

Project Data Summary Sheet¹⁵¹

Project Number	AIR 5431 Phase 3
Project Name	Civil Military Air Traffic Management System (CMATS)
First Year Reported in the MPR	2016-17
Capability Type	Replacement
Acquisition Type	Developmental
Capability Manager	Chief of Air Force
Government 1st Pass Approval	Nov 11
Government 2nd Pass Approval	Dec 14
Budget at 2 nd Pass Approval	\$731.4m
Total Approved Budget (Current)	\$975.8m
2018-19 Budget	\$115.4m
Project Stage	Contract Signature
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

AIR 5431 Phase 3 seeks to replace the current Fixed Base Defence Air Traffic Management and Control Systems at 12 Australian Defence Force (ADF) fixed base locations with a new harmonised system, referred to as the Civil Military Air Traffic Management System (CMATS). The CMATS component of AIR 5431 Phase 3 is being conducted as a joint acquisition program with Airservices Australia (Airservices). New and refurbished control towers and approach centres, and upgraded network infrastructure, is being delivered under separately funded works through the Estate and Infrastructure Group, the Chief Information Officer Group and Air Force.

1.2 Current Status

<p>Project Status AIR5431 Phase 3 was removed from the Project of Concern list on May 2018 but remains a Project of Interest.</p>
<p>Cost Performance <u>In-year</u> In-year expenditure is \$109.3m against a budget of \$115.4m. The underspend is due to delays in achieving contract award for the Australian Defence Air Traffic System (ADATS) life of type extension procurement (Autotrac II); delay in signature of CCP004 to the Airservices OSA; less than anticipated spend on contractor workforce and project management expenses; and amendments to the Air-Ground-Air engineering services contract. <u>Project Financial Assurance Statement</u> As at 30 June 2019, Project AIR 5431 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 for this 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. <u>Contingency Statement</u> The project has not applied contingency in the financial year.</p>
<p>Schedule Performance Thales achieved CMATS System Definition Review during November 2018. SDR was achieved through the application of a maturity-based approach to system requirements analysis. This approach carries forward technical debt from one design milestone to another, as requirements are only matured to a satisfactory level required for each milestone. The technical debt carried forward from SDR has yet to be comprehensively analysed and scheduled to ensure the work required to address the technical debt does not lead to delays to the Preliminary Design Review milestone, planned to occur during quarter 4 2019. A revised Materiel Acquisition Agreement (MAA) was approved on 14 January 2019, incorporating updated milestone dates and scope definition for AIR5431 Phase 3 Initial Operational Capability (IOC) planned November 2022 and Final Operational Capability (FOC) planned October 2025.</p>

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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.

As foreshadowed at the time of contract signature, the CMATS contract required a number Contract Change Proposals (CCPs) to affect the agreed Defence scope changes and address engineering changes, including Airservices options, known at the time of contract signature. Airservices have executed Three CCPs since contract signature, with a further two subject to negotiation with Thales. Execution of the CCPs is critical to stabilisation of the functional and schedule baselines.

The ability for Thales to progress the CCPs as well as performing the activities under the contract have been strained due to lower than desired staffing rates. This has resulted in the CCPs being executed serially with the consequent delays and has meant that changes are now being incorporated into the program sub optimally.

CCP3, which was to change the Capability Base Line (CBL) from the Joint Functional Performance Specification (JFPS) to the Thales System Specification (SS) was executed June 2019 and provided no schedule impact.

CCP4 was a Defence initiated CCP to correct the quantities of some items, and make changes to the interfaces for the radios. Delays in executing CCP4 has resulted in a slippage of 5.5 months to IOC due to having to insert the changes after the subcontractor had completed the original engineering. CCP4 is expected to be signed by Airservices and Thales in July 2019.

CCP5 incorporates the remaining Defence collaboration initiatives, the major one being the relocation of Townsville and Darwin Approaches into Brisbane centre. This CCP is likely to have a further impact on the schedule with the possibility of some of the Defence sites moving to the right. Thales is expected to provide a response to the CCP in SEP 2019 with a period of negotiation after that.

Defence's Independent Assurance Review conducted Quarter 1 2019, although not recommending the project go back on the project of concern list, did express concern over the Thales schedule and the optimistic dates, noting an underperformance in the schedule to date.

The Schedule Compliance and Risk Assessment Methodology (SCRAM), conducted in March 2019, determined the Thales schedule to have a significant number of logic errors and poor implementation of Monte Carlo three point estimates. The SCRAM team was not able to replicate the Thales schedule from the known activities and considered the Thales Schedule lacked credibility. Remediation activities are underway with an Integrated Baseline Review(IBR) expected Quarter 4 2019.

During this reporting period, Thales found deficiencies in the way they flowed down engineering Activities to subcontractors and initiated a Global Engineering Management Plan (GEMP) to address those shortcomings. Due to staffing, this has also had an effect on the schedule and about half the delay to IOC attributed to CCP4 was due to changes made as a result of the GEMP.

Because of the way the CCPs are looked at in isolation, and remediation of the Thales schedule based on the SCRAM recommendations, it was agreed by CASG and Air Force, to maintain the MAA as is until CCP5 and the Integrated Baseline review is completed in Quarter 4 2019.

Materiel Capability Delivery Performance

CMATS has not delivered any materiel capability to date. As a result of affordability constraints, Defence has **accommodated** a number of CMATS scope changes to deliver an equivalent capability more cost effectively. The most significant changes are:

- Airservices supplying alternative, non-CMATS Tower Air Traffic Management systems at four locations – Edinburgh, Richmond, Gingin and Oakey;
- Relocating Darwin and Townsville Approach from Darwin and Townsville to the Airservices Approach Centre in Brisbane; and
- Relocating Oakey approach from Oakey to Amberley.

CCP2, to remove Defence scope, including the tower systems for Edinburgh, Richmond, Gingin and Darwin and removal of the approach systems from Darwin, Townsville and Oakey, was agreed to by Airservices in December 2018. CCP5, to update the CMATS contract to incorporate the co-location of Darwin and Townsville approach services at the Airservices Brisbane Air Traffic Service Centre and include Oakey approach at Amberley, is planned for execution in Quarter 4 2019.

Materiel Capability is also being delivered by BAE Systems Australia for the Air Ground Air (AGA) transition solution, Raytheon for the ADATS life-of-type extension and Defence site preparation and support. Delivery of materiel capability associated with these procurements are delivered outside the On-Supply Agreement.

Note

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

1.3 Project Context

Background

AIR5431 Phase 3 will acquire a fixed Air Traffic Management (ATM) system to replace the existing Australian Defence Air Traffic System (ADATS) capability (Tower and Approach Centres) at 12 ADF fixed base locations, and a simulator system for the School of Air Traffic Control (SATC). Defence is procuring for its replacement ATM capability under AIR 5431 Phase 3, a common Civil Military Air Traffic management and control System (CMATS) through a joint acquisition and support program with Airservices, also referred to as OneSKY Australia (OneSKY).

Beyond the joint CMATS procurement, Defence is also acquiring elements necessary for successful integration of the CMATS into the broader Defence ATM system.

The strategic objectives of Airservices and Defence for the CMATS program include:

- to harmonise Australia's civil and military air traffic management systems so as to deliver improvements in safety, efficiency, flexibility, economy and business continuity and accords with the Australian Government's policy to maximise the efficiency of Australian airspace through increased cooperation and collaboration between Airservices and Defence; and

- to successfully acquire, transition, support and operate the CMATS across Australia's national airspace and every major civil and military aerodrome in Australia within agreed schedule, cost and performance constraints.

Consistent with the Government's 2013 Policy for Aviation, Defence will work jointly with Airservices as the lead agency for the CMATS, to establish a harmonised national air traffic system.

AIR 5431 Phase 3 achieved First Pass approval in November 2011 as part of a combined project with AIR 5431 Phase 2, which included combined Defence Capability Plan (DCP) capital and Net Personnel and Operating Costs (NPOC) provisions. The Project Initial Review Board (PIRB) held in November 2013, subsequently directed AIR 5431 Phase 2 and Phase 3 be presented to government as separate projects, which was noted by the Minister for Defence in March 2014. The revised DCP 2014 included AIR 5431 Phase 2 and Phase 3 as separate projects. A PIRB held April 2014 agreed to seek Second Pass for AIR 5431 Phase 3 in December 2014, vice March 2015, to better align with Airservices' project approval timeline and to mitigate the identified Defence risks with the delivery of associated facilities and communications projects.

AIR 5431 Phase 3 achieved Second Pass approval in December 2014 on the basis of tender agnostic capability, schedule and cost data provisioned by Airservices in the form of a Not-to-Exceed (NTE) price for the Defence share of the common and Defence unique elements of the CMATS. **After a period of complex negotiations**, AIR5431 Phase 3 formally returned to Government in February 2018 and was granted a RCI of \$243.0m (including contingency) to cover additional CMATS costs, a transition radio solution (AMACCS), Australian Defence Air Traffic System (ADATS) life-of-type extension and facilities preparation costs related to CMATS installation. Approval of the RCI for AIR 5431 Phase 3 included a requirement that Defence provide 6 monthly updates to Government.

The CMATS offer and negotiation process was protracted, primarily due to the difficulties experienced by Thales in producing an acceptable offer that represented value for money for Defence and Airservices, an underestimation of the time required to settle the requirements, total cost and cost attribution of a harmonised capability and alignment of customer approval processes through two separate governance structures. Notwithstanding, Airservices signed both acquisition and support contracts with Thales in February 2018.

The joint civil-military acquisition originally intended to procure a **principally** commercial off-the-shelf (or military off-the-shelf) system; however, the only compliant and viable solutions tendered all required significant development and integration effort to deliver the specified capability. Furthermore, there **were** no similar civil-military Air Traffic Management systems fielded elsewhere in the world. **Due to this**, Thales priced a large **portion** of risk into the fixed price offer to cover uncertainty in software development and site implementation. **To better manage this risk, Airservices and Thales** agreed to move from a Fixed Price to a Target Price Incentive contract, **in order to incentivise** Thales to deliver the capability at the lowest price possible. **Defence is not subject to the risks or benefits associated with the Target Price Incentive arrangement.** The Target Price Incentive model, along with improved relational governance arrangements, provide Defence and Airservices stakeholders confidence that challenges presented during contract execution can be overcome collaboratively through transparency of technical, schedule and cost risk between the parties.

Airservices' management of the contracts with Thales and on-supply to Defence will be governed by an On-Supply Agreement (OSA) **executed in** February 2018. In addition to defining the on-supply to Defence of the Defence supplies and services delivered to Airservices by Thales, the OSA is underpinned by a principles-based governance framework, aligned to that established between Airservices and Thales for the CMATS acquisition and support contracts.

The CMATS program organisation is structured to ensure Defence provides an equitable contribution towards the delivery of the CMATS. This is achieved through the implementation of a Joint Program Team consisting of both Airservices and Defence subject matter experts, a CMATS Review Group (CRG), consisting of Defence and Airservices senior representatives, and higher level forums above the CRG consisting of the Program Sponsors including CEO Airservices, Chief of Air Force and Deputy Secretary CASG. Whilst the parties have opted for a lead agency construct, the organisation is underpinned by embedded staff and decision-makers to assure that both parties' interests and requirements are addressed in terms of management of the project. However, the dual sponsorship, and the governance and stakeholder management that arises, does lead to challenges where there is a variation between the timelines of approval or organisational direction.

On 18 August 2017 the Ministers for Defence and Defence Industry announced this project as a Project of Concern. AIR 5431 Phase 3 was subsequently removed from the Project of Concern list on 8 May 2018 with the criteria for removal met at contract award. In recognition that AIR 5431 Phase 3 will remain complex and require significant governance to ensure capability, cost and schedule risks are adequately managed; AIR 5431 Phase 3 will continue to be managed as a Project of Interest.

Uniqueness

CMATS represents the first time that a Defence project is contributing to a major national infrastructure project. The December 2009 National Aviation White Paper identified the need to implement a harmonised national civil and military air traffic management system. The activities identified in the White Paper for the implementation of a comprehensive, collaborative approach to nation-wide air traffic management included the procurement of a single solution air traffic management (ATM) platform between civil and military agencies.

At the time of decision to enter into a joint project arrangement there was no history of a similar governance structure in operation that aligned with the scope of this project. As a consequence, Airservices and Defence have established and continued to refine the CMATS joint delivery structure without the benefit of adapting from proven existing models.

Major Risks and Issues

While both organisations have risk policy and practices in place, Airservices and Defence manage risk separately in accordance with their respective risk management frameworks. The CMATS joint program risk register is maintained and managed by Airservices on behalf of the CMATS program and considers risk that may collectively impact both Defence and Airservices. AIR 5431 Phase 3 operates a separate risk register for Defence specific/unique risks and issues. All major risks that have an impact on AIR 5431 Phase 3 have been disclosed, regardless of where they are managed.

During the reporting period, the risks identified for AIR 5431 Phase 3 and the CMATS joint program have shifted as a result of progress through the system design milestones and a maturing of the agreed Defence scope changes. While five risks have been retired or downgraded in severity, a number of existing risks remain, with new sources of risk emerging as identified in the following summary:

- Consolidation of approach services into Amberley approach centre and removal of four Defence towers from CMATS scope in absence of detailed definition and planning.
- Delays to the procurement of the Air Ground Air (AMACCS) transition solution may result in insufficient AGA assets to enable CMATS and Four Alternate Tower Solution (FATS) transition within the agreed contract schedule.
- Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues
- Poor scope definition, planning and a lack of dedicated and suitably skilled supplier resources for the FATS.
- The functional availability of external Defence delivered systems on CMATS implementation within the Defence ATM environment.
- Thales' Mission System design process does not recognise Defence Facilities Constraints articulated in the JASOW.
- Inadequate levels of appropriately trained Verification and Validation (V&V) personnel to support V&V activities in 2019.
- Availability of the Joint Software Support Facility in time for Rz system of systems readiness demonstration for Rz transition.
- Delayed delivery of the Support System Specification (SSS).
- Insufficient Defence and Airservices project resources to oversight system design work for PDR and Critical Design Review (CDR).
- CMATS system maturity and residual SDR technical debt.
- Alignment of the maturity-based engineering approach with the software design model and design assurance activities.
- Composition and flexibility of Thales' resource profile.
- Onerous, long-term and ongoing travel obligations associated with site acceptance integration and verification activities.
- Impact of delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2
- If consistency between different system specification documents and between Defence, Airservices and Thales is not maintained, the system solutions could be incompatible and not fit for purpose
- Transition of the Project's support services arrangement to the Major Service Provider.

The key issues impacting Airservices and Defence have remained relatively stable and continue to be actively managed, these include:

- Insufficient dependent AMACCS system assets during CMATS introduction into service will impact current operations. A procurement related risk associated with this issue that has the potential to impact transition activities for CMATS and FATS.
- The joint program has yet finalise remediation of the online SharePoint portal utilised for configuration/data management and processes to effectively implement the Program's Configuration and Data Management activities.

Other Current Related Projects/Phases

AIR5431 Phase 1 – Deployable Air Traffic Control (ATC) Capability will introduce Deployable Air Traffic Management (ATM) command and control systems into the ADF inventory.

AIR5431 Phase 2 – Fixed Base ATC Replacement Capability will replace the existing fixed base defence ATC surveillance radars.

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			
Dec 14	Original Approved (Second Pass Approval)	731.4	1
Dec 17	Real Variation – Budgetary Adjustment	(6.8)	2
Feb 18	Real Variation – Real Cost Increase	247.5	3
	Exchange Variation	3.7	
Jun 19	Total Budget	975.8	4
Project Expenditure			
Prior to Jul 18	Contract Expenditure - Airservices Australia	(127.8)	
	Contract Expenditure - Jacobs Australia – Integrated Support Contract	(21.5)	
	Other Contract Payments/Internal Expenses	(5.8)	5
		(155.1)	

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FY to Jun 19	Contract Expenditure - Airservices Australia	(96.0)	
	Contract Expenditure - Jacobs Australia – Integrated Support Contract	(5.6)	
	Contract Expenditure – Jacobs Australia – Integrated Work Package	(2.7)	
	Other Contract Payments/Internal Expenses	(5.0)	5
Jun 19	Total Expenditure		(109.3)
			(264.4)
Jun 19	Remaining Budget		711.4

Notes	
1	In addition to these direct project costs, Defence received approximately \$175m for Major Capital Facility costs and enabling ICT costs.
2	This variation is due to administrative decisions to temporarily harvest funds from the project. These funds were returned to the project as part of the RCI approved in February 2018. These funds were part of the original Second Pass approval budget.
3	A RCI of \$249.7m was approved by Government in February 2018 to cover additional costs related to the acquisition. This includes \$2.2m for Air Force to relocate the current Tindal Australian Military Airspace Control Communications System (AMACCS) air traffic control radio equipment site, leaving \$247.5m for CASG related costs (additional CMATS costs, transition radio solution (AMACCS), Australian Defence Air Traffic System (ADATS) life-of-type extension and facilities preparation costs related to CMATS installation). This figure includes the \$6.8m returned to the project to correct the Budgetary Adjustment which occurred in December 2017. Given this, the total approved RCI above Second Pass approval is \$242.9m including the \$2.2m for Air Force.
4	The total budget includes planned expenditure for the Air Ground Air Transition Solution, ADATS life-of-type extension and Defence site preparation and support. These procurements will be incorporated into Section 2.3 as each agreement is reached.
5	Other contract payments/internal expenses: Operating expenditure, contractors, minor contract expenditure and other capital expenditure not attributable to the listed contracts.

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
116.4	125.0	115.4	PBS - PAES : The variation is due to the estimated cost of the Procurement of the Autotrac II Air Traffic Control System which is the preferred option to address ADATS Life Of Type Extension Issues. PAES- Final Plan: The variation is due to re-phasing the Air-Ground-Air transition trial hardware and installation procurement and delays in finalising the Autotrac II procurement.
Variance \$m	8.6	(9.6)	Total Variance (\$m): (1.0)
Variance %	7.4	(7.7)	Total Variance (%): (0.9)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(1.0)	Australian Industry	The underspend is due to delays in achieving contract award for the ADATS life of type extension (Autotrac II); delay in signature of CCP004 to the Airservices On Supply Agreement; less than anticipated spend on contractor workforce and project management expenses; and amendments to the Air-Ground-Air engineering services contract.
			Foreign Industry	
			Early Processes	
		(5.1)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
115.4	109.3	(6.1)	Total Variance	
		(5.3)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 19 \$m			
Jacobs Australia – Integrated Support Contract	Dec 14	107.7	27.0	Variable	Modified ASDFCON	1,2

Airservices Australia	Feb 18	521.0	521.0	Fixed	On Supply Agreement	1,3
Jacobs Australia – Integrated Work Package	Dec 18	47.0	47.0	Variable	Integrated Work Package	1,4
Notes						
1	Contract value as at 30 June 2019 is based on actual expenditure to 30 June 2019 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
2	This contract is closed following the transition to a Branch wide Integrated Work Package (IWP) contract.					
3	CMATS will be procured via the Contracts (Acquisition) and (Support) between Airservices and Thales. Airservices manages both Contracts with Thales on behalf of Defence through the OSA. The agreed acquisition price of AUD \$521m was based on the agreed Airservices and Thales EUR exchange rate of 0.6722. This is not consistent with the Department of Finance exchange rates. Due to exchange rate variance, the addition of Defence approved scope and the inclusion of Contract (Support), the price of the OSA will increase over time.					
4	Contract value is the estimated Project share of the Branch IWP contract and is based on the estimate of project expenditure for 8 x 6 monthly work packages to the end of December 2022.					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 19				
Jacobs Australia	N/A	N/A	Service based integrated support.			
Airservices Australia	N/A	N/A	Through the OSA, delivery of CMATS control tower and approach centres at Amberley (including Oakey approach), East Sale, Williamtown, Tindal and Nowra, consolidated Darwin and Townsville approach services at Airservices Brisbane approach centre, CMATS control towers at Darwin, Townsville and Pearce and a simulator system at SATC.	1		
Jacobs Australia	N/A	N/A	Serviced based integrated work package.			
Major equipment received and quantities to 30 Jun 19						
Nil.						
Notes						
1	This was a result of revised schedule Control tower systems for Oakey, Gingin, Richmond and Edinburgh (also referred to as the Four Alternate Tower Solution (FATS)) will be delivered within the agreed fixed-price cap of \$521.0m. The obligation for Airservices to provide FATS was established through the OSA signed 22 February 2018. The FATS Statement of Work and Functional Performance Specification are the subject of negotiations between Defence and Airservices.					

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	CMATS System Requirements Analysis	Aug 17	N/A	Jan 18	5	1
Preliminary Design Rz	CMATS	Oct 19	N/A	Oct 19	0	2,3,4
Critical Design Rz	CMATS	Apr 20	N/A	Apr 20	0	2,3,4
Notes						
1	Airservices entered into contact with Thales for the acquisition of the CMATS in February 2018; System Requirements Analysis was achieved later than expected due to an underestimation of the effort required to develop the Functional Baseline.					
2	Dates for Preliminary Design and Critical Design are derived from the contract Delivery Schedule. The forecast dates are subject to revalidation during the Integrated Baseline Review to reflect implementation of the CMATS scope changes.					
3	Rz is the initial Defence system build for the first five Defences sites and represents the minimum software functionality for safe air traffic services at Defence sites. R1 is a software release that represents the minimum functionality required for Airservices to operate Brisbane and Melbourne Air Traffic Centres. R2 is a software release that represents the full CMATS functionality.					
4	Thales intends to conduct separate Preliminary Design Review and Critical Design Review activities for each software release for Rz, R1 and R2. The table at 3.1 will continue to be updated to reflect the design stages as the project progresses through each software release.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Rz System Integration	CMATS	N/A	TBA	TBA	0	1
System Acceptance	SATC – CMATS	Jan 22	Feb 22	Feb 22	1	4
	RAAF Base East Sale – CMATS	May 22	N/A	May 22	0	
	RAAF Base Amberley – CMATS	Jun 22	N/A	Jun 22	0	
	RAAF Base Edinburgh – FATS	Jun 22	TBA	TBA	0	2
	RAAF Base Pearce – CMATS	Oct 22	Nov 22	Nov 22	1	4
	RAAF Base Gingin – FATS	Oct 22	TBA	TBA	0	2

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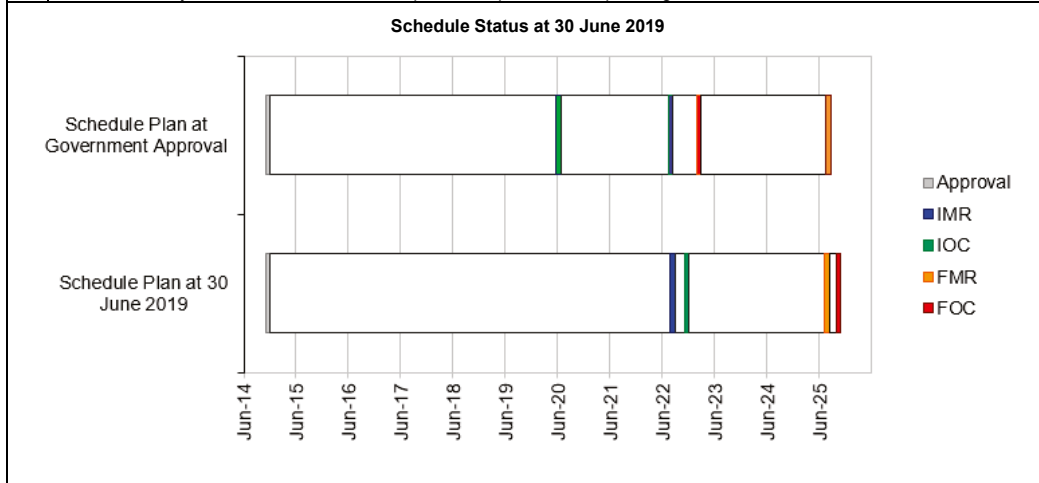
	RAAF Base Tindal – CMATS	Nov 22	N/A	Nov 22	0	
	Army Aviation Centre Oakey – FATS	Nov 22	TBA	TBA	0	2
	RAAF Base Townsville – CMATS	Nov 23	Nov 24	Nov 24	12	4
	Naval Air Station Nowra – CMATS	Mar 24	Nov 24	Nov 24	8	4
	RAAF Base Williamtown – CMATS	Apr 24	Oct 24	Oct 24	6	4
	RAAF Base Darwin – CMATS	Apr 24	Oct 24	Oct 24	6	4
	RAAF Base Richmond – FATS	May 24	TBA	TBA	0	2
Rz System Acceptance	CMATS	Aug 22	N/A	Aug 22	0	3
R1 System Acceptance	CMATS	Jul 24	N/A	Jul 24	0	
R2 System Acceptance	CMATS	Feb 25	N/A	Feb 25	0	
Final Acceptance	CMATS	Aug 25	N/A	Aug 25	0	

Notes	
1	These dates are expected to be updated once the Integrated Baseline Review is complete.
2	The Current Planned and Forecast dates are expected to be updated once the FATS agreement is in place.
3	Rz System Acceptance includes East Sale Tower and Approach (including the School of Air Traffic Control (SATC)), Amberley Tower and Approach including consolidated Oakey Approach and Edinburgh FATS Tower. The selected sites constitute the AIR 5431 Phase 3 IOC, as the combination of these sites demonstrates all possible system variants for Defence's portion of the CMATS system.
4	The delay is due to the execution of Contract Change Proposal 2 in December 2018 which changed to schedule logic for the software builds post Release 1.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Aug 22	Aug 22	0	1
Initial Operational Capability (IOC)	Jun 20	Nov 22	29	2
Final Materiel Release (FMR)	Aug 25	Aug 25	0	1
Final Operational Capability (FOC)	Jun 23	Oct 25	28	2

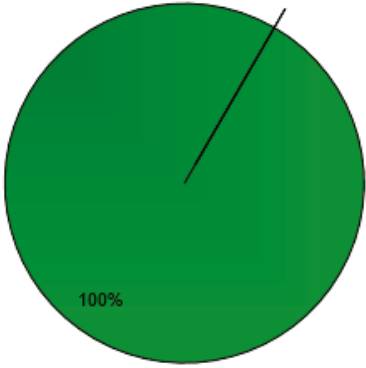
Notes	
1	The IMR and FMR milestones reflect the revised MAA signed January 2019.
2	The initial delay to IOC and FOC is due to a protracted period of complex negotiations between the customer and Thales.



Notes	
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	
 <p>100%</p>	<p>Green: The project expects to meet the capability requirements as expressed in the Joint Project Directive, Materiel Acquisition Agreement and relevant Technical Regulatory Authority. While a number of Defence related scope changes have been agreed (i.e. Airservices supplying an alternate non-CMATS Tower solution at four Defence sites – Edinburgh, Richmond, Gingin and Oakey; relocating Darwin and Townsville approach from Darwin and Townsville to the Airservices Approach Centre in Brisbane; and relocating Oakey Approach from Oakey to Amberley) these will not impact on the safe delivery of Defence air traffic services.</p> <p>Amber: N/A</p> <p>Red: N/A</p>
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)	Amberley, East Sale (including SATC) and Edinburgh transitioned from ADATS. Forecast achievement date August 2022 .	Not yet achieved
Initial Operational Capability (IOC)	Amberley, East Sale, SATC and Edinburgh have been accepted into Operational service. Forecast achievement date November 2022.	Not yet achieved
Final Materiel Release (FMR)	Delivery of all CMATS material system elements configured to the final system build. Forecast achievement date August 2025 .	Not yet achieved
Final Operational Capability (FOC)	All Defence Sites have been accepted into operational service. Forecast achievement date October 2025.	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
Poor provision of Customer Furnished Materials, Supplies and Services including non-compliance of, deficiencies in, or unavailability of CIOG and E&IG infrastructure and networks, will result in the customer impacting the contracted schedule.	This risk has been reassessed as Medium due to effective and regular engagement with service providers and suppliers, building confidence through working groups and configuration change boards.
Delays to the procurement of the Air Ground Air (AMACCS) transition solution may result in insufficient AGA assets to enable CMATS and FATS transition within the agreed contract schedule.	Progress urgent acquisition of the AGA transition solution design and associated equipment, using the Survey and Quote provisions of the AMACCS support contract with BAE. Strategies such as progressive delivery and concurrent build, installation and testing are being considered to meet site schedule constraints.
The current approach to aggregate CMATS data within the Defence network may not satisfy the requirements for the Civil Aviation Safety Authority (CASA) accreditation.	This risk has been retired following confirmation through that the Defence network architecture is capable of meeting the anticipated necessary regulatory/safety requirements.
Accreditation of CMATS to operate as Protected may be impacted as a result of existing Defence and Airservices infrastructure and systems not meeting the security requirements or further due to CMATS design and boundary issues.	Implement recommendations articulated in the plan developed by the INFOSEC Registered Assessors Program (IRAP) assessor, outcomes from this activity will be input into the joint security working group to develop the CMATS accreditation plan.
A lack of coordination between Airservices and Defence during development and implementation of the Defence/Airservices network gateway may lead to an impact on the delivery and performance of dependent Customer Furnished Services (CFS).	This risk has been downgraded to Medium due to more effective and coordinated engagement between Airservices and Defence.

Project Data Summary Sheets

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Agreement to consolidate Darwin and Townsville approach services into the Airservices Brisbane approach centre, Oakey approach services into Amberley and removal of four Defence towers (Richmond, Edinburgh, Gingin and Oakey) from CMATS scope in absence of detailed definition and planning, may impact the achievement of Preliminary Design Review (PDR) and create dependency complexity.	The OSA established the high-level agreement for the CMATS scope changes. In line with this agreement, progress remaining CCPs to remove and/or change the CMATS requirements as well as identify and agree requirements outside of CMATS to reflect the agreed scope changes.
Poor scope definition, planning and a lack of dedicated and suitably skilled supplier resources, may impact the delivery of the Four Alternate Tower Solution (FATS) at Richmond, Edinburgh, Gingin and Oakey.	Defence have engaged additional resources to provide close management of the FATS agreement development.
Achievement of SDR exit may be impacted by the Contractor's inadequate resource profile, a failure of the Parties appropriately specifying system interface requirements and convergence of the safety system of system consolidation work required for SDR maturity and the Functional Baseline.	This risk has been retired following achievement of SDR exit in November 2018.
A failure of the Prime System Integrator (PSI) to align parallel system engineering activities, such as identification and management of interfaces, dependencies and system of systems deliverables, may result in omissions or rework in the development and delivery a system of systems solution.	This risk has been retired following achievement of SDR exit in November 2018.
Implementation of CMATS within the Defence ATM environment may be impacted by the functional availability of external Defence delivered systems, potentially limiting the ability of the Defence portion of the ATM solution to meet regulatory and licencing requirements.	Air Force are engaged through the Stakeholder Working Group (SWG) to analyse each function end-to-end to establish those systems that don't meet the availability requirements and identify possible mitigation options for shortfalls.
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
Thales' Mission System design process does not recognise Defence Facilities Constraints articulated in the JASOW, this may lead to schedule delay and cost transfer from Thales to the customer.	Defence are closely monitoring the CMATS design process to raise areas of concern early, as well as ensure the Systems Engineering Management Plan includes customer constraints.
An inadequate level of appropriately trained Verification and Validation (V&V) personnel to support Voice Communication Services and Airfield Management Services V&V activities in 2019, may lead to system acceptance of test results non-compliant with JFPS requirements, resulting in delays and rework.	Action is being taken to source additional resources through the Major Service Provider (Jacobs) and suitable courses identified to ensure personnel are trained in the conduct of V&V activities.
The Joint Software Support Facility may not be available or operationally effective in time for demonstrating Rz system of systems readiness for Rz transition, this may cause delays to commissioning at Rz sites.	This risk is being addressed via a provisional acceptance process through each functional baseline validation and regression testing. Identification of alternate acceptance strategies for Defence sites may be required.
Delivery of the Support System Specification (SSS) has been delayed; this is a key product for the determining the Allocated Baseline (ABL) for PDR and may result in schedule delays to the PDR milestone.	The Thales Global Engineering Management Plan will reinforce baseline management and configuration management and verify and drive alignment through the Technical Review Meetings (TRM).
A lack of Defence and Airservices project resources may impact oversight of system design work as it relates to PDR and Critical Design Review (CDR) milestones, and progress on the Human Machine Interface and Automation (HMI&A) de-risking workshops, leading to fitness for purpose issues and potential schedule delays.	The organisational structure and resource allocation to work packages is designed to enhance flexibility within the CMATS program and tailored to focus on strategic elements against maturity goals.
CMATS system maturity and residual SDR technical debt may impact the progression of the ABL through the PDR, CDR and Test Readiness Review (TRR) milestones, resulting in schedule impacts to Rz sites, with the potential for flow on effects to R1 and R2 implementation.	Early PDR planning at SDR exit identified a need for the customer to focus on oversight and assurance of the system maturity profiles, areas of technical debt and reinforce Thales' role as the Prime System Integrator.
The maturity-based engineering approach adopted for CMATS requirements analysis may not align with the software design model and design assurance activities prescribed by the relevant industry standard.	A plan to satisfy the software design assurance objectives has been jointly developed between the Customer and Thales.
Thales' resource profile lacks flexibility and the necessary composition of skills to concurrently deliver the requirements for PDR and CDR milestones, cater for ECPs and CCPs and any emergent scope should it arise. This risk is compounded by staff turnover, leading to productivity inefficiencies and potential schedule delay.	Ongoing monitoring of Thales' progress to address resourcing composition is occurring through the Program Review Board. Independently, Thales are implementing the Thales Global Engineering Maturity Plan to consolidate transverse engineering activity and enhance consistency of artefacts.

Site acceptance and the quality of site integration and verification activities, may be impacted by a requirement to support onerous, long-term and ongoing travel obligations.	Strategies that focus on the recruitment of suitably skilled resources within proximity of each sites is being undertaken.
Delays to the delivery of the Fixed Base Radar system under Project AIR5431 Phase 2 may impact development and transition into service of CMATS.	Alternate sources of radar data required to enable CMATS design, test and evaluation and verification and validation activities are being investigated. Options for live data sources to support operations are also being considered.
If consistency between different system specification documents and between Defence, Airservices and Thales is not maintained, the system solutions could be incompatible and not fit for purpose	Defence teams will undertake conformance checks between key documents, and specifically assess the service delivered over interfaces as part of the test and evaluation program prior to final delivery
The increased cost of the Major Service Provider contract, compared to the original Integrated Support Contract, may exceed the available budget, resulting in less support being provided or an increase in costs, leading to project delays or a requirement to seek additional funds	The Project is monitoring the cost of resources within affordability constraints. Strategies to treat funding shortfalls might include a reduction in the joint support Defence provide to the Joint Project Team above the OSA requirement, a reduction in the oversight of supplier deliverables to free up resource availability and an increase to APS and ADF placements.

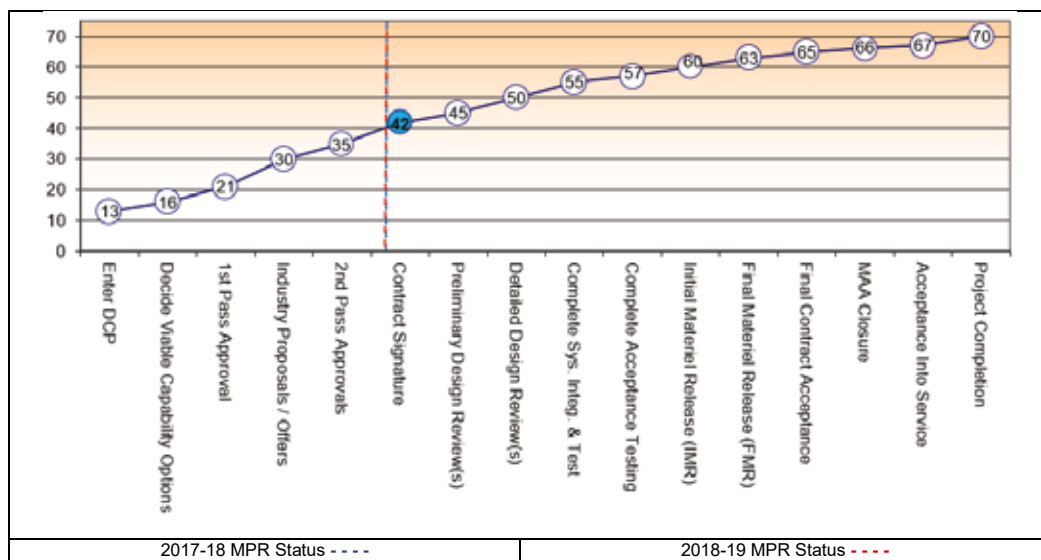
5.2 Major Project Issues

Description	Remedial Action
AIR 5431 Phase 3 is unable to introduce CMATS into service without impacting current operations due to insufficient dependent AMACCS system assets.	While procurement activity for the Air Ground Air (AGA) transition solution has commenced there is uncertainty on the availability of new generation AMACCS assets and viable fall-back options for ongoing delays in execution of the AGA transition contract with BAE.
The joint program has yet finalise remediation of the online SharePoint portal utilised for configuration/data management and processes to effectively implement the Program's Configuration and Data Management activities.	Additional configuration and data management resources have been brought on to support design and process reform, however progress towards upgrading the existing configuration management tool is still ongoing.
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	6	6	6	6	6	6	6	42
Contract Signature	Project Status	5	6	6	6	6	6	6	41
	Explanation	<ul style="list-style-type: none"> Schedule – The contracted schedule will require significant modification to reflect the agreed Defence CMATS de-scoping options. Schedule confidence should increase after Integrated Baseline Review. 							



Section 7 – Lessons Learned

7.1 Key Lessons Learned

Description	Categories of Systemic Lessons
Set up the Governance structure earlier in the process – the decision regarding lead agency and harmonisation was determined at a strategic level without detailed analysis of the nuances between the two organisations. Although there is now a robust governance structure in place, there are still areas of disunity that are now difficult to change.	Governance
Better communication with Stakeholders - although the establishment of joint project was at the direction of a harmonisation initiative of the Government, the joint project has been slow to re-engage with stakeholders, up to and including Government, to seek refined direction based on prevailing and emerging risks and issues.	Contract management/Governance
A lack of resources at the initiation stage of the project, and during the preparation of the Request For Tender, can create a significant technical and stakeholder management debt that will affect the ability to agree on requirements, forecast a realistic schedule and determine future workforce requirements.	Resourcing
Whilst waiting to initiate dependant projects (i.e. facilities) 'just in time' increases the risk of delays to the delivery of prime mission system, starting dependant projects too early can result in them being delivered so far in advance of the prime mission system, that the outputs of the dependant project no longer satisfy the 'evolved' mission system intent.	Schedule Management
As a result of long-running schedule maturity issues, it is recommended that long-term planning beyond the nearest major milestone is essential to reducing program risk and sub-optimal short-term planning, and furthermore schedule logic applied to the Contract Master Schedule (CMS) must reflect the logic identified in the contract to ensure activities are sequenced according to precedence and priority.	Schedule Management
Aggressive timeframes to meet schedule milestones often results in compressed timeframes to engage stakeholders (operational, engineering/technical and strategic), leading to compromises to proper requirements management. Consequently, a schedule needs to be developed to include opportunities for specified periods of stakeholder consultation and alignment during the capability delivery life-cycle.	Schedule Management/Governance

Section 8 – Project Line Management

8.1 Project Line Management as at 30 Jun 2019

Position	Name
Division Head	Mr Ivan Zlabur
Branch Head	AIRCDR Phil Tammen
Project Director	GPCAPT Darren Spee
Project Manager	WGCDR Terry Atkinson

