

Project Data Summary Sheet¹⁴⁷

Project Number	LAND 75 Phase 4
Project Name	Battlefield Command Systems
First Year Reported in the MPR	2015-16
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Army
Government 1st Pass Approval	Aug 13
Government 2nd Pass Approval	Aug 13 (Work Package A)
Budget at 2nd Pass Approval	\$319.0m
Total Approved Budget (Current)	\$367.9m
2017-18 Budget	\$30.6m
Project Stage	Final Contract Acceptance
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

LAND 75 Phase 4 **increased** and **enhanced** Army's networked force acquired under LAND 75 Phase 3.4. The Battle Management System Command and Control (BMS-C2) **provides** tactical and operational commanders with enhanced situation awareness tools, evolved command and control, extend the capability into the armoured fighting vehicle fleets and enrich training and simulation to provide a collaborative approach to complex warfighting.

LAND 75 Phase 4 was initially divided into four work packages consisting of:

- Work Package Alpha (WP-A) - **Approved**. This work package **expanded** the basis of provisioning for M113AS4 (Armoured Personnel Carriers), Protected Mobility Vehicles and G-Wagon.
- Work Package Bravo (WP-B) - **Approved**. This work package seeks to integrate the BMS-C2 into additional vehicle platforms.
- Work Package Charlie (WP-C) - **Approved**. This work package seeks to implement a mature BMS-C2 training solution.
- Work Package Delta (WP-D) - **Approved**. This work package seeks to extend the functionality of the BMS-C2 to support formation headquarters and enhance the **interoperability with joint and coalition systems**.

Land 75 Phase 4 Work Packages B, C and D are **now** considered under Land 200 Tranche 2 **which was approved by Government in September 2017**. LAND 75 Phase 4 Work Package Alpha is a continuation of LAND 75 Phase 3.4 from the Major Projects Report of 2014-15. Under LAND 75 Phase 3.4, the Commonwealth implemented the core Battle Group and Below – Command, Control and Communications (BGC3) system capability for the Australian Defence Force's Land Force.

LAND 75 Phase 4 WP-A **provided** additional quantities of BGC3 to:

- 294 M113AS4 (Armoured Personnel Carriers),
- 255 Protected Mobility Vehicles,
- 401 G-Wagon Vehicles, and
- 10 Engineering kits.

LAND 75 Phase 4 WP-A **has** also:

- **Designed and integrated the** BGC3 into the Protected Mobility Vehicle Air Defence Variant (PMADV), and
- **Enhanced** the BGC3 capabilities through extension of the BGC3 Variable Message Format (VMF).

In October 2014, Government approved project closure arrangements for LAND 200 Tranche 1 that finalised the transfer of M113AS4 BGC3 installation activities to LAND 75 Phase 4 from LAND 75 Phase 3.4 that was originally agreed by Government as part of the 2012 Federal Budget.

147 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.

Following Government 1st Pass approval in August 2013, the Commonwealth conducted a series of Risk Reduction Activities (RRA). These activities allowed further development, refinement and validation of key requirements and operational concepts through the use of Concept Demonstrators to inform future Government consideration. **These activities concluded in November 2015.**

1.2 Current Status

Cost Performance

In-year

In-year expenditure of **\$28.4m** resulted in an underspend of **\$2.2m** against a budget of **\$30.6m**. **The underspend against phasings is due to the delay in the delivery of a Milestone assessment report for the Specific Absorption Rate Survey and Quote.**

Project Financial Assurance Statement

As at 30 June 2018, project LAND 75 Phase 4 has reviewed the projects approved scope and budget for those elements required to be delivered by Defence. 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, **including contingency**, remaining for the project to complete against the agreed scope.

Contingency Statement

The project **has** applied contingency in the financial year **primarily for the completion of risk reduction activities related to the M1A1 Tank Weapons Integrated Battle Management System to reduce technical and commercial risk to LAND 200 Tranche 2 and LAND 400 Phase 2. This work concluded in May 2018.**

Schedule Performance

In the 2012 Federal Budget, the Government moved Battle Management System (BMS) installation into M113AS4 **Armoured Personnel Carrier (APC)** from LAND 75 Phase 3.4 to the then unapproved LAND 75 Phase 4 WP-A, leaving design activities with LAND 75 Phase 3.4. In the Government Approval of WP-A in 2014 the remaining M113AS4 APC design work was transferred from LAND 75 Phase 3.4 to LAND 75 Phase 4 WP-A.

LAND 75 Phase 4 WP-A has achieved Initial Materiel Release (IMR), with the completion of 36 **Bushmaster** Command Variant vehicles. The project **has completed all installations of** the BGC3 system into vehicles in accordance with the materiel release milestones.

The project has conducted design and system testing on the full scope of VMF messages delivered under WP-A. System level regression testing (Conformance to standard testing) **was completed** as a single test Program synchronised with In Service Support Release.

The installation of the **Bushmaster** Air Defence Variant **was completed in** July 2017.

In the 2013 Government Approval of LAND 75 Phase 4 there is no Initial Operational Capability (IOC) and Final Operational Capability (FOC) linked to LAND 75 Phase 4 WP-A. IOC and FOC are linked to WP-B-D, which is **now an** element of **LAND 200 Tranche 2**.

The **now approved** scope of Land 75 Phase 4 Work Packages B, C and D are considered under Land 200 Tranche 2 which **was approved by** Government in **September 2017**. Final Materiel Release (FMR), **achieved in December 2017, constituted** the final deliverable for the Project.

Materiel Capability Delivery Performance

The project achieved Initial Materiel Release (IMR) of 36 PMCV BGC3 installed vehicles in June 2016.

The project achieved Final Materiel Release (FMR) **in December 2017**.

Note

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

1.3 Project Context

Background

LAND 75 Phase 4 WP-A received Government Combined First and Second Pass Approval in August 2013. LAND 75 Phase 4 WP-A is a Contract Change Proposal (CCP) to the BGC3 Contract. The CCP was executed with the Prime Contractor on 19 December 2013.

LAND 75 Phase 4 WP-A has delivered additional BGC3 installed into the following platforms:

- 36 **Bushmaster** Protected Mobility Command Vehicle (PMCV),
- 126 **Bushmaster** Protected Mobility Troop Vehicle (PMTV),
- 61 **Bushmaster** Protected Mobility Ambulance Variant (PMAV),
- **20 Bushmaster Protected Mobility Air Defence Variant (PMADV)**,
- 12 **Bushmaster** Protected Mobility Electronic Warfare (PMVEW) vehicle installation kits,
- 5 **Bushmaster** PMCV engineering vehicle installation kits,
- 5 **Bushmaster** PMTV engineering vehicle installation kits,
- 26 G-Wagon General Service Vehicles,
- 123 G-Wagon Manoeuvre Vehicles,
- 123 G-Wagon upgrades from General Service Vehicle to Manoeuvre Vehicle,
- 129 G-Wagon Command and Control vehicle installation kits, and
- 294 M113AS4 Armoured Personnel Carriers.

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<p>Uniqueness</p> <p>The capability being delivered under LAND 75 Phase 4 WP-A is a continuation of the capability delivered under LAND 75 Phase 3.4. LAND 75 Phase 4 WP-A does contain design development for the PMADV variant of Bushmaster, which is based largely on the Command Vehicle design delivered under LAND 75 Phase 3.4. The software development of enhanced variable message format (VMF) BGC3 interoperability capability does introduce software engineering development scope.</p>
<p>Major Risks and Issues</p> <p>Nil.</p>
<p>Other Current Sub-Projects</p> <p>LAND 200 Tranche 2: This project expands LAND 200 Tranche 1 capability across Army with new collaborative planning, control and monitoring tools for Brigade and Divisional level headquarters and integrates the system into additional platforms. The Battlefield Command System comprises of two major sub-systems:</p> <ul style="list-style-type: none"> • Battle Management System (BMS) – a digital military planning and monitoring system with an electronic battle map which displays combat related data; including navigation information, task overlays, orders and messages. Friendly force positions are automatically updated and enemy force positions are updated by staff and external systems, and • Tactical Communications Network (TCN) – mobile, highly secure, communications infrastructure that provides voice services and data distribution for the BMS and other combat systems.
<p>Note</p> <p>Major risks and issues are excluded from the scope of the review.</p>

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Nov 13	Original Approved (Combined Pass Approval)	319.0	1
Jun 15	Real Variation – Real Cost Increase	8.5	2
Jun 18	Exchange Variation	40.4	
Jun 18	Total Budget	367.9	
Project Expenditure			
Prior to Jul 17	Contract Expenditure – Elbit Systems Limited	(296.3)	3
	Other Contract Payment / Internal Expenses	(25.9)	4
		(322.2)	
FY to Jun 18	Contract Expenditure – Elbit Systems Limited	(22.6)	3
	Other Contract Payment / Internal Expenses	(5.9)	5
		(28.5)	
Jun 18	Total Expenditure	(350.7)	
Jun 18	Remaining Budget	17.2	
Notes			
1	This project's original budget amount represents a combined First and Second Pass for Work Package Alpha as well as a First Pass for Work Package Bravo to Delta.		
2	Real Cost Increase for M113AS4 design effort from LAND 75 Phase 3.4.		
3	Expenditure against LAND 75 Phase 4.		
4	Other expenditure comprises: Contractor Support (\$12.1m), Operating Expenditure (\$6.9m), Consultants (\$6.3m), Minor Capital (\$0.6m) and expenditure not attributable to the Prime contract.		
5	Other expenditure comprises: Contractor Support (\$2.9m), Consultants (\$2.2m), Operating Expenditure (\$0.7m), Minor Capital (\$0.1m) and expenditure not attributable to the Prime contract.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
24.6	30.0	30.6	PBS-PAES: The variation relates to later than expected WP-A final acceptance and physical configuration audit activities as mentioned in section PDSS 3.1 Physical configuration audit activities from the prior financial year, and paid for in this financial year, as mentioned in Section 3.1 of the PDSS. PAES-Final Plan: The Variation relates to a PRE-ERC and PBS exchange rate update. .
Variance \$m	5.4	0.6	Total Variance (\$m): 6.0
Variance %	22.0	2.0	Total Variance (%): 24.4

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
			Australian Industry	The underspend against phasings is due to the delay in the delivery of a Milestone Assessment Report for the Specific Absorption Rate Survey and Quote.
		(2.2)	Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
30.6	28.5	(2.2)	Total Variance	
		(7.2)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 18 \$m			
Elbit Systems Limited	Dec 13	204.3	337.4	Variable	ASDEFCON	1,2,3
Notes						
1	This includes escalation on the Milestone as the contract is in Base Date Quarter three 2007 prices.					
2	The increase in contract value is due to the Survey and Quote 044 activities.					
3	Contract value as at 30 June 2018 is based on actual expenditure to 30 June 2018 at current exchange rates, and includes adjustments for indexation (where applicable).					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 18				
Elbit Systems Limited	666	960	BGC3 installed into M113, PMV and G-Wagons	1,2,3		
Major equipment received and quantities to 30 Jun 18						
Bushmaster Protected Mobility Vehicle Command Variant (PMCV) – 36						
Bushmaster Protected Mobility Vehicle Troop Variant (PMTV) – 126						
Bushmaster Protected Mobility Ambulance Variant (PMAV) – 61						
Bushmaster Protected Mobility Air Defence Variant (PMADV) – 20						
Bushmaster Protected Mobility Vehicle Electronic Warfare (PMEW) – 12						
Bushmaster Protected Mobility Vehicle Command Variant (Engineering Quantities) – 5						
Bushmaster Protected Mobility Vehicle Troop Variant (Engineering Quantities) – 5						
G-Wagon General Service Variant – 26						
G-Wagon Manoeuvre Variant – 123						
G-Wagon General Service Variant to Manoeuvre Variant Upgrade – 123						
G-Wagon Command and Control Variant – 129						
M113AS4 Armoured Personnel Carrier – 294						
Notes						
1	CCP 019 executed on 19 December 2014 for the supply of BGC3 vehicle installation kits for M113AS4.					
2	CCP 022 executed on 9 December 2015 for the installation of BGC3 vehicle installation kits into the M113AS4.					
3	Survey and Quote 044 executed on 28 March 2017 for the installation of BGC3 vehicle installation kits into the PMADV.					

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Preliminary Design	PMADV	Jun 14	Sep 14	Jan 15	7	1
Detailed Design	M113AS4 APC	Dec 11	N/A	Feb 15	38	2
	PMADV	Dec 15	Nov 15	Mar 16	6	3
Functional Configuration Audit	M113AS4 APC	Sep 15	N/A	Oct 15	1	
	PMADV	Nov 15	Mar 17	Jun 17	19	4
	VMF Software	Mar 17	N/A	N/A		5
Physical Configuration Audit	M113AS4 APC	Sep 15	N/A	Oct 15	1	6
	PMADV	Nov 15	Apr 17	Jun 17	19	4
	VMF Software	Mar 17	N/A	N/A	4	5
Notes						
1	Delays due to the availability of Government Furnished Equipment.					
2	Delays in LAND 75 Phase 3.4 due to complex design issues.					
3	Delays by contractor not achieving entry criteria for Detailed Design PMADV.					
4	Delays by contractor not achieving entry criteria for Functional Configuration Audit and Physical Configuration Audit for PMADV.					
5	Final release to be synchronised with In Service Support Release.					
6	Delays due to approval of user handbooks and manuals.					

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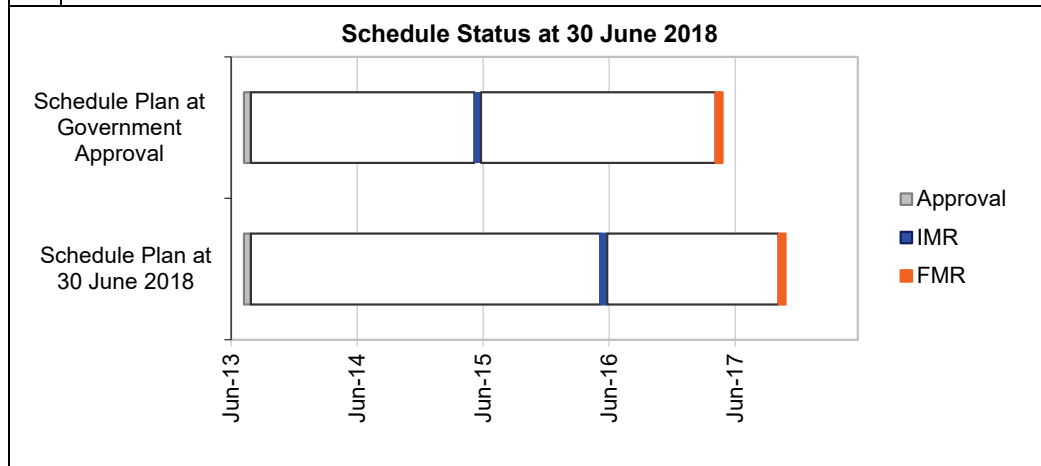
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3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
Conformance to Standard Testing	VMF Software	Nov 16	N/A	N/A	(2)	1, 2
First Article Factory Testing	PMADV	Jul 16	N/A	Dec 16	5	3
Notes						
1	System integration was completed under LAND 75 Phase 3.4.					
2	Conformance to standard testing was completed as a single test program synchronised with In Service Support Release.					
3	Delays due to approval of acceptance test report.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Jun 15	Jun 16	12	
Materiel Release 2	Feb 16	Dec 17	22	2
Materiel Release 3	Mar 16	Dec 17	21	2
Materiel Release 4	Nov 16	Dec 17	13	3
Materiel Release 5	Dec 16	Dec 17	12	2
Materiel Release 6	Mar 17	Dec 17	9	4
Final Materiel Release (FMR)	Jun 17	Dec 17	6	4,5,6
Notes				
1	Installations for IMR were delivered in July 2015, However the achievement of IMR did not occur until June 2016 after design acceptance was achieved.			
2	Delayed due to provision of Government Furnished Equipment to Contractor. Delivery of Supplies achieved in June 2017. Materiel Release achieved in December 2017.			
3	Delivery of Supplies achieved in February 2016. Materiel Release achieved in December 2017.			
4	Delayed due to provision of Government Furnished Equipment to Contractor. Delivery of Supplies was achieved July 2017. Materiel Release achieved in December 2017.			
5	The now approved scope of Land 75 Phase 4 Work Packages B, C and D has been transferred to Land 200 Tranche 2. FMR achieved in December 2017 constituted the final deliverable for the Project.			
6	There is no Initial Operational Capability (IOC) and Final Operational Capability (FOC) linked to LAND 75 Phase 4 Work Package A. IOC and FOC are linked to Work Packages B-D.			



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	
	<p>Green: The project has met capability requirements as expressed in the Material Acquisition Agreement and supporting suite of capability definition documentation.</p>
	<p>Amber:</p> <p>N/A</p>
	<p>Red:</p> <p>N/A</p>
<p>Note</p> <p>This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.</p>	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	Delivery of 36 installed BGC3 Bushmaster PMCV vehicles. Installations for IMR were delivered in July 2015. However, the achievement of IMR did not occur until June 2016 after design acceptance was achieved.	Achieved.
Final Materiel Release (FMR)	FMR requires the following to be delivered: 36 installed BGC3 Bushmaster PMCV vehicles, 123 BGC3 G-Wagon upgrades from GSV to MNV vehicles, 123 installed BGC3 G-Wagon MNV vehicles, 26 installed BGC3 G-Wagon GSV Dual Cabin vehicles, 126 installed BGC3 Bushmaster PMTV vehicles, 61 installed BGC3 Bushmaster PMAV vehicles , 12 BGC3 Bushmaster PMVEW vehicle installation kits, 5 BGC3 Bushmaster PMCV engineering vehicle installation kits, 5 BGC3 Bushmaster PMTV engineering vehicle installation kits, 129 BGC3 G-Wagon Command and Control vehicle installation kits, 294 installed BGC3 M113AS4 Armoured Personnel Carriers, additional VMF messages and 20 installed BGC3 Bushmaster PMADV vehicles. FMR achieved in December 2017.	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
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2017-18)	
Description	Remedial Action
N/A	N/A

5.2 Major Project Issues

Description	Remedial Action
N/A	N/A

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

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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	9	10	9	9	9	9	65
Final Contract Acceptance	Project Status	10	9	10	10	9	10	10	68
	Explanation	<ul style="list-style-type: none"> • Technical Understanding – Operational Test and Evaluation activities has confirmed the suitability of the design for its intended used with all supplies transitioned to in service support arrangements. • Commercial – The Contractor has achieved Contract Final Acceptance and selected as the Prime Contractor for LAND 200 Tranche 2 Battle Management System. • Operations and Support – The materiel and support system are fully operational. 							

Project Stage	Maturity Score
Enter DCP	13
Decide Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Offers	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ. & Test	55
Complete Acceptance Testing	57
Complete Acceptance (IMR)	60
Initial Materiel Release (FMR)	63
Final Materiel Release (FMR)	65
Final Contract Acceptance	66
MAA Closure	67
Acceptance Into Service	67
Project Completion	70

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 8 – Project Line Management

8.1 Project Line Management in 2017–18

Position	Name
Division Head	RADM Tony Dalton (to – Aug 17) Mr Ivan Zlabur (Sep 17 – current)
Branch Head	Ms Alison Petchell
Project Director/Manager	LTCOL Rob Gunn

