

Project Data Summary Sheet¹³⁹

Project Number	SEA 1439 Phase 4A
Project Name	COLLINS REPLACEMENT COMBAT SYSTEM
First Year Reported in the MPR	2007-08
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 02
Total Approved Budget (Current)	\$450.6m
2015–16 Budget	\$0.4m
Project Stage	Initial Materiel Release
Complexity	ACAT IV



Section 1 – Project Summary

1.1 Project Description

The SEA 1439 Phase 4A Replacement Combat System (RCS) project was established to provide each of the six Royal Australian Navy (RAN) Collins Class submarines with an initial installation of the United States (US) Navy (USN) AN/BYG-1 Combat and Weapon Control System, minor improvements to the combat system augmentation sonar, and shore facilities for integration, testing and training. Shore based systems are located at the Submarine Training and Support Centre at HMAS *Stirling* (WA) and a reference laboratory in the US at the Naval Undersea Warfare Centre. The project required the development of system commonality between the RAN and USN.

1.2 Current Status

Cost Performance

In-year

This year the underspend of \$0.1m is primarily due to delays in programmed work by Australian Industry.

Project Financial Assurance Statement

As at 30 June 2016, project SEA 1439 Phase 4A has reviewed the approved scope and budget for those elements required to be delivered by the project. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

139 Notice to reader

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

Schedule Performance

Project boat installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program, consequently completion dates vary according to boat availability. The RCS schedule has also been impacted by emergent work during each submarine docking. The final boat installation is scheduled for completion in 2018, following the decision to defer the HMAS *Collins* FCD, with Final Materiel Release (FMR) forecast for October 2018 (33 months behind schedule).

Materiel Capability Delivery Performance

CS04

The RCS Project managed the development, installation and integration of the CS04 baseline. The installation in HMA Ships *Waller* and *Farncomb* was approved for Initial Operational Release (IOR) by Chief of Navy (CN) in May 2008 and September 2009 respectively. CN subsequently approved Operational Release (OR) of that baseline in December 2009. The capability delivered in HMA Ships *Waller* and *Farncomb* is consistent with that identified in the project requirement.

CS05

The RCS Project managed the development, installation and integration of the CS05 baseline. Installations and Harbour Acceptance Testing for the upgraded combat system baseline installed in HMA Ships *Dechaineux* and *Sheean* are complete. Sonar towed array trials scheduled for HMA Ships *Dechaineux* and *Sheean* were completed with OR of the Collins Towed Array Processor (CTAP) being awarded on 20 January 2011. IOR approval of the upgraded baseline as installed in HMAS *Dechaineux* occurred on 8 March 2011. **OR of the CS05 baseline is expected to be achieved in July 2016.**

CS06

Installation of the upgraded baseline in HMAS *Rankin* was completed by the RCS Project in May 2014. The development and integration of this baseline is being managed by Sustainment.

Technical Insertion (TI)14

Installation in HMAS *Collins* will be completed by the RCS Project in conjunction with the FCD program. The project schedule is dependent on the boat FCD program; consequently the completion date may vary. The development and integration of this baseline is being managed by Sustainment. Note: This baseline adopts the new TI naming convention beyond CS06.

The remaining project **activity** includes installation of RCS on HMAS *Collins*. Development, installation and integration of all further combat system upgrades is being managed by Sustainment.

Note

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

1.3 Project Context

Explanation

Background

Risks associated with rapid technology change have been treated by adopting a project management strategy that aligns with the US continuous update program and its two-year update cycle.

The then standard acquisition approach was adapted to enable the project office to establish itself as prime contractor with a series of Integrated Project Teams working at various levels within Defence and industry. This role has required close collaborative relationships to be formed between Defence, the USN and industry partners in Australia and the US.

In July 2001 the Minister for Defence terminated the original tender process for the Collins Class RCS.

In September 2002 the Government approved the project based on the procurement of the following off-the-shelf sub-systems:

- the US Combat and Weapon Control sub-system, consisting of the Combat Control System and the Virginia Class Weapons Integration Panel, to be acquired by Foreign Military Sales (FMS);
- minor improvements to the sonar processing solution currently installed in HMA Ships *Sheean* and *Dechaineux* as part of the Combat System Augmentation initiative; and
- other system support infrastructure and project support.

The USN Combat and Weapon Control System is being supplied under an Armaments Cooperative Project (ACP) which provides for system upgrades developed on a bi-annual basis, whereas the Commonwealth is adopting every second baseline with a four year update cycle. This project provides one system baseline for the first two submarines and later baselines for the remaining four submarines. These initial baselines installed by the RCS Project will be upgraded at some later date as a sustainment activity.

Australian systems are being provided under a combination of contracts. The main Australian contractors include ASC Pty Ltd, Raytheon Australia, Thales Australia and Sonartech Atlas Pty Ltd. Installation is being undertaken in conjunction with SEA 1429 Phase 2 Heavyweight Torpedo at locations in South Australia and Western Australia. Installation in all submarines is coordinated with the FCD program.

The combat system capability enhancement required a significant change to submarine infrastructure that could only be achieved during a major docking. Furthermore, to ensure the required submarine availability was not impacted adversely and to work within the existing workforce at ASC Pty Ltd, it was necessary to couple the installation program to the existing submarine docking program. Although there are significant benefits in coupling the RCS installation schedule to the submarine docking program, that coupling has dictated the delivery schedule of the RCS capability.

Uniqueness

The Commonwealth has undertaken the functions of a prime systems integrator. This role required the Commonwealth project team to manage and coordinate a number of separate contracts and ultimately the integration, installation and testing of the delivered products.

The Project is participating in a Joint Development Program with the USN to introduce hardware and software upgrades for Combat and Weapon Control System and implementing that evolving system baseline into the Collins combat system.

Major Risks and Issues

The small project team is disproportionately affected by turnover of key personnel, leading to an impact on cost and schedule. Mitigation activities are in place, but they do not significantly reduce the risk.

The cost of implementing the RCS modifications on HMAS *Collins* may rise over those predicted as a new contract will need to be negotiated to cover the remaining work. Sufficient Project budget exists to cover a reasonable price increase.

Delays in development or approval of the T114/Advanced Processor Build (APB) 15 related Configuration Change Proposals (CCPs) by Sustainment could impact the Combat System installation on HMAS *Collins*. This **risk has been downgraded to medium following the raising of** a Production Permit to enable installation on HMAS *Collins* ahead of CCP approval.

FMR could be delayed as the current MAA specifies deliverables that are outside of the Project's control, which may not be available in time to meet the FMR timeframe, leading to an impact on cost and schedule. This is being mitigated by amending the MAA.

The Coles Review recommended changes to the submarine docking program that resulted in HMAS *Collins'* implementation completion date slipping from 2016 to 2018, with a corresponding impact on the FMR and Final Operational Capability (FOC) dates.

Other Current Sub-Projects

SEA 1439 Phase 3 Collins Class Submarine Reliability and Sustainability: SEA 1439 Phase 3 is a program of upgrades to Collins Class platform systems to improve the Fleet's reliability, sustainability, safety and capability.

SEA 1439 Phase 3.1 Collins Obsolescence Management - Integrated Ship Control Management and Monitoring System Obsolescence: Project scope includes remediating obsolescence of the Integrated Ship Control Management and Monitoring System in the Collins Submarines and shore facilities. Stage One includes purchasing two boat sets and completion of the first installation.

SEA 1439 Phase 4B Weapon and Sensor Enhancement Program: Acquire endorsed supplies to address deficiencies identified in the area of Submarine weapons and sensors.

SEA 1439 Phase 5B1 Communications Mast and Antenna Replacement Class Fit: The project aims to fit five submarines with the communications fit developed and tested under Project SEA 1439 Phase 4B, along with one spare antenna, one spare mast raising equipment and spares.

SEA 1439 Phase 5B2 Collins Class Communications and Electronic Warfare Program: The Project scope is to enhance the Communications and Electronic Warfare capabilities of the Collins Class submarine. The project is broken up into two sections - the Modernised Submarine Communications System, an

upgrade to the existing on board communications system, and the Microwave Electronic Support Measures, an enhancement to the existing Electronic Warfare capability.

SEA 1439 Phase RCE3 EHF Communications Capability: Extreme High Frequency (EHF) Communications Capability for a single Collins-class submarine.

SEA 1439 Phase 6 Collins Sonar Capability Assurance Program: The Project scope is to address obsolescence and capability deficiencies in the Collins Class Sonar System and establish an ongoing capability assurance program.

Note

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

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Sep 02	Original Approved	455.3	
May 03	Real Variation – Transfer	(0.9)	1
Aug 04	Real Variation – Budgetary Adjustment	(0.8)	2
		(1.7)	
Jul 10	Price Indexation	56.5	3
Jun 16	Exchange Variation	(59.5)	
Jun 16	Total Budget	450.6	
Project Expenditure			
Prior to Jul 15	Contract Expenditure – Raytheon Australia	(101.7)	4
	Contract Expenditure – US Government (FMS)	(79.3)	4
	Contract Expenditure – US Government (ACP)	(59.1)	5
	Contract Expenditure – Thales Australia	(26.9)	
	Contract Expenditure – Sonartech Atlas Pty Ltd	(26.8)	
	Other Contract Payments/Internal Expenses	(141.3)	6
		(435.1)	
FY to Jun 16	Other Contract Payments/Internal Expenses	(0.3)	7
		(0.3)	
Jun 16	Total Expenditure	(435.3)	
Jun 16	Remaining Budget	15.2	
Notes			
1	Transfer to the then Defence Science Technology Organisation (DSTO).		
2	Administrative savings harvest.		
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$55.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$1.0m having been applied to the remaining life of the project.		
4	The FMS case value is \$79.3m (written back from \$143.9m - see Note 1 in Section 2.3 below). The supplies remaining under the FMS case would then be delivered under the ACP.		
5	The ACP is the main vehicle for supplying equipment and services for the Combat and Weapon Control hardware and software development.		
6	Other expenditure of \$141.3m includes an amount of \$51.5m to ASC Pty Ltd for platform design and installation; a total of \$33.6m on supplies and services provided by other Contractors, and \$10.2m to Engineering and Scientific Systems for engineering and testing support. The remaining \$46.0m of expenditure comprises operating expenditure, consultants, and contingency used in 2009-10.		
7	The amount of \$0.3m comprises of \$0.3m to ASC Pty Ltd.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
0.8	0.7	0.4	The variance for both movements reflects increased cost maturity for work conducted by ASC Pty Ltd on HMAS Collins.
Variance \$m	(0.1)	(0.3)	Total Variance (\$m): (0.4)
Variance %	(8.8)	(42.6)	Total Variance (%): (47.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(0.1)	Australian Industry	The underspend of \$0.1m is primarily due to delays in programmed work by Australian Industry.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
0.4	0.3	(0.1)	Total Variance	
		(30.9)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 16 \$m			
US Government (FMS)	Jun 03	143.9	79.3	Fixed	FMS	1, 6
Sonartech Atlas Pty Ltd	Jun 03	22.5	35.8	Variable	ASDEFCON Strategic	2, 6
Raytheon Australia	Aug 03	53.9	101.7	Variable	ASDEFCON Strategic	3, 6
Thales Australia	Oct 03	22.9	26.9	Variable	ASDEFCON Strategic	4, 6
US Government (ACP)	Nov 04	51.8	61.0	Fixed	ACP	4, 5, 6
Notes						
1	Included on-going involvement in the Combat and Weapon Control hardware and software development process for the duration of the ACP. The FMS Case valued at \$143.9m was written back to \$79.2m with the introduction of the ACP.					
2	The Sonartech Atlas Pty Ltd contract value as at 30 June 2015 includes a Sustainment component of \$9.0m.					
3	Includes on-going involvement in the Combat and Weapon Control hardware and software development process for the duration of the ACP. This contract also provided for the integration of Electronic Chart Display Information System (ECDIS) master navigation into the combat system at a cost of \$2.8m which was not funded by SEA 1439 Phase 4A.					
4	The Thales Australia contract valued at \$27.3m was written back to \$26.9m following delivery of the final contracted supplies.					
5	The US Government (ACP) 30 June amount was reported as \$121.0m in previous MPRs (to 2012-13), however this figure included sources of funding other than SEA 1439 Phase 4A. SEA 1429 Phase 2 and Sustainment were the other contributors to the ACP costs. The Price Base at Signature has also been revised to reflect only SEA 1439 Phase 4A.					

6	Contract value as at 30 June 2016 is based on actual expenditure to 30 June 2015 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).				
Contractor		Quantities as at		Scope	Notes
		Signature	30 Jun 16		
US Government (FMS)		7	7	US Combat and Weapon Control sub-system	
Sonartech Atlas Pty Ltd		4	7	Sonar sub-system equipment	1
Raytheon Australia		7	7	Tactical System sub-systems and components	
Thales Australia		7	7	Scylla Sonar and associated sub-systems	
US Government (ACP)		7	7	US Combat and Weapon Control sub-system	
Major equipment received and quantities to 30 Jun 16					
Six RCS Ship Sets delivered. Category 5 Sea Acceptance Testing completed. Engineering and maintenance arrangements established.					
Notes					
1	The RCS project was funded originally for four Submarine Acoustic Transitory Event Processing System units. The in-service support organisation took advantage of an option in the RCS project acquisition contract with Sonartech Atlas Pty Ltd to replace the ageing Submarine Acoustic Transitory Event Processing System units fitted to the existing submarine combat system. Although the contract value was increased, the additional sets were not funded from project funds.				

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Combat System	Nov 04	N/A	Nov 04	0	1
System Design	Combat System	May 05	N/A	May 05	0	1
Preliminary Design	20 Separate sub-systems or major components	Oct 03 – Oct 06	N/A	Nov 03 – Oct 06	1	1
Critical Design	20 Separate sub-systems or major components	Nov 03 – Apr 07	N/A	Nov 03 – Apr 07	0	1, 2
Notes						
1	<p>The above data represents rolled up information as the project consists of many sub-systems each of which have independent Preliminary Design Review, Critical Design Review or associated activities. Additionally, these system engineering activities were applied across two system baselines. As a result, there were many individual events within each of the above activities where the schedule was allowed to move provided the critical path for the delivery of capability was not impacted adversely. The critical path was based on the FCD program. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the FCD program.</p> <p>In some instances schedule slip has occurred as a result of project management intervention to delay finalisation of sub-system and major component design until the evolving US Combat and Weapon Control system baseline was mature. The project schedule has been re-baselined following significant events. To progress the Preliminary Design Review and Critical Design Review activity ahead of the US system development would have incurred significant cost. Preliminary Design Review and Critical Design Review slip has not impacted capability delivery because of the dependency on the FCD program to install the RCS equipment.</p>					

2	Some sub-systems or major components have several Critical Design Reviews or US equivalent.
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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	Combat System - System Integration Test Phase 1-6	Jun 06 – Apr 08	N/A	Jun 06 – Apr 08	0	
	Combat System - Harbour Acceptance Trials Stage 1-3	Nov 06 – May 08	N/A	Nov 06 – May 08	0	
	Combat System - Sea Acceptance Trials Stage 1-2	Dec 07 – Jun 08	N/A	Dec 07 – Jun 08	0	
	Category 3 System Integration Testing Combat System CS05.00.01 (TI06/APB06)	Apr 09	N/A	Apr 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.00 (TI06/APB06)	Nov 09	N/A	Dec 09	1	1
	Category 3 System Integration Testing Combat System CS05.01 (TI06/APB06)	Jan 09	N/A	Jan 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.01 (TI06/APB06)	Feb 10	N/A	Feb 10	0	
	Category 5 Sea Acceptance Trials Combat System CS05.01 (TI06/APB06)	Apr 10	N/A	Aug 10	4	2, 3
Notes						
1	Combat System CS05 baseline Harbour and Sea Acceptance Trial tests were conducted in two stages to account for weather, submarine defects and support vessel defects. In general, the project test and evaluation program was carried out in conjunction with other post docking activities and the planned testing schedule has been impacted to some extent.					
2	<p>Combat System CS05.01 baseline Sea Acceptance Trials and associated shore based analysis were completed in August 2010. The variance for testing is due to HMAS <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.</p> <p>The outcome of the CS05.01 trials including the ECDIS and TA were successful, with some minor trouble reports noted but not affecting capability. The CS05.01 System Design Certificate was issued 10 September 2010. CS05 Initial Materiel Certification for HMAS <i>Dechaineux</i> was achieved 22 September 2010. OR of the CS04 CTAP was awarded on 20 January 2011. CS05 IOR was awarded by CN on 8 March 2011. Additional testing of CS05 (TI06) minor software upgrades were conducted by the Project in 2010 and 2012. CS05 OR is expected to be awarded in July 2016.</p>					
3	The CS05 Acceptance trials were the last acquisition related testing activity managed by the Project. All further development and testing of the CS06 and TI14 combat system upgrades and beyond is the responsibility of Sustainment. SEA 1439 Phase 4A performed the installation for CS06 on HMAS <i>Rankin</i> and will perform the installation for TI14 on HMAS <i>Collins</i> .					

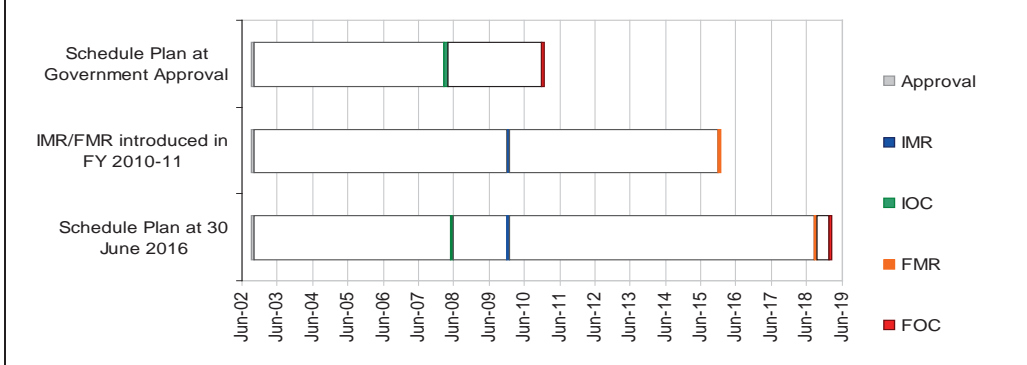
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Dec 09	N/A	1
Initial Operational Capability (IOC)	Mar 08	May 08	2	1
Final Materiel Release (FMR)	Jan 16	Oct 18	33	2
Final Operational Capability (FOC)	2010	Feb 19	98	3

Notes

1	The RCS baseline (CS04) installed in HMA Ships <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.
2	FMR date was set at project approval before the submarine FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the RCS installation schedule has been delayed, with final installation to be completed in HMAS Collins in 2018.
3	FOC date was set at project approval before the submarine FCD program had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the RCS installation schedule has been delayed.

Schedule Status at 30 June 2016

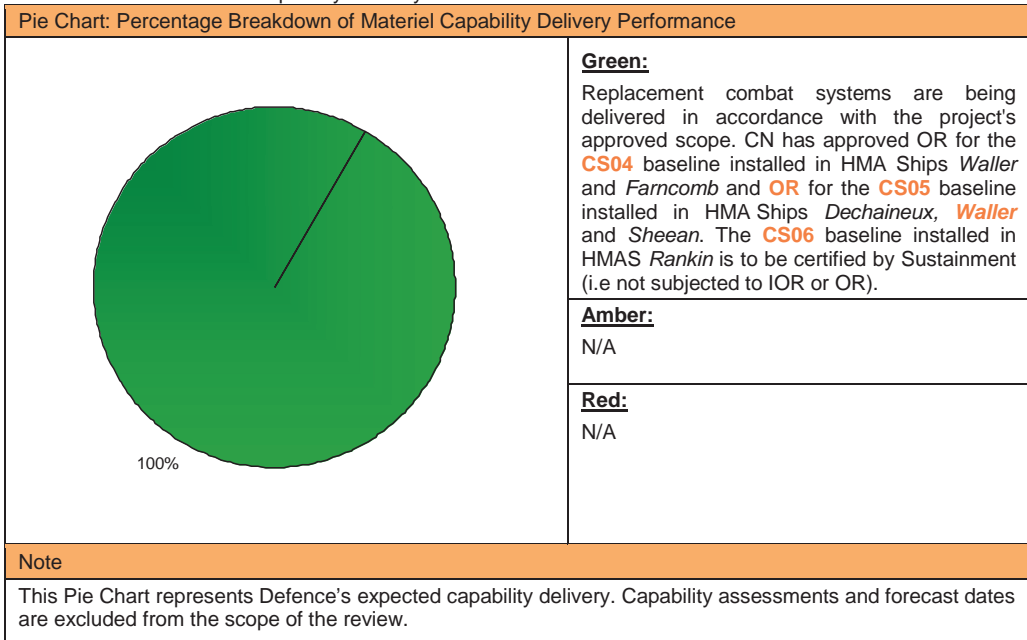


Note

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

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance



4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Provisional acceptance of RCS on HMAS <i>Waller</i> achieved December 2009, incorporating completion of CS04 sea trials and CS04 OR.	Achieved
Final Materiel Release (FMR)	Completion of CS04 and CS05 OR and installation of a RCS on each of the six submarines. FMR is planned for October 2018.	Not yet achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	This risk is being mitigated by: <ul style="list-style-type: none"> Use of contractors where appropriate; Use of Reserve personnel where skills are suitable; and Optimising use of matrix support staff.
There is a distinct risk that the price of implementing RCS modifications on HMAS <i>Collins</i> may rise over those predicted.	Sufficient project budget exists to cover a reasonable price increase.
There is a chance that delays in development of approval of the T114/APB15 related CCPs could impact the Combat System installation on HMAS <i>Collins</i> .	This risk has been downgraded to medium following the raising of a Production Permit to enable installation of RCS into HMAS <i>Collins</i> ahead of CCP approval.

There is a chance that FMR could be delayed, leading to an impact on cost and schedule.	This risk is being mitigated by updating the MAA to remove deliverables outside of the Project's control.
Emergent Risks (risk not previously identified but has emerged during 2015–16)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the RCS installation schedule.	The Government has agreed to the amended implementation dates resulting from previous docking program changes. A MAA amendment is being staffed to reflect the approved schedule.

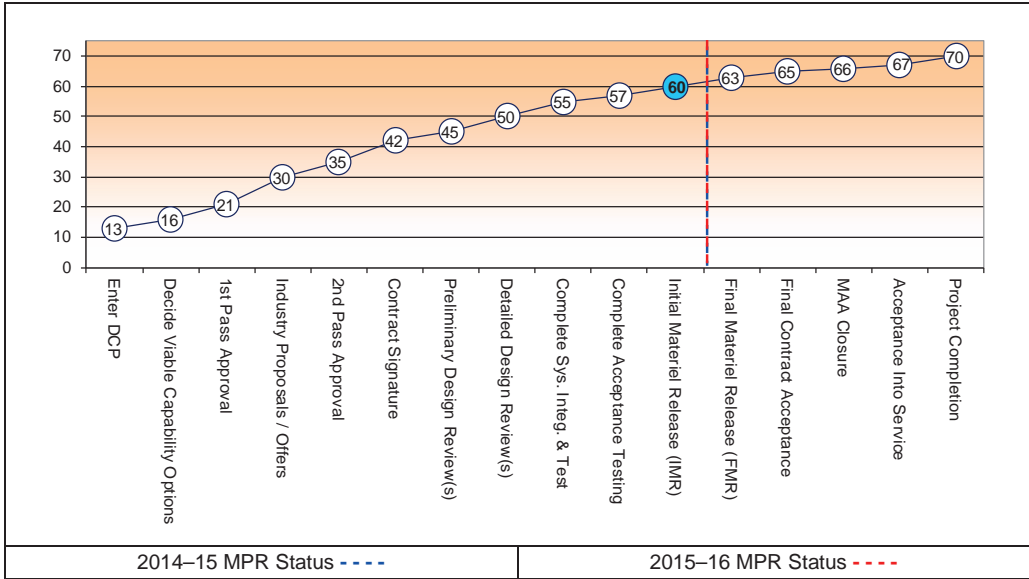
Note

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

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	9	9	9	9	8	9	62
	Explanation	<ul style="list-style-type: none"> • Schedule: The last boat installation for the project to achieve FMR is HMAS <i>Collins</i>. FCD timings have changed substantially in the past. However, with the introduction of a configuration controlled Collins IMS, the project is now confident that schedule will be met. • Cost: The costs for the remaining project work on HMAS <i>Collins</i> are known, and the remaining Project budget and contingency is considered adequate to cover reasonable remaining project cost risk. • Requirement and Technical Understanding: The CS05 baseline has been at sea on operational boats since 2010. Transitioning of the final baseline on HMAS <i>Collins</i> is expected in 2018. 							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing and resources are available, in particular if Defence is to be both the prime systems integrator and Project Authority.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule Management
Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US Government International Traffic in Arms Regulation can require up to a year to progress.	Requirements Management
Engaging in a joint development project where Australia is the junior partner and largely dependent on the US Government program can introduce project management, cost, technology, gaps in OQE and schedule risk that needs to be addressed.	First of Type Equipment
Robust procedures, processes and discipline must be implemented when managing requirements for multiple baseline combat systems. Maintaining expertise with a Requirements Management tool is essential to ensure reliable outputs and reduced re-work.	Requirements Management
Discipline in writing robust and understandable descriptions for failed requirements, deficiencies and non compliances is essential. The deficiencies should be written to inform both technical and operational personnel. The benefit is better quality documentation and less re-work by other staff in the future.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management in 2015–16

Position	Name
Division Head	Mr Stephen Johnson (Nov 15-current)
Branch Head	Mr David Cochrane
Project Director	CMDR Ian Jimmieson (Acting)
Project Manager	Mr Alan Levy