Project Data Summary Sheet[155]

Project Number	**SEA 1439 Phase 3**
Project Name	**COLLINS CLASS SUBMARINE RELIABILITY AND SUSTAINABILITY**
First Year Reported in the MPR	2009-10
Capability Type	Upgrade
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 00
Total Approved Budget (Current)	$411.7m
2016-17 Budget	**$6.6m**
Project Stage	**Initial Materiel Release**
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 for each of the six submarines.

1.2 Current Status

Cost Performance

In-year

This year **the project achieved accrued overspend of $0.2m of the 2016-17 Cash budget of $6.6m. This is due to phasing alignment within the three year contracted high level work plan under Performance Period Two of the In-Service Support Contract with ASC.**

Project Financial Assurance Statement

As at 30 June 2017, project SEA 1439 Phase 3 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

Project SEA 1439 Phase 3 does not have a formal contingency allocation.

155 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

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 periods 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 Full Cycle Docking (FCD) program and Enterprise priorities, consequently completion dates vary according to the maintenance program and the focus of ensuring submarines availability targets are achieved.

Installation of engineering enhancements are progressing **within schedule tolerance as part of** the High Level Work Program for the In-Service Support Contract (ISSC) Performance Period Two (PP2). Progress continues for activities of project scope implementation on HMAS ***Collins*** in FCD **(expected to be completed in May 2018)** and HMAS ***Sheean*** **in Mid-Cycle Docking (MCD) (expected to be completed in December 2017)**. The project continues to progress non-platform activities **such as the** Diesel Land Based Test Facility **which is currently undergoing final acceptance from ASC Pty Ltd (ASC) and is expected to be completed in August 2017. The project completed Sea Verification Trials for the Special Forces Exit and Re-entry capability in HMAS *Dechaineux* during Exercise Platypus Moon March 2017. The results of the trial demonstrated the capability successfully.** Final Materiel Release (FMR) is expected to be achieved in August 2022.

Materiel Capability Delivery 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 installed and harbour and sea acceptance testing on HMAS *Dechaineux* were conducted post Mid-Cycle Docking (MCD) in June 2015. A persistent defect in the Exit and Re-entry modification within the conning tower was identified during the sea trails which lead to further investigation and minor redesign. Project has rectified the defect and conducted subsequent sea verification trials **during Exercise Platypus Moon in March 2017. The results of the trial demonstrated the capability successfully.**

Torpedo Decoy received Initial OR on 2 May 2014 by Chief of Navy.

Fourteen 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.

Note

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

1.3 Project Context

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. Fourteen engineering enhancements have been completed and the two new capabilities are being implemented. However, completion of the remaining six engineering enhancements are 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:

1. **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.
2. **Torpedo Counter Measures Internal Stores (Torpedo Decoy) (New Capability):** To provide a programmable counter measure against torpedos.
3. **Fire Fighting Upgrade (Engineering Enhancement):** Upgrade to the fire fighting systems onboard, including greater protection from fire and its toxic by-products.
4. **Sewage System Upgrade (Engineering Enhancement):** Automation of the sewage discharge system and thereby reduce the risks of exposure to toxic gases.
5. **Fast-Track modifications to HMA Ships *Collins, Farncomb, Waller and Rankin* (Engineering Enhancement):** Address platform build deficiencies in a holistic get-well program.

The remaining platform upgrades (engineering enhancements) are outlined in ANAO Report No. 17 2010-11: *2009-10 Major Projects*

Report.

Uniqueness

Project SEA 1439 Phase 3 installs prioritised engineering enhancements and acquires replacement materiel as a part of ensuring continuous improvement of the Submarine fleet. Engineering enhancements were undertaken by ASC under an annualised cost-plus Through Life Support Agreement (TLSA); however as of 1 July 2012 this work is now contracted under an ISSC initially as a performance based and cost-reimbursement arrangement with a subsequent three year target based incentive period. 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 General Manager Submarines.

Budget management under the cost reimbursement arrangement of the ISSC presents a major challenge for the project in achieving monthly expenditure. This is due to the alignment of linear phased expenditure and the supplier's ability to move work within the total work program to achieve Enterprise agreed objectives and contracted performance goals.

Major Risks and Issues

Engineering enhancements are managed on a prioritised basis within the funding and skilled resources 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 and schedule performance.

Risks have been identified pertaining to the HALON actuation panel upgrade performance and the adaption of panel back lighting. Additionally the current design of the Outboard Stowages and installation options may be deficient in a number of areas. Preliminary design review has been conducted utilising a design options to mitigate these risks.

The schedule delay related to the Special Forces Exit and Re-entry conning tower modification defect has developed into an issue because of delays in verifying the system prior to HMAS *Dechaineux* Intermediate Docking commencing. The project recently completed Sea Verification Trials for the Special Forces Exit and Re-entry capability in HMAS Dechaineux during Exercise Platypus Moon. The results of the trial demonstrated the capability successfully; however the trials identified a further four risks pertaining to the maintenance and operation of the new capability (see Section 5.1 for further detail).

Other Current Sub-Projects

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. Stage Two includes the procurement of the residual boat sets and implementation of the remaining submarines.

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 4B Weapons and Sensor Enhancements: 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 deliver a Modernised Submarine Communications System and upgrade Electronic Support Measures systems on Collins Class Submarines.

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 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
			271.3	
Jul 10	Price Indexation		74.4	7
Jun 17	Exchange Variation		(6.0)	
Jun 17	**Total Budget**		411.7	
	Project Expenditure			
Prior to Jul 16	Contract Expenditure – ASC Pty Ltd	(245.8)		
	Other Contract Payments / Internal Expenses	(113.6)		8
			(359.4)	
FY to Jun 17	Contract Expenditure – ASC Pty Ltd	(6.7)		
	Other Contract Payments / Internal Expenses	(0.1)		
			(6.8)	
Jun 17	**Total Expenditure**		(366.2)	
Jun 17	**Remaining Budget**		45.5	

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 for Special Forces Upgrade 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 $54.7m 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 $12.3m for the Propulsion Control Reference System, $11.7m to L3 Nautronix Ltd for the underwater communications system and sonobuoy, $9.3m for the Towed Array Handling System, $8.0m for general operating expenditure, $4.7m for contractor service providers, $4.1m for minor contracts, $3.7m with Thales for the Underwater Telephone, $3.1m for Torpedo decoy procurement, and $2.0m for generator procurement.

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
6.7	6.6	6.6	PBS-PAES: **Revised down by ($0.1m) due to assessment of planned expenditure and forecast budget achievement for the year.** PAES-Final Plan: **There is no variance.**
Variance $m	(0.1)	0.0	Total Variance ($m): (0.1)
Variance %	(1.9)	0.0	Total Variance (%): (2.0)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
		0.2	Australian Industry	Variance achieved an over spend of $0.2m of the 2016-17 Cash budget of $6.597m. This is due to phasing alignment within the three year contracted high level work plan under Performance Period Two of the In-Service Support Contract with ASC.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support in Operations	
			Additional Government Approvals	
6.6	6.8	0.2	**Total Variance**	
		3.2	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 17 $m			
ASC Pty Ltd	Jul 12	N/A	N/A	Variable (Cost Reimbursement)	ASDEFCON	1

Notes	
1	The contract is comprised of five year Performance Periods from 1 July 2014 - Target Cost Incentive Model arrangements with Direct Project Costs (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 17		
ASC Pty Ltd	N/A	N/A	See 1.3 Project Context: Background for further information.	

Major equipment received and quantities to 30 Jun 17

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 IMS.

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
Article I. Final Design Review	Special Forces Upgrade	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	2
Article II. First of Class Implementation	Special Forces Upgrade (COLLINS)	Jun 05	N/A	Oct 07	28	3, 4
	Torpedo Decoy	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	
Article III. Full Class Implementation	Special Forces Upgrade (COLLINS)	May 08	May 18	May 18	120	3, 4
	Torpedo Decoy	Oct 13	N/A	Dec 13	2	5
	Fire Fighting Upgrade (DECHAINEUX)	Sep 22	N/A	May 22	(4)	6
	Sewage System Upgrade (COLLINS)	Mar 17	N/A	May 18	14	7
	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 Collins Class Interim Minimum Operating Capability. 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.
3	HMAS *Collins* 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 HMAS *Collins* in 2008. The redesigned safety modifications identified were installed on HMAS *Dechaineux* MCD (completed December 2014). These modifications are planned for HMAS *Collins* FCD which is scheduled to complete May 2018 in accordance with the current IMS.
4	The Special Forces Upgrade safety modifications identified during the manned Sea Verification Trial have been installed and harbour and sea acceptance testing on HMAS *Dechaineux* completed post MCD in June 2015. This capability is still undergoing **verification** to determine system safety and fitness for purpose as required to achieve Initial OR. Full class implementation will be achieved on completion of HMAS *Collins* FCD which is scheduled for May 2018, and excludes the activities required to achieve Initial OR and OR.
5	Full class implementation has been achieved with the approval of the Configuration Change Instruction. Variance is a result of minor delays in the Configuration Management process.
6	Installation of Fire Fighting Upgrades are planned to be finalised early on HMAS *Sheean* during MCD (January 2018) with final class installation on HMAS *Dechaineux* occurring during FCD (May 2022).
7	Full class implementation will be achieved on the completion of HMAS *Collins* FCD which is scheduled for May 2018 in accordance with the IMS.

3.2 Contractor Test and Evaluation Progress

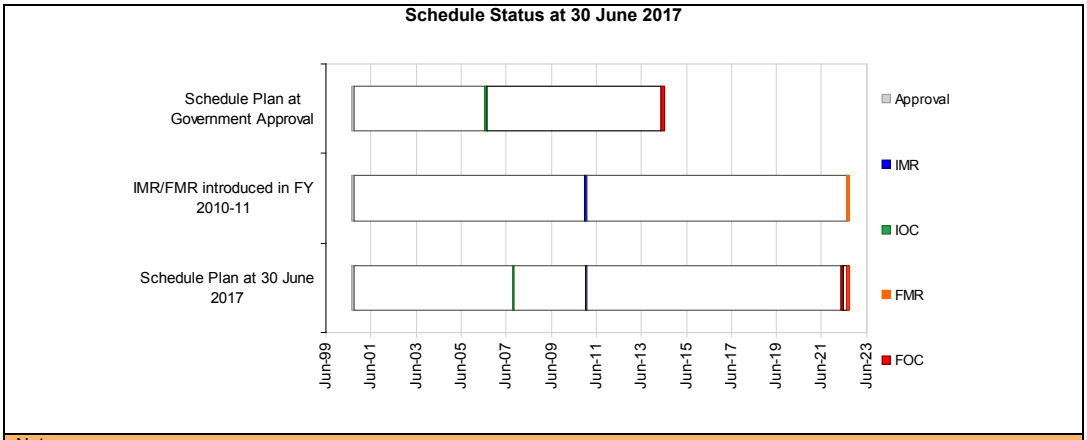
Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned (Note 1)	Achieved/Forecast (Note 1)	Variance (Months)	Notes
Article IV. Harbour Acceptance Test (HAT)	Special Forces Upgrade (COLLINS)	Jun 05	N/A	Sep 06	15	
	Torpedo Decoy	Jun 10	N/A	Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	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	
Article V. Sea Acceptance Test (SAT)	Special Forces Upgrade (COLLINS)	Aug 05	N/A	Dec 07	28	3
	Torpedo Decoy	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	Refer Section 3.1 Note 2. 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 was attributed to the change in schedule completion of HMAS *Rankin* FCD from October 2013 Version (IMS V3.3) and the current baselined IMS.
3	Refer Section 3.1 Note 3 and 4 and Section 3.3 Note 1.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Jan 11	N/A	
Initial Operational Capability (IOC)				
Initial Operational Release Special Forces Upgrade (DECHAINEUX)	Nov 10	**Dec 17**	**85**	1
Initial Operational Release Torpedo Decoy	Aug 10	May 14	45	2
Fire Fighting Upgrade (RANKIN)	Oct 13	May 14	7	3
Sewage System Upgrade (WALLER)	Aug 06	Oct 07	14	4
Fast Track Enhancements	N/A	N/A	N/A	5
Final Materiel Release (FMR)	Oct 22	Aug 22	(2)	6
Final Operational Capability (FOC)				
Operational Release of Special Forces Upgrade	Jun 07	**Feb 20**	**153**	7
Operational Release of Torpedo Decoy	Jun 14	**Dec 17**	**42**	8
Fire Fighting Upgrade (DECHAINEUX)	Jun 14	May 22	95	9
Sewage System Upgrade (COLLINS)	Jun 14	May 18	47	9
Fast Track Enhancements (WALLER)	Jul 06	Nov 07	16	10

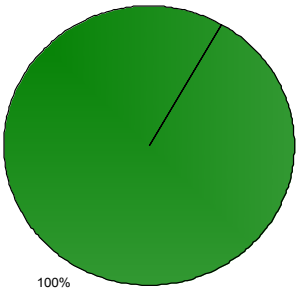
Notes	
1	Special Forces Upgrade modifications have been delayed due to the requirement to implement safety modifications identified during the manned Sea Verification Trial. These safety modifications have been installed and harbour and sea acceptance testing on HMAS *Dechaineux* completed post MCD in June 2015. **The project recently completed Sea Verification Trials for the Special Forces Exit and Re-entry capability in HMAS Dechaineux during Exercise Platypus Moon. The results of the trial demonstrated the capability successfully.**
2	Torpedo Decoy received Initial OR on 2 May 2014 by Chief of Navy. The delay in schedule has been due to a combination of delays in acceptance of the safety case and a delay in approval of the OR due to the appointment of a new Chief of Navy.
3	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.
4	IOC is linked to completion of the FOC SAT. Variance due to changes in docking maintenance schedule since original MAA.
5	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.
6	FMR dates have now been aligned to the current baselined IMS and reflected in the MAA.
7	The MAA delivery date was for HMAS *Collins* only. HMAS *Dechaineux* implementation through MAA amendment created variance. The delay was further influenced by contractor workforce constraints and the phased delivery of capability enhancements to the Special Forces systems. Operational Test and Evaluation estimated to take twelve months dependent on submarine availability and other resources. **Forecast date is February 2020.**
8	Delay in achieving IOR for the Torpedo Decoy has caused a delay to OR to allow for Navy to conduct the required Operational Test and Evaluation Period. Operational Test and Evaluation **(OT&E)** is underway a completion date **of December 2017 set be the project. This is dependent on the Navy being able to satisfy their OT&E requirements.**
9	Variance due to changes in docking maintenance schedule since original MAA. Forecast date linked to FCD completion.
10	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.



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

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** The project is currently meeting capability requirements as expressed in the MAA except for the achievement of materiel release of the Special Forces Exit and Re-entry safety modifications on HMAS *Dechaineux*. **Project has completed Sea Verification Trials for the Special Forces Exit and Re-entry capability in HMAS *Dechaineux* during Exercise Platypus Moon. The results of the trial demonstrated the capability successfully.** Refer Section 1.2 Materiel Capability Delivery Performance. **Amber:** **N/A** **Red:** N/A

Note
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Completion of the following platform upgrades on all submarines unless otherwise specified: • Special Forces Upgrade: Multi swimmer release and Float On/Float Off; • Torpedo Countermeasures; • Fire Fighting Upgrade: HMA Ships *Waller, Dechaineux and Sheean*; • Sewage System Upgrade: HMA Ships *Waller* and *Dechaineux*; • Fast-Track modifications: HMA Ships *Collins Farncomb*, *Waller* and *Rankin*; and • Other remaining subordinate projects relating to platform build deficiencies in a holistic get-well program.	Achieved
Final Materiel Release (FMR)	Completion of previous Materiel Releases (Refer Section 1) and dockings up to and including HMA Ships *Waller* and *Dechaineux*	Not yet achieved

	FCD consisting of: • Special Forces Upgrade – Outboard Stowage: HMA Ships *Collins* and *Dechaineux;* • Special Forces Upgrade – Explosive Ordnance: HMA Ships *Collins* and *Dechaineux;* and • Diesel Engine Upgrades: All Submarines (expected end HMAS *Waller* FCD (May 2020)). FMR is planned for August 2022.	

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 of delays to the FCD schedule due to other non-project related activities or other higher priority Program activities that reduce the contractors' ability to undertake project activities which would result in a schedule and cost impact to the Project.	• Aligning Project schedule with Program schedule (IMS); • Ensuring all Project Configuration Change Instructions are approved and planned into the FCD Advance Planning Letter, Maintenance Availability Change Proposal 1 & 2; • Ensure Project Materials are available for the FCD; and • Ensure the off boat and on boat activities are understood and where possible off boat work is done ahead of target FCD. • **This risk is reduced to Medium due to the proactive management of the Enterprise Governance Framework and the maturity of the project deliverables within the FCDs.**
Article VI. There is a chance that Program priorities and competing workload demands of skilled resources will impact on the availability to undertake project activities as planned because of competing priorities within the Program and the limited number of skilled resources available which would result in a schedule and cost impact to the project.	• Resolving design issues with engineering enhancements early to improve design maturity. • Coordinating the engineering enhancement workload on the ASC capped workforce. • Aligning Project schedule with Program schedule (IMS). **This risk has reduced to Medium due to a reduced likelihood of this risk occurring.**
There is a chance that the current design of the Outboard Stowages and installation options will be deficient in a number of areas (weight and pressure) due to current design solutions being unable to meet original user requirements. As a result, the number of pressure vessels may need to be reduced to overcome weight and user requirements may need to be revisited.	Project Office to seek clarification of Special Forces and platform requirements /constraints to re-confirm feasibility of design options and user requirements. • Destructive testing and modelling of preliminary design solution. • **Ensure weight and stability changes are positive and allocated of the modification via the Margins Board.** **This risk has reduced to Medium due to a reduced likelihood of the risk occurring as the design maturity increases and margins impacts are understood.**
There is a chance that Wormald HALON actuation solution does not meet the required discharge time due to system integration issues or capacity.	• Compliance requirement flowed to Wormald who have to demonstrate how this can be achieved. • System engineering (Preliminary and Detailed Design Reviews etc) will be adhered to ensure adequate review and acceptance is carried out during the design process.
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
There is a chance that current improvements required for the Fire Panel will not be implemented to meet schedule of current planned installation on HMAS Collins FCD and HMAS Sheean MCD because of the MX1 Fire Panel prototype presented requires an adaptation of backlighting solution to be effective and function appropriately in operating environment.	• **Regular meetings with stakeholders to monitor progress.** • **Development of an interim solution as a work around.**
There is a chance that the Conning Tower (CT) Upper Hatch (UH) becomes jammed ajar with divers present within the CT because of the CT UH mechanism becoming jammed or blocked.	• **Improvements of a removable link in the outboard mechanism has been installed which can be removed by the diver in the fin to allow direct operation of the hatch.** • **Improvement in the regular maintenance regime on the**

	hatch will improve its operation.
There is a chance that the Diver Air Breathing System (DABS) will require maintenance and repair on each occasion the system is utilised because of limited schedule maintenance on HMAS *Dechaineux* of the DABS system.	• Improvement in the of regular maintenance regime of the DABS Systems to reduce defects.
There is a chance that required spares to conduct Special Forces activities will be delayed due to insufficient allowance or availability.	• Work with the nominated stock item owner to ensure that sufficient sparing is procured and serviceable in accordance with operational & maintenance requirements.

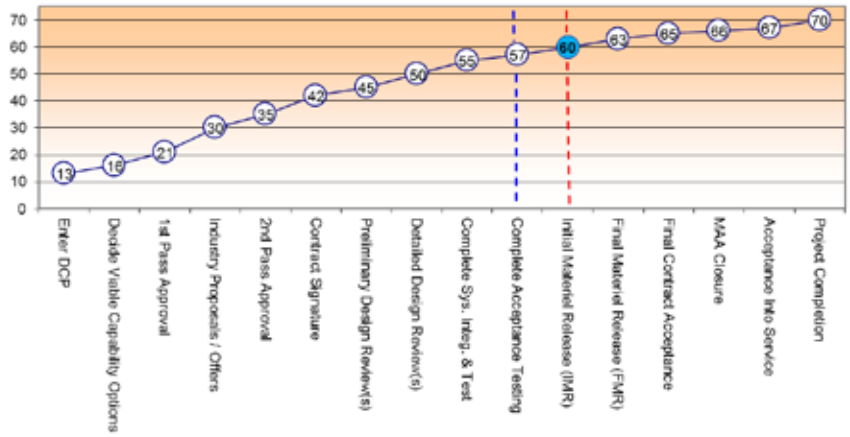
5.2 Major Project Issues

Description	Remedial Action
Special Forces Exit and Re-entry capability manned sea verification Trial was not conducted prior to HMAS *Dechaineux* Intermediate Docking due to delays in proving the system fit for purpose, driven by the continued defect of the conning tower compressible volume curtain. As a result, this capability will not meet the MAA date.	• Update all Special Forces documentation associated with the operation and support of the Special Forces Exit and Re-entry capability. • Engage SUBSAFE Board to ensure expectations are being managed and stakeholders are aligned. • Ensure configuration change instructions are approved for the design. • Assist ASC where possible in rectifying the compressible volume curtain defect and facilitate boat access to conduct required repairs and testing.
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							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	9	8	8	9	9	8	9	60
	Explanation	• Schedule: Stability in the Integrated Master Schedule has improved confidence in the project to meet its schedule delivery targets. • Technical Understanding: Majority of the project modifications are in operation and support solutions have been transferred to end users.							



2015-16 MPR Status - - - -	2016-17 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that all capability requirements are clearly defined, approved and appropriately funded before detailed acquisition planning commences.	Requirements Management
Ensure that maintenance period schedule dependencies are identified and appropriate risk management strategies developed.	Schedule Management
Consider the impact associated with long term sole source cost plus contracts.	Contract Management
Understand the competing priorities within a program (ISS Performance Term Contract) and how they will impact on individual project performance.	Schedule Management Contract Management
Responsibilities need to be clearly defined between project stakeholders in regards to the development and endorsement of trial documents and that this is identified well in advance of scheduled trials.	**Governance**

Section 8 – Project Line Management

8.1 Project Line Management in 2016-17

Position	Name
Division Head	Mr Stephen Johnson
Branch Head	CDRE John Chandler (Jul 15-**Dec 16**) **CDRE Richard Fitzgerald (Dec 16-current)**
Project Director/**Manager**	Mr Brad Hajek