	0	
	Sewage System Upgrade (FARNCOMB)	Mar 17	N/A	May 16	(10)	6
	Fast Track Enhancements (WALLER)	Jul 06	N/A	Nov 07	16	
Notes						
1	The above data represents rolled-up information within the listed sub-projects each of which has many independent design review activities associated with over 100 Configuration Change Proposals. As the critical path for these sub-projects was broadly defined by the submarine docking program, individual activities within each of the above sub projects were allowed to move provided the delivery of the capability was not impacted adversely by delaying the completion of the specific docking. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the submarine docking program.					
2	In some instances, the original planned schedule for sub projects was incorporated into the submarine maintenance schedule which was maintained by ASC. ASC update the maintenance schedule annually and do not retain original schedule information. Consequently, apart from post June 2005 activities supported by a MAA, it is not possible to provide the original planned dates for some platform upgrade projects, which were scheduled to occur during an unstable FCD Program. Fast Track was initially installed on two submarines and managed under SEA 1446 Phase 1. 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.					
3	HMA Submarine <i>COLLINS</i> received modifications for Multi Swimmer Release and Float on/Float off which comprise two of the three Special Forces capabilities. The third (Exit and Re-entry) required redesign to increase diver safety following sea trials conducted in HMA Submarine <i>COLLINS</i> in 2008.					
4	The Special Forces safety modifications identified during the manned Sea Verification Trial have been developed and are awaiting implementation during HMA Submarine <i>DECHAINEUX</i> Mid-Cycle Docking, scheduled to be completed by December 2014 in accordance with the IMS.					
5	Full class implementation will be achieved on the completion of HMA Submarine <i>COLLINS</i> FCD which is scheduled for May 2018 in accordance with the IMS.					
6	Full class implementation will be achieved on the completion of HMA Submarine <i>FARNCOMB</i> FCD which is scheduled for May 2016 in accordance with IMS Version 5.0.					

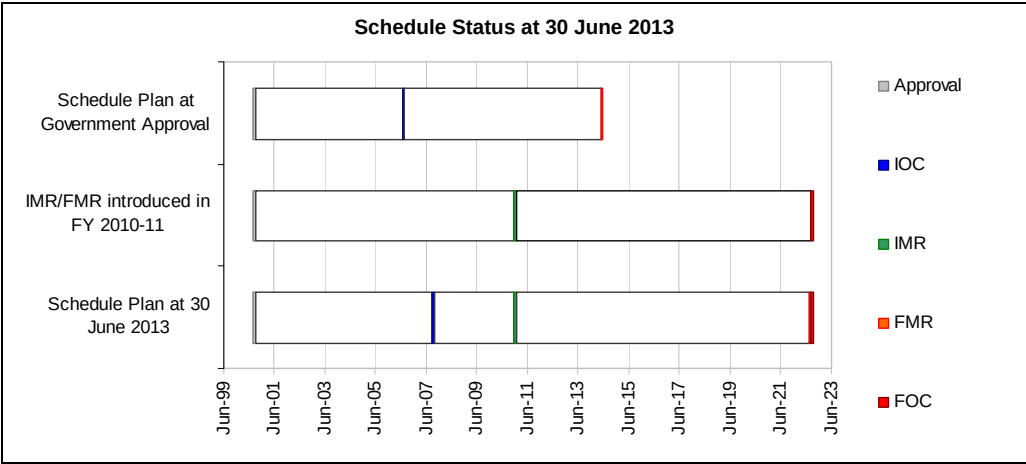
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned (Note 1)	Achieved /Forecast (Note 1)	Variance (Months)	Notes
Harbour Acceptance Test (HAT)	Special Forces (COLLINS)	Jun 05	N/A	Sep 06	15	
	Torpedo Decoy (DECHAINEUX)	Jun 10	N/A	Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Oct 13	May 14	May 14	7	2
	Sewage System Upgrade (WALLER)	Jul 06	N/A	Mar 07	8	
	Fast Track Enhancements	N/A	N/A	N/A	N/A	
Sea Acceptance Test (SAT)	Special Forces (COLLINS)	Aug 05	N/A	Dec 07	28	3
	Torpedo Decoy (DECHAINEUX)	Jul 10	N/A	Jul 10	0	
	Fire Fighting Upgrade	N/A	N/A	N/A	N/A	
	Sewage System Upgrade (WALLER)	Aug 06	N/A	Oct 07	14	
	Fast Track Enhancements	N/A	N/A	N/A	N/A	
Notes						
1	The original planned schedule for all sub projects was incorporated into the submarine maintenance schedule, the IMS. ASC update the maintenance schedule pertaining to specific dockings as required to achieve schedule performance 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 Section 3.1. Fast Track was initially installed on two submarines and managed under SEA 1446 Phase 1. SEA 1439 Phase 3 is responsible for rolling out those changes to the remaining four submarines. As such, HAT and SAT was achieved under SEA 1446 Phase 1.					
2	Variance is attributed to the change in schedule completion of HMA Submarine RANKIN FCD from October 2013 Version (IMS V3.3) and the current baselined IMS.					
3	HMA Submarine <i>COLLINS</i> received modifications for Multi Swimmer Release and Float on/Float off which comprise two of the three Special Forces capabilities. The third (Exit and Re-entry) required redesign to increase diver safety following sea trials conducted in HMA Submarine <i>COLLINS</i> in 2008. The redesigned safety modifications identified have been developed and are awaiting implementation during HMA Submarine DECHAINEUX Mid-Cycle Docking scheduled to be completed by December 2014. Sea Acceptance testing will be conducted again to verify the modifications. Redesigned safety modifications for HMA Submarine COLLINS FCD are scheduled for May 2018 in accordance with the IMS, upon completion HAT and SAT will be conducted.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

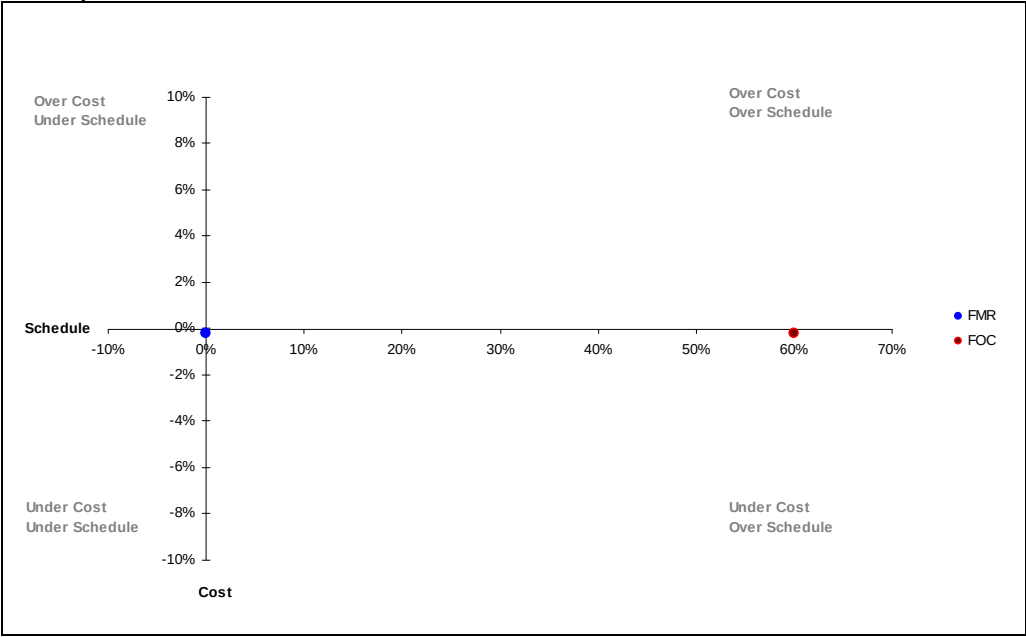
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Jan 11	N/A	
Initial Operational Capability (IOC)				
Initial Operational Release Special Forces (DECHAINEUX)	Nov 10	Dec 14	49	Refer Section 1.2 Current Status: Materiel Capability Performance.
Initial Operational Release Torpedo Decoy (DECHAINEUX)	Aug 10	Jun 13	34	Refer Section 1.2 Current Status: Materiel Capability Performance.

Fire Fighting Upgrade (RANKIN)	Oct 13	May 14	7	IOC is linked to successful completion of the HAT , where any variance will be caused through movement in the docking maintenance schedule. These dates are based on the IMS.
Sewage System Upgrade (WALLER)	Aug 06	Oct 07	14	IOC is linked to completion of the FOC 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.
Final Materiel Release (FMR)	Oct 22	Oct 22	0	
Final Operational Capability (FOC)				
Operational Release of Special Forces	Jun 07	Dec 15	102	The MAA delivery date was for HMAS <i>COLLINS</i> only. HMAS <i>DECHANEUX</i> implementation through MAA amendment created variance. The delay was further influenced by contractor workforce constraints and the phased delivery of capability enhancements to the Special Forces systems.
Operational Release of Torpedo Decoy	Jun 14	Oct 13	(8)	This modification is largely independent on the constraints of the docking maintenance schedules and can be simultaneously rolled out to platforms.
Fire Fighting Upgrade (SHEEAN)	Jun 14	Sep 22	99	Variance due to changes in docking maintenance schedule since original MAA.
Sewage System Upgrade (FARNCOMB)	Jun 14	Mar 17	33	Variance due to changes in docking maintenance schedule since original MAA.
Fast Track (WALLER)	Jul 06	Nov 07	16	Fast Track initially installed on two submarines and managed under SEA 1446 Phase 1. This project installed the Fast Track upgrades across the remaining four submarines. Variance due to changes in docking maintenance schedule since original MAA.



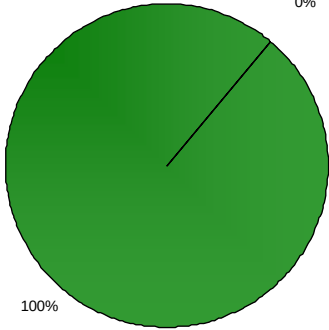
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
 A pie chart representing the percentage breakdown of Materiel Capability Performance. The chart is divided into two segments: a large green segment labeled '100%' and a very thin yellow segment labeled '0%'. The green segment represents the majority of the performance, while the yellow segment represents a negligible portion.	Green: Upgrades to platform and shore infrastructure are meeting operational, functional and safety requirements. Upgrades are rectifying capability deficiencies with the initial system. Appropriate and timely training provided to operators and maintainers is occurring. Submarines meet the requirements of the Navy Technical Regulations. System upgrades meet supportability requirements as defined under individual system upgrade certification plans. Special Forces Exit and Re-entry safety modifications could not be achieved within the Material Release Tranche Two due to the impact to the submarine maintenance availability. These modifications have been programmed for the next maintenance availability with an expected delivery date in line with the IMS.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that schedule slip to the boat FCD schedule will impact the installation of engineering enhancements and new capability, leading to cost and schedule increases to the project.	This risk is being treated by: • Obtaining endorsement of the IMS at the senior management level; • Improving management of maintenance schedules; and • Ensuring configuration changes are captured in the targeted maintenance availabilities Total Work Package.
There is a chance that competing workload demands will reduce the skilled resources available at the contractor facility and impact the installation and testing of engineering enhancements on boats, leading to cost and schedule increases.	This risk is being treated by: • Undertaking engineering enhancement in accordance with the IMS; • Resolving design issues with engineering enhancements early to improve design maturity; and • Coordinating the engineering enhancement workload on the ASC capped workforce.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
There is a chance the Outboard Stowage of Special Forces Equipment cannot be achieved due to design and manufacturing deficiencies leading to schedule delays.	This risk is being treated by: • Directorate of Submarine Engineering to review design and manufacture data; and • Material options to be investigated and compression testing to be carried out prior to design acceptance.

6.2 Major Project Issues

Description	Remedial Action
That Torpedo Decoy (SUBSCUT) Capability will not be accepted prior to life expiry of Acoustic Decoy Countermeasures (ADC).	ADC life has expired. SUBSCUT is yet to achieve interim operational release status however is available for training and carriage as required. Project has satisfied all DMO requirements and is awaiting Navy Regulatory authorisation of the Technical Instruction 338 to support the Capability Manager achieve Initial Operational Release (IOR).

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	6	6	8	8	8	8	9	53
	Explanation	• Schedule: Establishment of the IMS and maturity of the majority of designs gives confidence in the schedule. • Cost: Project estimates for individual enhancements were not feasible given the undefined project scope. However current cost estimates are within project budget as the majority of the modifications are designed but not fully implemented. • Requirement: Designs are either complete or well advanced for most platform upgrades projects. Many are partially implemented across the class. • Technical Difficulty: Some verification of designs have been completed, however some technical design challenges remain in progress; such as, composite external pressure vessels for Special Forces. • Commercial: Transition to an ISSC from TLSA has provided confidence that the remaining project cost will stabilise. Refer to Section 2.3 Details of Project Major Contracts Note 1. • Operations and Support: Project has achieved IMR for a number of sub-project enhancements and is now primarily in the implementation phase.							

Project Stage	2011-12 DMO MPR Status	2012-13 DMO MPR Status
Enter DCP	13	
Decide Viable Capability Options	16	
1st Pass Approval	21	
Industry Proposals / Offers	30	
2nd Pass Approval	35	
Contract Signature	42	
Preliminary Design Review(s)	45	
Detailed Design Review(s)	50	
Complete Sys. Integ. & Test		55
Complete Acceptance Testing		57
Initial Material Release (IMR)		60
Final Material Release (FMR)		63
Final Contract Acceptance		65
MAA Closure		66
Acceptance into Service		67
Project Completion		70

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that all capability requirements are clearly defined, approved and appropriately funded before detailed acquisition planning commences.	Requirements Management
Ensure that maintenance period schedule dependencies are identified and appropriate risk management strategies developed.	Schedule Management
Consider the impact associated with long term sole source cost plus contracts.	Contract Management

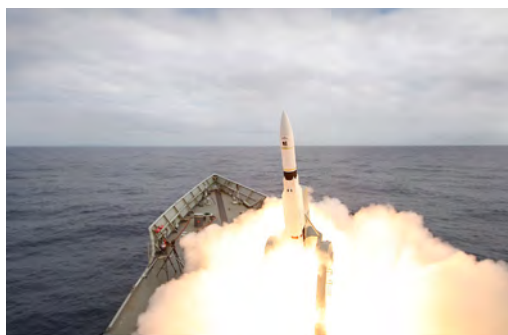
Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Mr Andrew Cawley (to Jul 12) Mr David Gould (Jul 12–current)
Division Head	AVM Chris Deeble
Branch Head	Mr David Cochrane
Project Director	Mr David Connolly
Project Manager	Mr Brad Hajek

Project Data Summary Sheet¹⁸²

Project Name	SM-1 MISSILE REPLACEMENT
Project Number	SEA 1390 Phase 4B
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	Nov 03
Government 2nd Pass Approval	Jul 04
Total Approved Budget (Current)	\$400.2m
2012-13 Budget	\$27.7m
Project Stage	Acceptance into Service
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

This project will replace the Standard Missile-1 (SM-1) missile with a modern variant of the Standard Missile-2 (SM-2) missile and improve the air defence capability of the Guided Missile Frigate (FFG) fleet, adding to the capability delivered by the FFG Upgrade project.

1.2 Current Status

Cost Performance

In-year

In-year expenditure resulted in a \$7.5m underspend, which is primarily attributed to delayed contracted scope with Australian and Foreign Industry and subsequent savings, as well as deferred Foreign Military Sales (FMS) payments. Additionally, establishment of In-Service arrangements has not proceeded as quickly as planned and Fire Control Radar hardware investigations are yet to commence.

Project Financial Assurance Statement

As at 30 June 2013, project SEA 1390 Phase 4B has reviewed the project's approved scope and budget for those elements required to be delivered by the Defence Materiel Organisation (DMO). Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

¹⁸² Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

Procurement and delivery of missiles completed February 2010. FFG SM-2 missile Stage 1 Home-All-the-Way (HAW) Material Release (May 2010), Initial Operational Release (IOR) (July 2010) and Initial Operational Capability (IOC) (August 2010) now achieved. Stage 2 (final stage) Mid-Course Guidance (MCG) capability Material Release occurred with Stage 2 software installation aboard HMAS *Sydney* in May 2011. Subsequent combined Acceptance Test and Operational Test and Evaluation (OT&E) live-fire events for the SM-2 missile test program successfully conducted off Hawaii during June 2011.

Land based and shipboard regression testing during January – March 2012 identified some issues for remediation prior to the MCG final software baseline being finalised for release in the third quarter of 2012. **The Materiel Acquisition Agreement (MAA) was updated on 28 March 2012. Capability observations by Navy regarding legacy Fire Control performance issues have been addressed insofar as these can be corrected in software to ensure the products are suitable. FFG Team Trainer (TT) has been completed with multiple FFG crews using that for Command Team Training. Operational software has been released for use in all FFGs. Maritime Armament Review Board (MARB) actions have been addressed and the Weapon System Certificates for all ships have been issued. Final Operational Capability (FOC) and Final Material Release (FMR) are forecast for early 2014 when delivery of the additional missile section spares is expected to be completed and the In-Service Support arrangements established.**

Materiel Capability Performance

FFG SM-2 Stage 1 HAW capability baseline was established in May 2010 and has been installed in all four FFGs and the land based TT. An operational firing event aboard HMAS *Newcastle* was conducted successfully in July 2010, and on 25 August 2010 Chief of Navy (CN) approved IOR of the FFG SM-2 HAW capability. The IOC was also achieved coincident with HMAS *Melbourne* deployment in August 2010. CN endorsed the SM-2 HAW capability, in conjunction with the upgraded FFG capability for Operational Release (OR) on 28 June 2012.

The FFG SM-2 Stage 2 MCG capability software baseline was established in May 2011 and installed in HMAS *Sydney* in preparation for combined Acceptance Test and OT&E live-fire events that were successfully conducted off Hawaii in June 2011. **SM-2 MCG capability has now been released for use in all FFGs and Weapon System Certificates have been issued. Royal Australian Navy (RAN) Test, Evaluation & Acceptance Authority (RANTEAA) OR recommendation has been submitted to CN for Acceptance decision, which is anticipated to occur in July 2013.**

1.3 Project Context

Project Background

Project SEA 1390 Phase 4B, as a discrete phase of the SEA 1390 Phase 2 FFG Upgrade project, will integrate the SM-2 Block IIIA surface to air missile into the four Royal Australian Navy (RAN) ADELAIDE class frigates (FFGs) at the "Mid-Course Guidance" standard, and acquire Initial Ship Outfit and Inventory Stock missiles.

The SM-2 Block IIIA missile is the replacement Area Air Defence (AAD) weapon for the aging SM-1 missile in RAN service with the FFGs. It will provide a modern AAD missile capability to the RAN FFGs and affording an air defence to escorted vessels and coastal infrastructure or forces deployed nearby.

The SM-2 capability will be progressively delivered in two stages to mitigate technical risk with the development and fielding of the required software. Stage 1 provides an SM-2 HAW capability (which was achieved in August 2010 with the deployment of HMAS *Melbourne* to Operation Slipper) with the full capability of MCG to be delivered in Stage 2.

The Commonwealth, through the FFG Systems Program Office (SPO), has assumed responsibility as the Prime Systems Integrator (Prime Contractor). This commercial arrangement is important as it provides a sound risk mitigation approach to the project's primary risk – the completion of the production stages of the SEA 1390 Phase 2 FFG Upgrade project (particularly the implications of non-availability of the FFG). This level of managerial oversight has allowed the FFG Upgrade project (SEA 1390 Phase 2) and the SM-2 Integration (SEA 1390 Phase 4B) to occur in parallel without negatively impacting each upon the other.

Project Uniqueness

Acquisition of the SM-2 capability is being undertaken via a combination of United States (US) Government FMS arrangements and US and Australian commercial sources, with overall 'Prime Systems Integrator' responsibility resting with the FFG SPO. There is a strong reliance on Original Equipment Manufacturers (OEM) due either to necessity (sole supplier/ proprietary information/ intellectual property constraints) or to mitigate risk and to maintain technical integrity. In addition, under a Service Level Agreement, the Navy Guided Weapons Systems Program Office is responsible for the acquisition of the SM-2 missiles, missile support and repair/certification facilities at the Intermediate Level Maintenance Facility Defence Establishment Orchard Hills.

Project Major Challenges

Ship availability within the RAN Force Generation Plan (FGP) **was** a significant challenge **when** scheduling installation and test activities. SM-2 Stage 2 MCG final software baseline **was rolled-out** in the third quarter of 2012 but ship availability **delayed the completion of this activity to the first quarter 2013. FOC, originally scheduled for the third quarter of 2012, has been delayed to early 2014.**

Other Current Projects / Sub-Projects

SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade Implementation: Upgrade FFG Anti-Ship Missile Defence (ASMD), air search radar and missile fire control system/radars, Underwater Warfare, Electronic Support and other ship systems, Data Link, ship and shore based Training Systems and establish a Warfare Systems Support Centre.

SEA 1390 Phase 4A – FFG SM-1 Missile Replacement Test Station: Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the SM-2.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1390 Phase 2.1 FFG Guided Missile Frigate Upgrade Implementation.	Upgrade FFG ASMD, air search radar and missile fire control system/radars, Underwater Warfare, Electronic Support and other ship systems, Data Link, ship and shore based Training Systems and establish a Warfare Systems Support Centre.	The upgraded FFG combat system developed under SEA 1390 Phase 2.1 was a necessary precursor and baseline for the development of the SM-2 capability. The upgraded FFG combat system was developed and delivered progressively as three successive (software) baseline builds and the completion of Baseline Build 2 was necessary for the further development of the SM-2 capability to be completed under SEA 1390 Phase 4B.
SEA 1390 Phase 4A FFG SM-1 Missile Replacement Test Station.	Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the SM-2.	Project SEA 1390 Phase 4A is another discrete phase of the SEA 1390 FFG Upgrade Project and is directly linked to the SM-2 capability. This phase acquired, installed and set-to-work a Mk 698 Mod 0 Guided Missile Test Set necessary to support the re-certification, maintenance and repair of the SM-2 Block IIIA missiles.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Jul 04	Original Approved	552.6	
Aug 05	Real Variation – Budgetary Adjustments	(2.1)	1
Apr 12	Real Variation – Transfer	(86.5)	2
Apr 12	Real Variation – Cost Saving	(120.0)	2
		(208.6)	
Jul 10	Price Indexation	127.9	3
Jun 13	Exchange Variation	(71.7)	
Jul 13	Total Budget	400.2	
Project Expenditure			
Prior to Jul 12	Contract Expenditure – AAI Corporation	(13.2)	
	Contract Expenditure – Lockheed Martin	(25.6)	
	Contract Expenditure – BAE Systems	(14.7)	
	Contract Expenditure – Thales Australia	(8.4)	6
	Contract Expenditure – US Government	(238.7)	
	Other Contract Payments / Internal Expenses	(6.2)	4
		(306.8)	
FY to Jun 13	Contract Expenditure – AAI Corporation	(0.5)	
	Contract Expenditure – Lockheed Martin	(0.5)	
	Contract Expenditure – BAE Systems	(0.3)	
	Contract Expenditure – Thales Australia	(1.2)	6
	Contract Expenditure – US Government	(16.5)	
	Other Contract Payments / Internal Expenses	(1.2)	5
		(20.2)	
Jun 13	Total Expenditure	(327.0)	
Jul 13	Remaining Budget	73.2	
Notes			
1	Skilling Australia's Defence Industry harvest.		
2	Real Cost Decrease comprising \$86.5m funds transfer to SEA 4000 Phase 3.2 Standard Missile-2 Conversion and Upgrade approved by Chief of Defence Force and Secretary, Department of Defence 29 August 2011, and \$120m cost savings identified at the 2012-13 Portfolio Budget Estimates Review for return to the Defence Capability Program.		
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$118.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$9.2m having been applied to the remaining life of the project.		
4	Other expenditure comprises operating expenditure, contractors, external service providers, consultants, other capital expenditure not attributable to the aforementioned top four contracts and minor contract expenditure.		
5	Other expenditure \$0.9m for Australian and US commercial technical support (verification/validation) services, and \$0.3m for other Project management support costs – travel/minor operating expenses.		
6	Thales Australia engaged to modify the Australian Distributed Architecture Combat System (ADACS) Command and Control (C2) software. Total contract value less than \$10.0m with expenditure profile as shown.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(4.6)	FMS	Some contracted scope with Australian and Foreign Industry (\$0.6m) has been delayed and these aspects will not be recovered in Financial Year 2012-13. Some contracted scope has also not been utilised leading to savings (\$0.3m). FMS payments were rescheduled with some FMS planned payments deferred in anticipation of savings and others brought forward. Establishment of In-Service arrangements has not proceeded as quickly as originally planned (\$4.0m) and Fire Control Radar hardware investigations are yet to commence.
		(0.4)	Overseas Industry	
		(0.2)	Local Industry	
		1.8	Brought Forward	
		(0.3)	Cost Savings	
		0.5	FOREX Variation	
		(4.3)	Commonwealth Delays	
27.7	20.2	(7.5)	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes		
		Signature \$m	30 Jun 13 \$m					
AAI Corporation	20 Jul 07	10.4	14.3	Firm	ASDEFCON			
Lockheed Martin	20 Jul 07	23.9	26.8	Firm	ASDEFCON			
BAE Systems	04 Feb 08	7.8	15.1	Firm	ASDEFCON			
US Government	15 Aug 05	218.9	258.3	FMS	FMS			
Contractor	Quantities as at		Scope			Notes		
	Signature	30 Jun 13						
AAI Corporation	Various	Various	Upgraded On-board Training System (OBTS), Guided Missile Launching System (GMLS) Simulator and Land Based Simulation System (LBSS).					
Lockheed Martin	Various	Various	MK92 Continuous Wave Illuminator (CWI) upgrade.					
BAE Systems	Various	Various	Guided Missile Launching System upgrade.					
US Government	Various	Various	Acquisition of SM-2 Missiles, Weapon Control System software upgrade.					
Major equipment received and quantities to 30 Jun 13								
Delivery of approved suite of missiles achieved. Hardware installations complete.								

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	GMLS Mk-13	Oct 05	N/A	Oct 05	0	
	OBTS/LBSS	Dec 05	N/A	Dec 05	0	
	Mk-92 Fire Control System Solid State CWI transmitter	Oct 05	N/A	Oct 06	12	1
	Command & Control (C2) ADACS Software	Feb 09	N/A	Feb 09	0	
	Weapons Control System	Oct 07	N/A	Oct 07	0	
Preliminary Design	GMLS Mk-13	N/A	N/A	N/A	0	
	OBTS/LBSS	Sep 07	N/A	Sep 07	0	
	Mk-92 Fire Control System Solid State CWI	Oct 07	N/A	Sep 07	(1)	
	C2 ADACS Software	Jun 10	N/A	Feb 10	(4)	
	Weapons Control System – Stage 1: HAW	Mar 08	N/A	Apr 08	1	2
	Weapons Control System – Stage 2: MCG	Jan 09	N/A	Feb 09	1	2
Critical Design	GMLS Mk-13	Oct 07	N/A	Nov 06	(11)	
	OBTS/LBSS	Jan 08	N/A	Jan 08	0	
	Mk-92 Fire Control System Solid State CWI	Jan 08	N/A	Jan 08	0	
	C2 ADACS Software	Jun 10	N/A	Feb 10	(4)	
	Weapons Control System – Stage 1: HAW	Aug 08	N/A	Aug 08	0	
	Weapons Control System – Stage 2: MCG	Jul 09	N/A	Jul 09	0	
Notes						
1	Delay due to mutually agreeing considerations with respect to Limitation of Liability and Intellectual Property.					
2	Delay attributable to consolidation of travel to US for multiple events including this review.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration - Weapons Control System Stage 1 HAW	Standard Missile Adjunct Processor (SMAP) Integration	Feb – Mar 09	N/A	Feb – Mar 09	0	
	Weapons Control Processor (WCP)/SMAP Integration Surface Warfare Engineering Facility	Mar – Jun 09	N/A	Mar – Jun 09	0	
	HAW CWI Engineering Development Model	Jun 09	N/A	Jun 09	0	
	System Integration Test – Shipboard	Aug – Sep 09	N/A	Sep – Oct 09	1	1
	System Acceptance Test – Shipboard	Oct – Nov 09	N/A	Nov 09	0	
System Integration - Weapons Control System	WCP/SMAP Integration Surface Warfare Engineering Facility	Jul – Nov 10	N/A	Nov 10	0	
	ADACS/WCP/SMAP Integration – Garden Island, Sydney	Jul – Sep 10	N/A	Oct 10	1	2

Project Data Summary Sheets

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2012–13 Major Projects Report

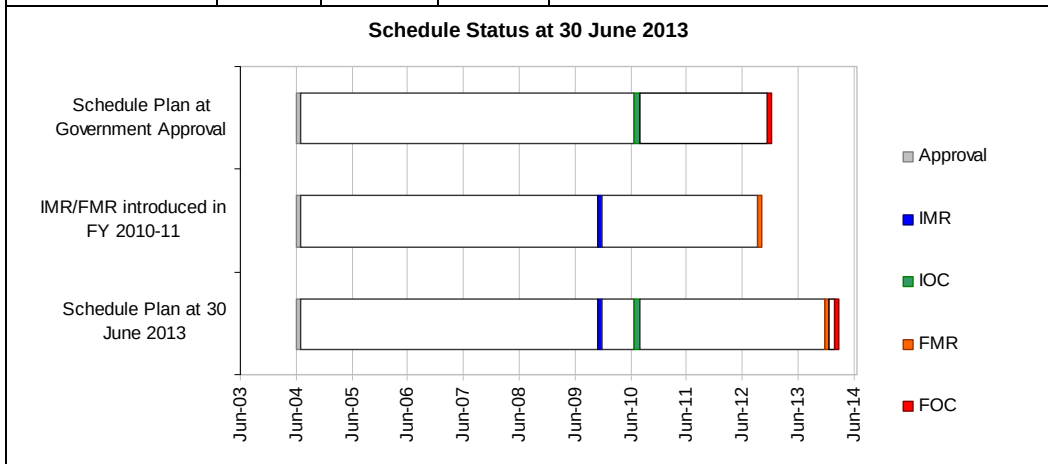
Stage 2 MCG	System Integration Test – Shipboard	Dec 10 – Jan 11	N/A	Jan 11	0	
	System Acceptance Test – Shipboard	Jan – Mar 11	N/A	Mar 11	0	
Acceptance	WSN-7B Ring Laser Gyro-compass	N/A	N/A	Sep 07 – Aug 09	0	3
	SM-2 Missiles	Sep 07 – Dec 08	N/A	Jul 08 – Oct 09	10	4
	GMLS Mk-13 Installation (4 ships)	Feb 09 – Feb 10	N/A	Apr 09 – Jun 10	4	5,6,7
	GMLS Mk-13 Roundhouse 1 Installation	Jan 09	N/A	Apr 09	2	8
	OBTS	Mar 09	N/A	Jun 10	9	9
	Team Trainer (TT)	Jul 09	N/A	Dec 09	5	10
	Warfare Systems Support Centre (WSSC)	Jul 09	Oct 09	Sep 09	2	17
	Mk-92 Fire Control System Solid State CWI (4 Ships)	Nov 08 – Jul 09	N/A	Aug 08 – Apr 10	9	11
	Mk-92 Fire Control System Solid State CWI for Ship Set 5	Nov 09 – Mar 10	N/A	Oct 09 – Jun 10	3	11
	Mk-92 Fire Control System Solid State CWI for Moorestown NJ, US	Dec 09 – Jul 10	N/A	Jan 10 – Apr 11	9	12
	Mk-92 Fire Control System Solid State CWI for Garden Island, Sydney	Aug – Sep 10	N/A	Apr 10 – Jun 11	9	12
	C2 ADACS Software	Feb 12	N/A	Nov 12	9	16
	Weapons Control System Stage 1	Dec 09	N/A	Aug 10	8	13
	Weapons Control System Stage 2 Firing Event Capability Demonstration	Mar – Apr 11	Jun 11	Jun 11	3	14
	Weapons Control System Stage 2 Operational Capability	N/A	Oct – Dec 12	Mar 13	3	15
	Weapons Control System Stage 2, Navy Acceptance (agreement to MCG Operational Release)	Oct – Dec 12	Jul 13	Jul 13	7	18
Notes						
1	A slight delay of nine days to coincide with ship completion of scheduled maintenance availability, thereby allowing the commencement of system testing.					
2	Delay attributable to ADACS software development and related follow-on certification for the FFGs to operate on the Australian tactical Multi-TDL Network.					
3	Delivery schedule for listed items procured under FMS Case AT-P-GMG not specified. Original planned date for delivery is not applicable.					
4	Delay attributable to requisition of missile components by US Navy during (FMS Case ATP-LCY) production phase.					
5	Ship one Installation was completed as scheduled in January 2009, however, Milestone achievement was delayed for resolution of minor design issues. This delay had no effect on the overall project delivery schedule.					
6	Ship two installation completed, milestone awaiting resolution of N260469 CCP-5. This delay had no effect on the overall project delivery schedule.					
7	Ship four Installation was completed as scheduled in December 2009. However the Test Results and Supplies Acceptance Certificate was provided and accepted by the Commonwealth in January 2010. This delay had no effect on the overall project delivery schedule.					

8	Installation completed as scheduled in January 2009. However, the Test Results and Supplies Acceptance Certificate was provided and accepted by the Commonwealth in April 2009 after installations and minor design corrections were made. This delay had no effect on the overall project delivery schedule.
9	Initial Acceptance Testing onboard HMAS <i>Melbourne</i> showed defect in Government Furnished Equipment (GFE) inertial navigation system. Finalisation of the OBTS Acceptance was withheld pending correction of this defect.
10	The test and acceptance of the Land Based Simulation System software was dependant on the availability of the site for this purpose within the overall RAN training schedule. Since the TT was not available at the contracted time, the obligation was deferred until the TT was available and was coordinated with other visits to Australia by the US vendor (AAI Corporation) personnel. This delay had no effect on the overall project delivery schedule.
11	MK92 CWI updates included the classified Stable Master Oscillator (STAMO). The alterations required a turn-around program for the classified items through the OEM (Lockheed Martin) in the US and its supplier. There is a limited number of classified shipments through the Australian Freight Forwarder in US and RAAF Richmond in Australia. Additionally these classified items require licensing by the US Department of State for international transfer. Several issues were encountered where the Australian Freight Forwarder changed its street address in US and this required re-issuing of the licence, a process that takes about three months through the US Department of State. Coordination of ship availability for installation testing of modified STAMOs and to provide the GFE for the turn-around program needed to be undertaken with the classified shipments. The purpose was to ensure that the ships were always operational during the turn-around program with some variation to the contracted milestones, which was appreciated by both parties. The delay had no effect on the overall project delivery schedule.
12	A latent defect in the original FFG Upgrade STAMO design was discovered midway through the SM-2 alteration turn-around program. This meant that additional design and fabrication was required and that all STAMOs needed to be turned around again. The re-work was agreed under contract change and the existing contract milestones rescheduled. The redesign, fabrication, and proof of correction took longer than expected due to material supply lead-time and issues associated with the shipment of classified items to/from US (see Note 13). Additionally STAMOs in the turn-around program not being available for ships (see Note 13) which perturbed the overall program since a modified STAMO was necessary before an unmodified STAMO could be returned. The delay had no effect on the overall project delivery schedule.
13	Shipboard testing identified issues which required resolution.
14	Delay attributable to the RAN Reduced Activity Period in the December/January 2010 period, which meant ships were unavailable over a two month period for the conduct of shipboard integration and testing per the original schedule. An additional delay of one month was caused by the unavailability of the US Pacific Missile Range Facility where the live-fire test events are scheduled to be conducted.
15	Update of MAA has recognised the need to allow for update of the software to account for issues in the test program that need to be corrected before being fielded for operational use. The revised MAA now allows for both a correction and regression test period and a roll-out to all ships and shore sites depending on the availability of those locations within the RAN FGP and Training Program. Achievement date of March 2013 represents the issuing of the SM-2 Stage 2 MCG Weapon System Certificates for each ship under the auspices of the MARB.
16	Finalisation of the Stage 2 baseline Combat System software for operational fielding of the final MCG capability was scheduled to occur by early 2012. Issues with the Fire Control radars have been identified during the on-going regression tests for the planned final software and resolution required additional shipboard testing conducted aboard HMAS <i>Newcastle</i> late June 2012. MCG capability has now been released for use in all FFGs and Weapon System Certificate has been issued. Awaiting RANTEAA OR submission to CN.
17	WSSC delay attributed to requirement for Weapon Control System software maturity to be attained before completion of the Land Based Simulation System wrap-around simulation software could occur and Acceptance achieved. Original scheduling did not include this dependency.

18	Capability progressively installed in FFGs per the Navy operating cycle as represented in the Force Generation Plan. Maritime Armament Review Board held in December 2012 and outstanding actions completed in March 2013 coinciding with final ship installation. RANTEAA recommendation on Navy OR being staffed through Navy channels. Date projected represents expected CN agreement.

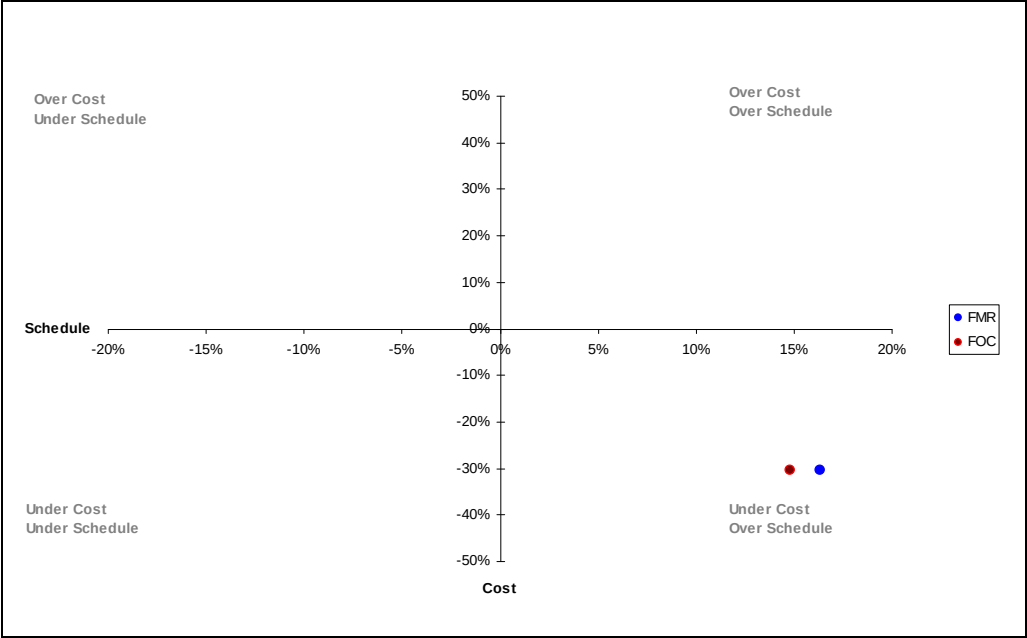
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 09	N/A	
Initial Operational Capability (IOC)	Aug 10	Aug 10	0	
Final Materiel Release (FMR)	Sep 12	Jan 14	16	Procurement of Additional Missile Section Spares was initially delayed due to US FMS contracting issues. Delivery has commenced but is not expected to be completed until Dec 2013 due to shipping delays associated with the annual/semi-annual ammunition ship that transports ordnance from US to Australia. Additionally establishment of the In-Service Support arrangements are outstanding but expected to be in place by late 2013.
Final Operational Capability (FOC)	Dec 12	Mar 14	15	Achievement of FMR is procedurally necessary prior to FOC and hence this event is programmed to occur following the expected achievement of FMR.



Section 4 – Project Cost and Schedule Status

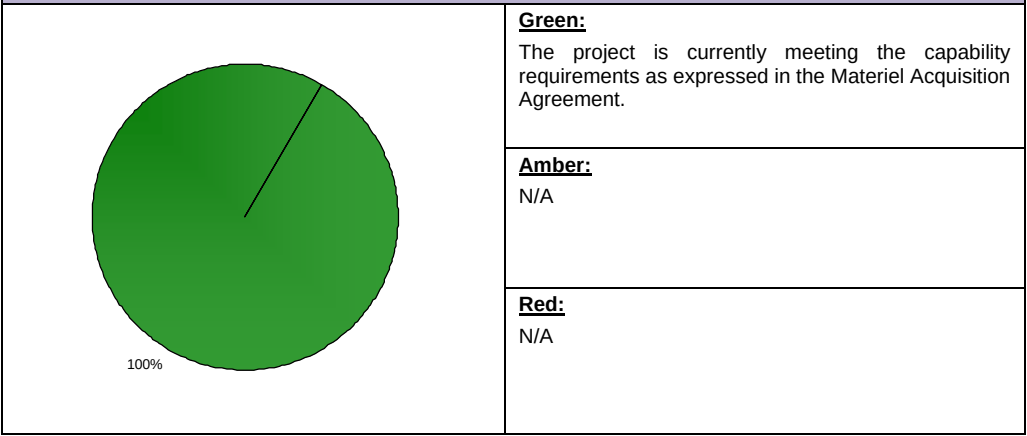
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

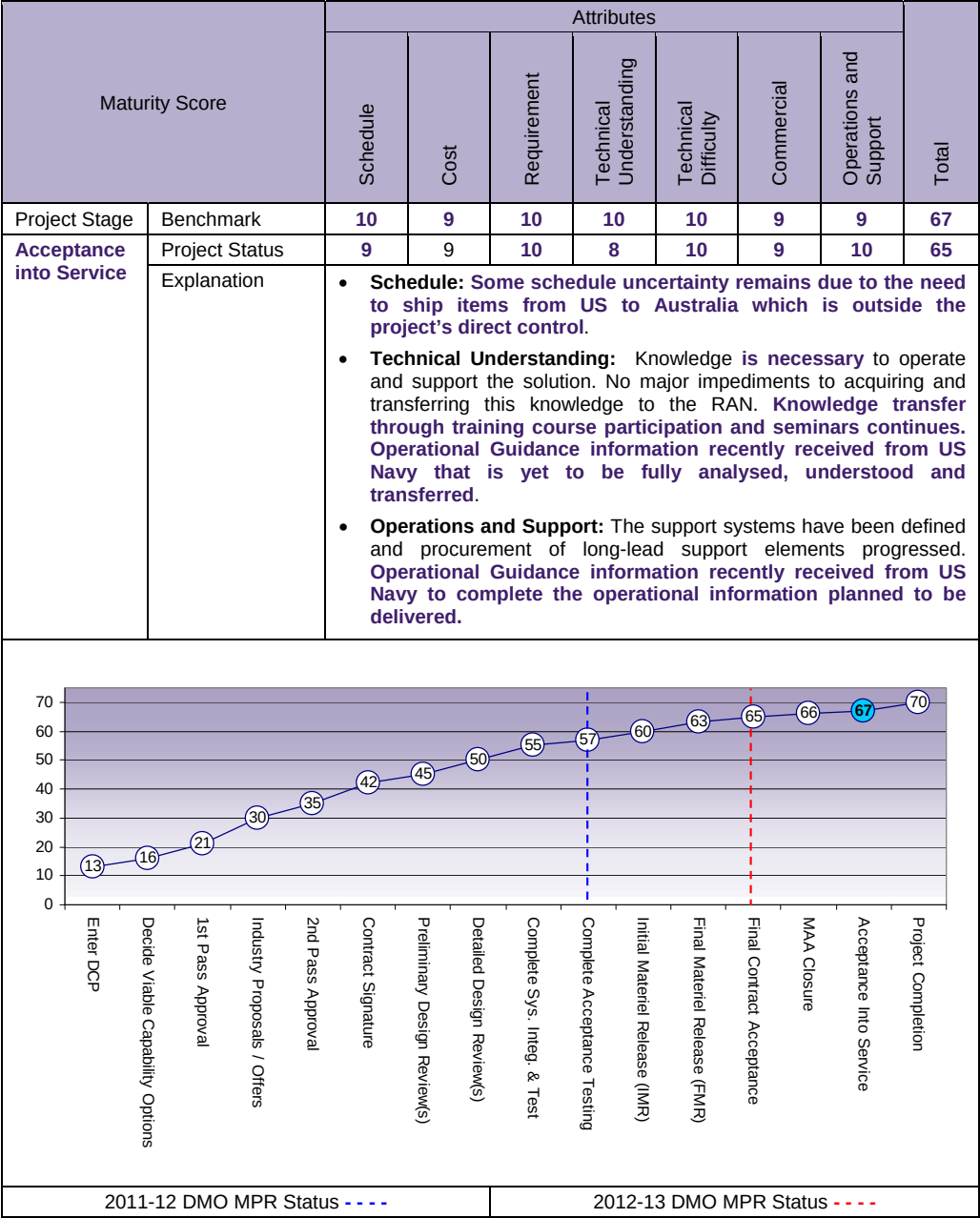
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the SM-2 test program will be affected by the non-availability of Target/Range services to conduct firing within Australia leading to a delay to schedule and increased costs.	The FFG SPO is engaging the RAN operators and regulators to provide indigenous Test and Evaluation options. This risk has been reassessed by the project and is now rated as a medium risk. This risk has been retired.
There is a chance that US Government FMS Technical Services and commercial contracts with US based OEMs may exceed allocated Budget per service.	Commonwealth accept the risk and allocate contingency as required. Additional provision for FMS and commercial technical services, and test and evaluation activities have been programmed. This was reported as an Issue in the 2010-11 MPR but has been reverted to a Risk as funding for existing contracts/services, additional FMS and commercial technical services are pending negotiation/contract, as well as provision for further OT&E have been programmed in the 2012-13 Portfolio Budget Statements. OEM and commercial contracts/services have been delivered and therefore this risk can be retired. This risk has been retired.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
There is a chance that the establishment of In-Service Support Arrangements for the Weapons System Software will not be in place such that there will be a reduction in availability of the development Integrated Development Team (IDT) personnel to provide the planned support, thereby endangering the In-Service capability longevity.	FMS Letter of Request has been submitted to US Navy International Programs Office requesting three years In-Service Support per the project obligations. Liaison has been undertaken with the US Navy FMS managers and IDT participants regarding expected scope and method of delivery (eg. 2x 18-month updates to the software products). US Government Letter of Offer and Acceptance is awaited.

6.2 Major Project Issues

Description	Remedial Action
Project delivery and timing will not be met if appropriately qualified and experienced project staff are not recruited.	Increase Australian Public Service position levels to attract/retain personnel. Engage professional service providers to meet shortfall in required expertise. This is an on-going issue as commercially engaged technical support is required to deliver and finalise the Project. Funding provision for commercial support is programmed to Financial Year 2013-14. Additionally, the number of unfilled positions within the FFG Systems Program Office (SPO) and current recruitment freeze is posing a significant challenge to SPO business, which is having an impact on the Project. This issue has been retired.
The installation and test program, necessary to deliver the SM-2 capability to meet the In-Service Dates, will be affected by the unavailability of Upgraded FFGs, due to their Fleet Activity Schedule (now Force Generation Plan).	This was identified as a risk in the 2010-11 MPR and has now been realised. Navy operational requirements and revised ship availability schedule has delayed Mid Course Guidance software rollout by at least three months. This issue has been retired.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Two stage contracting: Contract Development Agreements facilitate early positive engagement with the contractor, joint development of the resultant fixed price contract and establishes an effective and cooperative work environment.	Requirements Management Contract Management
The establishment of commercial contracts were based entirely on deliverable items and artefacts (software build states and/or documentation in electronic format) and progress against agreed milestones. Payments were made on delivery acceptance and milestones achieved in accordance with the contract. Reliance on Contract Earned Value Management requires considerable effort and expertise on the part of the Project Authority to adequately assess contractor performance, and was not utilised or necessary to achieve 'value for money' project objectives.	Contract Management
For significant and high technological upgrades to major systems the acquirer (Commonwealth) acting as the Procurement Coordinator managing separate contracts directly with OEMs allows for better risk management, schedule control and influence on the quality of the contracted supplies.	Requirements Management Contract Management
Significant efficiencies were achieved for ease of handling, delivery, traceability and tracking of documents through electronic document delivery which was encouraged in all commercial contracts and the primary FMS case.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13) AVM Chris Deeble (Acting Jun 13–current)
Division Head	RADM Peter Marshall (to Dec 12) RADM Mark Purcell (Dec 12–current)
Branch Head	CDRE Michael Houghton
Project Director	CAPT Mona Shindy, RAN
Project Manager	CAPT Mona Shindy, RAN

Project Data Summary Sheet¹⁸³

Project Name	ANZAC ANTI-SHIP MISSILE DEFENCE
Project Number	SEA 1448 Phase 2A
First Year Reported in the MPR	2009–10
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 03
Total Approved Budget (Current)	\$386.5m
2012-13 Budget	\$16.0m
Project Stage	Complete Acceptance Testing
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA 1448 Phase 2 project will provide the ANZAC Class Frigates with an enhanced level of self defence against modern anti-ship missiles. There are two sub-phases of SEA 1448 Phase 2. Phase 2A of the ASMD Project, is to upgrade all eight of the ANZAC Class Ship's existing Combat Management Systems (CMS) and fire control systems, and install an Infra-Red Search and Track (IRST) System which will provide improved detection of low level aircraft and anti-ship missiles when the ship is close to land.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2013 the current approved scope, budget and contractual obligations have been reviewed and met. Current in-year performance indicates an underspend of \$4.4m, assessed largely due to complex material management. The project is actively working with industry to realign the financial spend profile.

Project Financial Assurance Statement

As at 30 June 2013, project SEA 1448 Phase 2A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

¹⁸³ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

The systems being provided under Phase 2A are being delivered to schedule. Overall though, due to the **dependence** 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. With the Real Cost Increase for Phase 2B for the follow on ships 2-8 in November 2011, there is now a 10 month variance to the delivery of the final capability as advised in the 2009 Cabinet Submission. This equates to a 70 month variance to the original approvals for this Phase of the Project. During **2012–13**, schedule has continued to be maintained, **with recent activities including the successful completion of Stage 2, CAT 3 and CAT 4 system testing on HMAS Perth. The second ship to undergo the ASMD upgrade is progressing on schedule and is due to re-enter service in early 2014.**

Materiel Capability Performance

The Initial Materiel Release (IMR) was claimed for Stage 1 Capability on HMAS *Perth* on 24 June 2011. The Chief of Navy formally provided Initial Operational Release (IOR) for ASMD upgrade capability delivered to HMAS *Perth* and its associated support systems on 16 August 2011. The Project is continuing to progress Stage 2 Capability and is on track.

1.3 Project Context

Explanation

Project Background

The need for an ASMD capability in the Royal Australian Navy's (RAN) surface fleet was first foreshadowed in the 2000 Defence White Paper.

SEA 1448 Phase 2A is the initial phase of the ANZAC ASMD Program, performed by the ANZAC Alliance (Commonwealth plus BAE Systems (previously Tenix) and Saab Systems), to provide ship systems capable of integrating missile defence systems.

Phase 2A was approved by Government in November 2003 for **\$449m** (December 2003 prices). This included an element for the Very Short Range Air Defence (VSRAD) System (two per ship) of \$155.5m, which was quarantined pending the outcome of investigations into an active phased array radar system (referred to as CEAFAIR) and its Sea trials conducted in 2004.

SEA 1448 Phases 2A and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. Phase 2A represents a low risk due to its in-service equipment, whereas Phase 2B represents a high risk due to the leading edge (developmental) technology involved, and these risks migrate as enterprise risks to the confederated SEA 1448 Phase 2 ASMD Project.

As a result of technical issues in the integration of the phased array radar into the Class with Phase 2B of the ASMD Project in 2007, a change to the Phase 2B Project acquisition strategy has caused delays in the installation of the equipment being purchased under Phase 2A. These delays do not impact on the delivery of the Phase 2A equipment, which is being delivered into store and appropriately maintained until the Phase 2B acquisition strategy calls on the equipment for installation.

To support the upgraded Mk3E Combat Management System and IRST, a combined ASMD Integration and Training Centre was built by the Defence Support Group (DSG) in 2006. This building was added to the existing ANZAC System Support Centre located at HMAS *Stirling* in Western Australia. This facility was made available for lead ship training between September 2010 and April 2011 and was formally handed to Navy in August 2011.

The remaining contract to be **developed** for Phase 2A of the ASMD Project is the in service support for the IRST. This has been **deferred to the second half of 2014, to align with the return to service of HMAS Arunta**. 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.

Project Uniqueness

The Phase 2A Combat Management System upgrade is the next generation of the Mk3E system initially installed on the final ANZAC Class Frigate (HMAS *Perth*). The Mk3E was the first Windows XP based **Commercial-Off-The-Shelf (COTS)** combat management system in the RAN and was initially installed in HMAS *Perth* as part of a de-risking trial.

This Phase of the ASMD Project is currently fully contracted through the ANZAC Ship Alliance.

Project Data Summary Sheets

ANAO Report No.12 2013–14
2012–13 Major Projects Report

Project Major Challenges

The Major Challenges for SEA 1448 Phase 2A are:

- Ensuring sufficient **life of type** spares for the COTS based Combat Management System have been procured.
- **Integration of highly technical systems within a single ship platform.**

Other Current Projects / Sub-Projects

SEA 1448 Phase 2B - This Phase completes the ASMD Upgrade by delivering a Phased Array Radar (PAR) System consisting of a target indication and tracking radar titled CEAFAR and a missile illuminator system, titled CEAMOUNT which will provide mid course guidance and terminal illumination to the Evolved Sea Sparrow Missile (ESSM). This phase also replaces the existing ANZAC Class navigation radar.

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Jan 04	Original Approved	449.0	
Aug 04	Real Variation – Budgetary Adjustments	(0.1)	
Mar 06	Real Variation – Transfers	(155.4)	1
Feb 07	Real Variation – Transfers	(4.4)	2
		(159.9)	
Jul 10	Price Indexation	101.3	3
Jun 13	Exchange Variation	(3.9)	
Jun 13	Total Budget	386.5	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – SAAB Systems Pty Ltd (CMS)	(113.2)	
	Contract Expenditure – SAAB Systems Pty Ltd (First of Class)	(15.7)	
	Contract Expenditure – BAE Systems Australia (IRST)	(93.1)	
	Contract Expenditure – BAE Systems Australia (First of Class)	(35.3)	
	Other Contract Payments / Internal Expenses	(14.4)	4
		(271.7)	
FY to Jun 13	Contract Expenditure – SAAB Systems Pty Ltd (First of Class)	(3.0)	
	Contract Expenditure – SAAB Systems Pty Ltd (Follow On (FON))	(0.2)	
	Contract Expenditure – BAE Systems Australia (First of Class)	(0.4)	
	Contract Expenditure – BAE Systems Australia (FON)	(8.0)	
		(11.6)	
Jun 13	Total Expenditure	(283.3)	
Jun 13	Remaining Budget	103.2	
Notes			
1	\$155.4m transferred to Project SEA 1448 Phase 2B for phased array radar procurement with procurement of VSRAD capability as directed by Government.		
2	Transferred to DSG for facilities funding of the ASMD Systems Integration and Training Centre.		
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$88.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$12.5m having been applied to the remaining life of the project.		
4	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned top five contracts and minor contract expenditure.		

Project Data Summary Sheets

ANAO Report No.12 2013–14
2012–13 Major Projects Report

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The overall program remains slightly behind schedule, largely due to complex material management. The project is actively working with industry to realign the financial spend profile.
			Overseas Industry	
		(4.4)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
16.0	11.6	(4.4)	Total Variance	

2.3 Details of Project Major Contracts

1.5 Details of Project Major Contracts						
Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
SAAB Systems Pty Ltd (CMS)	Apr 05	123.1	119.7	Variable	Alliance	
SAAB Systems Pty Ltd (First of Class)	Apr 07	9.9	13.9	Variable	Alliance	1
BAE Systems Australia (IRST)	Apr 05	104.9	108.6	Variable	Alliance	2
BAE Systems Australia (First of Class)	Apr 07	26.2	27.5	Variable	Alliance	2
BAE Systems Australia (FON)	Jan 12	74.9	74.9	Variable	Alliance	2
Notes						
1	An increase in contract value has occurred as the project transitioned from the research and development stage through to realising the potential full capability. These were enacted via contract change proposals.					
2	These contracts are listed with BAE Systems Australia, formerly Tenix Defence.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
SAAB Systems Pty Ltd	8	8	Combat Management Systems and Fire Control System upgrades	1		
SAAB Systems Pty Ltd	N/A	N/A	First of Class Installation			
BAE Systems Australia	8	8	Infra-red Search and Track Systems	1		
BAE Systems Australia	N/A	N/A	First of Class Installation			
BAE Systems Australia	7	7	FON Ships 2-8 Installation			
Major equipment received and quantities to 30 Jun 13						
Equipment has been delivered into store and is being appropriately maintained until required by Phase 2B for its installation. Installation has been completed for First of Class ship, HMAS Perth, and is now being installed on the second ship, HMAS Arunta.						
Notes						
1	\$155.4m transferred to Project SEA 1448 Phase 2B for phased array radar procurement with procurement of VSRAD capability as directed by Government.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track – Stage 1 (Requirements Review)	Feb 04	N/A	Aug 05	18	1
	Mk3E Combat Management System/Fire Control Director – Stage 1 (Functional Review)	Apr 05	N/A	Aug 06	16	1
	Mk3E Combat Management System/Fire Control Director – Stage 1 (System Performance Review)	N/A	N/A	Nov 06	N/A	
	ASMD Shore Facilities (HMAS <i>Stirling</i>)	N/A	N/A	May 06	N/A	
Preliminary Design	Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track System – Stage 1	Nov 05	N/A	Aug 07	21	1
	ASMD Shore Facilities (HMAS <i>Stirling</i>)	N/A	N/A	Nov 06	N/A	
Critical Design	Stage 1 Critical Design Review – Part 1 (All except Phased Array Radar in the AFT mast)	Sep 06	N/A	May 08	20	1
	Stage 1 Critical Design Review – Part 2 (Remaining components of AFT mast)	N/A	N/A	Aug 08	N/A	
	ASMD Shore Facilities (HMAS <i>Stirling</i>)	N/A	N/A	Jun 07	N/A	
Notes						
1	Variances indicated are directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS <i>Perth</i> with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Nov 07	N/A	Mar 11	40	1, 2
Acceptance	HMAS <i>Perth</i> with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Apr 08	Jun 11	Jun 11	38	1
Notes						
1	Variance indicated is directly linked to the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.					
2	Additional variance of one month due to production completion delay of one month in lead ship HMAS <i>Perth</i> .					

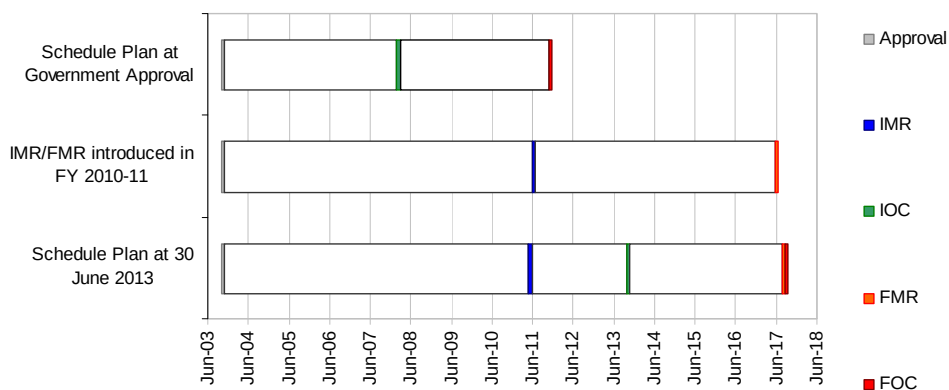
Project Data Summary Sheets

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2012–13 Major Projects Report

3.3 Progress Toward Materiel Release and Operational Capability Milestones

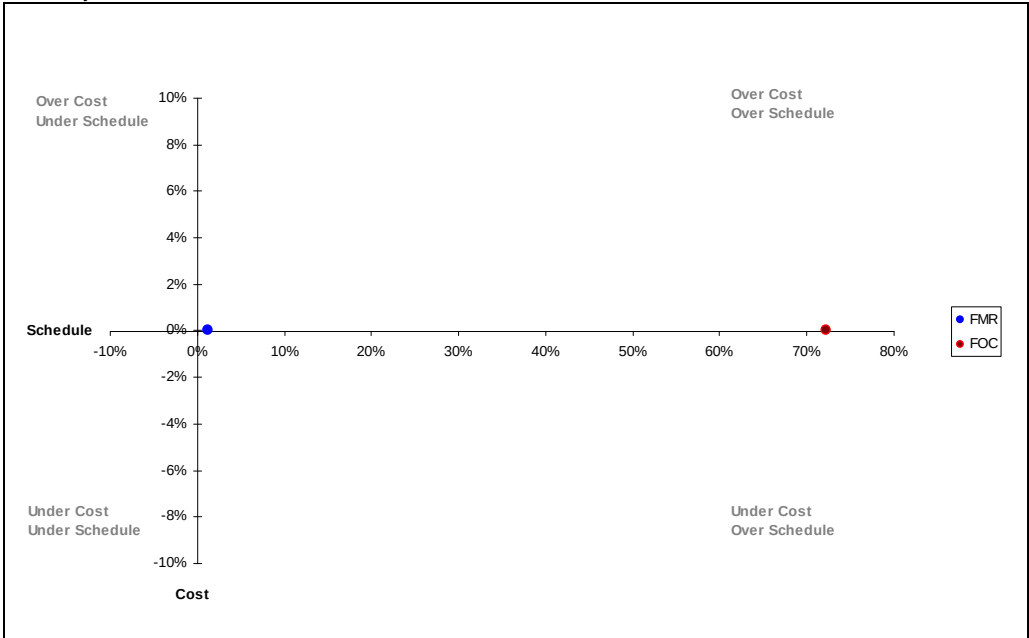
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Jun 11	N/A	N/A
Initial Operational Capability (IOC)	Mar 08	Nov 13	68	Variance is directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform. The new variance is linked to the updated Materiel Acquisition Agreement (MAA) which moved IOC until after PAR System has been proven against Super Sonic Targets.
Final Materiel Release (FMR)	Jul 17	Sep 17	2	Newly added DMO milestone as part of update to the MAA between Defence and DMO. <i>Note: this variation is due to the approval of ships 2-8 by Government.</i>
Final Operational Capability (FOC)	Dec 11	Oct 17	70	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. <i>Note: this variation is due to the approval of ships 2-8 by Government.</i>

Schedule Status at 30 June 2013



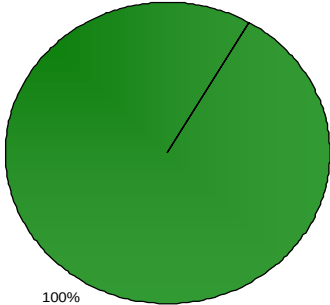
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: Based on lead ship (HMAS <i>Perth</i>) successful acceptance testing and IOR being achieved in August 2011, the Project is currently meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

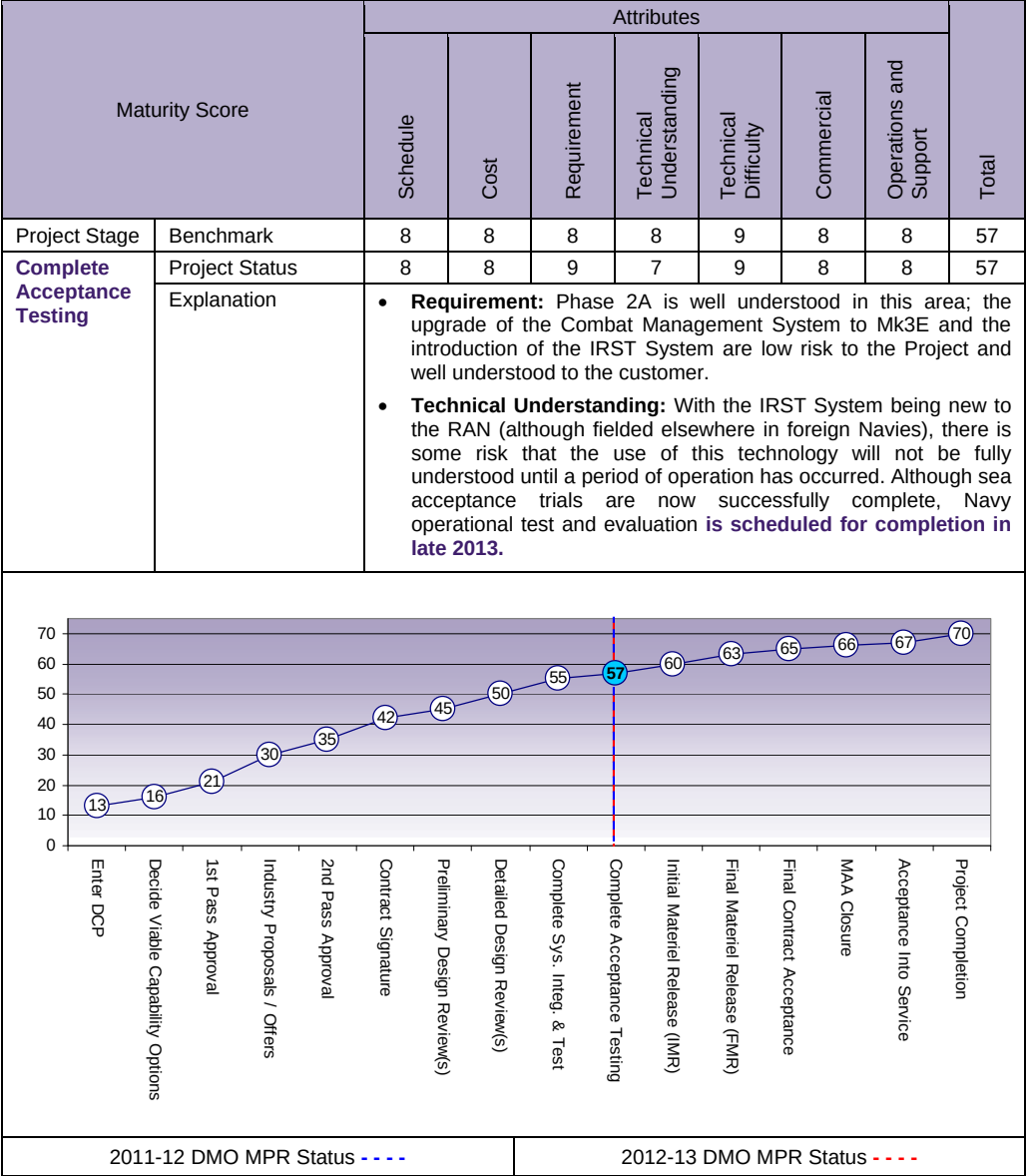
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Recognising that the IRST System being installed under Phase 2A is a new capability being fielded by the RAN for the first time, there is a chance it will not operate to the expectations.	Successful completion of acceptance testing for HMAS <i>Perth</i> has seen all systems achieving initial materiel certification in June 2011. Subsequent at sea operations by HMAS <i>Perth</i> has proven the system to meet initial capability requirements. This risk will be retired when IOC is achieved in late 2013.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
N/A	N/A

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Adequate implementation of Project Systems Engineering processes. In light of this, the ASMD Project has rigidly followed a disciplined systems engineering process that has ensured the complete traceability from requirements through to final acceptance testing.	Requirements Management
Ensuring that stakeholder engagement at all levels (engineering and strategic) is culturally embedded within the Project Team.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13–Jun 13) AVM Chris Deeble (Acting Jun 13–current)
Division Head	RADM Peter Marshall, RAN (to Dec 12) RADM Mark Purcell (Dec 12–current)
Branch Head	CDRE Michael Houghton, RAN
Project Director/Manager	Mr John Runge (to Sep 12) Mr Mark Simmonds (Sep 12–current)

Project Data Summary Sheet¹⁸⁴

Project Name	ARTILLERY REPLACEMENT
Project Number	LAND 17 Phase 1A
First Year Reported in the MPR	2010-11
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Feb 06
Government 2nd Pass Approval	Jul 09
Total Approved Budget (Current)	\$323.9m
2012-13 Budget	\$14.4m
Project Stage	Complete Acceptance Testing
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This project will deliver 35 M777A2 Lightweight Towed 155mm Howitzers (LW155) and the Advanced Field Artillery Tactical Data System (AFATDS) as the Battle Management System - Fires (Command and Control) (BMS-F (C2)) through Foreign Military Sales (FMS) with the United States (US) Government to replace major systems of the current fleet of 105mm and 155mm Howitzers. It is also acquiring the XM1156 Precision Guidance Kit as the Course Correcting Fuze (CCF) capability.

1.2 Current Status

Cost Performance

In-year

This year the variation is primarily due to savings associated with vehicle integration kits, taclink cables and the BMS-F (C2) FMS case.

Project Financial Assurance Statement

As at 30 June 2013, project LAND 17 Phase 1A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

184 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

LW155 and BMS-F (C2) capabilities – The project achieved the Initial Materiel Release (IMR) of November 2011 and is on track to deliver the required Mission System and Support System materiel for the Final Materiel Release (FMR) in August-September 2013, **noting Initial Operational Capability (IOC) was declared by the Capability Manager on 23 May 2013.**

The CCF capability **was initially delayed due to the need for additional test programs during development, however, the FMS case for the CCF has now been approved (December 2012) and the CCF has been cleared for production in the US as of May 2013.**

Due to the delay during development achievement of the December 2013 Final Operating Capability (FOC) that includes the CCF capability is at risk.

Materiel Capability Performance

The Indirect Fire capability sought is as follows:

- The LW155 capability will provide Army with a digitised, mobile, medium indirect fire platform.
- The BMS-F (C2) capability will provide Army with a digitally networked, interoperable command and control system that will allow for automated transmission of digital calls for fire from combat units and the rapid calculation of ballistic solutions and effects for firing.
- The CCF capability will provide Army with improved ammunition precision to minimise collateral damage, avoid incidents of friendly fire and increase lethality against high value targets.

The Project is on track to deliver the LW155 and BMS-F (C2) capabilities; the CCF capability **was initially delayed, however an FMS case was signed in December 2012 and the CCF has been cleared for production in the US.** Land 17 Phase 1A has a dependency on numerous DMO projects whose progress has the potential to impact capability performance.

1.3 Project Context

Project Background

Government First Pass approval for LAND 17 Phase 1A was provided on 14 February 2006, and allowed the project to explore capability solutions to enhance the Australian Army Indirect Fire Support system through the replacement or upgrade of the 105mm Hamel Howitzer and 155mm M198 Howitzer fleets when they reach the end of their service life.

In July 2009, Government provided Second Pass Approval and agreed to split the LAND 17 project into two phases. Phase 1A for delivery of the LW155 and an Australianised AFATDS, and Phase 1B for delivery of the Self Propelled Howitzer (SPH) and the Digital Terminal Control System.

An FMS Case for the supply of the LW155 was established with the US Government in September 2009. The first M777A2 Lightweight Howitzer arrived in Australia in August 2010, with the remainder **delivered** during 2011-12.

An FMS Case for the supply of the AFATDS was established with the US Government in May 2010.

A Systems Requirements Review (SRR) was conducted between LAND 17 Phase 1A project, the US Government and Raytheon Network Centric System (NCS) in September 2010 resulting in the US Government signing a contract with Raytheon NCS for the AFATDS. IMR for LW155 and BMS-F (C2) was achieved on 23 November 2011.

A Letter of Request (LOR) was submitted to the US Government for the acquisition of the CCF in September 2009, however in November 2009 the US Government advised that it was unable to offer a Letter of Offer and Acceptance (LOA) as final costs in relation to testing were not available. On advice from the US Government, the LOR was resubmitted in January 2010; however, in September 2010 the US Government advised that the US Program was on hold due to continued delays in the CCF development. In February 2011, the US Government advised that the CCF will be subjected to a further program of testing prior to reaching a production milestone decision.

In August 2011, the Minister of Defence (MINDEF) was informed of the delays affecting the CCF program and that Defence would seek Government agreement to reset the CCF schedule pending remediation outcomes.

In December 2012 the LOA for the acquisition of CCF via FMS was accepted, in anticipation of the US CCF program passing the initial production and deployment milestone in the first half of 2013.

In May 2013 the US Government advised that the CCF had been cleared for production.

Project Uniqueness

Whilst this project is considered a replacement project, the inclusion of the BMS-F (C2) and the ability to perform digitised calls for fire and ballistic computations is a new capability for the Australian Defence Force (ADF).

The digital capability provided by AFATDS and Digital Fire Control System (DFCS) will enable connectivity and interface with external systems and thereby contribute to the higher intent for joint and Network Centric Warfare (NCW).

Project Major Challenges

Mission System Architectures – The creation of the BMS-F Joint Fires Network Architecture was a major technical challenge. Full ADF and Coalition interoperability will require a higher order Joint Fires Support solution architecture that supports the BMS-F Joint Fires Network. This task is technically challenging and will require engagement of key stakeholders.

Integration and interoperability – with the broader ADF will mean overcoming the following challenges:

Technical – The LW155 must operate with Army's current and future fleet of vehicles, must be transportable by in-service aircraft and naval vessels, and utilise both in-service and future 155mm ammunition.

Technical – AFATDS must interface and integrate with multiple systems across the ADF and Coalition, which utilise different platforms, standards and protocols. **The CCF program in the US required remediation causing delays in achieving the capability release milestone.**

Commercial – Combining systems from different Original Equipment Manufacturers and countries of origin, where each has specific background and foreground Intellectual Property restrictions will be commercially challenging. Many of the identified systems, including the LW155 and AFATDS, are subject to the US Government's International Trade in Arms Regulations.

Scheduling – Organising the test and certification activities performed in collaboration with DMO projects and external agencies creates a major schedule challenge.

Sustainment – The **ongoing support** of the Australian AFATDS presents a complex sustainment challenge. Both the software **and hardware** will require ongoing upgrades in synchronisation with all interfaces throughout the entire Life Of Type of the capability. LAND 17 Phase 1A aims to transition an evolutionary acquisition process into the sustainment office.

Other Current Projects / Sub-Projects

LAND 17 Phase 1B: Covers the acquisition of new and improved Forward Observer equipment including a Control Terminal and the Tactical Full Motion Video System (TFMVS).

LAND 17 Phase 1C1: Covers the acquisition of **an additional quantity of LW155, noting additional capability enabling elements are pending the scope approval.**

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2085 Phase 1B Explosive Ordnance Warstock Remediation Project	JP 2085 Phase 1B has procured the XM982 Excalibur Global Positioning System guided artillery precision munition, as well as the Smart 155 Sensor Fuzed Munition. JP 2085 Phase 1B is also procuring an initial quantity of the AFATDS as part of the Excalibur capability through the FMS program.	This acquisition of AFATDS was planned to be the baseline mission system and support system for LAND 17 Phase 1A to expand. It included integration with ADF vehicles and interoperability with a number of ADF battle systems.
JP 2072 Phase 1 Battlespace Communications System (Land)	JP 2072 is responsible for designing the Battlespace Communications Systems (Land) (BCS (L)) architecture. The BCS (L) will be a 'system of systems' incorporating Combat Net Radio and wide band radio, Trunk Communications and local area voice and data systems that will act as the bearers used to network force elements.	JP 2072 is the primary acquisition body for the LAND 17 Phase 1A communications bearers required under the BMS-F Network architecture.

LAND 200 The Land 200 nomenclature is the combination of the following projects/phases: • LAND 75 Phase 3.2 and Phase 3.3. Battlefield Command Support System (BCSS); • LAND 75 Phase 3.4. Battle Management System – Mounted (BMS-M); and • LAND 125 Phase 3. Battle Management System – Dismounted.	The systems within LAND 200 will be utilised by manoeuvre elements and generate a current and Common Operating Picture (COP).	Interoperability with this COP system is essential for LAND 17 Phase 1A to create a shared situational awareness that is central to the safe and effective application of Joint Fires. Land 17 Phase 1A is also integrating the AFATDS into the Bushmaster Protected Mobility Vehicle Command (PMV-C) variant, based on the LAND 200 vehicle configuration.
LAND 106 M113 Armoured Vehicles Upgrade Project	This project is responsible for upgrading in-service M113A1 vehicles for Army. There will be seven variants of the M113AS produced.	The primary vehicle interface for LAND 17 Phase 1A to upgrade will be the BMS-F (C2) capability integrated in the Armoured Command Vehicle (M113 AS4-C).
LAND 116 Project Bushmaster	LAND 116 introduced the Protected Mobility Vehicle (PMV) in seven configurations.	The LAND 17 Phase 1A conversion kit interfaces with the PMV-C variant. The Troop (PMV-T) variant has been proposed as the personnel vehicle for the LW155 Gun Crew. The Command variant is the vehicle platform on which both the LAND 75 Phase 3.4 and LAND 17 Phase 1A will integrate their respective systems.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Nov 09	Original Approved	348.3	1
Jun 13	Exchange Variation	(41.6)	
Jul 10	Price Indexation	17.2	
Jun 13	Total Budget	323.9	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government (AT-B-UCZ)	(89.8)	2
	Contract Expenditure – US Government (AT-B-UDQ)	(8.6)	
	Contract Expenditure – Harris Corporation	(9.7)	
	Other Contract Payments / Internal Expenses	(13.8)	
		(121.9)	
FY Jun 13	Contract Expenditure – US Government (AT-B-UCZ)	(3.1)	3
	Contract Expenditure – Harris Corporation	(0.8)	
	Contract Expenditure – US Government (AT-B-UGV)	(0.4)	
	Other Contract Payments / Internal Expenses	(8.8)	
		(13.1)	
Jun 13	Total Expenditure	(135.0)	
Jun 13	Remaining Budget	188.9	
Notes			
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$8.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$8.4m having been applied to the remaining life of the project.		
2	Other Contract Payments/Internal Expenses: Radios (Raytheon Australia \$3.4m) , Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract.		
3	Other Contract Payments/Internal Expenses: Field Service Representatives (\$1.5m), M777A2 parts/support (\$5.0m), AFATDS Vehicle Integration Kits (\$0.7m) and Other Operating Expenses (\$1.6m).		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(0.4)	FMS	The variation of (\$1.3m) is primarily attributed to savings associated with vehicle integration kits, taclink cables, the BMS-F (C2) FMS case and foreign exchange gains.
			Overseas Industry	
			Local Industry	
			Brought Forward	
		(0.7)	Cost Savings	
		(0.2)	FOREX Variation	
			Commonwealth Delays	
14.4	13.1	(1.3)	Total Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government (AT-B-UCZ)	Sep 09	130.8	110.5	FMS	FMS	1
US Government (AT-B-UDQ)	May 10	22.8	20.6	FMS	FMS	
US Government (AT-B-UGV)	Dec 12	19.9	18.9	FMS	FMS	
Harris Corporation	Feb 11	11.1	11.1	Firm	ASDEFCON	
Notes						
1	Contract price reduced to reflect saving against LW155 price following final delivery of guns.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
US Government (AT-B-UCZ)	35	35	The delivery of M777A2 Lightweight Towed 155mm Howitzer and support system.	1		
US Government (AT-B-UDQ)	108	108	The delivery of Australian AFATDS.	2		
US Government (AT-B-UGV)	4000	4000	The delivery of Course Correcting Fuzes.			
Harris Corporation	255	255	Supply of HF, VHF and UHF radios, ancillaries and spares.			
Major equipment received and quantities to 30 Jun 13						
Thirty-five LW155 received to date.						
Notes						
1	Delivery of 35 LW155 completed in Financial Year 2011-12.					
2	These quantities are exclusive of JP 2085 Phase 1B – The complete quantity is 156 "seat" licences (combined total), which includes AFATDS software (qty 108), Effects Management Tool (EMT) software and Simulator-Stimulator software.					

Project Data Summary Sheets

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2012–13 Major Projects Report

Section 3 – Schedule Performance

3.1 Design Review Progress

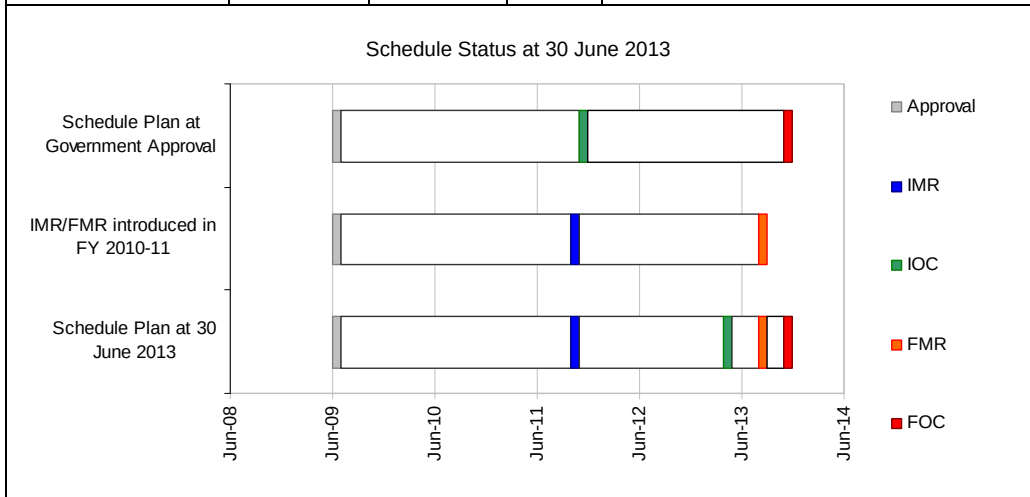
Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	AFATDS	Sep 10	Sep 10	Sep 10	0	1, 2
Preliminary Design	AFATDS/Bushmaster Command Post (CP) – Vehicle Installation Kit (VIK)	Jun 12	N/A	Jul 12	1	3
Detailed Design	AFATDS/Bushmaster CP-VIK	Oct 12	N/A	Feb 13	4	3
Notes						
1	First round of SRR held in September 2010. Second round of SRR (post-IMR) to establish Integrated Project Team (IPT) agreement on the remaining functional requirements was conducted in March 2012.					
2	As both the LW155 and AFATDS are Military-Off-The-Shelf acquisitions, there is neither Preliminary Design Review (PDR) nor Critical Design Review.					
3	PDR and Detailed Design Review cover design for the VIK for AFATDS. The variance is the result of several requirements needing action after a test event in October 2012.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LW155	Sep 11	N/A	Sep 11	0	1
	AFATDS AS 6.7	Sep 11	N/A	Mar 12	6	2
	LW155	N/A	May 13	May 13	0	3
	AFATDS AS 6.7 SP 1	N/A	May 13	May 13	0	2
Acceptance Test and Evaluation	LW155 PDA for IMR	Sep 11	N/A	Nov 11	2	4
	AFATDS PDA for IMR	Sep 11	N/A	Nov 11	2	4
	LW155 DA for FMR	N/A	Jul 13	Jul 13	0	5
	AFATDS DA for FMR	N/A	Jul 13	Jul 13	0	5
Notes						
1	The project conducted certification activities required for IMR in collaboration with relevant Defence agencies.					
2	The AFATDS was tested and certified with multiple combat management systems prior to IMR. The System Integration for AFATDS is finalised as required for FMR based on: - The Factory Acceptance Test (FAT) Report being received in March 2012 for the Final Australian (AS) version of AFATDS 6.7. The variance is based on the schedule for US Government to approval of the FAT; and AFATDS AS 6.7 Service Pack (SP) 1 requalification test report received in February 2013. This test report details the resolution of a high priority software error identified in the US mainline software and confirmed in the AS baseline in November 2012. The integration of the new AS baseline software was received, tested and accepted by May 2013.					
3	Final certification testing activities with the LW155 were completed by May 2013. The Project is continuing to incorporate all certification data into the Design Acceptance pack for FMR.					
4	Pre-IMR Acceptance Test and Evaluation activities were conducted from May through to November 2011. Test event with live fire (AFATDS/LW155) occurred in October 2011 and Preliminary Design Acceptance (PDA) documents were completed in November 2011.					
5	Pre-FMR Acceptance Test and Evaluation activities for LW155 were conducted from June 2012 through to March 2013 with estimated completion date in May 2013. Pre-FMR Acceptance Test and Evaluation activities for AFATDS were conducted from April 2012 until February 2013. Design Acceptance (DA) documents for AFATDS and LW155 are planned for completion in July 2013.					

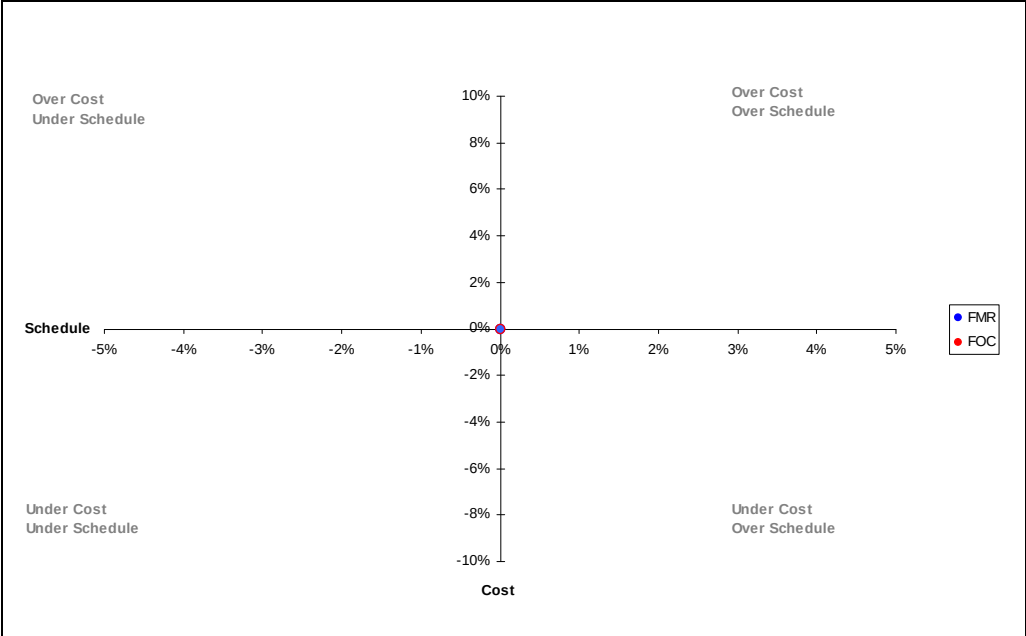
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Nov 11	Nov 11	0	
Initial Operational Capability (IOC)	Dec 11	May 13	17	IOC was delayed due to the delays in the development of the CCF, declaration was made on the basis that the CCF had been cleared for production in the US.
Final Materiel Release (FMR)	Aug/Sep 13	Aug/Sep 13	0	The acquisition of CCF is an issue, which is expected to impact the MAA milestones. CCF was approved for production as of May 2013 and an approved production schedule is being negotiated with the US Government.
Final Operational Capability (FOC)	Dec 13	Dec 13	0	The acquisition of CCF is an issue, which is expected to impact the MAA milestones. CCF was approved for production as of May 2013 and an approved production schedule is being negotiated with the US Government.



Section 4 – Project Cost and Schedule Status

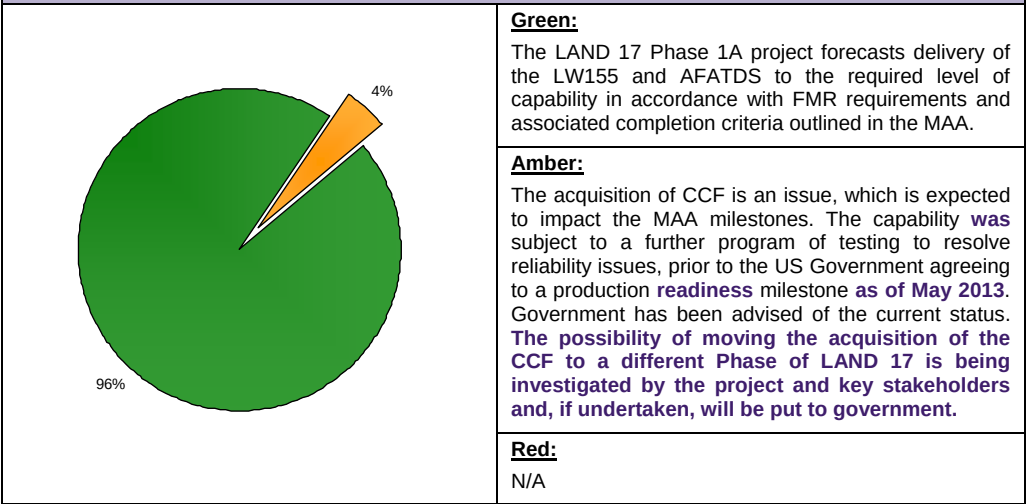
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
LW155 Configuration Management: There is a chance that configuration management for the M777A2 howitzer will be affected by US configuration changes leading to an impact on supportability and performance.	The Project Office will convene a Configuration Control Board (CCB) to develop strategies for the management of hardware and software upgrades, and enhancements to maintain interoperability with Coalition systems. The CCB will also assess the Block Scale Upgrades of the BMS-F AFATDS to ensure interoperability with DFCS. The Project Office will ensure when the support contract is signed, that the contractor has the ability to upgrade the M777A2 in accordance with the US baseline. This risk has been retired since the rollout of the LW155 software was completed under the approved configuration control.
AFATDS Vehicle integration not met by FMR date: It is possible that a PMV-C mounted BMS-F (C2) and almost certain that a M113 mounted BMS-F (C2) capability by the FMR date may not be achieved due to the inability of JP 2085 Phase 1B to deliver vehicle integration designs for the PMV-C and M113 prior to November 2010. JP 2085 Phase 1B was to set the conditions for LAND 17 Phase 1A vehicle integration activities.	The Project Office engaged multiple stakeholders (DMO projects and Defence agencies including Land Engineering Agency (LEA)) in December 2010 and gained stakeholder endorsement on an integration plan to leverage off the LAND 75 vehicle integration work. In collaboration with LAND 75, JP2072 Phase 1 and LAND 116 Bushranger Project, the project has completed work to develop five Bushmaster PMV-C AFATDS conversion kits utilising the terms and conditions of an extant Bushmaster PMV-C services contract. The Project Office initiated the production of the PMV-C conversion kits in March 2013. The Department is managing the remaining scope for those elements that remain a requirement (refer Section 6.2).
LW155 There is a chance that the FOC will be affected by LW155 support arrangements. The US Government has not finalised the long term through life support arrangement for this capability. The end state ADF through life support arrangement will need to leverage the US industrial base once established.	The Project Office will maintain an interim support arrangement, monitor the progress of the US DoD toward a long term, through life support arrangement, and maintain sufficient flexibility to access and leverage the contracts and arrangements established. This risk has no significant impact on the FMR milestone.
AFATDS Configuration Management: There is a chance that FOC shall be affected by the complexities of a configuration management plan with high level of interdependencies on systems outside the boundary of the project or sustainment office.	The Project Office prepared the Software Development Life Cycle report to guide the development of co-ordinated BMS-F and Joint Fires Systems SOPs. This work is being progressed in coordination with plans of the Army configuration management organisation (Land Network Integration Centre). Updated Configuration Management Plan draft tailors existing processes to ensure safe baseline management for BMS-F (C2) until FMR and beyond. This risk has been retired.

AFATDS – System Integrator Competencies. There is a chance that the FOC will be affected by the lack of in-house systems integration competencies, leading to an impact on FMR date. Although the foundation of System Engineering process is sound, the problem is compounded by the process implementation and corporate culture not suited to capabilities based on IT software and hardware components.	The Project Office has engaged the services of the external Systems Integrator and provided extensive AFATDS training to the in-house resources at the School of Artillery and main contractor site (Raytheon Network Centric Systems in the U.S.). Constant exposure to Network Centric Warfare systems and obtaining lessons learnt from other Defence organisations continues to give staff and stakeholders a greater appreciation on the integration demands of such systems.
AFATDS Interoperability with other ADF Systems: There is a chance that FMR date will be affected by complex and unclear interoperability requirements with external systems. The problem is compounded by the lack of Army's Joint Fires Functional Concept (JFFC) and appreciation of interdependencies within digitised networks.	The Project Office has engaged the services of an external Systems Integrator to assist in understanding gaps in JFFC through workshops and requirement analysis. The Project Office, to the limit of its control, endeavoured to discharge its interoperability requirements through engineering test programme and closer engagement with stakeholders of "enabling" projects and interdependent agencies. Remedial actions by the end of the reporting period have resulted in better understanding by stakeholders of limitations facing information exchange between tactical and strategic domains.
LW155 System Engineering Corporate Knowledge: There is a chance that FMR/FOC will be affected by the lack of engineering corporate knowledge and project history due to staff turn over.	The Project Office has put in place a fast-tracked programme to up skill the incoming System Engineering Manager. This risk is under the complete Project Office control and the mitigation plan is expected to move the risk to a lower rating in the second half of 2012. This risk has been retired when the project management was satisfied with the level of the achieved corporate knowledge.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
LW155 Explosive Ordnance Design Acceptance for In-service 155mm munitions: There is a chance that the Explosive Ordnance Design Acceptance for in-service munitions will not be achieved in time for the FMR milestone. The risk is based on the delayed provision of amended technical data from the Munitions Branch (MUNB) and together with project resource constraints and increased number of required munitions combinations.	MUNB secured the conventional munitions priority list from Army. The project is on track to obtain certifications as per the priority list, noting that the inclusion of the Precision Guided Munitions for FMR is subject to the outcomes of the Excalibur trial and the provision of the required technical information from MUNB.
Integrated Logistics Support Resourcing (LW155 and AFATDS): There is a chance that a lack of Project Integrated Logistics Support resources will lead to a delay in setting conditions for FMR leading to an impact on the capability performance, schedule and supportability.	Recruitment actions were initiated and business case was completed and submitted for action. These were placed on hold pending the workforce downsizing which included a temporary freeze on the progress of new and existing recruitment. The project has started an early transition to Fleet and shares resources for ongoing project activities where practicable.

LW155 Engineering Design Acceptance (DA) not completed before FMR: There is a chance that Objective Quality Evidence won't be provided in a timely manner to meet Design Acceptance criteria, leading to an impact on schedule. This is caused by dependency on a number of external organisations involved in the certification process.

Through active engagement of external organisations and follow up with site visits, the project managed to mitigate many of the causal factors.

The roadmap for DA was re-baselined in March 2013 and estimated the completion of activities in July 2013.

6.2 Major Project Issues

Description	Remedial Action
AFATDS – JP 2085 Phase 1B: The inability of JP 2085 Phase 1B to deliver AFATDS software, hardware, radios and vehicle integration to set the conditions for the LAND 17 Phase 1A AFATDS upgrade has brought additional schedule risk to the project. LAND 17 Phase 1A has financial provision to acquire additional vehicle integration kits based on JP 2085 design for the additional vehicle variants, that is, not the Bushmaster PMV-C conversion of the LAND 75 vehicle baseline.	Under a Project Collaborative Agreement, AFATDS assets acquired by JP 2085 Phase 1B were transferred to LAND 17 Phase 1A, together with the responsibility to integrate those assets into the Bushmaster PMV-C. The Project Management Steering Group (PMSG) confirmed in February 2013 the outstanding AFATDS integration tasks, including the integration designs for M113, are beyond the control of JP 2085 Phase 1B. The PMSG engaged key stakeholders, including Capability Development Group (CDG) and Army Headquarters to refine the integration requirements and identify DMO organisations best suited to fulfil them. LAND 17 Phase 1A is ready to retire this issue when formalised actions are agreed.
CCF – Schedule: The US Government has been unable to offer the CCF for acquisition via FMS due to ongoing testing and certification of the fuze accuracy and reliability. The US Government advised in February 2011 that a production milestone decision for the CCF will not be made until December 2012, and further delayed until the first half of 2013.	The project is planning to have CCF work packages scheduled, resourced and ready to commit once the fuze achieves US Government Materiel Release milestone and is approved for sale through FMS. The FMS case has been signed in anticipation of production readiness being achieved in the first half of 2013. In May 2013 the US Government formally advised LAND 17 that the progression to production had been approved. An Options Plan is in place to move the CCF scope to later phases of LAND 17. LAND 17 Phase 1A is ready to retire this issue.
AFATDS – The AFATDS capability is required to interface with the Theatre Battle Management System (TBMCS) to achieve an effective Air-Land co-ordination. LAND 17 Phase 1A has the contractual requirement to verify application interoperability with TBMCS and provide an engineering input to Army. However, the in-service build for the TBMCS does not support the AFATDS interface. The problem is compounded by the TBMCS support arrangements, whose approved scope does not facilitate the integration with other joint war fighting systems (such as BMS-F (C2)).	Project has conducted the test with the in-service TBMCS build. The test event proved that there were technical issues between the two systems (interface) and gaps in the wider network architecture. The IPT agreed at the requirements review that ongoing work to resolve technical issues will continue, and that the full production rollout of this interface is outside the LAND 17 Phase 1A scope. CDG have an action to review the TBMCS requirement. The IPT agreed the project portion of the TBMCS requirements will be tabled for endorsement at the next PMSG. The project is engaging the TBMCS support agency to investigate options to include AFATDS interface in the next scheduled software release of TBMCS and is preparing a Minute to inform management of the respective organisations.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Complete Acceptance Testing	Project Status	9	8	9	8	8	9	8	59
	Explanation	Schedule: Critical Path activities are being managed in accordance with DMO policy and guidelines. Current schedule sees the major milestones of IMR and FMR being met, noting the impact to schedule of project interdependencies and pending reset of CCF milestones once delivery schedule is confirmed. Requirement: Project Requirements are well understood, and were confirmed at the second SRR. Technical Difficulty: As system integrator LAND 17 Phase 1A continues analysis and verification of integration and interoperability between the individual component systems. An interoperability test plan has also been drafted. Commercial: All contracted requirements have been satisfactorily performed. There is confidence that contractor's in service support performance will be satisfactory, noting limitations to LW155 support arrangements stated in Section 6.1.							

Project Stage	Maturity Score
Enter DCP	13
Decide Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Offers	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ. & Test	55
Complete Acceptance Testing	57
Initial Materiel Release (IMR)	60
Final Materiel Release (FMR)	63
Final Contract Acceptance	65
MAA Closure	66
Acceptance Into Service	67
Project Completion	70

2011-12 DMO MPR Status - - - -	2012-13 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Collaboration with key stakeholders required – As the project progressed, the technical understanding of the project office increased faster than that of the external stakeholders and this has required a pro-active management approach to ensure a common understanding.	Governance Requirements Management
Network Centric Warfare – while representing a clear intent for ADF future war fighting, NCW is a relatively new and evolving concept. As NCW evolves it imposes demands for projects as a result of incremental changes to organisational understanding, standards, and operating methods. The experience underlines the importance for the project of having well-defined and stable requirements.	Requirements Management
Foreign Military Sales – When pursuing an FMS contract with the US Government it is important to factor in schedule contingency.	Schedule Management

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13–Jun 13) AVM Chris Deeble (Acting Jun 13–current)
Division Head	MAJGEN Grant Cavenagh (to Jan 13) MAJGEN Paul MacLachlan (Jan 13–current)
Branch Head	BRIG David Shields
SPO Director	COL Michael Chadwick (to Feb 13) Ms Sharna-Leigh Fayle (Feb 13–current)
Program Director LAND 17	Mr Adrian Ford
Project Manager LAND 17 Phase 1A	LTCOL John Dougall

Project Data Summary Sheet¹⁸⁵

Project Name	FOLLOW ON STAND OFF WEAPON
Project Number	AIR 5418 Phase 1
First Year Reported in the MPR	2009-10
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	Aug 04
Government 2nd Pass Approval	Dec 05
Total Approved Budget (Current)	\$317.4m
2012-13 Budget	\$7.0m
Project Stage	Acceptance into Service
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

This project will acquire the Lockheed Martin AGM-158A Joint Air-to-Surface Standoff Missile (JASSM) and support systems, and integrate the JASSM onto the Royal Australian Air Force F/A-18 A/B Hornet aircraft. The Follow On Stand Off Weapon (FOSOW) system will increase aircraft survivability and weapon terminal effectiveness against defended targets from launch ranges in excess of those afforded using air delivered weapons currently in the Australian Defence Force (ADF) inventory. The FOSOW system will provide the capability to successfully, and effectively, conduct stand-off strike operations against a range of targets.

1.2 Current Status

This Project was made a Project of Concern on 23 November 2010 and was removed from the list on 23 December 2011.

Cost Performance

In-year

This year the project experienced minor delays in receiving invoices in relation to Precision Strike Targeting LAN (PSTL) and delays in negotiating the Project Engineering contract extension which led to a slight underspend for this period.

Project Financial Assurance Statement

As at 30 June 2013, project AIR 5418 Phase 1 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

¹⁸⁵ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

Initial Material Release (IMR) was achieved in July 2011, Material Release 2 (MR2) was achieved in November 2011, and Initial Operational Capability (IOC) was achieved in December 2011. **Final Materiel Release (FMR) and Final Operational Capability (FOC) are expected to be achieved in September 2013. The delay to FMR is a result of a fuze issue that also impacted on the delivery schedule required to achieve FOC.**

Materiel Capability Performance

Two live test firings occurred in mid-2013, demonstrating the reliability and performance of the capability. All material elements to enable an Initial PSTL capability have been delivered and explosive ordnance storage facilities are available to meet FOC storage requirements.

1.3 Project Context

Project Background

Project AIR 5418 was originally scoped to acquire a FOSOW capability to provide Australia with the ability to conduct effective airborne precision land strike against well-defended targets. The F/A-18 A/B Hornet aircraft was nominated as the delivery platform to carry and employ the FOSOW system.

Lockheed Martin's JASSM was selected as the preferred option following the tender process and Project AIR 5418 Phase 1 gained Second Pass Approval on 5 December 2005.

JASSM is being procured through a Foreign Military Sales (FMS) Case with the United States Air Force (USAF) for the supply of the operational and test missiles, support equipment and USAF program management support; a FMS case with the United States Navy (USN) for weapon to aircraft integration; and a Direct Commercial Sales contract with Lockheed Martin Missiles and Fire Control for the supply of certification/airworthiness data, integration support, and missile capability enhancements.

Originally Project AIR 5418 was required to deliver a fixed and relocatable targets capability which achieved IOC, and a mobile maritime targets capability which achieved FOC. Due to lack of program funding by the USAF for the maritime strike capability, it no longer became a feasible option for Australia. This was also agreed to by the Defence Capability and Investment Committee on 28 May 2010.

Integration of JASSM onto the F/A-18 A/B Hornet was undertaken by the USN Advanced Weapons Laboratory at China Lake, California. The integration effort required the inclusion of the JASSM capability into the F/A-18 A/B Hornet Operational Flight Program (OFP) software.

A successful JASSM live firing was completed at the USN China Lake Weapons Range on 3 December 2010. Analysis of data from this test firing confirmed JASSM functionality in the 21X OFP software, resulting in a Letter of Certification being issued by the USN on 28 February 2011.

A Cabinet Submission was developed advising the status of Project AIR 5418 and was noted by Government in May 2011. The submission removed moving target capability from the scope of the project, included a Real Cost Decrease of \$50 million and revised definition requirements for IOC, FOC, IMR and FMR.

In July 2011 two successful JASSM firings took place at the Woomera Test Range and demonstrated an IOC level of capability. Following on from positive recommendations from the Airworthiness Board, AIR 5418 achieved IOC in December 2011.

A fuze issue in 2012 delayed the delivery of the remaining missiles required to fulfil FMR requirements. The issue is now resolved with deliveries occurring February to April 2013 and FMR is expected to be achieved in September 2013.

The Project Office is currently assisting with the transition of the JASSM into service, and has recently raised a Sustainment Case via FMS with the United States (US) Government.

Project Uniqueness

JASSM is an Australianised Military-Off-The-Shelf (MOTS) guided weapon acquisition. The Commonwealth of Australia was the first FMS customer authorised by the US Department of State to purchase this product.

This weapon is operated by the USAF from platforms which are not in the Australian inventory. Australian integration of JASSM onto the F/A-18 A/B Hornet platform is a world first.

JASSM represents the longest range (greater than 300 kilometres) guided weapon to be introduced into ADF capability, and as a result poses safety challenges for test/training over Australian land ranges.

Project Major Challenges

Explosive Ordnance (EO) storage licensing issues are being remediated.

Project Data Summary Sheets

ANAO Report No.12 2013–14
2012–13 Major Projects Report

Other Current Projects / Sub-Projects

N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5376 Phase 2 Hornet Upgrade	The AIR 5376 Phase 2 Project was established to upgrade the existing F/A-18 fleet to incorporate enhancements to the aircraft's air defence capability. Enhancements are being implemented in three distinct stages. The first is to enable the aircraft to more effectively perform its air defence role. The second stage involves enhancing pilot situational awareness, and the final stage is providing additional aircraft self protection. In addition to these hardware upgrades of the F/A-18 Fleet, each stage includes new or upgraded aircraft software and ground support and training systems.	AIR 5418 was 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. AIR 5376 Phase 2 has delivered both of these capabilities.
AIR 5349 Phase 2 Super Hornet Weapons	Project AIR 5349 Phase 2 was established to acquire the Super Hornet associated missile suite including: AIM-9X Within Visual Range Air-to-Air Missiles , AGM-154C & C-1 Joint Stand-Off Weapons, AIM-120C-7 Advanced Medium Range Air-to-Air Missiles and new Infra-Red Flares in support of the Super Hornet aircraft.	The Precision Strike Targeting LAN will facilitate the delivery of weaponeered target materials and provide support to both deliberate and dynamic strike operations. Project AIR 5418 Phase 1 has responsibility for delivering materiel components to enable declaration of PSTL Initial Service Release (ISR). On declaration of ISR, AIR 5349 Phase 2 will take on responsibility for delivering materiel components to support Final Service Release. Close liaison between AIR 5418 and AIR 5349 will be required to ensure a smooth transition in project responsibilities.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Aug 04	Original Approved	14.9	1
Dec 05	Government Second Pass Approval	355.3	
Jun 11	Real Cost Decrease	(50.0)	2
Oct 12	Real Cost Decrease	(25.0)	3
		295.2	
Jul 10	Price Indexation	62.6	4
Jun 13	Exchange Variation	(40.4)	
Jun 13	Total Budget	317.4	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government	(158.5)	5
	Contract Expenditure – Lockheed Martin	(81.0)	
	Other Contract Payments / Internal Expenses	(37.6)	6
		(277.1)	
FY to Jun 13	Contract Expenditure – US Government	(4.4)	
	Contract Expenditure – Lockheed Martin	(0.0)	
	Other Contract Payments / Internal Expenses	(2.4)	7
		(6.8)	
Jun 13	Total Expenditure	(283.9)	
Jun 13	Remaining Budget	33.5	
Notes			
1	First Pass approval.		
2	Government Approved Real Cost Decrease in June 2011 to remove moving target from project scope.		
3	As a result of project approaching FMR and risks retired due to the successful Operational Test and Evaluation \$25m of contingency has been returned from the project budget.		
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$59.2m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$3.4m having been applied to the remaining life of the project.		
5	Section 2.3 Prime Acquisition Contracts covering acquisition of the JASSM Materiel System and integration with the F/A-18 have been combined due to classification.		
6	Other expenditure comprises: \$37.6m, being a combination of Engineering Support (\$9.6m), Mission Planning (\$0.4m), Project Office Management (\$4.7m), Aircraft Integration (\$9.7m), and pre-Second Pass Approval expenditure (\$13.2m).		
7	Other expenditure comprises \$1.5m for Mission Planning System, with the remaining \$0.8m for Engineering Support and Project Office Support.		

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Prior Certification	AGM 158A Missile System	Aug 06	Jan 07	Feb 07	6	1
System Requirements	AGM 158A Missile System	Jun 07	N/A	Jun 07	0	
	F/A-18 A/B System Segment	Sep 05	N/A	Sep 05	0	
Preliminary Design	AGM-158A Missile System		N/A	N/A	N/A	2
	F/A-18 A/B System Segment 21X (IOC)	Mar 06	N/A	May 06	2	3
	F/A-18 A/B System Segment 23X (FOC)	Jun 08	N/A	Jun 08	0	4
Critical Design	AGM 158A Missile System	N/A	N/A	N/A	N/A	2
	F/A-18 A/B System Segment 21X (IOC)	Aug 06	N/A	Mar 07	7	3
	F/A-18 A/B System Segment 23X (FOC)	Jan 09	N/A	Jan 09	0	4
Build Readiness	F/A-18 A/B System Segment 21X (IOC)	Nov 07	N/A	Jul 09	20	3
	F/A-18 A/B System Segment 23X (FOC)	Feb 11	N/A	Feb 11	0	4
Notes						
1	Variance due to protracted commercial contract negotiations. Prior Certification Review was completed in late January 2007. The approval to exit the Prior Certification Review was dated 01 February 2007.					
2	The weapon is Australianised MOTS. Preliminary Design Review and Critical Design Review issues were addressed in the Prior Certification Review.					
3	Data listed is for the F/A-18 21X Build 3.4.1 (JASSM functionality) OFP software which was used for the IOC. Variance due to the detection of software anomalies and the undertaking of corrective and preventative action.					
4	Data listed is for the F/A-18 23X Build 3.1.3 (JASSM functionality) OFP software which will be used for the FOC.					

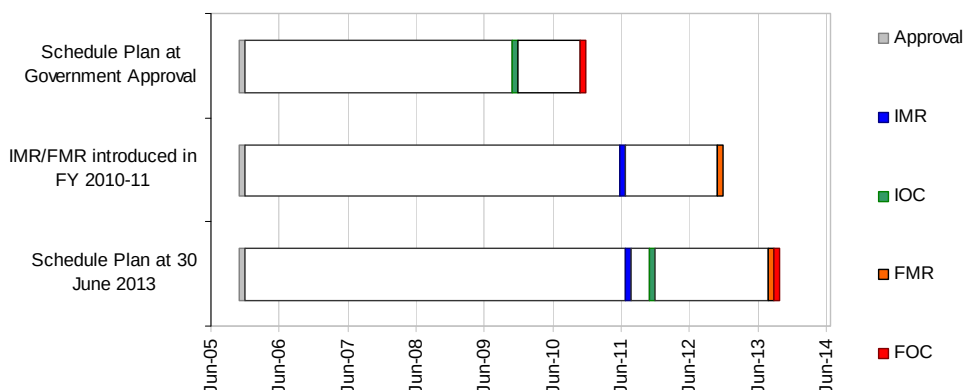
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	JASSM System (Weapon integrated into platform) 21X	Jun 09	Feb 11	Feb 11	20	1
	JASSM System (Weapon integrated into platform) 23X	N/A	Jun 11	Jun 11	0	
Acceptance	JASSM System (Weapon integrated into platform)	Dec 09	Nov 11	Dec 11	23	2
Notes						
1	Data listed is for the F/A-18 21X Build 3.4.1 (JASSM functionality) OFP software which will be used for the IOC. Variance is attributable to the delays associated with correcting software anomalies detected during software development and testing, which required extensive redevelopment and retesting to ensure airworthiness and operational effectiveness.					
2	An additional variation of four months between System Integration and Acceptance was realised due to: delayed delivery of JASSM Test Missiles, Government acceptance of risk associated with Woomera test firings and availability of the Woomera Test Range and support agencies.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

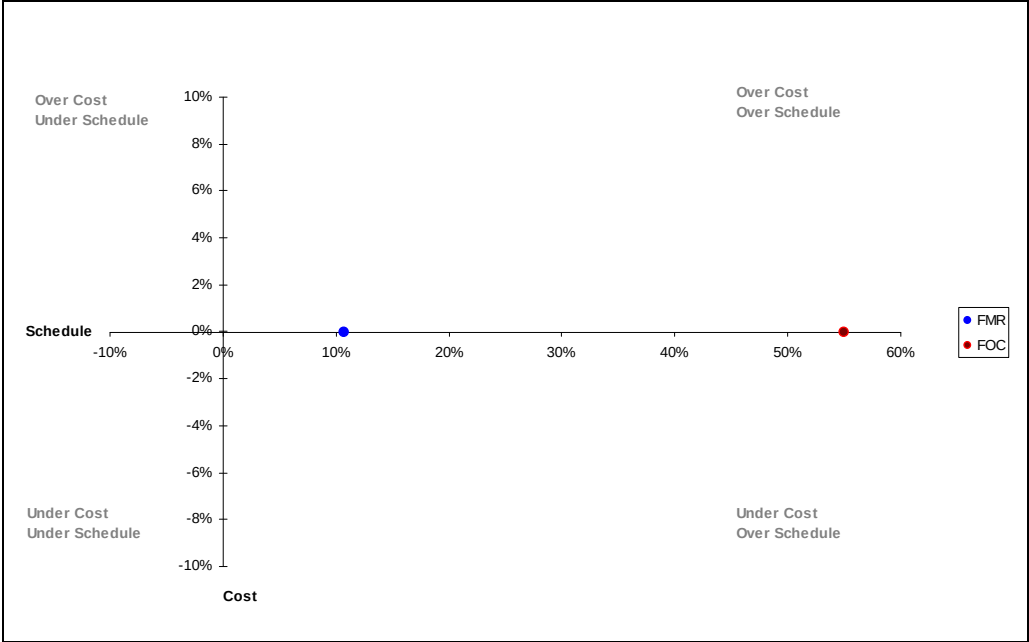
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul 11	Aug 11	0	The AIR 5418 Project Office submitted a minute to the capability manager seeking agreement that AIR 5418 had reached IMR on 5 July 2011. The capability manager signed off on this 3 August 2011.
Second Materiel Release (MR2)	Dec 11	Nov 11	(1)	MR2 was achieved in November 2011 with the issue of the Supplemental Type Certificate and Service Release.
Initial Operational Capability (IOC)	Dec 09	Dec 11	24	IOC was declared by Chief of Air Force on 13 December 2011. The variance is attributable to delays in the AF/A-18 A/B software development and certification process, which has required extensive testing and redevelopment to ensure airworthiness and operational effectiveness.
Final Materiel Release (FMR)	Dec 12	Sep 13	9	The Project Office is working towards achieving FMR in September 2013 following Lot 8 delivery delays.
Final Operational Capability (FOC)	Dec 10	Sep 13	33	FOC requires delivery of the approved full quantity of JASSM war stock. The FOC war stock missiles are being manufactured in Lot 8. Lot 8 missiles deliveries were delayed due to a fuze reliability issue. The fuze issue has now been resolved and deliveries were complete by April 2013. This will allow for FOC to be achieved by September 2013.

Schedule Status at 30 June 2013



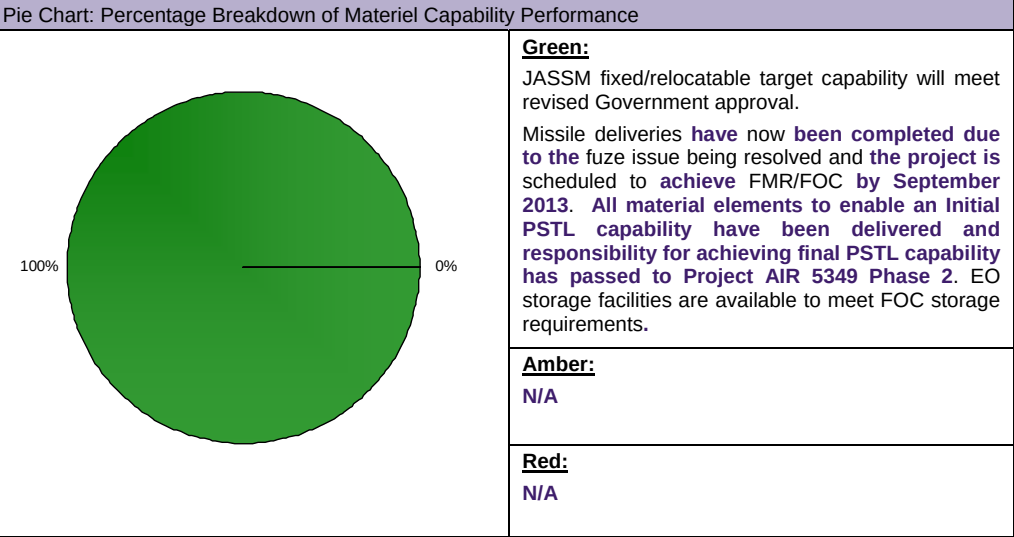
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

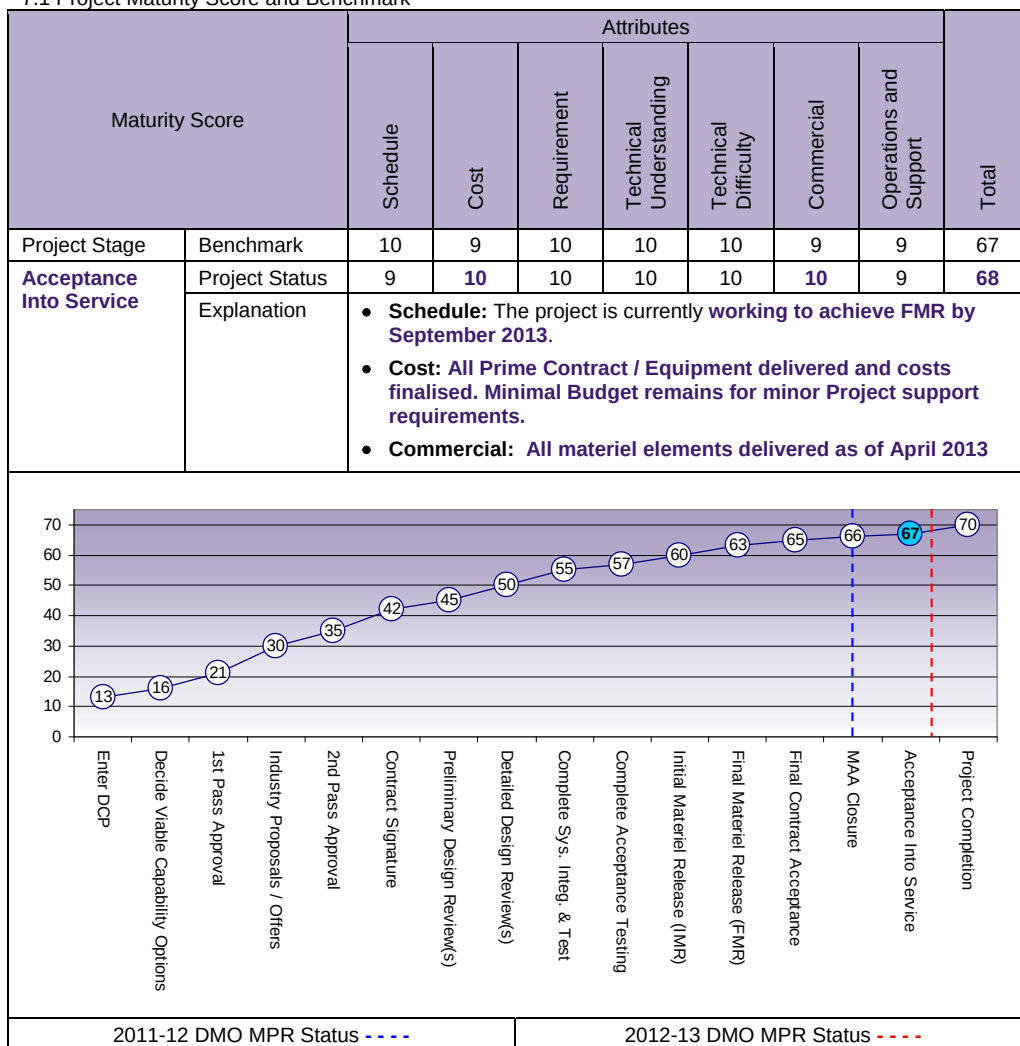
Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that JASSM FMR will be affected by delay in USAF LOT 8 production leading to an impact on Schedule.	This risk was realised and became an issue. The issue is now retired.
There is a chance that FMR could be delayed due to delay in certifying suitable EO storage facilities leading to an impact on schedule and performance.	USAF have completed Enhanced End-Use Monitoring inspection of alternate storage facilities and therefore there are confirmed suitable facilities to support FMR. This risk is now retired.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

Description	Remedial Action
PSTL Scope – Due to nature of rapid technology advances being made in mission planning and intelligence gathering. These advances have the potential to cause scope creep.	All material elements to enable an Initial PSTL capability have been delivered. Responsibility for the final PSTL capability will be passed to Project AIR 5349 Phase 2. This issue is now retired.
Staffing – Engineering and scheduling staff shortages are affecting project schedule.	Contractor staff have been sourced to cover the engineering gap. Scheduler staff issue has been resolved through reallocation of resources. This issue is now retired.
There is a chance that FMR will be affected by delay in USAF LOT 8 production leading to an impact on schedule and performance.	Lot 8 production and deliveries have recommenced were finalised in April 2013 allowing for FMR/FOC to be declared in September 2013. This issue is now retired.
EO Storage Facilities – JASSM storage facilities have had their Explosive Limit Licenses removed due to short comings in facility design.	Defence Support and Reform Group have been allocated funding to remediate the non-conforming facilities to enable Explosive Limit Licenses to be reinstated. Alternative temporary storage facilities have been identified for JASSM whilst rectification work is undertaken.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Stability of interfaces on ageing platforms may not be reliable, leading to an underestimation of integration complexity.	First of Type Equipment
Interface Control Documents are not always correct or may not have been interpreted correctly during host platform design.	Requirements Management
Host platform upgrades not required in the past may now be required, due to the minimum technical performance requirements of new systems to be integrated.	First of Type Equipment
Sufficient resident project staff is important to ensure US Government and contractors understand our requirements and expectations.	Resourcing
FMS is a good procurement vehicle when a US program is mature. However, FMS provides little ability for DMO to manage capability and associated risk when US program is less mature and the Commonwealth is the integrator of project outcomes.	First of Type Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb–Mar 13) Mr Michael Aylward (Acting Mar13–May13) Mr Andrew Cawley (Acting May13–Jun13) AVM Chris Deeble (Acting Jun13–current)
Division Head	Mr Anthony Klenthis (to Jan 13) Mr Martin Weir (Acting Jan 13–Feb 13) Mr Ivan Zlabur (Acting Feb 13–current)
Branch Head	Mr Martin Weir (to Jan 13) Mr Mark Remmers (Feb13–Mar 13) Mr Martin Weir (Mar 13–current)
Project Director	Ms Catherine Martin
Project Manager	SQNLDR Sheena Oldridge (to Dec 12) SQNLDR Mathew Green (Jan 13–current)

Project Data Summary Sheet¹⁸⁶

Project Name	BATTLEFIELD COMMAND SUPPORT SYSTEM
Project Number	LAND 75 Phase 3.4
First Year Reported in the MPR	2010-11
Capability Type	New
Service	Australian Army
Government 1st Pass Approval	Dec 05
Government 2nd Pass Approval	Nov 09
Total Approved Budget (Current)	\$308.0m
2012-13 Budget	\$51.3m
Project Stage	Integration and Test
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The LAND 75 Phase 3.4 Battlefield Command Support System (BCSS) project will provide a digital command and control support system to enhance combat capability of the Australian Army through supporting timely and quality decision-making in the land tactical environment. The BCSS project will also deliver Battle Management Systems (BMS) to a significant number of field vehicles including; Bushmaster Protected Mobility Vehicles (PMV), G-Wagons, Macks and Unimogs. The BMS is a computer-based command and control system designed to enhance the tactical commanders' Situational Awareness and ability to execute operations. The BMS consists of software that is simple and intuitive to use and hardware that can survive in the land tactical [combat] environment.

The BMS is the central component of the Battle Group and Below Command, Control and Communications System (BGC3) that is being jointly delivered by the LAND 75 Phase 3.4, LAND 125 Phase 3A and JP 2072 Phase 1 projects, and will incorporate a mobile, data capable communications system and be able to exchange combat information with BCSS and other Land BMS. The BGC3 will form the basis of a land combat identification (Blue Force Tracking) system by providing commanders with a 'real-time' Situational Awareness display of friendly force locations.

1.2 Current Status

Cost Performance

In-year

This year the variation between planned and actual expenditure is primarily due to the earlier than anticipated achievement of Vehicle Materiel Release Milestones resulting in an overspend.

Project Financial Assurance Statement

As at 30 June 2013, project LAND 75 Phase 3.4 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

¹⁸⁶ Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

Initial Materiel Release (IMR) was achieved on 14 June 2011 and the Initial Operating Capability (IOC) was declared by the Chief of Army as the Capability Manager on 20 April 2012.

In December 2011, the Prime Minister agreed to align the LAND 75 Phase 3.4 Final Operational Capability (FOC) with Army's Brigade rotation cycle circa December 2013. The approval was linked to a Basis of Provisioning change sought by Army. The DMO **has negotiated this change with Elbit Systems Ltd (ELS) and in January 2013 Contract Change Proposal (CCP) 13 (CCP013) to the contract was signed. Changes to the Basis Of Provisioning have been implemented into the schedule.**

As at June 2013, the project has installed the BGC3 into approximately 225 PMV, 85 Unimog Trucks, 110 G-Wagons and is progressing Mack Trucks to Functional and Physical Configuration Audits in preparation for vehicle installation.

Materiel Capability Performance

The DMO has provided release of supplies to Army in sufficient quantities to conduct operational test and evaluation activities commencing in June 2013. These activities are in support of a declaration of FOC by the Chief of Army in December 2013.

1.3 Project Context

Project Background

The capability need was identified in 2002-03 by Capability Development Group (CDG) and the Land Warfare Development Centre. The need arose from analysis of operational experience through the use of BCSS, regional threat and technology assessments, and support from allied programs and technology growth. The capability was refined from 2003 to 2005 culminating in the submission for first pass approval in late 2005. The duration of time from concept to contract has allowed the Australian Defence Force (ADF) to capitalise upon generational advancements in technology and support the alignment of complementary projects to deliver a holistic solution.

The project received Government first pass approval in December 2005. In June 2006, the Minister for Defence agreed that the solicitation of the LAND 75 Phase 3.4 BMS and the LAND 125 Phase 3 C4I sub-system was to be combined to enable Defence to obtain a fully integrated system for mounted and dismounted battle management. The communications bearer (originally to be provided separately by the JP2072 Phase 1 Battlespace Communications System project) for the mounted BMS was added in January 2007. Combining the Request For Tender (RFT) enabled Defence to seek a coherent and integrated solution from industry.

The BGC3 RFT closed on the 27 August 2007, with tenders received from four companies. The initial down selection was to two preferred tenders in January 2008. Phase 1 of the Offer Definition Activity (ODA) selected ESL as the preferred tender to proceed to Phase 2 of ODA in May 2008. ESL successfully completed the ODA and provided a refined risk, schedule and cost proposal that constituted the basis of the approval proposal. Government second pass approval was gained in November 2009, with the contract awarded to ESL as the prime contractor in March 2010.

Project Uniqueness

The capability introduced by this project will fundamentally change the methods used by tactical forces in the implementation and collaborative distribution of battlefield data. Command and Control processes will move from analogue, hard copy based information distribution to an electronic, near-real time capability with improved situational awareness. Implementation of this capability is considered a conversion rather than simply a rollout for the ADF, as it introduces a significant number of organisational and personnel change management requirements.

Project Major Challenges

There is a significant Government Furnished Equipment (GFE) component to this project and its management poses a challenge as the Commonwealth works to accommodate the GFE requirements of ESL. The type of GFE ranges from systems that can only be sourced through the United States Government and hence subject to International Traffic in Arms Regulations, and Australian Defence Force (ADF) controlled assets, including soldier equipment and vehicle platforms.

Meeting the design approval requirements continues to remain a challenge for the program as the project is exposed to multiple platform design authorities that creates a complex management environment. Melding of the processes required to achieve an approved design continue to consume a large portion of the project's management and engineering resources.

The majority of the components in the BMS are off the shelf, as are many of the external systems to which the system is to integrate. Managing the interfaces to ensure that the system specifications can be achieved remains a key challenge.

In the 2012-13 Federal Budget, the Government decided to remove installation of the BGC3 into the M113AS4 Family of Vehicles and apply a real cost decrease of **\$7.0m. The CCP, together with previous Basis of Provisioning and FOC schedule change sought by Army was executed in early 2013.**

Other Current Projects / Sub-Projects

LAND 75 Phases 3.2, 3.3 and 3.3B BCSS: A digital command post system used for deliberate planning, operational monitoring, controlling and reviewing functions. The BCSS will provide the higher level command and control processes to complement and inform the lower tactical information generated from the BMS. **The three BCSS acquisition project phases were closed in early 2013, and all BCSS activities are now managed in sustainment.**

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2072 Phase 1 Battlespace Communications System	This is a project to enhance communications for ADF land elements through the development of a holistic battlespace communications architecture for the land environment.	Communications radio solution and architectures that underpin the BGC3.
LAND 125 Phase 3A Soldier Combat System	This project will enhance communications for ADF soldiers through the development of a BMS Dismounted component.	LAND 125 Phase 3A C4I sub-system will enable the ADF to streamline delivery of an integrated system for mounted and dismounted battle management.
JP 5408 Phase 2B Navigation Warfare	This project will incrementally implement the enhancements and replacements to the ADF's Global Positioning Systems (GPS) equipment.	These navigational and timing GPS equipment form an integral component of the BGC3.
LAND 116 Phase 3 Bushranger	This project is providing protected land mobility to Army units and Royal Australian Air Force (RAAF) Airfield Defence Guards with the Bushmaster PMVs.	The Bushmaster PMV is one of the vehicle platforms identified for installation of the BMS. This is the highest priority vehicle for LAND 75 Phase 3.4.
LAND 121 Phase 3A Overlander	This project will acquire approximately 1,200 unprotected lightweight/light vehicles (G-Wagons).	The G-Wagon is one of the vehicle platforms identified for installation of the BMS. LAND 121 have already designed the mechanical installation of the BGC3 into the G-Wagon, and will fit the entire fleet of G-Wagons with principal mountings and fixtures. 388 G-Wagons from the total fleet are to be fitted with the BGC3. Every G-Wagon is to be delivered by LAND 121 fitted for the BGC3.

LAND 17 Phase 1B BMS-Fires and AFATDS	This project will deliver an enhanced indirect fire support system.	The BMS-Fires system of the 105mm Hammel Artillery Replacement and 155m Howitzer Artillery Replacement will need to exchange data with the BMS being acquired by the LAND 75 Phase 3.4 project. LAND 17 has already designed and is delivering a kit to replace a portion of the BMS with the BMS-Fires terminal. LAND 17 BMS-Fires kit requires that any PMV they are fitting has first been fitted by LAND 75.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
Dec 05	Original Approved	7.9	1
Nov 09	Government Second Pass Approval	325.0	
Jun 12	Real Variation – Scope	(7.0)	2
		318.0	
Jul 10	Price Indexation	15.6	3
Jun 13	Exchange Variation	(33.5)	
Jun 13	Total Budget	308.0	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – Elbit Systems Limited	(109.3)	
	Contract Expenditure – Northrop Grumman	(5.4)	
	Other Contract Payments / Internal Expenses	(17.0)	4
		(131.7)	
FY to Jun 13	Contract Expenditure – Elbit Systems Limited	(40.5)	
	Contract Expenditure – Northrop Grumman	(3.8)	
	Other Contract Payments / Internal Expenses	(8.1)	5
		(52.4)	
Jun 13	Total Expenditure	(184.1)	
Jun 13	Remaining Budget	(123.9)	
Notes			
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.		
2	The May 2012 Commonwealth Budget decreased the Project Budget by \$7.0m and removed the installation of BGC3 into the M113 family vehicle from the project scope.		
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$8.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$7.3m having been applied to the remaining life of the project.		

4	Other expenditure comprises: Operating Expenditure (\$4.0m) , Offer Definition (\$3.0m), Consultants (\$3.5m) , Contractor Support (\$6.1m) and Minor Capital (\$0.4m) expenditure not attributable to the Prime contract.
5	Other expenditure comprises: Operating Expenditure (\$3.1m), Contractor Support (\$3.9m) and Consultants (\$1.1m).

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	The variation is primarily due to the earlier than anticipated achievement of Vehicle Materiel Release Milestones.
		1.1	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
51.3	52.4	1.1	Total Variance	

2.3 Details of Project Major Contracts

2.5 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Elbit Systems Ltd	15 Mar 10	176.2	173.9	Variable	ASDEFCON	1
Northrop Grumman	24 Jun 11	10.3	10.9	Fixed Price	ASDEFCON	
Notes						
1	This value represents the LAND 75 Phase 3.4 aspect of a contract which covers two other discrete projects. Total contract value is \$275.7m, this includes both Acquisition and Sustainment.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
Elbit Systems Ltd	Various	Various	Delivery of BMS installations or installation kits for: - Mack Truck: 90 - Unimog Truck: 207 - Bushranger PMV: 237 - G-Wagons: 388			
Northrop Grumman	Various	Various	Software Licences for the Track Management System			
Major equipment received and quantities to 30 Jun 13						
As at June 2013, the project has installed the BGC3 into approximately 225 PMV, 85 Unimog Trucks, 110 G-Wagons and is progressing Mack Trucks to Functional and Physical Configuration Audits in preparation for vehicle installation.						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	System Design Review - BMS	May 10	N/A	Aug 10	3	1
Preliminary Design	Group 1 – Selected Variants of PMV, Mack and Unimog	Sep 10	N/A	Sep 10	0	
	BMS	Aug 10	N/A	Sep 10	1	2

	Preliminary Design Review – Group 2 & 3 Remaining Variants of PMV (Group 2) and M113 (Group 3)	Aug 11	N/A	Oct 12	14	3
Detailed Design	Group 1 – Selected Variants of PMV, Mack and Unimog	Dec 10	N/A	Jan 11	1	4
	BMS	Dec 10	N/A	Jan 11	1	
	Delta Detailed Design Review (dDDR) – Group 1 PMV only	Dec 11	N/A	May 13	17	5
	Group 2 – PMAV	Nov 11	N/A	Aug 13	18	6
	Group 3 M113	Dec 11	N/A	Nov 13	23	7
Notes						
1	The System Design Review was achieved when all major action items resulting from the review were completed, and the progress certificate was issued.					
2	System Preliminary Design Review (PDR) was delayed to align with the conduct of the Dismounted and Group 1 reviews.					
3	PDR was delayed due to Protected Mobility Command Vehicle production being reprioritised by Army in order to provide a coherent capability to the customer. Design activities relating to installation of the Battle Management System into the M113AS4 remains part of Group 3 design reviews, driving the achievement date. Mack and Unimog remaining variants designs were removed from Group 2 as part of CCP013 negotiations as a common design from Group 1 was implemented.					
4	The dDDR were aligned to incorporate the conduct of dismounted human factors trials and the dismounted design review, and significant input from Thales in its role of the vehicle Original Equipment Manufacturer (OEM) and Design Authority. The delay is subject to the finalisation of a major contract change proposal (CCP) for the design schedule.					
5	Review was held in December 2012 with one major action item remaining which is configuration management of the final design compared to the finite element analysis that was used to support the design review. This action has now been closed.					
6	Mack and Unimog remaining variants designs were removed from Group 2 as part of CCP013 negotiations as a common design from Group 1 can be implemented. PMAV (Group 2) has been delayed but is not delaying FOC, as it is not a requirement for FOC. There is sufficient float to support delivery prior to Final Acceptance.					
7	Delay is due to the time required for ESL to form a sub-contractual arrangement with BAE and their collective ability to develop a design, as BAE are required to manage the IP arrangements around these vehicles.					

3.2 Contractor Test and Evaluation Progress

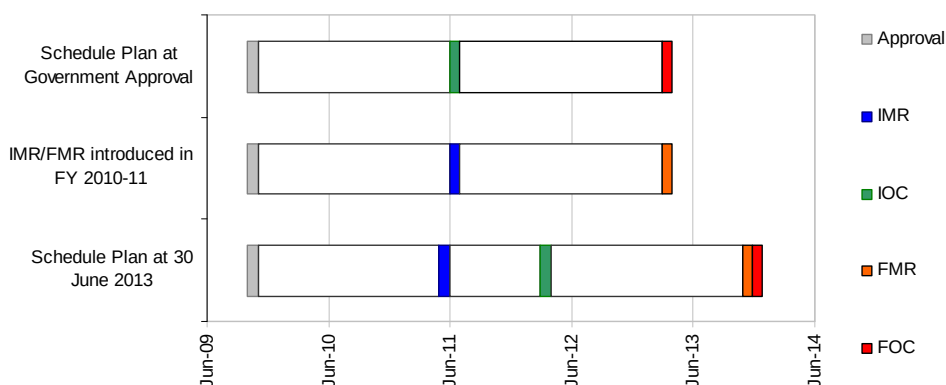
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Variable Message Format (VMF) Conformance to standard testing	Jun 11	N/A	Apr 13	22	1
	Communications	May - Oct 10	N/A	Oct 13	36	2
Acceptance	Acceptance Test and Evaluation - Group 1 Various Vehicles	Apr - Jun 11	N/A	Dec 13	30	3
	Acceptance Test and Evaluation – Group 2 PMV Ambulance	Feb 12	N/A	Feb 14	24	4

Notes	
1	The first set of VMF messages was completed June 2011, allowing demonstration of the interoperability element with other ADF systems. Remaining messages conformance testing is complete. Final ADF Tactical Data Link Authority testing on the final software release was completed in March 2013.
2	Initial communications developmental testing was related to communication performance of individual radios by radio OEMs (as delivered by the sister project JP 2072 Phase 1). Acceptance testing is platform related and is conducted on each new design to address the interdependencies, such as antenna collocation. The majority of the Communications requirements are complete, with the exception of the network modelling based requirements where input variables presented in the final report are considered inappropriate.
3	Final testing schedules for Group 1 variants were planned for September 2012. Delays are due to the need for the contractor to redesign elements to improve human factors compliance and mine blast conformance. Final acceptance testing has commenced, but with three vehicle fleets, some baseline controls and the availability of testing facilities, will not be finalised until late 2013.
4	PMAV does not share a common design with the other PMV variants. Delays have been experienced in obtaining a vehicle to provide to the contractor for design purposes. Additionally there were issues with the interim production and design activities on Group 1 vehicles. The PMAV design, as the only remaining element in Group 2 as effected through CCP013 , will be progressed with Thales as the Design Authority.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

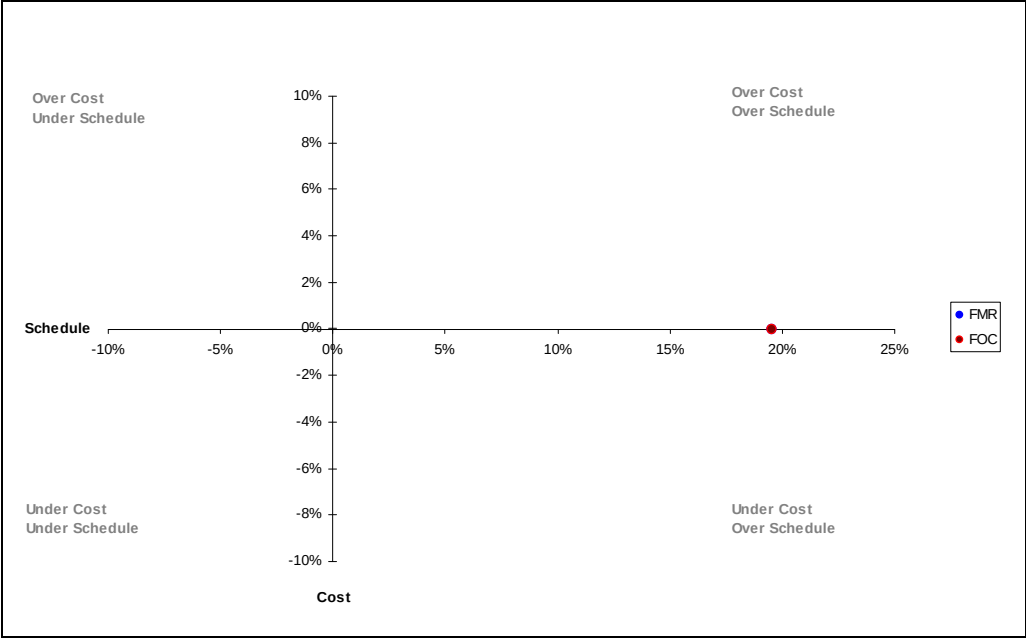
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul 11	Jun 11	(1)	N/A
Initial Operational Capability (IOC)	Jul 11	Apr 12	9	Longer than expected Operational Test and Evaluation (OT&E) activities were required to fully explore risk areas of interest to Army and Defence Science and Technology Organisation. The initial round of OT&E activities in 2011 following Exercise TALISMAN SABRE 2011 were inconclusive.
Final Materiel Release (FMR)	Apr 13	Dec 13	8	Dates moved to better align with the Army Brigade Rotation Cycle.
Final Operational Capability (FOC)	Apr 13	Dec 13	8	Dates moved to better align with the Army Brigade Rotation Cycle.

Schedule Status at 30 June 2013



Section 4 – Project Cost and Schedule Status

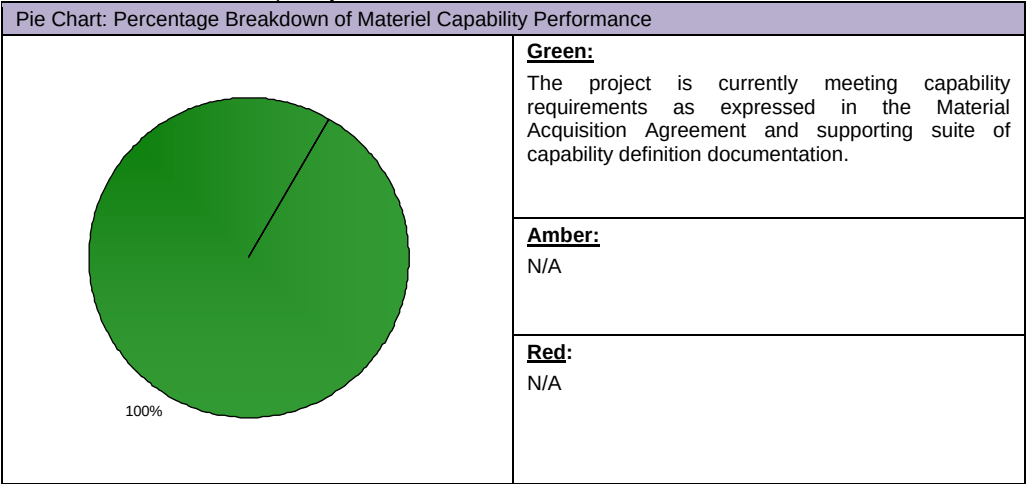
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that contractor performance and achievement of contractual obligations will not be met as a result of the contractor's developing experience in areas when working with Defence (contract and engineering processes, deliverables, culturally) and as such some deliverables are below standard.	Continual mentoring of the contractor in understanding the Australian marketplace, and way that Defence organisations operate. Seek to create the circumstances for early engagement with the Platform OEM . This risk has been realised and has been transferred to Section 6.2 Major Projects Issues.
There is a risk that the RAAF/Army are unavailable to support the Project's commitments due to known and unknown theatre commitments for Units. Subsequently the Government Furnished Materiel (GFM) will be unavailable for scheduled activities.	Adjust the schedule to better align with Force Rotation Schedules. Government notified of change to schedule in December 2011 with FOC Q4 2013. Early and sustained engagement with the Platform fleet managers to ensure vehicle rotation plan supports LAND 75 Phase 3.4 as well as Army's needs. This risk has been realised and has been subsumed into an existing issue in Section 6.2 Major Projects Issues.
There is a risk Army changes its Operational Concept which results in changes in scope for LAND 75. User acceptance of the system is also a risk if these changes are delivered late in the Program.	Extract from the MAA addresses this risk: "Should the parties agree that ambiguity exists between the requirements of the capability baseline endorsed by the Project Management Steering Group (MSG), specifically the Function and Performance Specification DEF(AUST) 8274 and the Operational and Support Concept and the BGC3 Systems Specification and Support Systems Specification (the Specification) then it is agreed that the Specification will take precedence over the capability baseline for the issue or issues identified". The test to enact this clause is that the PMSG agrees that ambiguity exists. If further changes were sought, then a change to the Government approval to allow sufficient time to implement the changes would probably be required. This risk has been subsumed into another risk and has been retired.
There is a risk that the BGC3 system will not achieve full information and communications technology (ICT) Accreditation.	System security accreditation documentation has been developed as a result of the Software Baseline being achieved and the Project is liaising with Chief Information Officer Group to ensure the process is successful. System Accreditation should be achieved in late 2013.
Note	
There have been significant changes to the Risk and Issues section as a result of the review of the Project's risk management processes and the transition to Predict! software as its risk management tool. Predict! continues to be assimilated into the Project's business processes, and refinement and understanding of the outputs of Predict continues.	

Emergent Risks (risk not previously identified but has emerged during 2012-2013)	
Description	Remedial Action
There is a risk that achievement of Design Acceptance for PMV Group 1 platform may be further delayed.	The project will continue engagement with ESL and insist on Thales involvement as well as frequent meetings to identify issues and address action items. This risk has been realised and has been subsumed into an existing issue in Section 6.2 Major Project Issues.
There is a chance that the BGC3 will not achieve Introduction into Service (IIS) approval from Army.	The project will continue to seek feedback from the Capability Manager, and conduct regular stakeholder meetings. In addition, ensure compliance to the Army Acceptance into Operational Service manual.
There is a chance that with a significant number of stakeholders involved with the Program consensus will not be reached on capability requirements of the BGC3 system deliverables	Maintain continual liaison with Army Headquarters and 7th Brigade. Ensure that all decisions and options align with Government Second Pass Approval.
There is a risk that ESL may fail to meet quarterly Key Performance Index (KPI) of the system post-delivery, or that ESL may challenge the Commonwealth assessment of the KPI.	Monthly review of KPI by Project Manager, and Assistant Project Managers of LAND 200. This will require input from the Chief Engineer, Integrated Logistics Support Manager, Training Manager and Risk Manager.
There is a risk that the project's testing capability for the Program will be reduced in 2013 with the departure of a key resource.	The project has limited ability to recruit at present however alternate options are being considered. The engagement of contractor support is the most viable short term solution should this risk be realised.
There is a risk that changes to the endorsed MAA scope for the dismounted BMS (BMS-D) are occurring informally.	Configuration Control Boards are held regularly to table changes to requirements within the scope of the BMS-D MAA and escalated accordingly. The MAA is to be re-written in conjunction with Army and Capability Realisation Plan to ensure consistency in scope of the BMS-D deliverables and stakeholders.
There is a risk that the Track Management System (TMS) will not achieve ICT accreditation for the DSN.	Continued consultation with domain experts and Chief Information Offer Group (CIOG) in Defence to advise on requirements to achieve ICT accreditation.
There is a risk that TMS will not transition to the in-service support agency.	Continued consultations with domain experts to ensure that transition requirements are understood, agreed and implemented.
There is a risk that the IIS Training will not adequately prepare selected staff officers at Brigade and Divisional level to undertake the role of a TMS operator on operations or in training.	Early commencement and validation of the training continuum. Ensure that soldiers selected for this course meet the pre-requisites for undertaking this training.
There is a risk that the TMS will not be accepted by the user.	The project plans to demonstrate the capability to Army during a major interoperability experiment towards the end of 2013.
There is a risk that TMS may not be able to deliver the interoperability required with other systems.	The project plans to conduct interoperability testing with each system and as a whole. This has been planned with major stakeholders and will be completed by end 2013.

There is a risk that the BGC3 System may not be given Design Acceptance.	If the system fails to meet the required specifications additional work will be required to solve functionality issues. A need to work closely through the conduct of verification activities to ensure these issues are addressed.
There is a risk of that there may be a delay to Design Acceptance schedule for the PMAV G2 platform.	The project will continue engagement with ESL and insist on Thales involvement as well as frequent meetings to identify issues and address action items.
There is a risk that there may be a delay to Design Acceptance for the M113AS4 Family of Vehicles.	The project will closely monitor the design process within ESL and ensure schedule recovery action is in place when required.
There is a risk that the Contract is not being executed correctly within the Program.	Regular review (through Integrated Product Teams and Project Management scheduled meetings) of contractual terms and conditions and their application. Maintain Project Team knowledge of the contract and lessons learnt. Manage all contractual correspondence through a formal mechanism that is reviewed fortnightly.

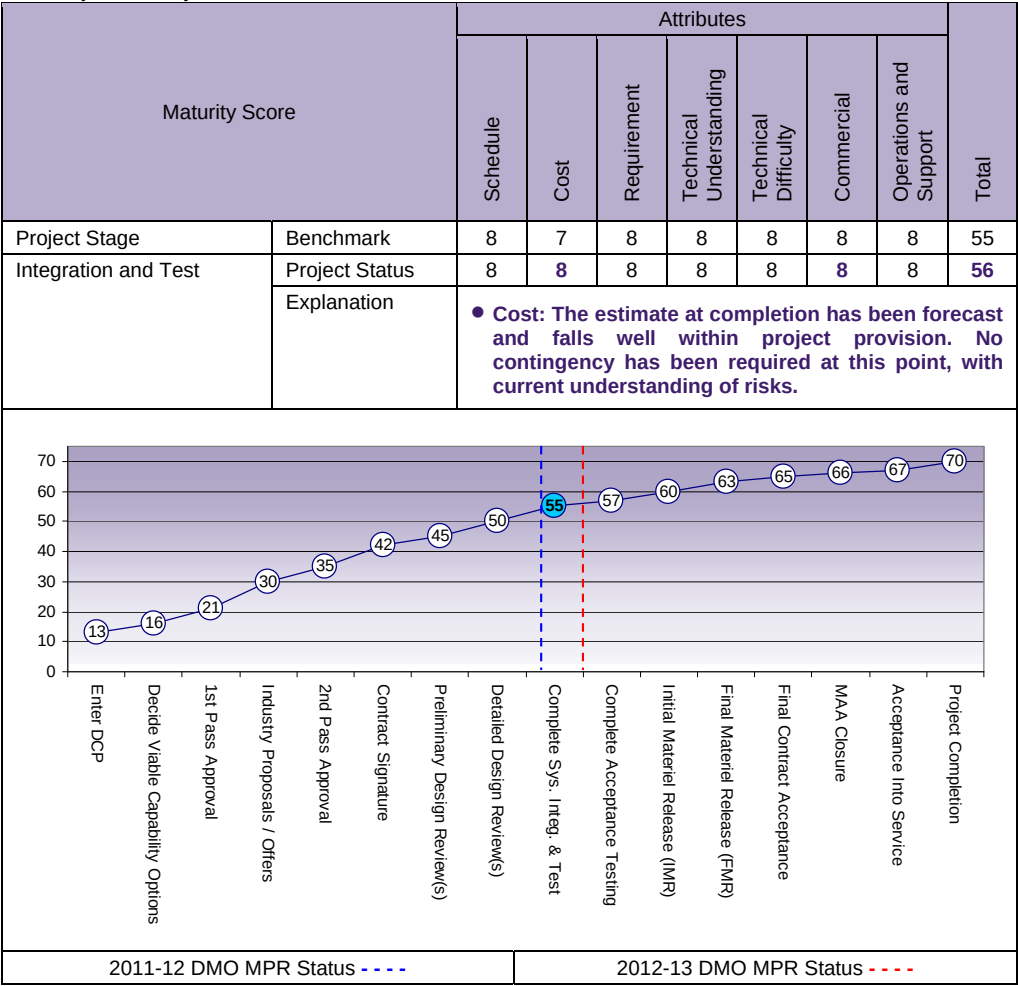
6.2 Major Project Issues

Description	Remedial Action
Detailed Design Review has not been met for the BGC3 system for the PMV due to scope changes to the baseline of the PMV impacting the requirements and subsequent baseline of the BGC3. The vehicle baseline is dynamic with competing projects installing capability in to the vehicles concurrently.	A February 2011 Gate Review agreed that the LAND 200 program will deliver most, if not all PMV installations to Army at preliminary design baseline. Once the design baseline has been finalised, and a design acceptance certificate has been issued by Thales, any deltas between the final design and that delivered will be identified. If Army accepts the design, then no further action is required. If there are differences that are unacceptable, then a retrofit program will be required which will be planned in the acquisition phase of LAND 75 Phase 3.4, with implementation split between acquisition and sustainment under the Sustainment Product Schedule.
In the FY 2012-13 Federal Budget, the Government decided to remove installation of the BGC3 into the M113AS4 family of vehicles. A Real Cost Decrease has already been applied to LAND 75 Phase 3.4 in the Portfolio Budget Statements and incorporated in the Basis of Provisioning change CCP negotiations.	Include the M113AS4 Family of Vehicles in the already planned Basis of Provisioning CCP discussions. Work with CDG and Capability Managers to re-baseline the Program. The agreement and implementation of CCP013 has resolved this issue. This issue has been retired.
Several key staff left the Project Office which was not adequately manned to support the execution of the contract. The rapid expansion of the workforce resulted in steep learning curves for the new staff, leading to a subsequent backlog of work that is still being resolved.	Track project response times to the contractor, and take corrective action if particular areas are lagging. Well-being plans, and staff rotations within the project to provide diversity of work, travel and reporting obligations. Recruitment of vacant positions still underway. Implementation of staff work profiles, in addition to knowledge transfer and retention plans within the project office, has resolved this issue. This issue has been retired.

Description	Remedial Action
The user community do not accept and use the BMS-D.	A Roadshow which highlighted the BMS-D (capability, training, support) was conducted by internal staff on the 13-16 March 2013.
The contractor may be inexperienced in areas in working with Defence (contract and engineering processes, deliverables, culturally) and as such some deliverables are below standard subsequently there is a chance the contractor performance and achievement of contract milestones will not be met.	Increase Project Controls and Contract Management function in the Program. Implement communication plan with ESL. Tighter control on the Program Measurement and Review format/performance measurements. Formal correspondence on issues and points of contention. Educate the AMPs/PMs on these strategies to ensure tighter project controls.
Schedule is not accurate - dates for vehicles availability are not 'solid', time frames are too aggressive, difficult to quantify amount of damages and warranty provision commencement/conclusion.	Implement the Battle Rhythm - including improve the schedule (scope), control the delivery of the product lines, review the schedule, action schedule slip with ESL and request corrective actions (formally), identify schedule tolerances and when they are breached and identify strategies for managing these breaches. Further CCP negotiations are required to re-baseline the schedule.
The BMS-D have the following safety issues: - Electromagnetic interference / Electromagnetic compatibility emissions / Radiation hazard - Weight - Size - Premature fatigue	Revalidate the BMS-D requirements to determine whether a 'tiered' system could be adopted for the BMS-D capability (plug-n-play based on operational scenario). Stop production of the BMS-D in its current form and revisit the requirements of the BMS-D to reduce the size and weight. Reduce the emissions by cable shielding. Reduce the emissions and weight by amalgamating the radios. Introduce Human Ergonomics training into BMS-D training. Implement correct doctrine for the operation of the BMS-D units.
Inadequate baseline management by both the Commonwealth and the contractor (ESL) has resulted in an inability to strike a baseline for the BMS-D.	CoA Engineers to work with Contractors (at their premises) to ensure deliverables are to a standard that will be accepted by the CoA in accordance with the Contract

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
For Network Centric Warfare (NCW) projects that have many interfaces and stakeholders, it is essential to have the requirements not only well understood, but to have these very well defined in the suite of Second Pass project approval documentation. This provided a solid foundation to build an executable contract, and helps guide stakeholder projects who are seeking interoperability with the BGC3.	Requirements Management
The project has a well defined contract with clear conditions of contract that provide flexibility where it is needed. In particular, parties to the contract can agree to changes to the GFM by accession rather than via a formal contract change proposal, which allows far greater agility in the management of GFM and GFE requirements.	Contract Management
During the course of the program, it was found to be essential to continue with an expanded Integrated Project Team which had senior stakeholder representation of all groups involved, including projects delivering the platforms, technical regulatory agencies and the Capability Managers.	Governance
Considering the many stakeholder interfaces involved in the NCW programs (which this project is but one), the traditional PMSG forum was found to be insufficient and requiring a broader NCW program focus. As a result, higher level program management oversight, which involves all key stakeholder groups, including the Capability Manager, Capability Development Group and the DMO, has proven to be an essential management forum for the project.	Governance

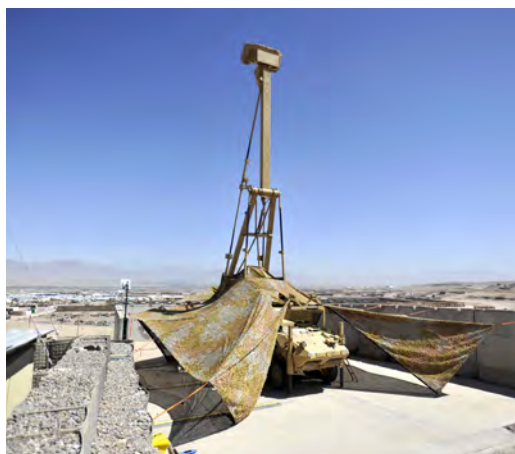
Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward (Jul 12–Feb13, May 13–current) Mr Mark Devlin (Mar 13–Apr 13)
Branch Head	Mr Brad Flux
Project Director	Mr Roger Grose
Project Manager	LTCOL Geoffrey Donkin

Project Data Summary Sheet¹⁸⁷

Project Name	COUNTER - ROCKET, ARTILLERY AND MORTAR
Project Number	LAND 19 Phase 7A
First Year Reported in the MPR	2011-12
Capability Type	New
Service	Australian Army
Government 1st Pass Approval	Apr 10
Government 2nd Pass Approval	Apr 10
Total Approved Budget (Current)	\$253.9m
2012-13 Budget	\$29.4m
Project Stage	Final Contract Acceptance
Complexity	ACAT III



Section 1 – Project Summary

1.1 Project Description

The project seeks to deliver a Counter – Rocket, Artillery and Mortar (C-RAM) Sense and Warn (S&W) capability, including Giraffe Agile Multi Beam (GAMB) radars and United States (US) C-RAM Command and Control (C2) equipment, for deployment to Afghanistan.

C-RAM S&W is designed to increase the level of force protection for deployed forces, providing early detection and warning against enemy indirect fire threats. The ability to provide early detection and warning of enemy indirect fire activity will afford friendly troops deployed in forward operating areas the time to take appropriate response measures, resulting in increased survivability.

1.2 Current Status

Cost Performance

In-year

This year the variation is primarily due to a reduction in planned costs associated with GAMB activities.

Project Financial Assurance Statement

As at 30 June 2013, the project has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

187 Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 139.

Schedule Performance

Achieved milestones to date:

- Initial Materiel Release (IMR), October 2010;
- Initial Deployment Capability, December 2010;
- Initial Operational Capability – Tarin Kot, December 2010;
- Initial Operational Capability – Uruzgan (**IOC - UR**), July 2011;
- **Final Operational Capability – Afghanistan (FOC – AF), September 2012;**
- **Final Materiel Release (FMR) – January 2013; and**
- **Final Operational Capability – Australia (FOC – AS), January 2013.**

The project achieved Final Materiel Release in January 2013 with the final delivery of the third GAMB.

The project was asked by Defence to support the development of a business case to introduce the capability into service. The project agreed and the Materiel Acquisition Agreement has been amended to reflect a revised project closure in late 2014 whilst the business case is progressed and transition into service is executed.

Materiel Capability Performance

The C-RAM capability is currently operational in Uruzgan province in Afghanistan. The installed C-RAM capability in Afghanistan is providing effective S&W performance.

1.3 Project Context

Project Background

In September 2009, the Australian Government directed the Australian Defence Force (ADF) to immediately prepare a C-RAM S&W capability for deployment to Afghanistan. The ADF's intent was to deploy the C-RAM S&W capability to Uruzgan Province.

The C-RAM system has been mandated to consist of two distinct sub-systems – the GAMB radar sensor to be acquired through a sole-sourcing arrangement with Saab, Electronic Defence Systems (Saab) and a C-RAM C2 S&W sub-system to be acquired through the Foreign Military Sales (FMS) process with the US Government.

The contracts were signed in April 2010 and the capability was installed and operational in the Uruzgan Province by December 2010. The rollout continued throughout 2011 to establish a series of patrol bases to support the ADF effort.

Working to an aggressive schedule, the many achievements have been attributed to the high profile of the project, in particular, the media interest and recognition by the wider project community.

With further direction from the Chief of Army and agreement from the Minister for Defence, the project is currently assessing the requirement to introduce the C-RAM capability into service.

Project Uniqueness

C-RAM S&W System is a combination of an FMS, Military 'off the shelf' acquisition and commercial contract. At the time this unique combination of mission system elements made it the first of its kind in the ADF. There have since been a number of similar projects.

The establishment of the capability with the Air Land Regiment requires specialist skills to operate the equipment as it is not considered a like capability to other radars in the ADF.

Project Major Challenges

Introduction Into Service Activities: The Australian Army has identified the need to transition the capability from Operational 'in use' to an 'In Service' capability. The major challenges facing the DMO Project Office in this coming year are the resources required with the relevant skill sets to undertake the work and intensive stakeholder engagement to manage this within the current agreed project timeline.

In addition to this, supportability in Australia is yet to be established. Of the many considerations of how the C-RAM S&W System is to be retained and maintained, a local support framework and structure has not been defined due to resource and trade skill constraints.

Supplier considerations: As all extant C-RAM equipment suppliers are based overseas, there has been no real opportunity for local industry involvement in the C-RAM acquisition contracts. However, there are now likely to be opportunities for Australian Industry for Through Life Support of the C-RAM S&W systems.

Project Data Summary Sheets

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2012–13 Major Projects Report

Other Current Projects / Sub-Projects

N/A

1.4 Linked Projects

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
May 10	Original Approved	265.6	1
Jul 10	Price Indexation	5.4	
Jun 13	Exchange Variation	(17.1)	
Jun 13	Total Budget	253.9	
	Project Expenditure		
Prior to Jul 12	Contract Expenditure – US Government (AT-B-UDU)	(48.2)	
	Contract Expenditure – Saab - Lease	(33.8)	
	Contract Expenditure – Saab - Acquisition	(60.9)	
	Other Contract Payments / Internal Expenses	(4.3)	
		(147.2)	
FY to Jun 13	Contract Expenditure – US Government (AT-B-UDU)	(2.9)	
	Contract Expenditure – Saab - Lease	(3.5)	
	Contract Expenditure – Saab - Acquisition	(20.7)	
	Other Contract Payments / Internal Expenses	(1.2)	
		(28.3)	
Jun 13	Total Expenditure	(175.5)	
Jun 13	Remaining Budget	78.4	
Notes			
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The impact on the project budget as a result of out-turning was \$5.4m having been applied to the remaining life of the project.		

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	FY12/13 expenditure is \$28.3m against latest approved plan of \$29.4m. Variance of (\$1.1m) is primarily due to the reduction of the GAMB restoration milestone payment, application of liquidated damages for GAMB Radars and project savings. Reductions from these activities have been offset by exchange loss and payment brought forward from FY13/14.
		(1.1)	Overseas Industry	
			Local Industry	
			Brought Forward	
		(0.2)	Cost Savings	
		0.2	FOREX Variation	
			Commonwealth Delays	
29.4	28.3	(1.1)	Total Variance	

2.3 Details of Project Major Contracts

Detailed Details of Project Major Contracts						
Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
US Government AT-B-UDU	Apr 10	71.2	103.4	FMS	FMS	1
Saab GAMB 740 Lease	Jun 10	32.4	45.2	Firm	MODIFIED ASDEFCON	2
Saab GAMB Acquisition	Dec 10	86.2	88.7	Firm	ASDEFCON	
Notes						
1	Increase of the FMS Case AT-B-UDU was due to changes in the operational environment and training requirements.					
2	Contract Change Proposal driven by lease of second 740 GAMB as a Training and Reference System.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
US Government AT-B-UDU	Various	Various	FMS Military off the shelf procurement includes the provision of supplies (supporting technical and engineering documentation), initial spares and support services in an operational environment. Consisting of: - Lightweight Counter Mortar Radar (LCMR) x 31; - Wireless Audio Visual Emergency System x 2 sets; - Forward Area Air Defense Command and Control x 25; - Air and Missile Defense Workstation x 25; - C-NET Local Area Network System x 2 sets; and - Field Service Representatives x 4.			
Saab GAMB 740 Lease	1	2	Re-manufacture and lease of two GAMB 740 Radar Systems, contracted logistic support and Field Service Representatives.			
Saab GAMB Acquisition	3	3	Manufacture of the GAMB Radar Systems, contracted logistic support and Field Service Representatives, and Giraffe Training Systems.			
Major equipment received and quantities to 30 Jun 13						
Initial Deployment Capability/Initial Operational Capability – Completed. Sufficient C-RAM S&W and GAMB 740 systems delivered direct to Theatre for Operational use.						

Project Data Summary Sheets

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2012–13 Major Projects Report

Section 3 – Schedule Performance

3.1 Design Review Progress

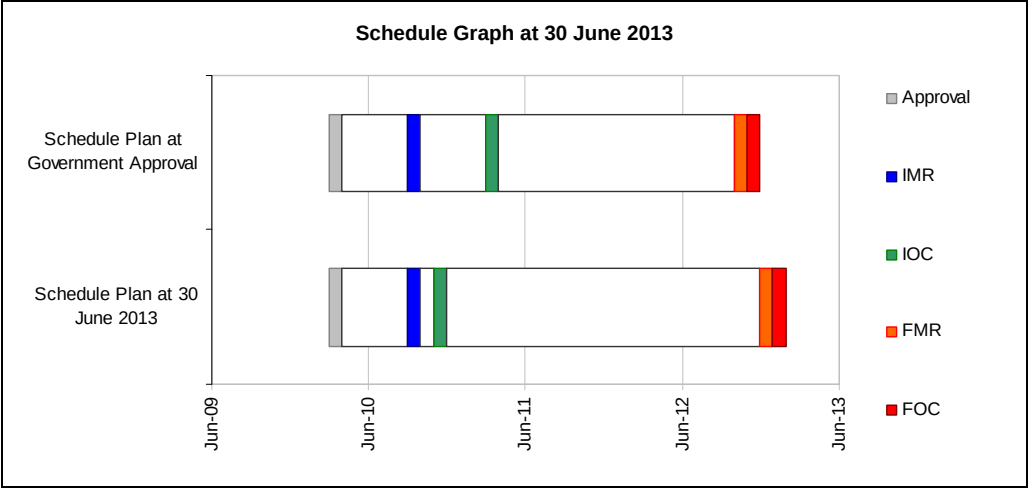
Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	N/A	N/A	N/A	N/A	N/A	1
Preliminary Design	N/A	N/A	N/A	N/A	N/A	1
Critical Design Review	N/A	N/A	N/A	N/A	N/A	1
Detail Design Review	GAMB Acquisition	Jun 11	N/A	Jun 11	0	
Notes						
1	As systems are Military Off The Shelf (MOTS) Acquisitions, there is no Systems Requirements Review, Preliminary Design Review or Critical Design Review.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	C-RAM C2 to GAMB 740	Apr 11	N/A	Dec 10	(4)	1
	C-RAM C2 to GAMB Acquisition	Jul 12	Jul 12	Jul 12	0	
Acceptance	C-RAM C2	Dec 10	N/A	Dec 10	0	
	GAMB 740	Mar 11	N/A	Dec 10	(3)	2
	GAMB Platforms 1 & 2	Jun 12	Jun 12	Jun 12	0	
	GAMB Platform 3	Dec 12	Dec 12	Dec 12	0	
Notes						
1	Parallel activities and early delivery of the GAMB 740 enabled the conduct of the system integration tests ahead of schedule.					
2	Concurrent activities, including the provision of logistic support from Army, facilitated acceptance of mission systems by the Commonwealth of Australia and enabled delivery to theatre ahead of schedule.					

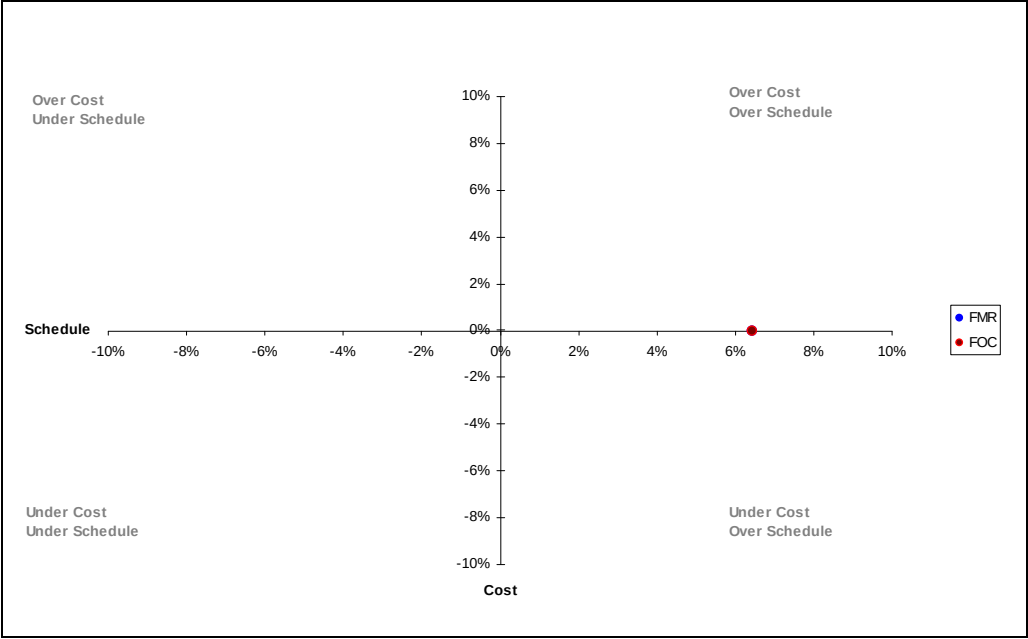
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Oct 10	Oct 10	0	N/A
Initial Operational Capability - (IOC) – Tarin Kot (IOC – TK)	Apr 11	Dec 10	(4)	Milestone achieved early as a result of delivery of GAMB 740 being ahead of schedule.
IOC – Uruzgan (IOC – UR)	Jun 11	Jul 11	1	Slight variance resulting from minor Patrol Base installation delays and revision of IOC-UR milestone requirements.
Final Operational Capability – Afghanistan (FOC – AF)	Jul 12	Sep 12	2	FOC-AF moved to September 2012 to align with contractor production schedule and enable design acceptance, training, troop rotation and movement of GAMBs to TK.
Final Materiel Release (FMR)	Nov 12	Jan 13	2	FMR variance reflects alignment with advised contractor production schedule for the GAMB.
FOC – Australia (FOC – AS)	Nov 12	Jan 13	2	FOC-AS variance reflects alignment of GAMB delivery to Australia with service air tasking.



Section 4 – Project Cost and Schedule Status

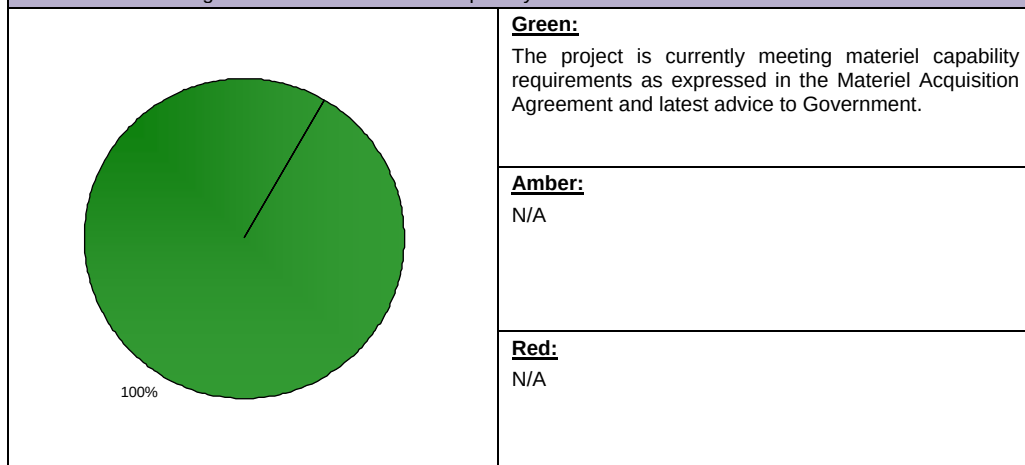
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that System Reliability will be affected by the C-RAM capability inaccurately identifying Rocket, Artillery and Mortar threats causing a high false alarm rate leading to an impact on Safety and Performance.	Duplication of detection methods to ensure that all threats are confirmed by two or more radars. Competent training of operators to identify and override false alarms. Investment in improvement upgrades.
There is a chance that FOC-AF may be delayed as a result of the Commonwealth not being able to provide air transportation for the two GAMB systems leading to an impact on Schedule and Reputation.	Engagement with 1 Joint Movement Group during 2011 and 2012 to ensure planning for movements to allow sufficient time to arrange air movement and contingency planning. This risk has been retired as FOC-AF was achieved in September 2012.
There is a chance that the SX45 will not be certified to be driven on Australian Roads by January 2013.	Liaise with Saab, Rheinmetal Military Vehicles – Australia, and The Department of Infrastructure and Transport to commence the certification (6 months early) prior to the DMO accepting 3rd GAMB System vehicle to Australia (minus radar component). This risk has been retired as Defence has been provided with either exemptions or approvals to drive the SX45 within applicable required state boundaries.
There is a chance that C-RAM introduction into service may be delayed due to a reduction in the workforce requested to conduct introduction into service activities leading to an impact on Cost, Schedule and Supportability.	Proactively engage within the DMO to ensure sufficient workforce numbers are available.

There is a chance that Project Closure may be delayed due to delays in the US program office contracting for LCMR upgrades leading to an impact on Schedule.	As C-RAM is to be introduced into service, it is expected that Project Closure may be extended. Project will continue to engage closely with all LCMR stakeholders.
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action
N/A	N/A

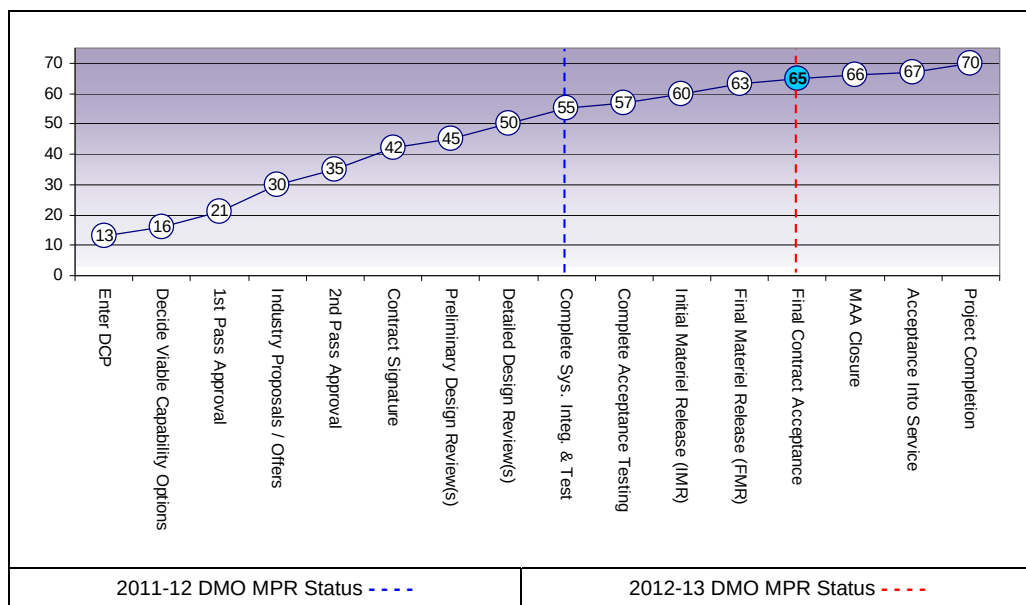
6.2 Major Project Issues

Description	Remedial Action
There is a chance that the ongoing C-RAM Supportability will be affected by extensive delay to the Net Personnel Operating Cost (NPOC) decision which will leave a gap in funding to enable support of the capability.	Escalate issue to Capability Development Group and Army Headquarters (Capability Manager), follow and report on progress. Plan to extend the project life, including allocation of work force element in the forward workforce management plan, to ensure the project remains staffed to complete sustainment and Introduction Into Service actions until such time as the NPOC business case is approved.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	9	9	9	9	65
Final Contract Acceptance	Project Status	10	9	10	9	9	9	9	65
	Explanation	The C-RAM deployed capability continues to operate effectively.							



Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Foreign Military Sales Schedule planning: When factoring FMS related schedules, there is an inclination to schedule the acceptance of the case without allowing sufficient schedule float to accommodate potential delays. Often, there will be a delay post case acceptance whilst the US Government supporting office seeks to contract their suppliers - this delay could be some six to nine months in some instances. When negotiating lead times, it is essential to gain an understanding of the contracting and procurement processes of the source country.	Contract Management Schedule Management
Sole source relationships: In a sole source relationship, projects might consider the Commonwealth of Australia would lack leverage over suppliers when negotiating contractual outcomes due to the absence of supplier competition. In this case, early and strong face-to-face engagement between the project office and FMS staff in the US and Saab staff in Sweden assured professional and outcome focused relationships. Using other Defence establishments for training, using partner nations to leverage open source commercial information to gain a sense of value for money in Australia's circumstance, and holding the supplier's reputation for further business opportunities at risk from poor performance in the current project are options available to the Commonwealth when negotiating sole source contracts.	Requirements Management Off-the-Shelf Equipment
Support arrangements: Accelerated Acquisitions. Whilst they deliver equipment quickly, Integrated Logistics Support considerations (e.g. NPOC) can take considerable time when implemented retrospectively. Limitations to resources and costs need to be considered at the early stages of the project to enable robust planning.	Requirements Management Off-the-Shelf Equipment Resourcing

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	Ms Shireane McKinnie (to Feb 13) AVM Colin Thorne (Acting Feb 13–Mar 13) Mr Michael Aylward (Acting Mar 13–Apr 13) Mr Andrew Cawley (Acting May 13–Jun 13) AVM Chris Deeble (Acting Jun 13–current)
Division Head	MAJGEN Grant Cavenagh (Jan 10–Dec 12) MAJGEN Paul McLachlan (Jan 13–current)
Branch Head	BRIG David Shields
SPO Director	COL Michael Chadwick (to Mar 13) Ms Sharna Fayle (Mar 13–current)
Project Director	LT COL Shaun Harding
Senior Project Manager	C-RAM C2: Mr Robert McCathie (Jan 10–Aug 12) / GAMB: Mr Ben Murphy Mr Ben Murphy (Sep 12–current)
Project Manager	C-RAM C2: Ms Tina Pham-van / GAMB: Mr James Harland

Appendices

Appendix 1: Guidelines for Readers of the DMO's 2012–13 MPR Project Data Summary Sheets

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 PDSSs comply in all material respects with the Guidelines 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. The ANAO exercises independent and professional judgement in determining its review methodology and in formulating an opinion.

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.



Australian Government

Department of Defence

Defence Materiel

Organisation

DMO 2012-13 MAJOR PROJECTS REPORT

GUIDELINES

Appendices

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Introduction

1.1 The Defence Materiel Organisation (DMO) 2012-13 Major Projects Report (MPR) will form part of the Australian National Audit Office's (ANAO) 2012-13 MPR which is to be tabled in Parliament by the Auditor-General. It reports on the performance of selected major capital acquisition projects managed by the DMO. The summary project data in the DMO report is prepared by the DMO and reviewed by the ANAO.¹⁸⁸

1.2 The projects selected for reporting are proposed by the DMO following criteria agreed with the Joint Committee of Public Accounts and Audit (JCPAA), and in consultation with the ANAO. The 2007-08 MPR reported on nine projects followed by the 2008-09 MPR reporting on 15 projects, the 2009-10 MPR reporting on 22 projects, the 2010-11 MPR reporting on 28 projects, and the 2011-12 MPR reporting on 29 projects. The 2012-13 MPR will report on 29 projects, endorsed by the JCPAA, and aims to build up to 30 projects in future years.

1.3 The project data is prepared by the DMO and presented by way of Project Data Summary Sheets (PDSSs) supported by appropriate evidence. The CEO DMO is responsible for ensuring that the PDSSs are prepared in accordance with the Guidelines¹⁸⁹, endorsed by the JCPAA, and for ensuring that the PDSSs and supporting evidence provided to the ANAO for review are complete and accurate.

1.4 The ANAO will review the PDSSs in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements other than Audits or Reviews of Historical Financial Information*. The ANAO's review of the PDSSs is designed to enable the ANAO to obtain sufficient appropriate evidence to form a conclusion that nothing has come to the ANAO's attention which indicates that the information in the PDSSs, that is within the scope of the review, has not been prepared, in all material respects, in accordance with the Guidelines.

1.5 These Guidelines address the following aspects of the 2012-13 MPR Program as they:

- (a) define the criteria for project selection and provide the list of projects selected for the 2012-13 MPR;

188 The ANAO will append a summary of its review and analysis to the DMO 2012-13 MPR, and its formal review conclusion, to form the ANAO's 2012-13 MPR.

189 The Guidelines which incorporates the Guidance for the Development of the Project Data Summary Sheets (Attachment A).

- (b) define the roles and responsibilities of the DMO in the production and review of the DMO 2012-13 MPR;
- (c) provide the guidance for producing the PDSSs (Attachment A);
- (d) provide the PDSS template (Attachment B); and
- (e) provide an indicative program schedule in support of a November 2013 tabling (Attachment C).

1.6 Each year the MPR Guidelines are reviewed and amended, to reflect lessons learned by the DMO, in order to improve the management of the MPR processes. In the formative years for the preparation of the MPR, these were prepared by the DMO in consultation with the ANAO. Since the Guidelines are now a stable document reflecting the requirements of the MPR and in the interests of administrative efficiency, the JCPAA has recommended that the ANAO take administrative responsibility for updating the Guidelines annually and submitting them to the Committee for endorsement.¹⁹⁰ The ANAO has agreed to this recommendation and has taken on this role.

Criteria for Project Selection

1.7 The inclusion of projects in the MPR is based on the projects included in the Defence Capability Plan and subject to the following criteria:

- (a) projects only admitted one year after Year of Decision;
- (b) a total approved project budget of > \$150m;
- (c) a project should have at least three years of asset delivery remaining;
- (d) a project must have at least \$50m or 10% (whichever is greater) of their budget remaining over the next two years; and
- (e) a maximum of eight new projects in any one year;

1.8 All projects for inclusion in the MPR will be proposed by the DMO, based on the above criteria, and provided to the JCPAA by the ANAO by 31 August in the year to which the MPR relates, for endorsement.

1.9 The removal of projects from the MPR is based on a post Final Materiel Release (FMR) risk assessment of the timely achievement of Final Operational Capability (FOC) and is subject to the following criteria:

190 Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, p.29.

- (a) the outstanding deliverables post FMR, against the relevant Materiel Acquisition Agreement (MAA)¹⁹¹ and/or Joint Project Directive (JPD)¹⁹²;
- (b) the remaining schedule post FMR, against the relevant MAA and/or JPD;
- (c) the remaining budget post FMR, against the relevant Materiel Acquisition Agreement MAA and/or JPD;
- (d) the remaining project risks and issues; and
- (e) the Capability Manager's assessment including overall risk rating and the extent to which this risk rating relates to DMO's responsibilities.

1.10 All projects selected for removal from the MPR will be proposed by the DMO, based on the above criteria, and provided to the JCPAA by the ANAO by 31 August in the year to which the MPR relates, for endorsement.

1.11 Projects which are anticipated to achieve both FMR and FOC within a twelve month period are to be automatically proposed for removal to the Committee.

1.12 Once projects have met the exit criteria, they should be removed from the PDSSs in subsequent years. For each project which has been removed, the lessons learned at both the project level and the whole-of-organisation level should be included as a separate section in the following MPR.¹⁹³

191 An MAA is an agreement between the Department of 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. Australian National Audit Office, *2010–11 Major Projects Report*, p. 536.

192 Following Second Pass approval by Government, the Secretary for Defence (SEC) and the Chief of the Defence Force (CDF) issues a JPD that covers the time from Second Pass Approval to the closure of the acquisition business case. This JPD is signed by SEC/CDF and assigns accountability and responsibility to:

- a. the Capability Manager for overall responsibility for the in-service realisation of the capability;
- b. the CEO DMO through the terms and conditions in the (post Second Pass) MAA; and
- c. other key enablers, such as Chief Information Officer, DEPSEC Defence Support and Chief Defence Scientist, for the provision of elements of Fundamental Inputs to Capability, and DEPSEC People Strategies & Policy for the management of the Department's workforce allocations via the Workforce Guidance Trails.

Defence Capability Development Handbook, August 2011, pp.79-80.

193 Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, p.20.

Project Selection

1.13 The following project was last reported in the 2010-11 PDSSs; and will be reported separately to the PDSS in DMO's lessons learned in the 2011-12 MPR:

- (a) Hornet Structural Refurbishment – AIR 5376 Phase 3.2.

1.14 The JCPAA has endorsed the following 'new' project for inclusion in the 2012-13 MPR:

- (a) Battlespace Communications System (LAND) – JNT 2072 Ph 2A.

1.15 The following 28 'repeat' projects appeared in the 2011-12 MPR and will be updated for the 2012-13 MPR:

- (a) Air Warfare Destroyer Build– SEA 4000 Phase 3;
- (b) Airborne Early Warning and Control Aircraft – AIR 5077 Phase 3;
- (c) Multi-Role Helicopter – AIR 9000 Phase 2/4/6;
- (d) Bridging Air Combat Capability – AIR 5349 Phase 1/2;
- (e) Field Vehicles and Trailers – LAND 121 Phase 3;
- (f) Amphibious Ships (LHD) – JP 2048 Phase 4A/4B;
- (g) Future Naval Aviation Combat System Helicopter (MH-60R Seahawk) – AIR 9000 Ph 8;
- (h) New Air Combat Capability – AIR 6000 Phase 2A/2B;
- (i) Armed Reconnaissance Helicopter – AIR 87 Phase 2;
- (j) F/A-18 Hornet Upgrade – AIR 5376 Phase 2;
- (k) Air to Air Refuelling Capability – AIR 5402;
- (l) Guided Missile Frigate Upgrade Implementation – SEA 1390 Phase 2.1;
- (m) Bushmaster Protected Mobility Vehicle – LAND 116 Phase 3;
- (n) Next Generation SATCOM Capability – JP 2008 Phase 4;
- (o) ANZAC Anti-ship Missile Defence – SEA 1448 Phase 2B;
- (p) Additional Medium Lift Helicopters – AIR 9000 Phase 5C;
- (q) High Frequency Modernisation – JP 2043 Phase 3A;
- (r) Armidale Class Patrol Boat – SEA 1444 Phase 1;
- (s) Collins Replacement Combat System – SEA 1439 Phase 4A;
- (t) Replacement Heavyweight Torpedo – SEA 1429 Phase 2;

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- (u) Collins Class Submarine Reliability and Sustainability – SEA 1439 Phase 3;
- (v) Indian Ocean Region UHF SATCOM – JP 2008 Phase 5A;
- (w) SM-1 Missile Replacement – SEA 1390 Phase 4B;
- (x) ANZAC Anti-ship Missile Defence – SEA 1448 Phase 2A;
- (y) Follow On Stand Off Weapon – AIR 5418 Phase 1;
- (z) Artillery Replacement 155mm Howitzer – LAND 17 Phase 1A;
- (aa) Battlefield Command Support – LAND 75 Phase 3.4; and
- (bb) Counter Rocket Artillery & Mortar (C-RAM) – LAND 19 Ph 7A.

1.16 The JCPAA has endorsed the removal of the following project which was reported for the final time in the 2011-12 PDSSs:

- (a) C-17 Globemaster III Heavy Airlifter – AIR 8000 Phase 3 and will be reported separately to the PDSS in DMO's lessons learned in the 2012-13 MPR.

1.17 The format of the PDSS is contained at Attachment B.

DMO's Roles and Responsibilities

1.18 The DMO will develop each projects' PDSS for the ANAO's review. The DMO Chief Audit Executive (CAE) has management responsibility for the preparation of the MPR and is the key point of contact for the ANAO's senior leadership team. The DMO's General Manager Systems (GMS) is the DMO Executive team leader and the Business Process Owner for the MPR. The DMO Chief Executive Officer (CEO) is responsible for formally presenting the MPR on completion of the PDSSs and associated commentary.

1.19 The DMO is responsible for ensuring information of a classified nature is made available to the ANAO for review, as it relates to the data contained within the PDSSs. Data of a classified nature is to be prepared in such a way as to allow for unclassified publication.

1.20 The CAE has appointed a Director to manage the MPR process directly with the ANAO's MPR team at the operational level.

1.21 DMO positions, roles and responsibilities in relation to the MPR are as shown in Table 1.

Table 1: DMO MPR Positions, Roles and Responsibilities

Position	Role	Responsibility
Chief Executive Officer (CEO)	DMO accountability	- Overall responsibility in DMO - Sign off on DMO sections in the MPR including the PDSSs
General Manager Systems (GMS)	Business Process Owner	Executive direction in DMO
Chief Finance Officer (CFO)	Financial assurance accountability	- Overall financial responsibility in DMO - Sign off on assurance statements in the PDSSs
Chief Audit Executive (CAE)	DMO accountability for the MPR	- Liaison with ANAO Senior Management - Advice to GMS and CEO - Guidance to Director MPR - Clearance of DMO MPR
Director MPR	MPR management, coordination, and liaison	- Responsible for the overall coordination, preparation and achievement of DMO MPR outcomes - Guidance and direction to project offices - Manage the MPR Program with ANAO MPR team - Configuration management of MPR and PDSS suite - Review of PDSSs and Evidence Packs to ensure completeness and accuracy - MPR schedule management - Development of DMO elements of MPR
Project Directors/Managers	PDSS development and generation of Evidence Packs	- Develop and produce PDSS and associated Evidence Packs - Review of PDSS and evidence packs to ensure completeness and accuracy - Actively engage the ANAO MPR team in its reviews of the PDSS
Director Capital Investment Programs	Provision and coordination of corporate budget information	- Provide relevant budget data as indicated in the PDSSs - Assist ANAO team in their reviews of budget data
Executive line management	Assurance	Assurance of PDSS data and content of the DMO element of the MPR

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MPR Process

1.22 The DMO has developed an indicative schedule of the MPR program in consultation with the ANAO – contained at Attachment C. The schedule will provide for a site visit period prior to the end of the financial year for the ANAO to conduct PDSS reviews of all projects. A second period will be set aside after the end of the financial year for reviewing completed PDSSs.

1.23 The DMO will provide full access to the ANAO to make enquiries and examine the systems, processes and documentation used by the DMO to generate PDSS data, which will be facilitated by the Director MPR.

1.24 Normally, at least five working days prior to the commencement of a project site visit, the Director MPR will provide the ANAO with a DMO reviewed copy of the PDSS together with the relevant evidence pack. The evidence pack will be appropriately structured for ease of reference to the PDSS, for ANAO review. The PDSS and evidence pack will be provided in soft copy or, where soft copy is not possible, in hard copy.

1.25 Contractors named within a PDSS will be consulted before the DMO finalises the PDSS. In accordance with natural justice provisions, the aim of the consultation is to provide the contractor with an opportunity to comment on relevant extracts from a project's PDSS. The DMO and ANAO will seek contractors' comments in relation to errors or misstatements in the PDSS. The DMO may wish to have regard to contractors' comments received within specified reasonable time limits. The DMO will also keep the ANAO apprised on how the DMO intends to deal with the contractors' response in the PDSS.

1.26 The ANAO may also directly engage with contractors to seek any clarification on their comments on the project data, and will keep the DMO apprised on feedback and outcomes.

Other Items to Note

1.27 As the PDSS is part of a public document, the use of acronyms and jargon must be avoided. The following style conventions must be followed:

- (a) **Acronyms:** Acronyms are not to be used where possible within the MPR. When acronyms are used, the first use must be spelt out in full. Note: Project names must appear as the full project title or the approved DMO abbreviation.
- (b) **Project Names:** Project names should be written in full and should be presented with an initial capital e.g. HORNET should be written as Hornet.

- (c) Costs: All costs should be shown as \$m (millions) and be rounded to one decimal place (i.e. to the nearest \$100k) with negative variations presented in brackets.
- (d) Dates: Dates in the PDSS narratives should be presented in full (e.g. July 2009). Dates in the PDSS tables should be presented as mmm yy (e.g. Jul 09). Time variations should be shown as full months.
- (e) No data: Any cells in a table not containing data should be shown as 'N/A'.

Attachments:

- A. Guidance for the Development of the Project Data Summary Sheets (PDSS)
- B. Project Data Summary Sheet -Template
- C. 2012-13 MPR Program Schedule

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GUIDANCE FOR THE DEVELOPMENT OF THE PROJECT DATA SUMMARY SHEETS (PDSS)

Data Element No / Heading	Data	Definition/ Description
SECTION 1 – PROJECT SUMMARY		
Project Header	Project Name	The name of the project as approved by Government.
	Project Number	The number of the project as approved by Government.
	First year reported in the MPR	The year the project was first reported in the MPR. Use 20xx-xx date format.
	Capability Type	Is one of the following: • New; • Replacement; or • Upgrade.
	Service	Could be either one or a combination of: • Royal Australian Navy; • Australian Army; • Royal Australian Air Force; • Chief Information Officer Group; or • Joint Services.
	Government 1st Pass Approval	The date Government 1st Pass Approval was given.
	Government 2nd Pass Approval	The date Government 2nd Pass Approval was given.
	Total Approved Budget (Current)	The current approved budget for the project. <i>Note: This figure should agree to the Total Budget in Section 2.1 - Project Budget (out-turned) and Expenditure History.</i>
	2012-13 Budget	The estimated project expenditure for 2012-13 as per the 'Latest Plan' in the MRS Majors Budget Performance Total report and/or the Five Year Defence Program (FYDP) Summary report in CEPPlan. ¹⁹⁴ <i>Note: This figure should agree to the Estimate in Section 2.2 – In-year Budget Expenditure Variance.</i>

194 This amount may include updates since the last Portfolio Additional Estimates Statements (PAES), such as foreign exchange under the Government's 'no win, no loss' policy, or budget impacts resulting from other government decisions.

Data Element No / Heading	Data	Definition/ Description
	Project Stage	The Lifecycle Gate as reported in the Monthly Reporting System (MRS). <i>Note: This should agree to Section 7.1 - Project Maturity Score and Benchmark.</i>
	Complexity	The Acquisition Categorisation (ACAT) level of the project.
Section 1.1 – Project Description	Description	One paragraph description of the project which should be written in terms of capability delivery and, where appropriate, mention equipment quantities. This information should be consistent with other sections of the PDSS.
Section 1.2 – Current Status	Cost Performance	At a strategic level, state the project's current progress against its approved and in-year budgets, and provide a succinct explanation of causes for variations. An additional 'Assurance Statement' on the project's budget performance should be disclosed: <i>'Noting the budget remaining for completion of the project, together with the estimated future expenditure and current known risks, the DMO considers that there is sufficient budget remaining for this project'.</i> This section must be consistent with the data in Section 2-Financial Performance.
	Schedule Performance	At a strategic level, briefly describe key schedule milestones achieved so far and issues facing the project in achieving future milestones. Milestone achievements or non-achievements in the current year should also be explained. This section must be consistent with what is stated in Section 3 – Schedule Performance.
	Materiel Capability Performance	At a strategic level, detail how the systems under acquisition are performing. Detailed technical performance of systems is to be avoided and classified information is not to be disclosed in this section.

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Data Element No / Heading	Data	Definition/ Description
Section 1.3 – Project Context	Background	A succinct summary level statement that covers Government approvals history and any strategic changes that have occurred since approval. For new projects in the MPR, if the project's classification is not Military Off The Shelf (MOTS) or Commercial Off The Shelf (COTS) an explanation must be provided to ensure that these options were explicitly considered and eliminated for particular reasons before final procurement decisions have been made. ¹⁹⁵
	Uniqueness	Brief explanation of the particular aspects that make the project unique.
	Major Challenges	Describe the challenges the project faced in the reporting year and what it is likely to face in the coming year. The focus should reflect those risks and issues that are of a strategic nature rather than short-term problems.
	Other Current Projects/ Sub-Projects	Only include current approved projects with the main project number e.g. SEA xxxx and state the phase of the project. Describe the name of the project and a brief description of the capability (i.e. one or two short sentences).
Section 1.4 – Linked Projects	Description of linked Projects and their dependency	The name and number of the project. Provide a brief description of the project and the nature of the dependency. Linked projects are those projects that the project relies on to deliver project outcomes.
SECTION 2 – FINANCIAL PERFORMANCE		
Section 2.1 – Project (out-turned) Budget and Expenditure History	Project Budget	
	Original Approved	The approved project cost for the DMO element of the project at Government Approval.
	Real Variation	“Scope” changes are attributable to changes in requirements by Defence and Government. These generally take the form of changes in quantities of equipment, a change in requirements that result in

195 Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, p.25.

Data Element No / Heading	Data	Definition/ Description
		specification changes in contracts, changes in logistics support requirements or changes to services to be provided which are accompanied by a corresponding budget adjustment. <i>Note: Where the original approved amount above is not Second Pass Government Approval, Projects are to disclose the actual Government Second Pass Approval amount as such in the description column (in bold) and not as a scope real variation.</i> “Transfers” occur when a portion of the budget and corresponding scope is transferred to or from another approved project or sustainment product 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). “Cost Increases” attributed to any negotiated Foreign Military Sales or commercial contracts. These funds have been approved by government to increase the Project’s budget. “Cost Decreases” attributed to any negotiated Foreign Military Sales or commercial contracts. These funds have been handed back to the Defence Portfolio. <i>The elements above are to be subtotalled to give a single amount for all real variations</i>

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Data Element No / Heading	Data	Definition/ Description
		(including Government Second Pass approvals).
	Price Indexation	Variations to the Original Approved project cost for the DMO element of the project due to price indexation and out-turning adjustments to take account of variations in labour and material indices over time. This is disclosed where applicable, i.e. not for projects approved post July 2010 in out-turned prices.
	Exchange Variation	The variations to the Original Approved project cost for the DMO element of the project due to foreign exchange adjustments brought about by changes in foreign exchange rates for payments in foreign currency.
	Total Budget	The sum of the above.
	Project Expenditure	
	Prior to Jul 12	This item comprises all amounts incurred in all <u>periods prior</u> to the current reporting period (i.e. contract level expenditure up to 30 June 2012). All expenditure is to be presented in brackets to indicate a negative figure. Reporting of expenditure is to be split into the following: <u>“Contract Expenditure”</u> against each of the top 5 contracts, restricted to contracts valued at 10% of the current approved project cost or \$10m. <u>“Other Contract Payments/Internal Expenses”</u> which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. It is generally expected that ‘other’ expenditure will not exceed 10% of total prior period expenditure. However, in the event that ‘other’ expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the

Data Element No / Heading	Data	Definition/ Description
		expenditure including amounts. <i>The two expenditure elements above are to be subtotalled to give a single amount for all prior period expenditure.</i>
	FY to Jun 13	This item comprises all amounts incurred in the <u>current reporting period</u> (i.e. contract level expenditure from 1 July 2012 to 30 June 2013). All expenditure is to be presented in brackets to indicate a negative figure. Reporting of expenditure is to be split into the following: <u>“Contract Expenditure”</u> expenditure against each of the top 5 contracts, restricted to contracts valued at 10% of the current approved project cost or \$10m. <u>“Other Contract Payments/Internal Expenses”</u> expenditure which comprises operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. It is generally expected that ‘other’ expenditure will not exceed 10% of total expenditure in the current reporting period. However, in the event that ‘other’ expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the expenditure including amounts. <i>The two expenditure elements above are to be subtotalled to give a single amount for FY expenditure.</i>
	Total Expenditure	This item discloses total project expenditure as at the reporting date (i.e. 30 June 2013) and is the sum of prior period and current period expenditure reported above. All expenditure is to be presented in brackets to indicate a negative figure.

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Data Element No / Heading	Data	Definition/ Description
	Remaining Budget	Is the subtraction of total expenditure from total budget, thus showing the unspent portion of the approved budget, as at reporting date.
	Notes	For additional information as required, for e.g. the breakdown of "Other Contract Payments/Internal Expenses".
Section 2.2 – In-year Budget Expenditure Variance	Estimate (\$m)	The estimated project expenditure for 2012-13. The data needs to present the project's 'Year to Date' performance in financial terms. It must explain the difference between the 'Latest Plan' in the MRS Majors Budget Performance Total report and/or the Five Year Defence Program (FYDP) Summary in CEPPlan and the End of Financial Year Actual Expenditure.
	Actual (\$m)	The actual project expenditure incurred in the current reporting period (i.e. 2012-13). <i>Note: This figure should agree to the FY to Jun 13 total figure in Section 2.1 - Project Budget (out-turned) and Expenditure History.</i>
	Variance (\$m)	Budget expenditure variances are to be disaggregated and disclosed separately as per the variance factors described below. The sum of these should give a total variance equal to the difference between the Estimate and actual expenditure.
	Variance Factor	This section provides a range of factors attributable to the cause of the variances between the Budget Estimate and actual expenditure. These are expressed as the standard variance factors of: • Foreign Military Sales (FMS); • Overseas Industry; • Local Industry; • Brought Forward; • Cost Savings; • FOREX Variation; and • Commonwealth Delays.
	Explanation	Explanations must address all of the variance factors noted above, where relevant.

Data Element No / Heading	Data	Definition/ Description
Section 2.3 – Details of Project Major Contracts	Contractor	List the name of the contractors for the top 5 contracts. Note that the top 5 contracts will be restricted to contracts that are valued at 10% or more of the current total budget or \$10m.
	Signature Date	The date the contract was signed.
	Price (Base) at Signature (\$m)	This is the value of the contract at contract signature in the applicable price basis.
	Price (Base) at 30 Jun 13 (\$m)	This is the value of the contract in the applicable price basis as at 30 June 2013. Where projects are the Prime Systems Integrator or where the structure of a contract prevents disclosure of 'Base Date' values, these projects will disclose contract values in 'Current' dollars as at 30 June 2013.
	Type (Price Basis)	The usual choices for this include: • Firm (or Fixed) • Variable • Reimbursement (for FMS) For further information including definitions refer to the Defence Procurement Policy Manual.
	Form of Contract/Arrangement	This refers to the contract template used i.e. DEFPUR 101, ASDEFCON (Strategic, Complex). For unique arrangements such as Alliance or Public Private Partnership (PPP) they would need to be specially treated (noting the key signatories to the arrangement). Projects should seek the advice of the DMO MPR Directorate. For Foreign Military Sales, declare "FMS". For Memorandum of Understanding, declare "MoU".
	Notes	For additional information as required for e.g. description of new contract or contract changes.
	Contractor	List the name of the contractors for the top 5 contracts. Note that the top 5 contracts will be restricted to contracts that are valued at 10% or more of the current total budget or \$10m.
	Quantities as at	The quantity of major equipment under

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Data Element No / Heading	Data	Definition/ Description
	Signature and 30 Jun 13	contract as at the date the contract was signed and also as at 30 June 2013. The quantity of contracted equipment should only be provided at a summary level.
	Scope	Generally only include hardware in this section and restrict it to a platform level summary, disclosing only major prime mission and support system elements (e.g. 4 x C-17 Globemaster Aircraft).
	Notes	For additional information as required.
	Major equipment received and quantities to 30 Jun 13	Detail the major equipment and quantities the project has received to 30 June 2013.
	Notes	For additional information as required.
SECTION 3 – SCHEDULE PERFORMANCE		
Section 3.1 – Design Review Progress	Review	The events to be included are shown below as they are applicable to the project: • System Requirements Review • Preliminary Design Review • Critical Design Review
	Major System/Platform Variant	State the major system that the design review refers to.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Planned	Replanned dates as evidenced by a contract amendment.
	Achieved/Forecast	<u>Achieved:</u> The date the event was achieved, or <u>Forecast:</u> The expected date for achievement.
	Variance (months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved/Forecast dates, and any additional background information as required.
Section 3.2 – Contractor Test and Evaluation Progress	Test and Evaluation	The events to be included are shown below as they are applicable to the project: • System Integration • Acceptance
	Major System/Platform Variant	State the major system that the Test and Evaluation event refers to. If there are significant variants for the major systems,

Data Element No / Heading	Data	Definition/ Description
		then state what they are.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Planned	Replanned dates as evidenced by a contract amendment.
	Achieved/Forecast	<u>Achieved</u> : The date the event was achieved; or <u>Forecast</u> : The expected date for achievement.
	Variance (months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved/Forecast dates, and any additional background information as required.
Section 3.3 – Progress Toward Materiel Release and Operational Capability Milestones	Item	Represented at a whole of capability level, unless key milestones are broken out under individual Mission or Support Systems.
	Original Planned	The original date on which the Materiel Release or Operational Capability milestone was scheduled for achievement.
	Achieved/Forecast	<u>Achieved</u> : The date the event was achieved; or <u>Forecast</u> : The expected date for achievement.
	Variance (months)	The difference between 'Original Planned' and 'Achieved/Forecast'.
	Variance Explanation /Implications	A top level description of the reasons for and implications of the variance to 'Achieved/Forecast' dates.
Schedule Status as at 30 June 13		DMO MPR Management will input the projects existing detail on: 2nd Pass Approval, IMR, IOC, FMR and FOC into the Bar Graph formula and produce the Graph.
SECTION 4 – PROJECT COST AND SCHEDULE STATUS		
Section 4.1 – Project Cost and Schedule Status		The DMO MPR Directorate will input the 'Project Status' for Cost and Schedule as at 30 June 2013 using data contained in Section 2.1 – Project Budget (out-turned) and Expenditure History and Section 3.3 – Progress Toward Materiel Release and Operational Capability Milestones.

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Data Element No / Heading	Data	Definition/ Description
SECTION 5 – MATERIEL CAPABILITY PERFORMANCE		
Section 5.1 – Measures of Materiel Capability Performance	Pie Chart: Percentage Breakdown of Materiel Capability Performance	Capability Pie Chart and associated narratives will provide a percentage breakdown of the FMR Milestones and Completion Criteria, as identified in the respective MAA, prior to the ANAO site visit and further updated to reflect status at 30 Jun 13. The pie chart analysis/narrative (Green, Amber & Red) is to be provided at the <u>strategic</u> level, including: • <u>Issue</u>: Strategic level detail of the issue/s impacting the milestones and completion criteria. • <u>Remediation</u>: Strategic level detail of remedial activity to recover performance. Where there is no data insert 'N/A'. <u>Please note:</u> Detailed technical performance of systems is to be avoided. No classified information is to be disclosed in this section.
SECTION 6 – MAJOR RISKS AND ISSUES		
Section 6.1 – Major Project Risks	Identified Risks (risk identified by standard project risk management processes)	<u>Description</u>: A major project risk is one that is rated high or extreme pre-mitigation. <u>Remedial Action</u>: The risk mitigation / treatment proposed for the risk identified (These must be actionable measures).
	Emergent Risks (risk not previously identified but has emerged during 2012-13)	<u>Description</u>: A major project risk that was not previously identified in the risk log but has emerged this year, rated as high or extreme pre-mitigation. <u>Remedial Action</u>: The risk mitigation/treatment proposed for the risk identified (these must be actionable measures).
Section 6.2 – Major Project Issues	Description	Issues are high or extreme risks that have been realised or issues that have arisen that require management action to address.
	Remedial Action	The remediation action proposed for the issue identified.

Data Element No / Heading	Data	Definition/ Description
SECTION 7 – PROJECT MATURITY		
Section 7.1 – Project Maturity Score and Benchmark	Project Stage	The stage the project is in according to the Maturity Score. <i>Note: This should align to the Project Header section.</i>
	Benchmark	Benchmark Maturity Score.
	Project Status	The maturity score recorded in the June 2013 MRS Majors Master Data report.
	Explanation	A short explanation is required for each attribute of the Maturity Score (Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, and Operations and Support) where there is a difference between the Current and Benchmark scores. Refer to Defence Materiel Standard Procedure (Project Management), Project Maturity Scores at Life Cycle gates – DMSP (PROJ) 11-2-007 for further guidance.
SECTION 8 – LESSONS LEARNED		
Section 8.1 – Key Lessons Learned	Project Lesson	Describe the project lesson (at the 'Strategic' level) that has been learned.
	Categories of Systemic Lessons	Select one of the following 'DMO Systemic Lessons' that can be cross referenced back to each individual Project Lesson. Lessons learned can include: • Requirements Management • First of Type Equipment • Off-the-shelf Equipment • Contract Management • Schedule Management • Resourcing • Governance
SECTION 9 – PROJECT LINE MANAGEMENT		
Section 9.1 – Project Line Management in 2012-13	Position and names of the Project's Line Management	• General Manager • Division Head or Program Manager • Branch Head • Project Director This list will contain those persons who occupied their respective position during the course of 2012–13, and applicable dates of change.

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Project Data Summary Sheet – Template

Project Name	
Project Number	
First year reported in the MPR	
Capability Type	
Service	
Government 1st Pass Approval	
Government 2nd Pass Approval	
Total Approved Budget (Current)	
2012-13 Budget	
Project Stage	
Complexity	

Section 1 – Project Summary

1.1 Project Description

1.2 Current Status

Cost Performance Noting the budget remaining for completion of the project, together with the estimated future expenditure and current known risks, the DMO considers that there is sufficient budget remaining for this project.
Schedule Performance
Materiel Capability Performance

1.3 Project Context

Project	Explanation
Background	
Uniqueness	
Major Challenges	
Other Current Projects/Sub-Projects	

1.4 Linked Projects

Project	Description of Project	Description of Dependency

Section 2 – Financial Performance

Presentation for Projects who received Government approval PRE JULY 2010:

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
	Project Budget		
	Original Approved		
	Real Variation – Scope		
	Real Variation – Transfer		
	Real Variation – Budgetary Adjustment		
	Real Variation – Cost Increase/Decrease		
Jul 10	Price Indexation*		
Jun 13	Exchange Variation		
Jun 13	Total Budget		
	Project Expenditure		
Prior to Jul 12	Contract Expenditure - Contractor 1		
	Contract Expenditure - Contractor 2		
	Contract Expenditure - Contractor 3		
	Contract Expenditure - Contractor 4		
	Contract Expenditure - Contractor 5		
	Other Contract Payments/Internal Expenses		
FY to Jun 13	Contract Expenditure - Contractor 1		
	Contract Expenditure - Contractor 2		
	Contract Expenditure - Contractor 3		
	Contract Expenditure - Contractor 4		
	Contract Expenditure - Contractor 5		
	Other Contract Payments/Internal Expenses		
Jun 13	Total Expenditure		
Jun 13	Remaining Budget		
Notes			
1			
2			
3			
4			
5			

*Note – Those projects approved in 'Out- turned' dollars will not contain an entry for 'Price Indexation'.

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Presentation for Projects who received Government approval POST JUNE 2010:**2.1 Project Budget (out-turned) and Expenditure History**

Date	Description	\$m	Notes
	Project Budget		
	Original Approved		
	Real Variation – Scope		
	Real Variation – Transfer		
	Real Variation – Budgetary Adjustment		
	Real Variation – Cost Increase/Decrease		
Jun 13	Exchange Variation		
Jun 13	Total Budget		
	Project Expenditure		
Prior to Jul 12	Contract Expenditure - Contractor 1		
	Contract Expenditure - Contractor 2		
	Contract Expenditure - Contractor 3		
	Contract Expenditure - Contractor 4		
	Contract Expenditure - Contractor 5		
	Other Contract Payments/Internal Expenses		
FY to Jun 13	Contract Expenditure - Contractor 1		
	Contract Expenditure - Contractor 2		
	Contract Expenditure - Contractor 3		
	Contract Expenditure - Contractor 4		
	Contract Expenditure - Contractor 5		
	Other Contract Payments/Internal Expenses		
Jun 13	Total Expenditure		
Jun 13	Remaining Budget		
Notes			
1			
2			
3			
4			
5			

2.2 In-year Budget Expenditure Variance

Estimate \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			FMS	
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
			Total Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (base) at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 13 \$m			
Contractor 1						
Contractor 2						
Contractor 3						
Contractor 4						
Contractor 5						
Notes						
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 13				
Contractor 1						
Contractor 2						
Contractor 3						
Contractor 4						
Contractor 5						
Major equipment received and quantities to 30 Jun 13						
Notes						

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved / Forecast	Variance (Months)	Notes
System Requirements						
Preliminary Design						
Critical Design						
Notes						
1						
2						
3						
4						
5						

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3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved / Forecast	Variance (Months)	Notes
System Integration						
Acceptance						
Notes						
1						
2						
3						
4						
5						

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved / Forecast	Variance (Months)	Variance Explanation/Implications
Initial Materiel Release (IMR)				
Initial Operational Capability (IOC)				
Final Materiel Release (FMR)				
Final Operational Capability (FOC)				
DMO MPR Team to Insert Graph				

Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status

DMO MPR Team to Insert Graph

Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
DMO MPR Team to Insert Pie Chart	<u>Green:</u>
	<u>Amber:</u>
	<u>Red:</u>

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Emergent Risks (risk not previously identified but has emerged during 2012-13)	
Description	Remedial Action

6.2 Major Project Issues

Description	Remedial Action

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark								
	Project Status								
	Explanation								
DMO MPR Team to Insert Graph									

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons

Section 9 – Project Line Management

9.1 Project Line Management in 2012-13

Position	Name
General Manager	
Division Head	
Branch Head	
Project Director	
Project Manager	

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2012-13 MPR Program Schedule

Event	Start Date	End Date
Pre Planning for 2012-13 MPR (including review of outcomes of 2011-12 program)	21 Dec 12	18 Jan 13
Schedule development & consultation	4 Jan 13	25 Jan 13
DMO & ANAO finalise preparations for 2012-13 MPR program for JCPAA Hearing	18 Jan 13	18 Mar 13
MPR program briefing to MPR Projects	15 Feb 13	15 Feb 13
DMO MPR Management finalise preparation with MPR Projects	22 Feb 13	22 Mar 13
Project Site Visits by ANAO	22 Mar 13	28 Jun 13
EOFY Briefing to MPR Projects	5 Jul 13	5 Jul 13
Post-30 June Project Reviews	8 Jul 13	27 Sep 13
Development of the DMO 2012-13 MPR	2 Aug 13	18 Oct 13
CEO DMO submits draft DMO portion of 2012-13 MPR to Auditor-General	2 Oct 13	2 Oct 13
ANAO develops its assurance overview and analysis for provision to CEO DMO	2 Aug 13	12 Oct 13
DMO response to ANAO assurance overview and analysis to Auditor-General	28 Oct 13	8 Nov 13
Period for ANAO internal clearance of 2012-13 MPR (Publication, Printing and Tabling)	November 2013	

Appendix 2: Types of Acquisition Undertaken by the DMO

Off-The-Shelf Equipment

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

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

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

OTS solutions are not free of risk and any cost/benefit analysis of OTS solutions must consider the potential benefits and risks of OTS solutions, expanded under Table 1. The major benefits of OTS include: proven solution; more predictable cost and schedule; the use of global supply chains; greater potential for interoperability with allies; and, access to potentially lower cost and better informed upgrade cycles. These benefits should be balanced against possible risks and costs of OTS which include: potentially, not delivering leading edge technology; a market driven product which may not fully meet the ADF's capability need; market-driven product/update cycles with which Defence must keep pace and fund; potentially limited access to technical data; certification and regulatory challenges; integration costs of disparate systems; and the strategic need for Australian industry capability and a secure supply chain which may not be possible for an overseas sourced OTS.

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Table 1: Off-The-Shelf Benefit and Risk Summary

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

There are three main types of acquisition undertaken by the DMO:

- **Military-Off-The-Shelf (MOTS) and Commercial-Off-The-Shelf (COTS)** – Military and/or Commercial 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 OTS 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.

It can be expected that cost, schedule and risk parameters increase as the requirement for Australianisation or development work increases. Notably, the category of a project can evolve; for example the Joint Strike Fighter is currently developmental in nature but should eventually become MOTS when it enters production line delivery.

Appendix 3: Categorising Acquisitions

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

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

The ACAT framework provides a recognised, consistent and repeatable methodology for categorising projects and aligning Project Managers'

certified experience and competencies to the complexity and scale of projects under management. Project Managers are assigned to acquisition projects on the basis that their Certified Professional Project Manager status is consistent with the project's ACAT level.

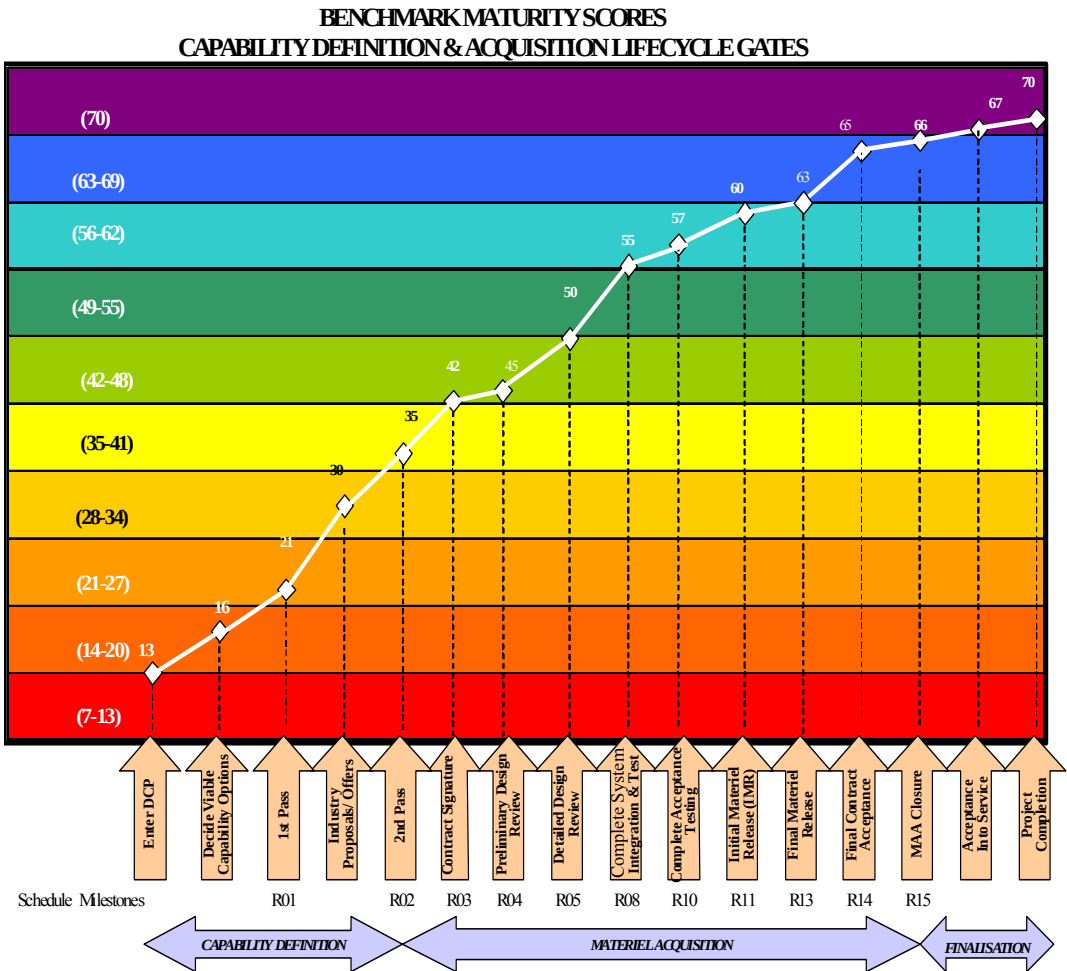
The ACAT level of a project is assessed against six project attributes:

- a) acquisition cost: the approved budget for the project;
- b) project management complexity: the complexity of project management necessary for its execution;
- c) schedule complexity: the inherent complexity brought about by delivery pressures on the project;
- d) technical difficulty: the complexities associated with technical undertakings such as design and development, assembly, integration, test and acceptance;
- e) operation and support: the complexity associated with readying the organisation and environment in which the system will be operated, supported and sustained; and
- f) commercial: the readiness and capability of industry to develop, produce and support the required capability, and the complexity of the commercial arrangements being managed.

Appendix 4: Project Maturity Scores – Monitoring Progress

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

Figure 1 – Benchmark Maturity Scores



The Project Maturity Score comprises a matrix of seven attributes:

- Schedule;
- Cost;
- Requirement;
- Technical Understanding;
- Technical Difficulty;
- Commercial; 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. The scores are not precise and are not intended to enable exact comparisons across projects. Following is a description of the Project Maturity Score Attributes.

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Project Maturity Score Attributes

ATTRIBUTE DESCRIPTORS VS MATURITY SCORE						
	Schedule	Cost	Requirements	Technical Understanding	Technical Difficulty	Commercial
DELIVERING THE DMO ACQUISITION 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?
10	Achieved	Proven	Demonstrated	Fully Understood	Proven	All Delivered
9	Confident	Contingency Remains	Tested	Transferred	Tested	Delivered
8	Acceptable	Confident	Designed	Arranged	Integrated	Delivering
7	In Tolerance	Within Contingency	Acceptable	Needs Understood	Designed	Manages Risk
6	Manageable	Negotiated	Contracted	Provided for	Planned	As Contracted
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?
5	Confirmed	Pre- Endorsed capability	Endorsed	Understood	Manageable	Offered
4	Understood	Industry Tested	Documented	Feasible	Feasible	Industry Proposals
3	Feasible	Reasonable	Solution Classes	Coalescing	Building Blocks	Strategy Developed
2	Drivers known	Plausible	Scenarios identified	Minimal	Conceptual	Possible
1	Speculative	Speculative	Deficiency	Not at all	Not Defined	Not Yet
						Is the impact on the existing operating and support environment understood?
						Planned
						Known
						Issues Understood
						Conceivable
						Not Identified

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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 1 st Pass options that will be put to Government are decided by Chief CDG	16
1 st Pass Approval	The stage at which 1 st Pass options to be put to Cabinet are endorsed by the Defence Capability Committee	21
Industry Proposals/ Offers	The stage at which formal responses from industry to an Request For Price or Request For Tender have been received and evaluated	30
2 nd Pass Approval	The stage in the capability definition/development process when 2 nd Pass Approval is sought from Cabinet	35
Contract Signature	On completion of contract negotiations and on concluding contract signature of a contract that has maximum influence on the project.	42
Preliminary Design Review(s)	On completion of System Requirements Reviews and when Preliminary Design Reviews are completed	45
Detailed Design Review(s)	On completion of Detailed Design Reviews	50
Complete System Integration and Test	On completion of Verification and Validation activities at the system and subsystem levels	55
Complete Acceptance Testing	On completion of all contractual acceptance testing and associated testing activities nominated in the Test and Evaluation Master Plan	57
Initial Materiel Release (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 ¹⁹⁶	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

196 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).

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Appendix 5: Lessons Learned

The Joint Committee of Public Accounts and Audit recommended in Report 422: Review of the 2009-10 Defence Materiel Organisation Major Projects Report, that the DMO include a Lessons Learned section in the MPR for projects that have met the exit criteria to report on their lessons learned at both the project level and the whole of organisation level.

Table 2 lists their lessons at the project level, against a whole of organisation level category.

Table 2: Lessons Learned – Project Level

Categories of Systemic Lessons	Project Lesson	Project Learned from
Military Off-The-Shelf Equipment	Considerable acceleration of the standard acquisition cycle is possible when the major supplies being procured are off-the-shelf production items. However, acceleration of establishment of support systems may be more difficult and should attract early management focus.	AIR 8000 Phase 3 – C17 Globemaster III Heavy Airlifter
Schedule Management	Closely monitor the return of repairable parts for the production installation phase to ensure no delays are experienced during the rebuild of each aircraft being modified. The more severe action that could be taken is to direct that repairable parts are not removed during the aircraft modification. Close monitoring of modification kit holdings and subsequent timely procurement is required to ensure kit deficiencies do not arise impacting on production schedule.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment

Categories of Systemic Lessons	Project Lesson	Project Learned from
Requirements Management	The data generated by DSTO as part of the centre barrel test-to-destruction programme will result in a considerable cost saving to the project (due to a reduction in the number of aircraft requiring SRP2) and an increased flexibility in aircraft modification induction dates.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment
Requirements Management	Modifying an ageing weapon system such as the Hornet aircraft can present emergent work such as corrosion and cracking in the aircraft structure which must be rectified while the aircraft is disassembled. Adequate project contingency budget and schedule must be programmed to accommodate such uncertainties.	AIR 5376 Phase 3.2 – F/A-18 Hornet Upgrade Structural Refurbishment

Lessons Learned – Whole of Organisation Level

The 2012-13 MPR builds on the lessons learned (at the organisational level) reported in last year's report. Set out below is a summary of progress against the categories of lessons learned.

Military Off-The-Shelf Equipment

The lessons learned in relation to Military Off-The-Shelf equipment are incorporated in Appendix 2.

Schedule Management

The lessons learned in relation to Schedule Management are incorporated in Chapter 1, Schedule Management, 1.17, page 107.

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Requirements Management

To address issues associated with understanding the level of maturity of requirements and progression through the various systems engineering reviews, the standard procedure covering Function and Performance Specification (FPS) development was amended to provide further guidance on the maturity levels for the FPS when it is progressing through the capability development process. Additionally, policy, guidance handbook and a standard procedure was promulgated to assist with assessing the suitability and risks for system reviews conducted in acquisition.

To improve the quality of objective evidence, or data, relating to acquiring and sustaining materiel systems, emphasis has been applied in the areas of configuration management and Verification & Validation (V&V). Improvements in the V&V policy, handbook and a standard procedure were issued to provide a more robust approach in utilising risk-based methodology to ensure that the necessary objective evidence is obtained. To reinforce the data quality of materiel systems an overarching configuration management policy has been promulgated to ensure reliable materiel system status throughout acquisition and sustainment.

Appendix 6: Budget Attributes

Price Indexation

Until June 2010, price indexation adjustments were applied to project budgets to manage the effect of inflation on an ongoing basis. The adjustments were in line with inflation related indices as agreed by government. Price indexation adjustments applied only to the unspent portion of project budgets.

From July 2010, DMO implemented the then Department of Finance and Deregulation policy requiring government departments to 'out-turn' budgets for long term acquisitions. Out-turning price adjustments are set by Defence to adjust the capital budget. For 2012-13 the index used was the Specialist Military Equipment Weighted Average. Actual labour and materiel indices within each contract may differ from this index.

Out-turning effectively anticipates inflation and is applied at the time of Government approval of funding decisions. This removes the requirement for annual price indexation adjustments. It also means that cost performance can be measured against a fixed 'goal post'. However, eventual inflation could be significantly divergent from that anticipated in the out-turning process and this may affect project cost performance accordingly.

Foreign Exchange

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

Scope Changes

Scope changes generally take the form of changes in quantities of equipment, specification changes, or changes to services to be provided. Such adjustments are normally accompanied by a corresponding Government approved budget adjustment.

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Transfers

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

Budgetary Adjustments

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

Budget Cost Savings

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

Appendix 7: Glossary

Acquisition Category	See Appendix 3.
Additional estimates	Where amounts appropriated at Budget time are required to change, the Parliament may make adjustments to portfolios through the Additional Estimates process.
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. Capability is generated by the Fundamental Inputs to Capability.
Capability Manager	A Capability Manager (CM) has the responsibility to raise, train and sustain capabilities. In relation to the delivery of new capability or enhancements to extant capabilities through the Defence Capability Plan, CMs are responsible for delivering the agreed capability to the Government, through the coordination of the Fundamental Inputs to Capability. Principal CMs are Chief of Navy (CN), Chief of Army (CA), Chief of Air Force (CAF), Deputy Secretary Intelligence and Security (DEPSEC I&S) and Chief Information Officer (CIO).
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.

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Contract Change Proposal	This is a formal written proposal by the Commonwealth or the contractor, prepared in accordance with the terms and conditions of the contract, to change the contract after the effective date. After agreement by the parties, the contract is amended in accordance with the processes established in the contract
Contract Master Schedule	A time and resource based schedule for executing work under the contract.
Corporate Governance	The process by which agencies are directed and controlled, and encompasses; authority, accountability, stewardship, leadership, direction and control.
Defence Procurement 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 Materiel Release (FMR)	A milestone that marks the completion and release of DMO Acquisition Phase Project Supplies required to support the achievement of the Operational Release (OR) of the Final Operational Capability (FOC).
Final Operational Capability (FOC)	FOC is the capability state relating to the in-service realisation of the final subset of a capability system that can be employed operationally. FOC is endorsed at second pass project approval and its achievement is reported by the CM
<i>Financial Management and Accountability Act 1997</i>	The FMA Act establishes the regulatory framework for financial management within public sector agencies, including the DMO.
Firm Price Contract	A firm price contract is unalterable in all respects for the duration of the contract, except where the parties agree to a contract amendment which alters that contract price.

First Pass Approval	The process that gives Government the opportunity to narrow the alternatives being examined by Defence to meet an agreed capability gap. First Pass approval allocates funds from the Capital Investment Program to enable the options that Government endorses to be investigated in further detail, with an emphasis on detailed cost and risk analysis.
Foreign Military Sales	The US Department of Defense's Foreign Military Sales program facilitates sales of US arms, Defense services, and military training to foreign governments.
Forward Estimates	The level of proposed expenditure for future years (based on relevant demographic, economic and other future forecasting assumptions). The Government requires forward estimates for the following three financial years to be published in each annual Federal Budget paper.
Function and Performance Specification	A specification that expresses an operational requirement in function and performance terms. This document forms part of the Capability Definition Document.
Fundamental Inputs to Capability	Fundamental Inputs to Capability (FIC) are a set of eight tangible inputs considered fundamental to the development and delivery of capability. The FIC are managed within a financial envelope and comprise: personnel; organisation; collective training; major systems; supplies; facilities and training areas; support; and command and management.
Initial Materiel Release (IMR)	A milestone that marks the completion and release of DMO Acquisition Project Supplies required to support the achievement of the Initial Operational Release (IOR) of the Initial Operational Capability (IOC).
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.

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Initial Operational Release (IOR)	IOR is a milestone at which the CM is satisfied that the initial operational and materiel state of the capability system is such that it is sufficiently safe, fit for service and environmentally compliant to proceed, if applicable, into a period of Operational Test and Evaluation (OT&E) or other activities in the build-up to the OR for an endorsed capability state.
Level of Development	See Appendix 2.
Major Capital Acquisition Project	A Defence project that meets one or more of the following criteria: a. it has an estimated total one-time cost of bringing the capital equipment concerned into operation of A\$ 20 million or more; b. the unit cost of an individual item in a multi-item acquisition is estimated at A\$ 1 million or more; and/or c. the project is strategically important and/or has significant Defence policy or joint Service implications.
Materiel Acquisition Agreement	An agreement between Defence and the DMO which states in concise terms what services and products the DMO (as a supplier) will deliver, for how much and when.
Materiel Capability Performance Measures	The traffic lights, based on a subjective assessment, indicate: Green: There is a high level of confidence that they will be met; Amber: Are under threat but still considered as manageable and able to be met; and Red: At this stage are unlikely to be met.
Memorandum of Understanding (MOU)	A memorandum of understanding is a document setting out an agreement, usually between two government agencies.

Minor Capital Acquisition Project	A Defence project in which the proposed equipment falls within the definition of capital equipment but does not meet the criteria in the definition of a major project.
Off-The-Shelf	A product that is available for purchase, which has been delivered to another military or government body or commercial enterprise.
Operational Concept Document	The primary reference for determining fitness-for-purpose of the desired capability to be developed. This document forms part of the Capability Definition Document.
Operational Test and Evaluation (OT&E)	Test and evaluation conducted under realistic operational conditions with representative users of the system, in the expected operational context, for the purpose of determining its operational effectiveness and suitability to carry out the role and fulfil the requirement that it was intended to satisfy.
Outcomes	The results that the Government, and Defence as the purchaser, seek from the DMO and which are achieved by the successful delivery of its products and services.
Output	The product or service produced by the DMO on behalf of the Government and Defence.
Platforms	Refers to air, land, or surface or sub-surface assets that are discrete and taskable elements within the ADF.
Portfolio Budget Statement	A document presented by the Minister to the Parliament to inform Senators and Members of the basis for Defence/DMO budget appropriations in support of the provisions in Appropriation Bills 1 and 2. The statements summarise the Defence/DMO budget and provides detail of outcome performance forecasts and resources in order to justify agency expenditure.

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Prescribed Agency	A prescribed agency is an agency established by regulation under the <i>Financial Management and Accountability Act 1997</i> . 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.
Project Stage	See Appendix 4.
Purpose 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.
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 the DMO.
Seed Capital	The initial funds used to setup the project.

System Program Office	One of the core business units in the DMO. They provide a crucial link between the DMO and its customers. They provide acquisition and sustainment services to the ADF.
Test Concept Document	The basis for the DMO's development of the Test and Evaluation Master Plan for a project, and is the highest level document that considers test and evaluation requirements within the capability systems' life-cycle. This document forms part of the Capability Definition Document.
Two pass approval process	The process by which major capital investment proposals are developed for consideration and approval by the Government.
Variable Price Contracts	Variable price contracts provide for the contractor to be paid a fixed fee for performance of the contract, subject to certain variations detailed in the contract. Variable price contracts may allow for variations in exchange rates, labour and/or material costs.
Verification and Validation	Verification 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. Validation is confirmation by examination and provision of objective evidence that the specific intended use or application of a product or service is accomplished in an intended usage environment.

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