




MAJOR PROJECTS REPORT 2016

1 July 2015 – 30 June 2016

Volume 2

New Zealand DEFENCE FORCE
Te Ope Kātua O Aotearoa
NAVY NZARMY AIR FORCE

New Zealand MINISTRY OF DEFENCE
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PART 3A: PROJECT DATA SHEETS

C-130H LIFE EXTENSION

Project Description: This project is extending the life and availability of the five RNZAF C-130H Hercules aircraft for airlift and transport tasks through to at least 2020. This is being achieved by upgrading the avionics, flight deck communications, navigation, mechanical and self-protection systems as well as extensively refurbishing the airframe structure. The project is also procuring a part task trainer to assist pilot conversion training.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the Major Projects Report, Volume 3.

SECTION 1: ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once defence industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of Acquisition Phase

Description of acquisition work

Based on the Operational Requirements Document, the acquisition project team commenced a tender process in July 2003, and issued five requests for tender to short-listed companies. Four 'Best and Final Offers' were assessed and L3-Spar was selected as the preferred contractor in May 2004. Defence considered that L3-Spar offered the best value for money while presenting the most acceptable level of risk. The contract was signed on 14 December 2004 to cover the upgrade of New Zealand's five C-130H aircraft.

Throughout 2006 and 2007, the acquisition project team prepared a contract variation to enhance the C-130H's self-protection system. On 1 May 2007, the procurement of a modern missile approach warning system was confirmed.

The closure of L3-Spar and its Edmonton facility was announced on 22 January 2009 following the loss of its Canadian Defence contract. Prior to this closure, L3-Spar had completed the majority of the prototype aircraft's refurbishment work and its initial flight test programme. Defence implemented a transition plan to ensure that parent company, L-3 Communications, fulfilled the remaining contractual obligations from its facility in Waco, Texas.

L-3 Integrated Systems took over the programme, with key personnel, equipment and data transferred to Waco by 31 July 2009. The first and second aircraft to be upgraded were re-located to Waco in July and August 2009 respectively. The first of these aircraft was Provisionally Accepted in October 2010 and the second in November 2010.

The ongoing delay in delivery of the prototype aircraft by L-3 Communications Integrated Systems resulted in sub-contractor, SAFE Air Limited, terminating its sub-contract in late March 2010. This left L-3 without a sub-contractor to complete the modification of the three remaining C-130H aircraft in the 'production phase' of the project.

A solution to complete the C-130H Life Extension Project (LEP) production phase was agreed to by the Crown, SAFE Air/Air New Zealand and L-3 on 16 July 2010. Under the agreed solution the Crown assumed responsibility for the C-130H LEP production phase, with SAFE Air providing support by way of specialist labour and material supplies.

A MoD project management team was established on site at RNZAF Base Woodbourne. The MoD sub-leased a hangar and a work-force was engaged (Aviation Labour Group). Safe Air continues to provide support services and key personnel under a MoD/Safe Air agreement.

A contract was signed with CAE of Canada to further develop the capabilities of the Part Task Trainer.

How Defence decided to acquire the Capability Solution

The prime contract was signed in December 2004 with L-3 Communications Spar Aerospace Limited of Canada (L3 Spar) and it was intended to induct the first aircraft (the prototype) at L3 Spar's facility in Edmonton, Canada. Upon acceptance of this aircraft, the remaining four aircraft were to be upgraded by SAFE Air in Blenheim. This was termed the 'production phase'. In 2007 a second aircraft was introduced into the upgrade in Canada as a 'proof' aircraft to confirm the production process and reduce the risk.

Parent company	L-3 Communications Holdings Incorporated
Prime contractor at contract signing	L-3 Communications Spar Aerospace of Canada
Current prime contractor	L-3 Communications Integrated Systems of USA

1.2 Project Budget

Budget variation

	Date Approved	Total (NZ$ million)
Original budget at Approval to Commit	6 December 2004	233.7
Current approved budget	2 August 2010	264.8
Variation on original approved budget		31.1 (see explanation below)

Explanation of major budget variations

Date of individual variation	Total (NZ$ million)	Factor	Explanation
1 May 2007	21.2	Scope / contract variation	Contract variation was made to upgrade the fleet's self-protection system with a modern missile approach warning system and counter-measures dispensing system.
28 July 2010	Up to 9.85	Sub-contract termination	The Crown is to pay SAFE Air Ltd a maximum NZ$ 7.85 million as a part contribution to cover any shortfall in the production phase costs. This total was listed as provisional in the 2012

			MPR because the production phase costs were then yet to be finalised. After the upgrade of the first production phase aircraft was completed in early 2013, an assessment was made of the costs involved in the upgrade and as a result no additional funding was sought. As at 30 June 2016, no additional funding had been sought.

1.3 Financial Performance

Project expenditure to 30 June 2016

Total (NZ$ million)	
Life to date expenditure (cumulative)	260.1
Remaining balance of approved budget	4.7
Forecast commitments	0.9

Total forecast expenditure

Forward Cover

To remove uncertainty from a future cash flow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A Forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline – is the price of certainty of future cash flows.

Total (NZ$ million)	
Approved budget	264.8
Total forecast expenditure	261.1
Gross project variation (forecast)	3.7
Foreign exchange impact	(3.7)
Actual project variation (forecast)	0.0

Variance explanation

Nature of variation (forecast)	Total (NZ$million)	Explanation
Actual project variation-	0.0	N/A
Foreign exchange impact	3.7	
Total	3.7	

Project contingency (as at 30 June 2015)

Total (NZ$ million)	
Contingency built into the budget	10.0

Total contingency expended	10.0
Remaining balance	0

Explanation of major contingency draw downs

Drawdown	Total (NZ$ million)	Explanation
Environmental Control System approved on 9 October 2006.	2.1	This draw down has been used to upgrade the old Environmental Control System. The upgrade will allow the C-130H to operate in very hot and very cold climates.
Part Task Trainer (PTT) approved between October 2006 and May 2007.	1.0	This is the cumulative cost of upgrading the PTT's intercom system, relocating the PTT to Edmonton, Canada for aircrew training and the purchase of spare parts.
Engineering work, spare parts, support equipment approved between October 2006 and February 2007.	0.9	The remaining drawdown approvals were used for unanticipated engineering work (bulkhead fatigue improvements, manifold air pressure gauge) and additional spare parts or support equipment (propeller beta lights, central wing rib caps).
Engineering work – approved April 2010.	0.2	To cover the costs of two mandatory engineering change proposals to satisfy independent consultants HMI.
Production Phase costs – approved January 2011.	2.3	Contribution to cover the new local production phase costs as part of the revised project budget.
Self Protection System Upgrade, DATAMARS and data loading software development – approved March 2011.	0.7	This included: • Upgrade to the Self Protection System ($649k). • The DATAMARS 1553 recording device ($29k). • Scope out the cost of developing a data loading tool ($38k).
Realignment of Production Phase – approved August 2012.	0.4	This utilised savings of $0.37 million on the Part Task Trainer contingency once this element of the Upgrade Project had been completed to which was added $0.03 of Part Task Trainer Project Management funding.
Costs projected to complete final two aircraft. Approved May 2014.	2.4	As planned, a review of actual costs of the first completed Production aircraft was carried out to project costs on the final two. It was found all remaining contingency would be required to complete the programme.
Total	**10.0**	

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date

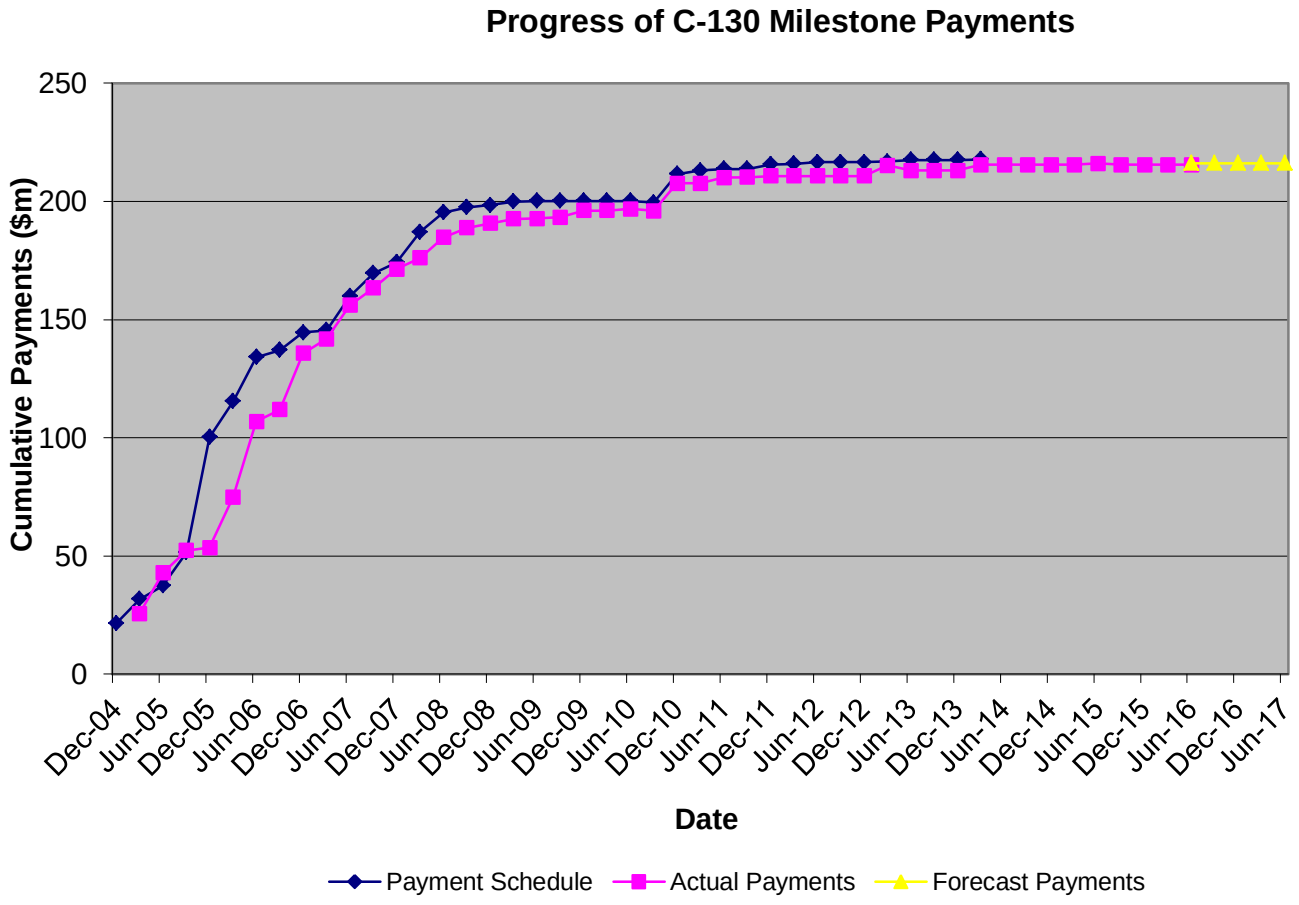
		Original forecast at Approval to Commit	30 June 2016 forecast / achieved	Variation in acquisition phase (months)
Acceptance Date	First Aircraft	Mid 2007	October 2010 achieved (provisional acceptance)	+40
	Last Aircraft	Mid 2010	September 2016 forecast	+75
Comment		New forecast schedule developed post-implementation of the revised contractual arrangements.		

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
21 May 2007	+4	The project's schedule could only be confirmed after the 'strip out and rebuild' work of the first aircraft was completed. This work revealed some unexpected repairs, design challenges and equipment demands.
January 2009	+2	The acquisition phase was delayed slightly because of a downturn in L3-Spar's productivity at the Edmonton facility.
July 2010	+35 to +38	A new schedule was developed for the revised contractual arrangements to complete the production phase.
June 2012	+50	Production Phase re-schedule following experience with the upgrade of the first production aircraft.
August 2015	+8	A review of the schedule was carried out based on the actual timings from the first Woodburn production aircraft (7001). This resulted in a projected schedule variation to complete the last aircraft in August 2015.
February 2016	+8	May 2015 7002 production schedule review resulted in a projected schedule variation to complete the last aircraft in February 2016
March 2016	+6	A combination of replacement of significant unscheduled structural items and required Lockheed intrusive inspections delayed the completion date to August 2016.
June 2016	+1	An extra month was required due to a long lead delivery time for a specific unscheduled structural component that required replacement.

Progress of C-130H Life Extension Project against the Milestone Payments Schedule

NOTE: This graph displays the project's progress by comparing actual milestone payments against the milestone payments schedule agreed to in the prime contract[1]. Milestone payments are made upon the contractor's provision of key deliverables and are therefore a good way to identify timing and size of schedule slippage.



[1] The milestone payments schedule has cumulative payments that are less than the total budget because it excludes the ancillary and discretionary costs of the project.

SECTION 2: INTRODUCTION INTO SERVICE

2.1 Summary of Introduction into Service Phase

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the test and evaluation process, which demonstrates the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

Description of Introduction into Service phase

In 2006, the RNZAF established a C-130H Life Extension Project (LEP) Introduction into Service team. The team was responsible for co-ordinating and implementing all additional components required for the aircraft to carry out the desired operational tasks and missions. The team prepared a transition plan that is designed to deliver the integrated components of the capability. For the C-130H LEP, the most important aspects of the transition plan include:

- Operational Test & Evaluation (OT&E);
- Training of all aircrew, technicians and support personnel;
- Personnel forecasting, availability, skilling and delivery;
- Certifying the aircraft;
- Developing supporting infrastructure;
- Integrating communications into the NZDF and allied infrastructure;
- Managing and organising the fleet during the upgrade work;
- Building and delivery of the information, command and control systems, as well as the external communication and Communication and Information Services systems;
- Preparing and supporting communication plans for engagement with external agencies, including public relations;
- Logistical support;
- Developing the concept of operations;
- Developing and validating the self-protection system capability;
- Profiling the through-life operating costs; and
- Setting up, testing and introducing training systems.

Since January 2008, the team has supported the acquisition project team by providing the aircrew and support personnel necessary to operate the aircraft during the acceptance test and evaluation of the first and second aircraft.

In 2006 the RNZAF established a Programme Management Office to co-ordinate the C-130H LEP in conjunction with the other upgrade and acquisition projects. In October 2010 this was subsumed into the HQ NZDF Capability Branch, Programme Delivery, as ‘Air Introduction into Service’.

A Joint Project Office was set up at Base Auckland in October 2010 to integrate all aspects of fixed wing capability delivery including Trials & Development, OT&E, training, retrofit, regression testing and follow on AT&E.

Status of the introduction into service plan

All additional components of the introduction into service phase are in place and OT&E has been completed for the following roles:

- Phase 1, Air Logistics Support;
- Phase 2, Airborne Operations;
- Phase 3, Search and Rescue;
- Phase 4, Aircraft Self Protection System;
- Phase 5, High Latitude Operations; and
- Phase 6, Night Vision Capability (This is not strictly part of the LEP project, but rather an exploitation of the Night Vision compatible flight deck).

The C-130H legacy fleet has been withdrawn from service with crews transitioning to upgraded aircraft through transition courses. In addition, several crew conversion courses have been run and numerous personnel qualified.

The principal challenges for IIS have been ongoing issues with the Avionics Mission System (AMS) software and delays of production aircraft. The software has been improved in content and stability since initial delivery. Software version V119 has been delivered and accepted by the RNZAF as the baseline software load, however MoD is in the process of completing negotiations for V120. In August 2012, acceptance and release of capability into service was completed for Air Logistic Support, Search and Rescue, Self Protection System and High Latitude Operations. In August 2014 Airborne Operations were completed allowing full capability release to be declared. With the release of the NZDF Supplemental Type Certificate C-130H(NZ) 001.In September 2014 the project transitioned from Introduction into Service to In-Service, as at that point the IIS Phase of the project was complete although one production aircraft has still to be delivered. Capability Branch handed over the residual Risks and Issues to the RNZAF for In-Service management.

2.2 Schedule of Introduction into Service

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements.

Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

	Initial Estimate	30 June 2016 Estimate	30 June 2016 Actual	Variance (months)
Date platform accepted by Crown	Mid 2007	N/A	October 2010	40
Commence operational test and evaluation	November 2007	N/A	October 2010	35
Finish operational test and evaluation	May 2008	NA	August 2014	75
Achieve initial operating capability	August 2008	N/A	August 2012	48
Establish directed level of capability	October 2010	N/A	September 2014	47
Explanation	Variations to the project's forecast timelines, including OT&E completion dates and directed level of capability, have primarily been driven by software integration and significant production delays, in addition to aircraft availability issues. While a directed level of capability was established by September 2014 with aircraft upgraded and crews trained, the project is continuing through to September 2016 to upgrade all five aircraft.			

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Operational Requirements

Operational Requirements	Delivery	Comment
Tactical airlift	Yes	Declared as released by Supplemental Type Certificate in August 2014.
Strategic airlift	Yes	Declared as released by Interim Supplemental Type Certificate by August 2012.
Pre-mission planning system	Yes	The pre-mission planning system depends on the contractor integrating the aircraft's software systems. Although the integration of the software has been delayed, Defence considers that the requirements of the pre-mission planning system will be met.
Communications	Yes	Declared as released by Supplemental Type Certificate in August 2014.
Navigation	Yes	The contract's original navigation database did not adequately cover all of the C130H's desired areas of operation. Defence has now implemented a solution (at a cost that was absorbed) to resolve this requirement shortfall.
Surveillance	Yes	Declared as released by Supplemental Type Certificate in August 2014.
Maritime Search and Rescue	Yes	Declared as released by Interim Supplemental Type Certificate in August 2012.
Self-protection system	Yes	The system has now been validated, and provides protection against man portable air defence systems. Assessment of the system performance is ongoing and the maintenance of protection levels will be a continual through life process as threats evolve and operating areas change. Declared as released by Supplemental Type Certificate in August 2014.
Assessment: All requirements have been met. The C130 Life Extension project is out of scope for benefits realisation, as its business case was approved by Cabinet pre-2010.		

NH90 MEDIUM UTILITY HELICOPTER

Project Description: This project is providing the NZDF with a medium utility helicopter capability for the next 30 years. Eight NH90 helicopters with associated deliverables have been acquired from NH Industries to replace the Royal New Zealand Air Force Iroquois fleet. An additional (ninth) helicopter has been acquired and broken down to form the majority of the spares and logistics package.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the Major Projects Report, Volume 3

SECTION 1: ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once defence industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of acquisition phase

Description of acquisition work

The acquisition phase of the medium utility helicopter project included engagement with industry, a tender and contract negotiation process, and ongoing management of the contract deliverables. This phase will be concluded following the delivery of the eight operational NH90 helicopters, the spares package (the ninth helicopter), publications, support equipment and the initial training requirements to the RNZAF.

Cabinet approved engagement with industry in December 2003 to identify potential suppliers and seek further information on the capability. The approved acquisition strategy included an Invitation to Register followed by a Request for Proposals.

Six companies responded to the Invitation to Register. The respondents are listed in the table below. The NH90 helicopter from NH Industries and the S-70M helicopter from Sikorsky were considered to meet the capability and operational requirements. At the time, however, the S-70M helicopter was not in production and the prototype was still under development. Therefore, it was decided that the bid from NH Industries for the NH90 helicopter was the preferred option. As a result, the Request for Proposals was not required and a ‘sole source’ Best and Final Offer was issued to NH Industries in order to determine program deliverables and costs.

Following a review of the Best and Final Offer response and further contract negotiations, the NH90 Acquisition Contract between the Crown and NH Industries was signed on 31 July 2006. The total cost of the NH90 helicopter exceeded forecasts made during the Capability Definition Phase and resulted in a decision to reduce the total fleet size from ten, as outlined in the 2003 Key Findings Report, to eight operational NH90s.

Prior to contract signing Joint Ministers agreed that a ninth helicopter be acquired as part of the negotiated spares and logistics package rather than as an operating helicopter. This decision resulted in approximately NZ$10 million savings in the cost of the spares component of the project. The NH90 helicopter was developed, assembled, test flown and prepared for Crown acceptance at the Eurocopter assembly line in Marignane, France.

The eight operational helicopters were to be delivered over a 47 month period from 31 July 2006. The Project Team (based in New Zealand and France) worked with the contractor to ensure the helicopters were provided within budget, to the contract's function and performance specifications and as close to the original schedule as possible. This has included a preliminary design review in March 2007 followed by a critical design review in November 2007. These two reviews assisted decisions on the final configuration of the NH90 helicopter, the most notable of which was the fitting of a fifth multifunction display screen in the cockpit of the helicopter. This provided more safety by improving situational awareness for the pilots.

In order to protect the Crown's and RNZAF's interests, regular Risk Review Board reports were conducted and a detailed design, test and qualification process for the NH90 helicopter's specific capability characteristics was undertaken.

In November 2011 the Crown accepted two aircraft in France. In December 2011 these aircraft arrived in New Zealand, followed by another two aircraft in June 2013. These four aircraft went into the 'interim configuration' stage.

In July 2013, two further aircraft were delivered, already in 'final configuration', with another delivered in November 2013. The arrival of these final configuration aircraft allowed the initial four interim configuration aircraft to enter a retrofit program to bring them up to final configuration standard.

The first aircraft to emerge from the interim configuration- final configuration retrofit was accepted by the NZDF in mid June 2014. The remaining three aircraft were returned to the NZDF by mid July 2014 (nine weeks ahead of schedule). The final aircraft to be delivered in final configuration arrived in New Zealand on 30 October 2014.

A fault with the engine semi automated venting procedure resulted in final configuration+ being split into two phases. The first phase was completed in June 2015. One aircraft, however, still required a "demonstration flight" prior to it returning to service. This aircraft also underwent a maintenance period concurrent with the final configuration+ upgrade and resources were not available to complete the flight. This occurred in September 2015.

The second phase of final configuration+, associated with the semi automated engine venting procedure is currently planned to be undertaken between August - October 2016.

How Defence decided to acquire the Capability Solution

Responses to the 2004 Registration of Interest	
Company	**Aircraft**
Bell Helicopters Textron Ltd – USA	UH-1Y
Hindustan Aerospace – India	Advanced Light Helicopter (DHRUV)
Kamov – Russia	Ka 29
Bell Agusta – USA	AB 139
Sikorsky – USA	S-70M
NATO Helicopter Industries – France ***Preferred Supplier***	NH90
Assessment	The five unsuccessful tenders did not meet the capability and operational requirements for a variety of reasons. These included payload, stowed aircraft limits, stretcher limits and commercial production of the aircraft.

1.2 Project Budget

Budget variation

	Date Approved	Total (NZ$ million)
Original budget at Approval to Commit	27 July 2006	771.7
Current approved budget	27 July 2006	771.7
Variation on approved budget		NIL

Explanation of major budget variations

Date of Individual Variation	Total ($m)	Explanation
N/A	N/A	N/A

1.3 Financial Performance

Project expenditure to date (as at 30 June 2016)

	Total (NZ$ million)
Life to date expenditure (cumulative)	675.8
Remaining balance of approved budget	95.9
Forecast commitments	0.0

Total forecast expenditure

	Total (NZ$ million)
Approved budget	771.7
Total forecast expenditure	675.8
Gross project variation (forecast)	95.9 (under spend)
Foreign exchange impact	(93.0)
Actual project variation (forecast)	2.9
Explanation	NOTE: The impact of a foreign exchange rate at any point of time in a project is constantly subject to change as the project progresses. These fluctuations are expected and mitigated by forward cover. Actual expenditure can only be measured once the project is complete and any variations resulting from foreign exchange differences are managed through forward cover.

Project contingency (as at 30 June 2016)

	Total (NZ$ million)
Contingency built into the budget	15.0
Total contingency expended	11.2
Remaining balance	3.8

Explanation of major contingency draw downs

Draw down	Total (NZ$ million)	Explanation
5th Multifunctional Display Screen	7.3	The multifunctional display screen will provide more safety by improving situational awareness for the pilots.
Support for the Project Management Team in France and New Zealand	3.9	Additional support to the project management team by way of four extra resident project team members and an external consultant.
Total	11.2	

Major reallocations of funds within the approved budget

Date of individual variation	Total ($m)	Explanation
N/A	N/A	N/A

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date

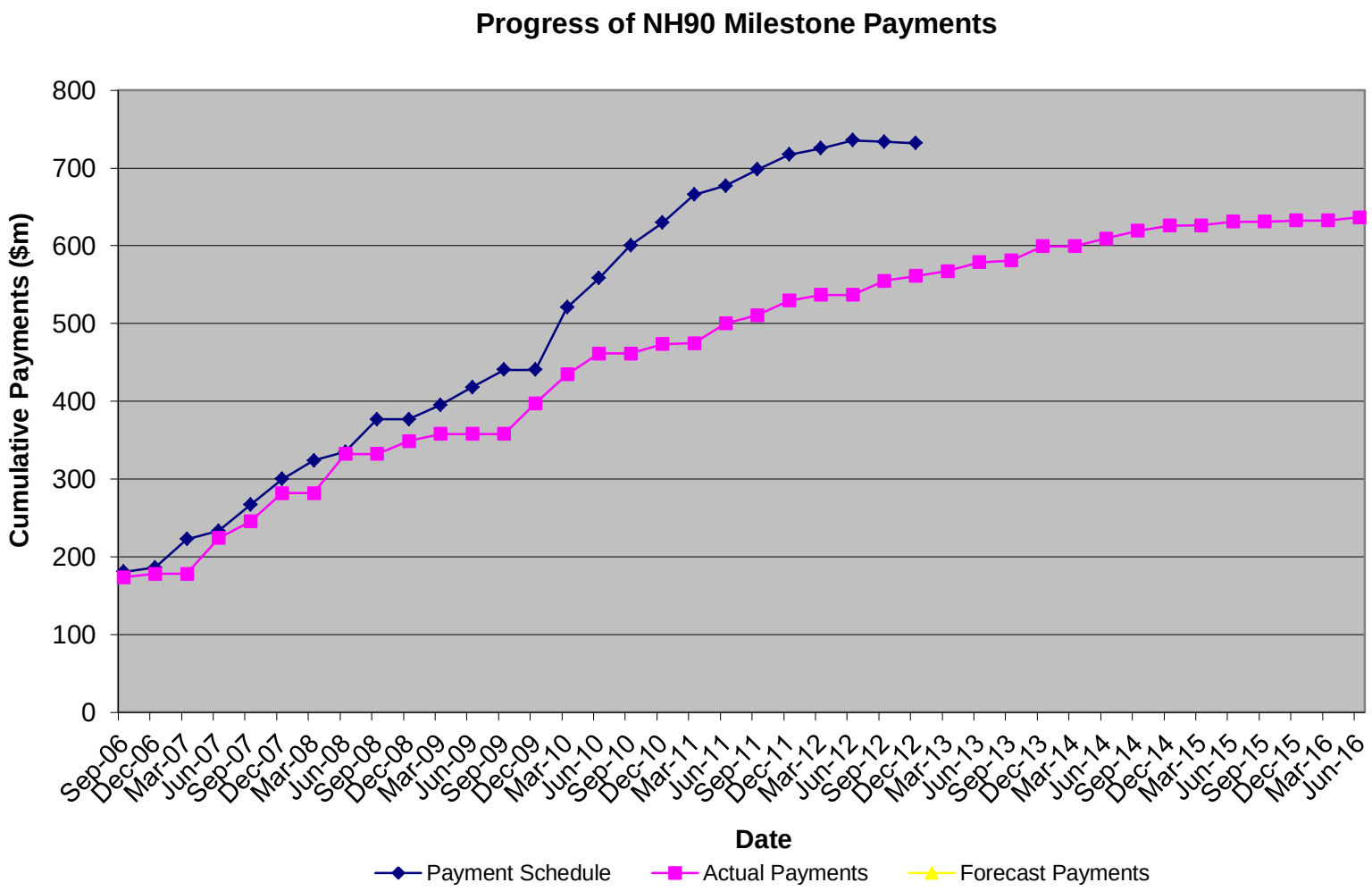
		Original forecast at Contract Signing	30 June 2016 forecast / achieved	Variation in Acquisition phase (months)
Acceptance Date	First platform	November 2009	December 2011 achieved	25 months
	Last platform	June 2011	October 2014 achieved	40 months

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
November 2009	13 months	The forecast acceptance of the first aircraft is based on the date of acceptance in France and not its delivery to New Zealand. The schedule slipped by 13 months due to a delay in the Qualification and Design Acceptance Process for the New Zealand variant of the NH90 because of the delays in the certification of other countries' variants of the NH90. This delay adversely affected the obligations of NATO Helicopter Industries to provide the necessary training for RNZAF personnel – engineers for example – to complete the acceptance of the first helicopter.
August 2010	TBC	The current estimate of December 2010 is under review and will be updated after consultation with NH Industries.
June 2011	27 months	Continued delays in the qualification of aspects of the helicopters and the role equipment together with the attachments and spares and a comprehensive set of maintenance data.
June 2014	39 months	As per previous explanation.

Progress of NH90 against the Milestone Payments Schedule

NOTE: This graph displays the project's progress by comparing actual milestone payments against the milestone payments schedule agreed to in the prime contract.[2] Milestone payments are made by the Crown upon the contractor's provision of key deliverables and are therefore a good way to identify the timing and size of schedule slippage.



[2] The milestone payments schedule has cumulative payments that are less than the total budget because it excludes the ancillary and discretionary costs of the project.

SECTION 2: INTRODUCTION INTO SERVICE PHASE

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the operational test and evaluation process, which demonstrates the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

2.1 Summary of Introduction into Service phase

Description of Introduction into Service phase

The RNZAF established the Utility Helicopter Introduction into Service team in July 2006. The Introduction into Service management plan included the medium utility (NH90) and the training/light utility (A109) helicopters. The work streams were structured around:

- management of personnel and training for the new aircraft types;
- research and development of the new systems;
- information management to and from the aircraft;
- concept of operations and doctrine for the new aircraft;
- infrastructure and organisation required to support the aircraft;
- equipment and/or platforms used to support the aircraft;
- issues related to airworthiness of the aircraft; and
- finance related to operating the new aircraft types.

The plan includes an external communications strategy, which describes:

- how consultation should be carried out with other government agencies, such as New Zealand Customs and Police;
- the Implementation Arrangement with the Australian Defence Force MRH90 helicopter Introduction into Service team for cooperative activities; and
- Cooperation with other militaries such as the German Defence Force, the Royal Air Force and others.

The plan also details the process of maintaining a risk register (now joint with MoD (Acquisitions)) and producing mitigation plans should they be needed, along with the reporting requirements to the Defence governance system. The main project dependencies detailed were:

- establishment of the Integrated Mission Support Squadron (now RNZAF No. 230 [Mission Support Squadron]);
- acquisition of the A109 helicopters;
- interface with Project Protector vessels;
- infrastructure – the successful completion of Project Takitini; and
- provision of the flight training device.

The Introduction into Service Team is supported by an RNZAF Integrated Logistics Support Team from the RNZAF's Directorate of Project Engineering and Certification. This latter team commenced work in 2004 to analyse the logistics support requirements of the new utility helicopter fleets. The logistics team work to an Integrated Logistics Support Plan that is a companion of the Introduction into Service Plan. The plan focuses on through-life support and life cycle costings and is supported by subordinate plans that cover the support requirements for:

- Logistics;
- Engineering;
- Maintenance;
- Supply;

- Training; and
- Computer and Data Management.

In 2006 the RNZAF established a Programme Management Office to coordinate the helicopter projects (NH90 and A109), in conjunction with the three concurrent fixed-wing projects. In October 2010 this was subsumed into the HQ NZDF Capability Branch, Programme Delivery, as 'Air Introduction into Service'.

Status of Introduction into Service phase

The Introduction into Service plan has served its initial purpose of preparing the RNZAF for the arrival of the medium utility helicopter. The final phase in the plan was the merger of the NH90 helicopters and the training/light utility helicopters (A109) within a single unit – No. 3 Squadron.

All nine NH90 aircraft (including the non flying spares aircraft) have now been delivered to the NZDF, and RNZAF-managed flying operations have been underway since February 2012. Flying effort has been constrained by a combination of key personnel resignations and the implementation of the Interim to Final Configuration (IC-FC upgrade) process and the implementation of the Final Configuration to Final Configuration + upgrade). An initial NH90 capability release was achieved in February 2013, which has allowed the conduct of New Zealand based non-tactical transport tasks with the helicopter. A subsequent capability release was achieved in March 2014, which has allowed the conduct of a variety of tactical transport tasks. The National Contingency (NATCON) capability was released on the 18 December 2014 allowing the NH90 to take over responsibility of all NATCON tasking from the UH-1H Iroquois aircraft. Following the issuance of the NZDF Interim Type Certificate NH90 005 on 30 June 2015 an Interim Operational Capability Statement was issued detailing the capability to support counter terrorism to overland targets.

2.2 Schedule of Introduction into Service

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements. Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications. Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

	Initial Estimate	30 June 2016 Estimate	30 June 2016 Actual	Variance (months)
Date platform accepted by Crown	November 2009	N/A	November 2011	24
Delivery of platform to New Zealand	Early 2010	N/A	December 2011	22
Commence operational test and evaluation	Early 2010	N/A	April 2012	24
Finish operational test and evaluation	December 2010	N/A	N/A	-
Achieve initial operating capability	April 2012	N/A	February 2013	10
Establish operational level of capability	December 2012	January 2018	N/A	-
Establish directed level of capability	March 2013	January 2018	N/A	-
Explanation	When the Introduction into Service team was established in 2006, it made initial estimates concerning the schedule to introduce the medium utility helicopter into service. As more information became available, in 2008 the team refined the schedule of estimates for the establishment of the operational and directed levels of capability. This was particularly relevant for reaching the directed level of capability. Milestone changes reflect both delays in the delivery of NH90s as well as a maturation of IIS plans which have shown that initial estimates were overly ambitious and not achievable with available resources. Note: Initial Operating Capability: This includes transporting NZ based passengers and cargo transport which is non-tactical. Operational Level of Capability: This includes the NH90 being capable of delivering the NZDF's Employment Contexts 1D outputs which deals with terrorist and asymmetric threats. Partial release of capability achieved in June 2015 (allowing the retirement of UH-1H). Final Enhanced capabilities are not scheduled for release until January 2018. Directed Level of Capability: Attainment of the level of capability is primarily governed by aircrew generation.			

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Capability and Operational Requirements

Progress as at June 2016 The Explanations are Subject to Change as the Project Progresses and Solutions are Implemented		
Operational Requirement	**Requirement Likely to be met**	**Explanation**
Movement of an Army section, a minimum of eight fully equipped land force soldiers to enable the smallest combat entity to conduct its tasks for success, safety and survivability.	Yes	Current analysis suggests one NH90 will be able to move up to 12 laden combat troops.
Movement of an Army platoon, minimum of 27 soldiers and equipment in a single wave to ensure synchronised arrival of combat elements.	Yes	It is expected that three NH90 helicopters will be required to complete this task, but this depends on the volume of equipment to be moved.
Movement of a minimum of six fully equipped special forces soldiers in a single helicopter.	Yes	
Movement of up to six stretcher casualties, plus medical staff, in a single helicopter.	Yes	
Capacity to move specialist equipment, such as the Direct Fire Support Weapon.	Yes	
Lift a light gun or light operational vehicle.	Yes	The NH90 can lift the light gun and the NZ variant of the light operational vehicle but the range is limited.
Meet sovereignty requirements in EEZ, including maritime counter terrorism and reach significant outlying islands in the South Pacific.	Yes	The NH90 can meet sovereignty and maritime counter terrorism requirements. It can reach outlying islands in the South Pacific but needs support, such as: • refuelling en-route may be required; • maintenance equipment and support equipment and personnel will need to be deployed separately; and • combat elements will need to be deployed separately.

Quickly deployable by either C-130 Hercules or self deploying to Australia or the South Pacific.	Partial	The early focus has been on self-ferry, HMNZS *Canterbury,* allied strategic airlift (e.g. ADF C-17), civil airlift charter e.g. Antonov. To date: • The NH90 can be deployed on the Antonov or the C-17 (though deployment on the C-17 is subject to further work). • The NH90 could be deployed by C-130, but this is not pragmatic as it would probably require a minimum of two loads and the break down and tie down schemes would have to be developed. • The NH90 can be transported by HMNZS Canterbury
Operate from the multi-role vessel to support the delivery of personnel and equipment to and from land.	To be confirmed	Confirmation of the ship-borne capability requirement was sought from the Minister of Defence in early 2010. The main capability targets were identified as: • Transportation of at least 4 x NH90 as cargo on HMNZS *Canterbury* (alternative transportation arrangements for the Seasprite); and • Flying operations of the NH90 on HMNZS *Canterbury* to the top of Sea State 2. The status of this capability is improving. Ongoing work streams are progressively identifying and resolving issues. A series of interface and flight trials have been completed with First of Class Flight Trials undertaken on HMNZS *Canterbury* with the assistance of the Australian Defence Force in late 2013. Consequently, the NH90 operating envelope has been established for operations from HMNZS *Canterbury's* deck. However, significant work remains to be done to train ship's personnel, deck crew, maintenance personnel and aircrew in the operation of the helicopter from the ship. In April 2016 it was confirmed that the NH90s were able to support a humanitarian aid operation (OP WINSTON) on their first overseas mission in Fiji. The helicopters were transported to Fiji by the multi-role vessel HMNZS *Canterbury* and deployed to support Fiji's disaster recovery efforts.
Operate day and night, in inclement weather and in a range of climatic, geographical and threat environments.	Yes	
Assessment: Deployment of NH90 by Antonov, C-17 or *HMNZS Canterbury* is more practical than C-130 Hercules. Requirement is therefore only partially met. Capabilities relating to the conduct of support operations from *HMNZS Canterbury* are still being developed. The NH90 project is out of scope for benefits realisation, as its business case was approved by Cabinet pre-2010.		

PILOT TRAINING CAPABILITY

Project Description: The Pilot Training Capability Project will replace the current military pilot training system with:

- modern trainee selection tools which select those most likely to succeed as military pilots;
- flight simulation computers and flight simulators;
- the introduction of a fleet of modern training aircraft; and
- a new teaching curriculum that is matched to the pilot training requirements.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the Major Projects Report, Volume 3.

SECTION 1: ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once defence industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of acquisition phase

Description of acquisition work

Defence issued tenders on 10 December 2012 for a package of updated aircraft, flight simulators, logistics support (maintenance) and a training package. Seven tenders were received for all or some of the tender requirements. A three-stage evaluation process then compared tender responses to service requirements, resulting in two proposals being shortlisted – The Beechcraft syndicate (Beechcraft, CAE Simulation and Safe Air Ltd) and Pilatus of Switzerland.

Due diligence was undertaken on both proposals, with site visits to the manufacturing facilities and to military users of these systems in the USA and Ireland. These visits provided the opportunity to confirm aspects of the tenders and to obtain first-hand, the experiences of users of the aircraft in their training role.

A Best and Final Offer (BAFO) was released to the two tenderers in August 2013, with a focus on providing the best value for money at lowest risk. As a result, both proposals remained very competitive on pricing, schedule and risk. The Beechcraft aircraft had a slightly earlier delivery time and presented the ability to reduce through life costs through alternative spares solutions. Additionally it provided a number of ‘no cost benefits’ to the training capability. Overall, Beechcraft was recommended as the preferred supplier.

How Defence decided to acquire the Capability Solution

Contractual terms were agreed with Beechcraft Defense Company. Contracts for both the supply of the package and the through life support were signed in January 2014.

Parent Company	Beechcraft Defense
Prime Contractor at contract signing	Beechcraft Defense
Current prime contractor	Beechcraft Defense

1.2 Project Budget

Budget variation

	Date Approved	Total (NZ$ million)
Original budget at Approval to Commit	3 December 2013	154.6
Current approved budget	16 November 2015	159.2
Variation on original approved budget		4.6

Explanation of major budget variations

Date of individual variation	Total (NZ million)	Explanation
16 November 2015	4.6	Additional $4.6M approved as a non-cash technical adjustment for FX movement 2015 October Baseline Update

1.3 Financial Performance

Project expenditure to date (30 June 2016)

	Total (NZ$ million)
Life to date expenditure (cumulative)	145.0
Remaining balance of approved budget	14.2
Forecast commitments	0.3

Total forecast expenditure

Forward Cover

To remove uncertainty from a future cash flow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline- is the price of certainty of future cash flows.

	Total (NZ million)
Approved Budget	159.2
Total forecast expenditure	145.3
Gross project variation (forecast)	13.9
Foreign exchange impact	-0.4
Actual project variation (forecast)	14.3
Variance explanation	See below

Nature of variation (forecast)	Total ($million)	Explanation
Actual project variation-	14.3	This is the difference between the budget foreign exchange rates (weighted average of currency purchases: spot and forward rates) compared to the actual foreign exchange rates and current forecast rate.
Foreign exchange impact	-0.4	
Total	13.9	

Project Contingency (as at 30 June 2016)

	Total (NZ$ million)
Contingency built into the budget	14.1
Total contingency expended	3.2
Remaining Balance	10.8

Explanation of major contingency draw downs

Drawdown	Total (NZ$ million)	Explanation
Throttle safeguard modification to aircraft	0.46	The U.S Government implemented a throttle modification on the aircraft to prevent inadvertent engine shutdown. This was actioned well after contract signature and the NZDF/MoD determined this should also be implemented on the N.Z fleet.
Training package amendments and Field Service Representative training assessment.	2.77	During the training package validation it was found that amendments were required for unique N.Z flying requirements that did not align with a portion of the U.S courses. The MoD also requested the CAE Field Service Representative (who was an ex-RNZAF Flying Instructor) to remain throughout 2016 to independently assess and review the first Wings and FIC courses.
Total	3.23	

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date.

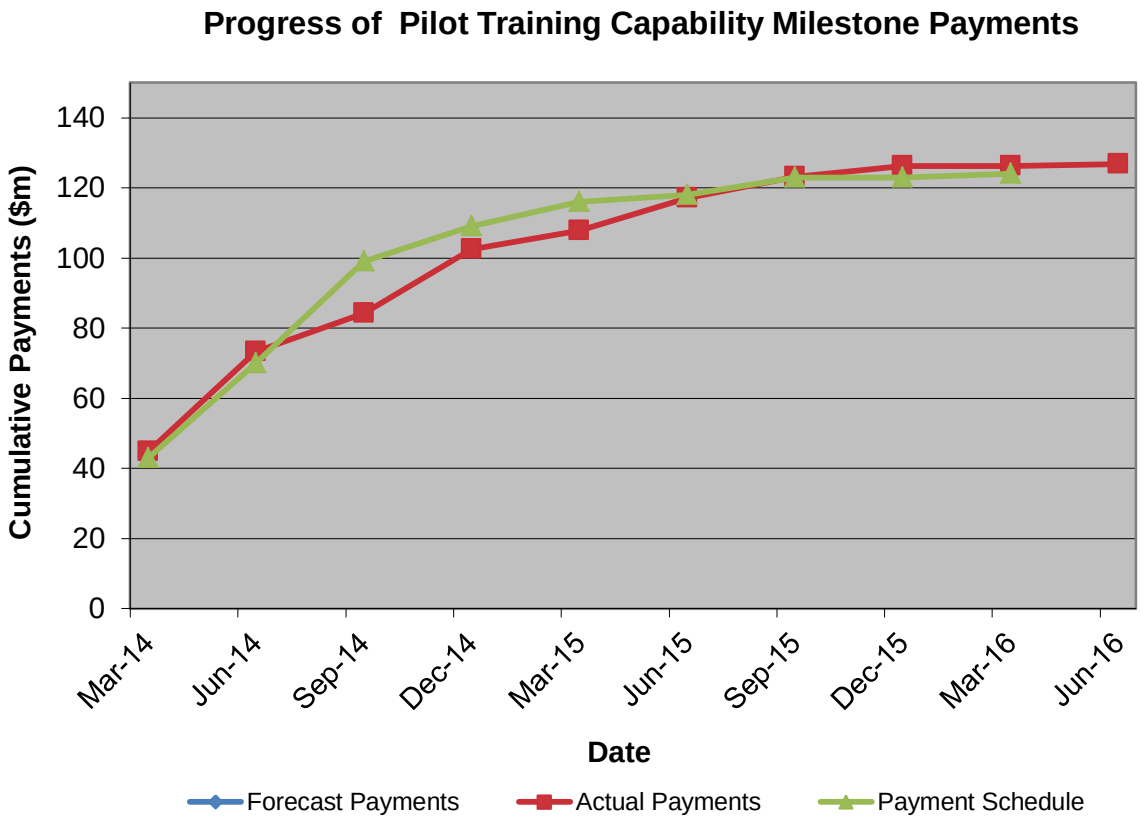
	Original forecast at Approval to Commit	30 June 2016 achieved	Variation in Acquisition Phase (months)
Acceptance Date	December 2015	(achieved)	Nil
Comment	N/A		

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
		N/A

Progress of Pilot Training Capability against the Milestone Payments Schedule

NOTE: This graph displays the projects progress by comparing actual milestone payments against the milestone payments schedule agreed to in the prime contract. Milestone payments are made upon the contractor's provision of key deliverables and are therefore a good way to identify timing and size of schedule slippage.



SECTION 2: INTRODUCTION INTO SERVICE PHASE

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the test and evaluation process, which demonstrated the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

2.1 Summary of Introduction Into Service Phase

Description of Introduction Into Service Phase

From the approved Budget some $NZD12.27M was allocated to the NZDF in support of Introduction Into Service (IIS). Major IIS areas of work will be:

- Infrastructure – Upgrade the hangar at Base Ohakea to house the new aircraft and build a new Training Centre including classrooms and housing for simulators;
- Implement the Courseware and Training Management Information System (TMIS) supplied as part of the overall training package;
- Establish the Logistics Support from Beechcraft Defense with Safe Air Ltd (aircraft) and CAE Ltd (simulators);
- Undertake Certification/Qualification of Aircraft and Simulators;
- Acquisition of the new Pilot Selection Tool; and
- Operational Training and Evaluation (OT&E) prior to delivering the first new pilot training course.

Status of the Introduction Into Service Plan

On 14 April RNZAF Base Ohakea formally launched the RNZAF Pilot Training Capability. This involved an ‘open day’ to showcase the new T-6C Texan capability to dignitaries from Industry, RNZAF, Ministry of Defence and selected media. The ‘open day’ was held within the 14 Squadron/Central Flying School hangar and showcased the full spectrum of capability, including new classrooms and office spaces, computer based training aids, Operational Flight Trainers, hangar upgrade and the T-6C Texan II aircraft fleet.

All eleven aircraft have been successfully delivered and formally accepted by the NZDF. The first RNZAF Pilots “Wings” course commenced 1 February 2016. The course is expected to be complete in mid 2017.

The two simulators are installed, powered up and functional in the new facility in Ohakea. Beechcraft has completed rectification work (projector upgrade) to improve the brightness level and enable them to fully meet industry standards.

The infrastructure work at Ohakea is complete. All fuel tankers were delivered as of September 2016.

2.2 Schedule of Introduction into Service

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements.

Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

	Initial Estimate	30 June 2016 Estimate	30 June 2016 Actual	Variance (months)
Date Platform accepted by Crown	December 2015	N/A	December 2015	N/A
Commence operational test and evaluation	June 2015	N/A	May 2015	-1
Finish operational test and evaluation	December 2015	N/A	December 2015	N/A
Commence first Wings Course	January 2016	N/A	February 2016	+1
Commence first Flying Instructors Course	January 2016	N/A	January 2016	N/A
Explanation	The PTC is an enabling capability. As it is not deployable the readiness measures of Directed or Operational Level of Capability do not apply.			

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Capability Operational Requirements

Operational Requirements:	Requirement likely to be met:	Explanation:
Deliver RNZAF Pilot Training courses to produce pilots to the required standard.	Yes	
Deliver the RNZAF Flight Instructors Course to produce Flying Instructors.	Yes	
Establish and maintain the RNZAF Display Team and undertake public displays as required by the Chief of Air Force.	Yes	
ASSESSMENT: Requirements on track to be delivered within the specified schedule. Benefits realisation is estimated for full implementation by 2020.		

ANZAC FRIGATE PLATFORM SYSTEMS UPGRADE

Project Description: The Platform Systems Upgrade (PSU) is addressing equipment obsolescence, performance degradation, operational limitations and compliance issues with the platform systems of the ANZAC class Frigates. These platform systems are distinct from combat capabilities and enable the frigates to move, float, generate power and recover from damage.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the Major Projects Report, Volume 3.

SECTION 1: ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once defence industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of acquisition phase

Description of acquisition work

In November 2007 Cabinet approved Defence's Main Gate investment case for the project and authorised the commencement of the acquisition phase (Approval to Proceed). The budget was not to exceed NZ$57.6 million. Cabinet authorised Joint Ministers (Defence and Finance) to approve the final costs. The Secretary of Defence was delegated authority to enter into contractual arrangements for the project.

The preferred acquisition strategy was to appoint Thyssen Krupp Marine Systems Australia (TKMSA) to be the project design authority, and to tender a prime contract on the international market. The November 2007 Cabinet paper also noted that Defence had a strong preference for the work to be undertaken at the Devonport Naval Base.

Revised Acquisition strategy

In May 2008 Defence sought Joint Ministers' (Defence and Finance) authorisation to adopt a revised acquisition strategy. The propulsion systems component of the PSU had been envisaged from the start of the project as taking place in conjunction with the replacement of the ANZAC frigates' engines in order to avoid duplication of work and significant extra cost. It became apparent after the Main Gate approval, however, that the engine replacements had to be done within a tight timeframe during the frigates' extended maintenance periods in 2009 and 2010. It would not have been feasible to ready the entire PSU work package under a prime contract in time for these maintenance periods.

Defence proposed, consequently, that four separate contracts be tendered, covering:

- the power upgrade;
- stability enhancement and compartment changes;
- Integrated Platform Management System replacement; and
- Heating, Ventilation, and Air Conditioning upgrade.

The power upgrade contract would be initiated in time for work to be carried out in conjunction with the engine replacement.

Joint Ministers authorised the revised acquisition strategy, as well as the commitment of NZ$4.5 million for the purchase of long lead items, and the commitment of $4.75 million as project start up costs. The Ministers noted that the heating, ventilation and air condition systems and the integrated platform management system replacement would go through an international tender process.

Phase One

Following approval of the revised strategy, work proceeded on a first phase, which included the power upgrade, as well as the stability enhancement and compartment changes. The project team appointed TKMSA as the design authority and awarded MTU Detroit Diesel Australia Pty Ltd (and partners, VT Fitzroy and Australian Marine Technologies) a contract to conduct a Preliminary Design Study on the power upgrade element in order to firm up costs and clarify the design.

On 23 October 2008 Joint Ministers delegated authority to the Secretary of Defence to enter into contractual arrangements for the power upgrade. The Phase One budget was finalised through two separate approvals. The first approval covered the long lead items and project start up costs totalling NZ$9.25 million. The second approval covered NZ$7.5 million to achieve the power upgrade element and NZ$7.5 million to achieve the stability enhancement and compartment changes.

Contractor	Contract
ThyssenKrupp Marine Systems Australia	Design Authority Services
Australian Marine Technologies	Stability Enhancement and Compartment Changes
MTU Detroit Diesel Australia Pty Ltd	Preliminary Design Study – power upgrade Long Lead Items – power upgrade Power Upgrade system design solution

HMNZS *Te Kaha* and HMNZS *Te Mana* completed their power upgrade and stability enhancement upgrades during their extended maintenance periods.

Phase Two

On 22 December 2010 Joint Ministers delegated authority to the Secretary of Defence to enter into contractual arrangements for the Integrated Platform Management System (IPMS) and Heating, Ventilation and Air conditioning (HVAC) elements of the project.

The project team undertook Phase Two on the basis of using individual contracts for each element. Accordingly, the contractors listed in the below table were engaged:

Contractor	Contract
ThyssenKrupp Marine Systems Australia	Provision of Design Authority Services
Australian Marine Technologies	Provision of Design Integration Services
Noske Kaeser NZ	Provision of the HVAC element and the MCR and Bridge Consoles
Siemens NZ	Provision of the IPMS element including the

	Integrated Bridge System (IBS)
MTU Detroit Diesel Australia Pty Ltd	Provision of the Propulsion Diesel Control System (PDCS) interface between the Siemens S7 software and the MTU diesel engines
L-3 Communications MAPPS Inc, Canada	Replace existing Gas Turbine Advanced Engine Control Module (GT-ECM), which is obsolete
Babcock Fitzroy Babcock (NZ) Limited	Installation work at Devonport Naval Base under the existing dockyard management contract

HMNZS *Te Kaha* completed platform systems upgrade phase 2 and was released for operational tasking in August 2014. HMNZS *Te Kaha* has subsequently completed a work up, deployment to Gallipoli for ANZAC Centenary commemorations, a maritime interdiction operation in the Indian Ocean and was deployed to exercise RIMPAC in Hawaii.

HMNZS *Te Mana* was inducted into the platform systems upgrade production Phase in December 2014 and completed Contractor Sea Acceptance Trials in April 2016. HMNZS *Te Mana* was released for operational tasking in early May 2016 and is operating in accordance with the RNZN Fleet Plan.

The On Board Operational Trainer has been contracted to Siemens to deliver the software system to operate on existing hardware. The software is programmed for delivery in mid 2017 and the project intends transferring this minor work to the Capital Project Minor portfolio as part of project closure.

The project team is progressing towards project closure.

1.2 Project Budget

Budget variation

	Date Approved	Approved Amount (NZ$ million)
Original budget at Approval to Commit- Total (Phases 1 & 2)	19 November 2007	57.6[3]
Approved budget- Phase 1 (see Note 1)	29 May 2008 31 October 2008 21 January 2011	9.3 15.0 (1.3)
Total – Phase 1		23.0
Budget – Phase 2 (see Note 2)	22 December 2010 21 January 2011 March 2012 10 December 2013 8 April 2014	33.3 1.3 1.8 6 22.2
Total-Phase 2		64.6
Remaining budget for Phase 2		87.6
Note 1	The Phase 1 budget was finalised through two separate approvals. • The first approval covered Long Lead Items (NZ$4.5 million), Design Authority (NZ$4.0 million), Project management (NZ$0.5 million), Preliminary Design	

[3] Budget limit set but no contract had been negotiated or signed.

	Study (NZ$0.25 million). • The second approval covered NZ$7.5 million to achieve the power upgrade element and NZ$7.5 million to achieve the stability enhancement and compartment changes. • The second approval also accepted that the original estimate has been exceeded by NZ$3.6 million and this will impact the total project contingency. • The under spend within Phase 1 (NZ$ 1.3 million) has been transferred to the Phase 2 budget.
Note 2	• Cabinet approved the Phase 2 budget in the last quarter of 2010. A baseline increase to the overall project budget of NZ$1.8M was approved to cover off forecasted additional costs in relation to project management and installation costs and provide additional contingency cover. • Information to hand by 30 June 2013 indicated that in order to complete the Platform Systems Upgrade to the specified capability requirements, additional funding will be required in the coming year. • An additional $6 million was approved in December 2013 to complete work on *Te Kaha*. • An additional $22.2 million was approved in April 2014 to complete work on *Te Mana.*

1.3 Financial Performance

Project expenditure to date (30 June 2016)

	Total (NZ$ million)
Life to date expenditure (cumulative)	77.9
Remaining balance of approved budget- Phase 1 and phase 2	9.7
Forecast commitments	2.6

Total forecast expenditure

Forward Cover

To remove uncertainty from a future cash flow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A Forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline – is the price of certainty of future cash flows.

	Total (NZ$ million)
Approved budget	87.6
Total forecast expenditure	80.5
Gross project variation (forecast)	7.1
Foreign exchange impact	(1.8)
Actual project variation (forecast)	5.4
Explanation	

Project Contingency (as at 30 June 2016)

	Total (NZ$ million)
Contingency built into the budget	1.2
Total contingency expended	2.5
Previous Balance	-1.3
Funding to provide additional contingency cover **March 2012** **December 2013** **April 2014**	 0.7 1.6 3.8
Remaining balance	4.8
Note: The original assessment of the allocated contingency was based on the prime contract outlined in the 2007 Comprehensive Capability Investment Proposal. The contingency allocated in the budget for phase two needed to be updated due to the project's change in strategy and the additional project definition work that has been completed.	

Explanation of major contingency draw downs

Draw down	Total (NZ$ million)	Explanation
1. Gas Turbine Engine Control Module (GT-ECM)	0.9	The draw down covered the cost of the GT-ECM. At the time of seeking Cabinet approval the requirements had not been defined in sufficient detail to allow tenders to be called. As a result accurate costing could not be included as a specific line item.
2. Transfer	+0.7	Additional contingency cover as part of the fiscally neutral transfer from the ANZAC Frigate Close In Weapon System project approved March 2012.
3. Transfer	+1.6	Additional contingency cover as part of the fiscally neutral transfer from other projects. Approved December 2015.
4. Siemens/TKMSA/Noske-	1.6	The draw down covered the costs of spare parts for both ships and a set of depot level spares, additional programming units, claim for delay (Siemens), rebuild design data (TKMSA), Console update claim delay (Noske-Kaeser) and covered foreign exchange impacts. Approved in October 2014.
5.	+3.8	Additional Contingency Cover approved by Cabinet [CAB Min(14) 13/4] 11 April 2014.

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date.

	Initial Estimate	30 June 2016 Forecast / Achieved	Variation in Acquisition phase (months)
Acceptance Date Phase 1 (power upgrade, stability enhancement) Coordinated with *Te Kaha* and *Te Mana*'s planned extended maintenance period	*Te Kaha* December 2009	8 February 2010 (achieved)	2
	Te Mana Late 2010 (scheduled maintenance period)	3 December 2010 (achieved)	0
Acceptance Date Phase 2- (heating, ventilation, air conditioning and the integrated platform management systems) Co-ordinated with *Te Kaha* and *Te Mana's* planned extended maintenance period.	*Te Kaha* December 2012	21 September 2014 (achieved)	21
	Te Mana December 2012	April 2016 (achieved)	2 (early)

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
April 2009	2	The RNZN deferred the start of *Te Kaha*'s maintenance period by two months to ensure that the power upgrade work could be undertaken in conjunction with the engine replacement.
December 2011	24	The decision was confirmed by the December 2011 meeting of the Defence Capability Management Board that *Te Kaha* would be the lead ship for the installation of PSU Phase 2 in 2013 and that *Te Mana* would follow in 2014. This action means a delay to the project schedule and comes with attendant costs but less risk.
June 2013	5	*Te Mana* was not likely to be available to commence PSU until early 2015, once she returned from an operational deployment in early 2014, and *Te Kaha* has achieved a suitable level of operational capability post her upgrade.
April 2014	N/A	As a result of Cabinet consideration of the PSU project's funding and schedule, a revised schedule was agreed for HMNZS *Te Mana* based on the ship being inducted into the upgrade no later than January 2015. This now forms the new base schedule.
July 2015	N/A	A formal reprogramme established a HMNZS *Te Mana* completion window of April-June 2016. Project Closure was programmed for March 2017.

SECTION 2: INTRODUCTION INTO SERVICE PHASE

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the test and evaluation process, which demonstrates the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

2.1 Summary of Introduction into Service phase

Description of Introduction into Service phase

The Configuration Management Plan developed by the ANZAC Ship Design Authority describes the procedures for accepting and introducing the Platform Systems Upgrade into service.

As noted in the Project Management Plan for the Platform Systems Upgrade, the upgrades are to be verified through analysis, inspection, demonstration and test activities. Verification will span from the design stage until the end of contractor Category 5 sea trials and will include:

- Category 0 design verification through reviews;
- Category 3 to test ship fit;
- Category 4 Harbour Acceptance Trials; and
- Category 5 Sea Acceptance Trials.

Category 0-5 Verification completed with Contractor Sea Acceptance Trials during the acquisition phase (Categories 1 and 2 are contractor quality assurance testing stages).

An Operational Test and Evaluation (OT&E) phase conducted on HMNZS *Te Kaha* as first of class completed in December 2014.

Following OT&E an Operational Capability Statement will be issued and Full Operational Release is programmed for November 2016.

Status of Introduction into Service phase

As of 30 June 2016 OT&E is complete. An Operational Capability Statement is being prepared and Full Operational release is programmed for November 2016.

2.2 Schedule of Introduction into Service

The schedule of introduction into service is detailed in the below table:

Ship	Implementation	Initial Operational Release	Category 6 Trials Complete	Category 7 Trials Complete	Full Operational Release
HMNZS *TE KAHA* – Phase I[4]	April – December 2009	13 February 2010	To be confirmed	To coincide with Phase II	To coincide with Phase II
HMNZS *TE MANA* – Phase I	April – October 2010	07 December 2010	To be confirmed	To coincide with Phase II	To coincide with Phase II
HMNZS *TE KAHA* – Phase 2	January 2013 – TBA	21 September 2014	19 December 2014	19 December 2014	November 2016
HMNZS *TE MANA* – Phase 2	June 2014 – May 2015	March 2016	N/A All trials completed on *Te Kaha*.	N/A All trials completed on *Te Kaha*.	November 2016

[4] See Section 1.1 above for an explanation of Phases 1 and 2.

SECTION 3: OPERATIONAL CAPABILITY

3.1 PROGRESS TOWARDS DELIVERY OF CAPABILITY AND OPERATIONAL REQUIREMENTS

Capability Requirement	Operational Requirement	Requirements Likely to be met	Explanation
Damage Stability and Reserve Buoyancy	• A minimum weight growth margin of 100 tonne. • Conformance to the requirements of DEF AUST 500, Australian Defence Force Maritime Materiel Rule Set, Volume 3, Hull System Requirements, Part 2 Stability of Surface Ships and Boats.	Achieved	Implementation on HMNZS *Te Kaha* and *Te Mana* was successful with some phases of operational testing complete. Full operational release will coincide with completion of Phase II.
ANZAC Operational Profile – the propulsion configuration system	• With respect to the propulsion systems, the diesel engines shall, in combination, provide sufficient power to drive the ship not less than 20 knots under the specified design environmental conditions at a maximum displacement of 3700 tonnes.	Achieved	
High Temperature Operating	• Adopt the ISO 7547-2002 standard for heating, ventilation and air conditioning. • An environmental control system which is capable of controlling the ship's internal air temperatures. • A chilled water cooling capacity of not less than 986 kw.	Implemented on *Te Kaha/Te Mana*	
Control and Monitoring System that delivers automated functions across all platform systems	• Integrated platform management systems. • Simplified propulsion control. • Gas turbine engine control module. • Integrated bridge system. • Onboard operational trainer. • Enhanced battle damage control system. • Remote monitoring capability.	Implemented on *Te Kaha/Te Mana*	
Operational Capability Statement and Operational Release programmed for November 2016. Benefits realisation is intended for full implementation by March 2017.			

ANZAC FRIGATE SYSTEMS UPGRADE

Project Description: The primary objective of the ANZAC Frigate Systems Upgrade (FSU) Project is to restore the frigates' ability to fulfil credible combat roles and provide high quality surveillance products in the contemporary and emerging security environment. This will ensure that the Government retains the ability to deploy the ANZACs frigates to the Pacific and beyond, enabling them to operate with confidence in low to medium threat environments.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the Major Projects Report, Volume 3.

SECTION 1: ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once defence industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of acquisition phase

Description of acquisition work

1. On 6 November 2012 the Cabinet Committee on State Sector Reform and Expenditure Control authorised the Secretary of Defence to:

   a. Issue Requests for Tender for the lead contractor, supply of components and other items as required to deliver the capability level; and

   b. Include in the Requests for Tender an option of acquiring a full combat inventory of up to 30 missiles.

How Defence decided to acquire the Capability Solution

Requests for Tender were issued in February 2013. Evaluation of the five tenders for the Combat System Integrator (CSI) resulted in a clear preferred supplier. Two respondents offered a baselined[5] solution that was approximately 15 – 20% less expensive than the other three. The higher cost proposals would have resulted in a compromise in capability to maintain the total project cost within that agreed to at the Detailed Business Case stage. Of the two lower cost solutions, one tender had a noticeably lower evaluation score, and posed a higher level of project and schedule risk. Conversely, the Lockheed Martin Canada (LMC) tender was a thorough response with a lower level of risk reflective of FSU being an extension of LMC's existing Halifax Class Frigate upgrade for the Royal Canadian Navy.

A number of preferred Original Equipment Manufacturers (OEMs) were also evaluated and identified as being able to provide the stand-alone systems not offered by the CSI, but which are required to meet the level of capability directed by Cabinet.

On 14 April 2014, Cabinet approved the Project Implementation Business Case and authorised the Secretary of Defence to award contracts to LMC and others as required for equipment and

[5] In order to evaluate on an equitable basis, responses were baselined by adding or subtracting components and costs from the responses where they differed.

services not forming part of the LMC contract. Cabinet approved NZ$446.193M of capital expenditure for the acquisition and introduction into service of the FSU project (based on Fx rates as at 1 April 2014). This included up to $20M as a special contingency against risk in the design and installation stages.

Contract Status (as at 30 June 2016):

Since the last report (30 June 2015) where seven contracts and three Foreign Military Sales cases had been awarded and one agreement entered into, the following contracts have been awarded:

a. OSI Maritime Limited (Canada). Signed on 20 June 2016 for the provision of an X-band navigation radar system for each frigate.

b. The US Government. A Foreign Military Sales case was established on 26 February 2016 for the provision of technical support to certify the Identification Friend or Foe systems following installation.

c. A major Contract Change Proposal was agreed with Lockheed Martin Canada (the Prime System Integrator) on 18 January 2016 for the provision of detailed design, with Thyssenkrupp Marine Systems Australia (TKMSA) subcontracted to do this. It provided the preliminary design under contract to the Crown.

d. Beca Limited (NZ). A Purchase Order was signed on 18 August 2015 for the provision of requirements definition, design, construction estimate and project management for the strip out and re-build of the Combat Systems Trainer facility for the Maritime Warfare Training Centre, Devonport Naval base.

Parent Company	Lockheed Martin Canada
Prime Contractor at contract signing	Lockheed Martin Canada
Current prime contractor	Lockheed Martin Canada

1.2 Project Budget

Budget variation

	Date Approved	Total (NZ$ million)
Original budget at Approval to Commit	14 April 2014	446.2
Current approved budget	16 November 2015	490.9
Variation on original approved budget		44.8

Explanation of major budget variations

Date of individual variation	Total (NZ million)	Explanation
16 November 2015	44.8	Additional $44.8M approved as a non-cash technical adjustment for FX movement 2015 October Baseline Update

1.3 Financial Performance

Project expenditure to date (30 June 2016)

	Total (NZ$ million)
Life to date expenditure (cumulative)	247.7
Remaining balance of approved budget	243.2
Forecast commitments	208.1

Total forecast expenditure

Forward Cover

To remove uncertainty from a future cash flow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline- is the price of certainty of future cash flows.

	Total (NZ million)
Approved Budget	490.9
Total forecast expenditure	455.8
Gross project variation (forecast)	35.1
Foreign exchange impact	(34.7)
Actual project variation (forecast)	0.4
Variance explanation	Foreign exchange impact

Nature of variation (forecast)	Total ($million)	Explanation
Actual project variation-	35.1	Foreign exchange impact and uncommitted cost
Foreign exchange impact	(34.7)	
Total	0.4	

Project Contingency (as at 30 June 2016)

	Total (NZ$ million)
Contingency built into the budget	30.2
Total contingency expended	0
Remaining Balance	30.2

Explanation of contingency draw downs

Drawdown	Total (NZ$ million)	Explanation
N/A		
Total		

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date.

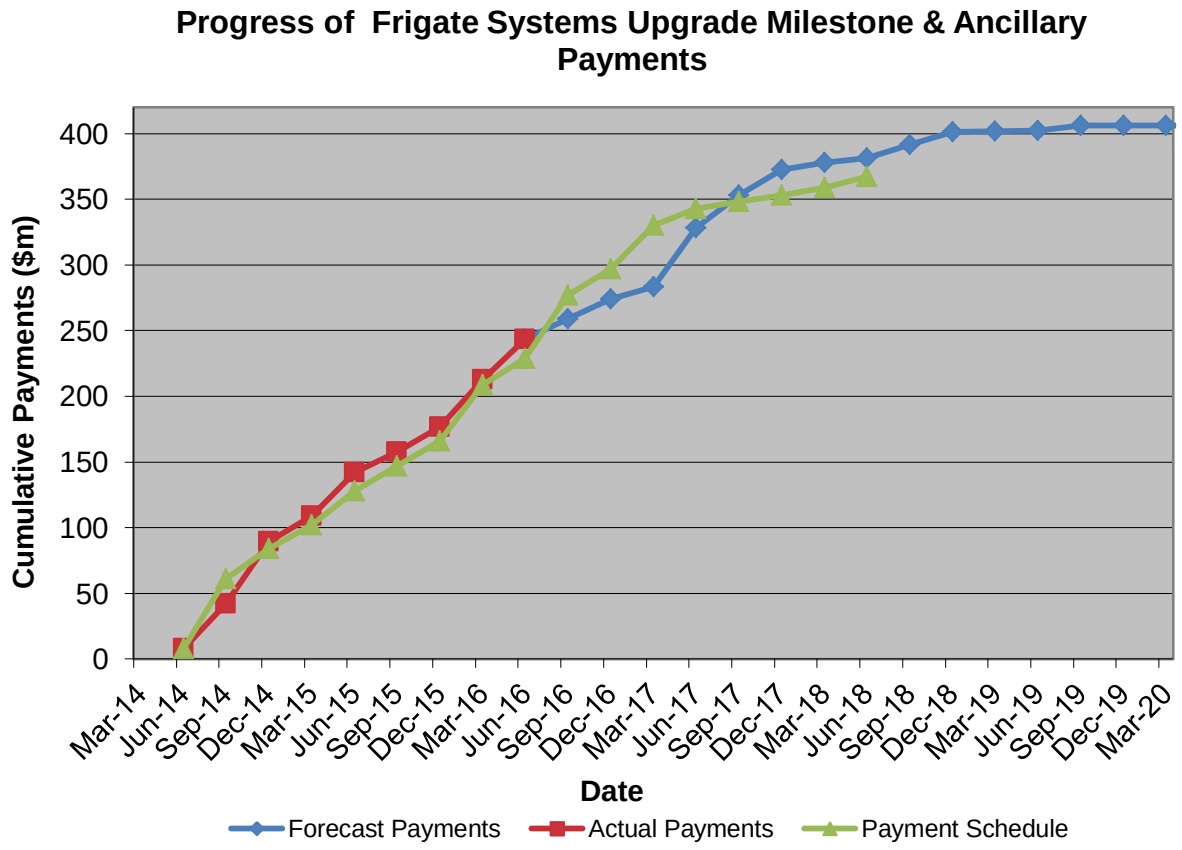
		Original forecast at Approval to Commit	30 June 2016 forecast/achieved	Variation in Acquisition Phase (months)
Acceptance Date	Ship One	March 2017	September 2018	18
	Ship Two	February 2018	September 2018	19
Comment		The June 2016 amendments reflect the changes to the refit start date but the actual acceptance dates remain under review and will only be confirmed once the installation Contract Change Proposal has been agreed in May 2017.		

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
Detailed Design Contract Change Proposal	8	Change to refit start date from November 2016 (as reported in the June 2015 report) to July 2017 due to the longer preliminary design phase.

Progress of ANZAC Frigate Systems Upgrade against the Milestone and Ancillary Payments Schedule[6]

NOTE: This graph displays the projects progress by comparing actual milestone payments against the milestone payments schedule agreed to in the prime contact.[15] Milestone payments are made upon the contractor's provision of key deliverables and are therefore a good way to identify timing and size of schedule slippage.



[6] This graph represents the Prime contract and Ancillary contract. It does not include the $12 million Project Management or the $10 million & $20 million contingencies.

SECTION 2: INTRODUCTION INTO SERVICE PHASE

2.1 Summary of Introduction into Service Phase

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the test and evaluation process, which demonstrated the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

Description of Introduction into Service Phase

An Introduction into Service Plan has been developed to coordinate the test and evaluation processes required to bring the upgraded frigates back into operational service.

The main activities will be:

Engineering change process: The overarching framework against which IIS will be conducted is the RNZN Engineering Change Process. This is a well-established structured process which ensures all elements of IIS are completed.

Data Management and Documentation Deliveries: documentation delivered by the contractors will be reviewed and then entered into the Logistic Information Management System (LIMS).

Acceptance Testing: Acceptance testing will be based on the Royal Australian Navy (RAN) Test and Evaluation procedures. Testing will include Factory, Harbour and Sea Acceptance Tests.

Acceptance testing of the Sea Ceptor missile system will include a significant amount of modelling analysis that will be achieved through collaboration with partner navies.

The first ship to be upgraded will need to meet sufficient test requirements to attain an Initial Operating Capability prior to the second ship entering refit.

Operational Test and Evaluation: will be conducted by the NZDF in order to satisfy that the delivered suite of products meets the original intent. Additionally it baselines the delivered systems and identifies its capabilities and limitations.

Training: Three types of training deliverables will be provided; training systems, training data/documentation and training courses. These deliverables will be managed by the project's ILS manager liaising with the end users.

Leveraging Partner Defence Force Relationships: In order to both meet system requirements and provide through life support, arrangements will be leveraged with partner defence authorities. Implementation Arrangements are now in place with both Canada and the UK.

Prior to IIS, safety case data will be provided by the FSU Project to allow Defence to raise relevant safety cases for approval by the Naval Capability and Armament Certification boards as appropriate. Similarly, prior to classified data being held on any delivered system, the system must be certified to recognised security standards.

2.2 Schedule of Introduction into Service

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements

Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability

	Initial Estimate	30 June 2016 Estimate	30 June 2016 Actual	Variance (months)
Date Platform accepted by Crown	Ship 1 March 2017 Ship 2 February 2018	Ship 1 September 2018 Ship 2 September 2019	N/A	18 21
Commence operational test and evaluation	May 2017	October 2018	N/A	17
Finish operational test and evaluation	February 2018	June 2019	N/A	16
Achieve initial operating capability	May 2017	October 2018	N/A	17
Establish directed level capability	TBC	June 2019	N/A	N/A
Explanation	The initial schedule estimates were at the time of submitting the Project Implementation Business Case. The updated estimates above reflect the change to the refit start date following commencement of detail design in January 2016. These dates remain under review and will not be confirmed until the installation Contract Change Proposal has been agreed (May 2017).			

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Capability Operational Requirements

Operational Requirements:	Requirement likely to be met:	Explanation:
Combat Management System (CMS).	Yes	The Lockheed Martin CMS 330 represents a significant upgrade over the current system that will integrate all the necessary sensors being provided under FSU.
Intelligence Systems	Yes	Both Radio and Radar electronic support measures will be enhanced by the provision of separate systems that will bring the Signals Intelligence capability up to date.
Radar Systems (Surveillance and Reconnaissance).	Yes	Provision of Thales SMART S 3 Dimensional Multi Function Radar and Sharp Eye surface surveillance radar will address obsolescence issues and provide systems capable of detecting modern threats.
Optronics (Surveillance and Reconnaissance).	Yes	A Sagem Vampir Infra Red Search & Track (IRS&T) system will provide additional surveillance plus target indication for the air defence missile system.
Air Defence	Yes	The Sea Ceptor active missile system will provide state of the art defence against the latest types of anti ship missile.
Anti Surface	Yes	The new surveillance sensor package combined with improved Command and Control will improve the ship's ability to defend itself against asymmetric surface threats. A new 5 inch gun control system will contribute to this as well as providing additional flexibility for Naval Fire Support to troops ashore.
Under Sea Warfare	Yes	Modernisation of the Hull Mounted Sonar (HMS) will significantly enhance performance of the detection and tracking of submarines. The introduction of the Sea Sentor Torpedo Defence system will for the first time provide the ability to detect, classify and track torpedoes whilst responding with an integrated set of defensive measures.

Support to Joint Task Force (JTF)	Yes	The overall upgrade will generate an escort that is capable of maintaining a presence in medium to high threat areas. It will be able to significantly contribute to the Intelligence, Surveillance and Reconnaissance objectives of a task force commander and provide local area air defence to high value units.
ASSESSMENT: Contracts to achieve all of the above operational requirements have been awarded. Benefits realisation is scheduled for full implementation in 2019.		

MARITIME HELICOPTER CAPABILITY

Project Description: This project is providing an upgraded fleet of naval helicopters for the Royal New Zealand Navy. Eight SH2G (I) Super Seasprite helicopters are being acquired from Kaman Aerospace with associated spares, training aids and a full-motion mission flight training simulator. Two additional helicopters are part of the package. These will be stored for use as attrition airframes and for spare parts. The Project will also include acquisition of Penguin missiles to replace the current stock of Mavericks.

The existing SH2G (NZ) Super Seasprite fleet was scheduled for a major upgrade of avionics and mission systems by 2015 to address system obsolescence. The offer of a fleet of SH2G (I) Super Seasprites with these systems already upgraded was assessed to provide greater value for money and at lower project risk.

Once delivered to New Zealand the helicopters undergo a period of Operational testing and Evaluation before being brought into service.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the Major Projects Report, Volume 3.

SECTION 1: ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once defence industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of acquisition phase

Description of acquisition work

The acquisition phase of the Maritime Helicopter Capability Project has to date included engagement with Kaman prior to Cabinet approval to negotiate; the negotiation of a contract with Kaman and the ongoing management of the prime contract with Kaman.

The deliverables from this prime contract with Kaman are:

- Aircraft:
  - Ten SH-2G(I) Super Seasprite helicopters
- Training systems:
  - One Full Motion Flight Simulator (FMFS)
  - Six Part Task Trainers (PTT)
- The Software Support Centre (SSC) comprising the hardware and software for:
  - Systems Integration Laboratory (SIL) and
  - Software Development Environment (SDE)
- Mission Planning equipment:
  - Six laptops, each with Mission Preparation System (MPS) and Mission Debrief Facility (MDF) Software
- Support Equipment
- Spares

- Training Services and Training Packages
- Publications

There are additional acquisition activities for:

- Procurement of avionic spares for equipment not supplied or supported by Kaman
- Procurement of the Penguin missile and associated equipment and support

From August 2013 to November 2015, the Ministry of Defence established an on-site team of Defence staff to work with Kaman in Connecticut to supply these deliverables.

Training of NZDF personnel occurred in Connecticut over September to October 2014.

Penguin missiles were delivered to Norway by the RNZAF in March 2014 for refurbishment by the manufacturer Kongsberg Defence and Aerospace. Following refurbishment, the missiles were delivered to New Zealand by the RNZAF in October 2015.

How Defence decided to acquire the Capability Solution

Defence engaged with Kaman Aerospace (the manufacturer of the existing Seasprite fleet) for technical advice and indicative costs to upgrade the existing fleet. Following the cancellation of Kaman's contract to supply newly upgraded Seasprites to Australia, Kaman made an unsolicited offer of these aircraft to New Zealand as an alternative to the upgrade option.

The Minister of Defence recommended that due diligence on the offer be undertaken, including the use of an external airworthiness consultant. Defence also examined a wide range of options for delivery of the naval aviation requirements, against which to compare the Kaman offer.

Cabinet agreed that the Kaman offer was potentially the best value for money and authorised negotiations with Kaman. At the conclusion of negotiations, Cabinet approved the contract in May 2013.

1.2 Project Budget

Budget variation

	Date Approved	Total (NZ$ million)
Original budget at Approval to Commit	15 April 2013	242.2
Current approved budget	15 April 2013	252.3
Variation on approved budget		10.1

Explanation of major budget variations

Date of Individual Variation	Total ($m)	Explanation
2014	10.1	Additional $10.1m approved as technical adjustment for FX movement 2013 October Baseline Update

1.3 Financial Performance

Project expenditure to date (as at 30 June 2016)

Total (NZ$ million)	
Life to date expenditure (cumulative)	215.2
Remaining balance of approved budget	37.2
Forecast commitments	48.3

Total forecast expenditure

Forward Cover

To remove uncertainty from a future cash flow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A Forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline – is the price of certainty of future cash flows.

Total (NZ$ million)	
Approved budget	252.3
Total forecast expenditure	258.5
Gross project variation (forecast)	(6.1)
Foreign exchange impact	5.0
Actual project variation (forecast)	(1.1)[7]
Explanation	NOTE: The impact of a foreign exchange rate at any point of time in a project is constantly subject to change as the project progresses. These fluctuations are expected and mitigated by forward cover. Actual expenditure can only be measured once the project is complete and any variations resulting from foreign exchange differences are managed through forward cover.

[7] In 2016/17, the Ministry will seek a non-cash technical adjustment to the approved budget, reflecting the effect of foreign currency exchange movements on the reported value of the project expenditure.

Project Contingency (as at 30 June 2016)

Total (NZ$ million)	
Contingency built into the budget	21.0
Total contingency expended	7.5
Remaining balance	13.5

Explanation of major contingency draw downs

Draw down	Total (NZ$ million)	Explanation
20 June 2014	1.76	To meet the increased MHCP infrastructure construction costs.
12 June 2015	0.42	For the procurement of an external contractor to assist with the procurement of the SH-2G(I) Support Contract and Completion of Technical Assistance Agreements; and, additional funding for contracted workforce to assist the Seasprite Transition Unit with the introduction of the SH-2G(I) Seasprite.
31 March 2016	4.91	To cover Introduction Into Service (IIS) costs – Software Support Upgrade, extension to contractor workforce and other IIS activities.
11 April 2016	-0.25	NZDF no longer required this funding for contractor assistance, therefore this part of the contingency drawdown was reversed.
03 June 2016	0.70	To enable capitalisation of inventory (spares) used to progress the regeneration of the fleet.
Total	7.54	

Major reallocations of funds within the approved budget

Date of individual variation	Total ($m)	Explanation
2014	31.9	Transfer from MoD to NZDF per 2013 October Baseline Update. This was to fund the introduction into service components of the project that were part of the overall project budget. The transfer avoided continual cost recoveries between NZDF and MoD for these purposes.

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date

		Original forecast at Contract Signing	30 June 2016 forecast / achieved	Variation in Acquisition phase (months)
Acceptance Date	First platform	Delivery to New Zealand January 2015	January 2015 achieved	0 months
	Last platform	Delivery to New Zealand August 2015	August 2015 achieved	0 months

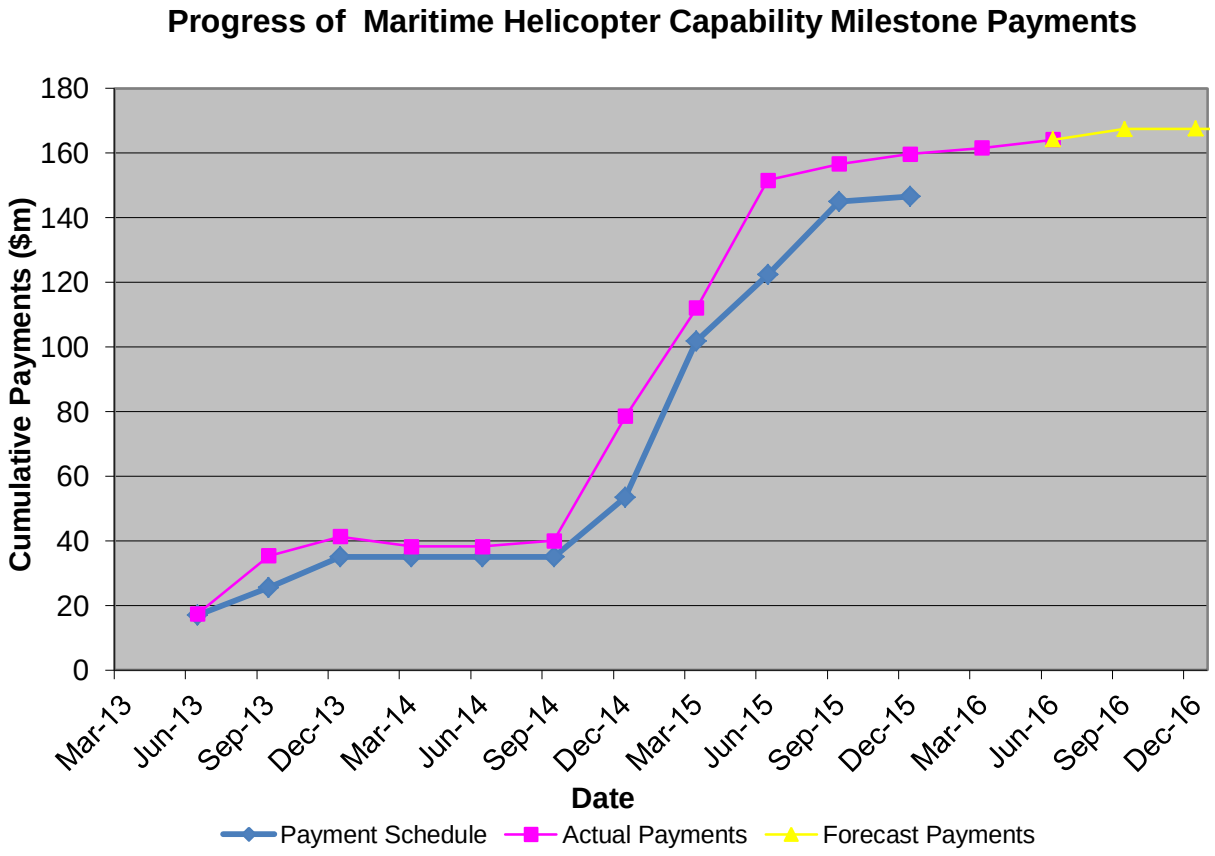
History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
N/A	N/A	N/A

Delivery of the first helicopters occurred in January 2015. The 20 months between contract signature and delivery is for regeneration of the aircraft from storage, final design, installation and testing of the modification for the Decklock anchoring system, provisional airworthiness acceptance by the Crown and shipping to New Zealand.

Progress of Maritime Helicopter Capability against the Milestone Payments Schedule

NOTE: This graph displays the project's progress by comparing actual payments against the milestone payment schedule in the project budget. Payments are made by the Crown upon the contractors' provision of key deliverables and are therefore a good way to identify the timing and size of schedule slippage.



SECTION 2: INTRODUCTION INTO SERVICE PHASE

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the operational test and evaluation process, which demonstrates the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

2.1 Summary of Introduction into Service phase

Description of Introduction into Service phase

The NZDF established the MHCP Introduction into Service (IIS) team in May 2013. The work streams are structured around:

- management of personnel and training for the new aircraft;
- construction of facilities;
- establishment of ground support capabilities;
- planning for the transition between the SH-2G(NZ) and SH-2G(I);
- planning for subsequent obsolescence upgrades for the flight simulator and software support environment;
- planning for Operational Test and Evaluation, First of Class flight trials and weapons qualification activities;
- establishing commercial support arrangements for software, the flight simulator and newly introduced equipment; and
- finance related to operating the new aircraft.

The plan includes a communications strategy.

The plan also details the process of maintaining a joint risk register and producing mitigation plans, along with the reporting requirements to the Defence governance system. The main project dependencies detailed were:

- establishment of software support facilities; and
- provision of the flight simulator.

A significant element of Introduction Into Service effort is focused on Mission Support.

In 2010 HQNZDF Capability Branch established a Base Auckland Joint Project Office to coordinate the Auckland based projects. The MHCP IIS is being coordinated through this office.

Status of Introduction into Service phase

All ten helicopters, spares and support equipment, publications and training have been delivered. The Full Mission Flight Simulator (FMFS) was provisionally accepted on 30 October 2015. The Software Support Centre (SSC) was accepted on 5 May 2016. The SSC contract with Beca Applied Technologies was signed on 1 April 2016 and provides Through Life Support to the mission system software to the aircraft until 2030.

The SH-2G(I) was awarded its Interim Type Certificate (ITC) on 7 April 2016. This followed a significant period of shore based Operational Test & Evaluation (OT&E). The SG-2G(I) Seasprite embarked in HMNZS *Te Kaha* on 11 April 2016 to conduct a work up and to participate in exercise RIMPAC 2016. The Seasprite Transition Unit (STU) was disbanded on 14 April 2016 and all personnel were subsumed into 6 Squadron. Simultaneously, the SH-2G(NZ) helicopters were withdrawn from service.

2.2 Schedule of Introduction into Service

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements.

Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

	Initial Estimate	30 June 2016 Estimate	30 June 2016 Actual	Variance (months)
Date first helicopter accepted by Crown	October 2014	N/A	24 November 2014	1
Delivery of first helicopter to New Zealand	January 2015	N/A	15 January 2015	Nil
Commence operational test and evaluation	February 2015	N/A	June 2015	4
Finish operational test and evaluation	May 2016	August 2016	N/A	5
Achieve initial operating capability	April 2016	N/A	April 2016	Nil
Establish operational level of capability	2016	November 2016	N/A	N/A
Establish directed level of capability	2016	November 2016	N/A	N/A
Explanation	This project entered the acquisition phase in May 2013. Delivery, testing and operational dates was revised after the first aircraft has completed regeneration, modification and acceptance testing in Connecticut.			

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Capability and Operational Requirements

Progress as at June 2013 The Explanations are Subject to Change as the Project Progresses and Solutions are Implemented		
Operational Requirement	**Requirement Likely to be Met**	**Explanation**
Conduct military and civil surveillance in all weather conditions, day and night, up to and including SS 5 and in a range of climatic, geographical and threat environments.	Yes	
Embark and operate from all RNZN aviation capable units up to the top of SS 5 and from appropriately equipped coalition ships.	Yes	
Prosecute anti-surface and anti-submarine targets, acting autonomously or in a co-ordinated force with a variety of weapon payloads and targeting systems.	Yes	
Detect threats in a hostile environment and be able to automatically deploy the appropriate countermeasures.	Yes	
Conduct boarding operations by landing, fast roping (with at least two ropes), and winching.	Yes	
Conduct maritime SAR and be able to hoist personnel and equipment including a rescue swimmer, medical staff and an injured person.	Yes	
Transport personnel to and from other naval units or small, unprepared landing sites.	Yes	
Transfer equipment and supplies between ships whilst underway or at anchor and between ship and shore.	Yes	

Be interoperable with other NZDF units, relevant government agencies and likely coalition partners through communications and data exchange.	Yes	
Assessment: All requirements likely to be met. Benefits realisation is scheduled for full implementation by the end of 2017.		

INDIVIDUAL WEAPON REPLACEMENT

Project Description: The purpose of the Individual Weapon Replacement project is to replace the existing New Zealand Defence Force (NZDF) 5.56mm Steyr rifle and the 40mm grenade launcher with a new individual weapon and grenade launcher of the same capability. To meet the needs of future operating environments, the Individual Weapons Replacement Project requires a move from a closed to open architecture design, to provide an individual weapon that delivers modularity in capability. This gives the user the ability to change systems and ancillaries, as well as adjust the size.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the Major Projects Report, Volume 3.

SECTION 1: ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of Acquisition Phase

Description of acquisition work

As part of the business case approval, Defence received approval to approach the market with a Request for Tender. This was issued on 14 August 2014 with a deadline for response of 12 November 2014.

Eleven companies responded, and eight responses were evaluated as compliant and were recommended to go through the trial evaluation process. All eight companies provided weapons for evaluation.

The trials took place over three months. This involved a comprehensive range of tests including both practical firing and technical analysis.

Overall, the evaluation had three broad streams:

- Technical testing – including aspects such as inherent accuracy at various ranges, actual motion and dynamics (for example, recoil and muzzle jump on firing), muzzle flash, noise levels, weight distribution;
- User testing – including overall usability of both the rifle, the rifle/grenade launcher combination, and the grenade launcher in ‘stand-alone’ mode, and the results of comprehensive shooting trials; and
- The overall commercial package, including in service support arrangements, price, and technical and service information compliance.

Lewis Machine & Tool Limited (LMT) was the clear choice across the full range of user trials. It met the technical evaluation and was within the fiscal envelope allowed. An added benefit was that the LMT grenade launcher was also preferred. This meant that the overall solution was a ‘turn-key’

solution from one provider, rather than having to consider matching a rifle from one provider and a grenade launcher from another.

Due diligence was undertaken on LMT by the Ministry of Defence and through an independent evaluation.

The major contract is a commercial purchase of the rifles, parts, a two year spares package, along with nominated ancillaries and services from LMT.

In addition to the overall contract, the project includes the modification of armouries and other infrastructure across the Defence Force; project management and an allowance for simulation. Logistic Support is part of the overall package. Maintenance arrangements are in line with current provision.

Two components of the overall weapons system - the primary x4 power sight and the combat torch - are contracted direct from their respective suppliers (Trijicon for the sight, and Quality Imports NZ Ltd for the combat torch). Both these components are already standardised in service. The tender requirements stipulated that these components be integral to the overall system.

Overall, project governance and management is in accordance with approved Capability Management Framework practices.

Contracts and Delivery

Individual Weapon – Lewis Machine & Tools Inc USA - Signed 23 Dec 15. (Delivered in 4 tranches)

Advanced Combat Optical Gunsight (ACOG) – Trijicon, Inc USA – Signed 18 Dec 15. (Delivered in 7 tranches)

Combat Torches – Quality Imports Limited New Zealand – Signed 21 Dec 15. (Delivered in one batch)

1.2 Project Budget

Budget variation

	Date Approved	Total (NZ$ million)
Original budget	2 December 2015	59.2
Current approved budget	2 December 2015	59.2
Variation on approved budget		0

Explanation of major budget variations

Date	Total	Explanation
N/A		

1.3 Financial Performance

Project expenditure to 30 June 2016

	Total (NZ$ million)
Life to date expenditure	15.5
Remaining balance of approved budget	43.7
Forecast commitments	41.5

Total forecast expenditure

Forward Cover

To remove uncertainty from a future cash flow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A Forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline – is the price of certainty of future cash flows.

	Total (NZ$ million)
Approved budget	59.2
Total forecast expenditure	57.0
Gross project variation (forecast)	2.2
Foreign exchange impact	(2.1)
Actual project variation (forecast)	0

Variance explanation

Nature of variation (forecast)	Total (NZ$ million)	Explanation
N/A		
Total	N/A	

Project contingency as at 30 June 2016

	Total (NZ$ million)
Contingency	2.7
Total contingency allocated	0
Remaining balance	2.7

Explanation of major contingency draw downs

Draw down	Total (NZ$ m)	Explanation
N/A		
Total	**N/A**	

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date

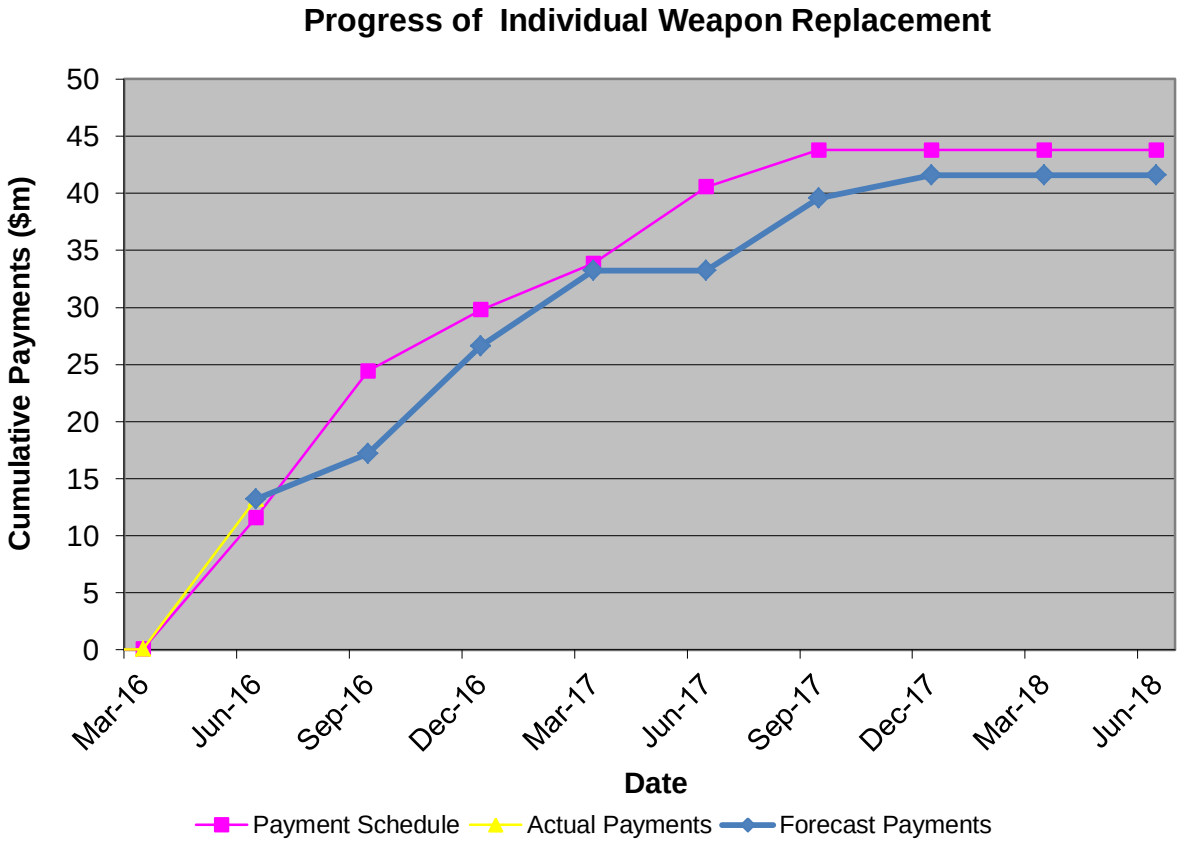
		Original forecast at Contract Signing	30 June 2016 forecast/achieved	Variation in Acquisition phase (months)
Acceptance Date	Individual weapon Final	July 2017	November 2017 (forecast)	4 months
	Advanced Combat Optical Gunsight Final	November 2016	November 2016 (forecast)	nil
	Torches	August 2016	August 2016 (forecast)	nil

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
13 July 2016	4 months	Delay in obtaining the necessary export approvals from the US Government and a re-calculation of production/delivery dates from LMT to cover off manufacturing processes.

Progress of Individual Weapon Replacement Project against the Milestone Payments Schedule

NOTE: This graph displays the project's progress by comparing actual milestone payments against the milestone payments schedule agreed to in the prime contract[8]. Milestone payments are made upon the contractor's provision of key deliverables and are therefore a good way to identify timing and size of schedule slippage.



[8] The milestone payments schedule has cumulative payments that are less than the total budget because it excludes the ancillary and discretionary costs of the project.

SECTION 2: INTRODUCTION INTO SERVICE

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the operational test and evaluation process, which demonstrates the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

2.1 Summary of Introduction into Service Phase

Description of Introduction into Service phase

Maintainer training commenced in March 2016. It is being conducted at the LMT facility in the US. Maintainers are drawn from all services, receive training from the manufacturer, then, while still in the US, conduct a factory acceptance test on the first tranche. Those maintainers will then conduct cascade training for the remaining maintainers. This will coincide with delivery site acceptance testing of each tranche.

As all active personnel involved in weapons training are already familiar with multiple weapon types, no particular challenges are envisaged with the introduction of either the rifle or its key ancillaries (which are also already in operational service within Defence, albeit on not such an extensive scale). The project includes rifles and grenade launchers specifically adapted for use in the mobile and static weapons training systems simulators, simulation training, and simulation testing and documentation.

Operator training will commence in October 2016, to be conducted by LMT instructors. Ten weapon instructors will be drawn from all services, who will then conduct cascade training throughout the main camps and bases in New Zealand.

It should be noted that, should operational circumstances require earlier or accelerated release, priority will be given to operationally tasked personnel and appropriate pre-deployment training provided on the Modular Assault Rifle System - Light (MARS-L.)

Racking in armouries (including aboard ships) is included in the project and a specific infrastructure allocation is allowed. Armoury modifications will be undertaken as the rifles are delivered. Rifle rack requirements within operational vehicles are being determined, with the project to undertake modifications to vehicles within the overall infrastructure allocation.

Status of Introduction into Service phase

The draft Introduction into Service concept document was presented to the project Board in June 2016. This will be used to prepare the detailed introduction into service plan.

2.2 Schedule of Introduction into Service

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or

all of the operational requirements.

Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

	Initial estimate	30 June 2016 estimate	Actual	Variance
Maintainer training commences	March 2016	N/A	April 2016	1 month
Operator training commences	October 2016	February 2017	N/A	4 months
First issue to users	November 2016	February 2017	N/A	3 months
Issue complete	November 2017	November 2018	N/A	12 months
Full OT&E complete	June 2018	June 2018	N/A	-
Explanation	Delay in obtaining the necessary export approvals from the US Government and a re-calculation of production/delivery dates from LMT to cover off manufacturing processes.			

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Operational Requirements

Progress as at 30 June 2016 The Explanations are Subject to Change as the Project Progresses and Solutions are Implemented		
Operational Requirements	**Delivery**	**Comment**
Increased ability to effectively detect, recognise, identify and engage targets	Yes	The rifle has an open architecture to allow additional equipment to be fitted.
Comply with current safety regulations	Yes	The individual weapon safety case is being scoped.
Improve ability to monitor usage rates.	Yes	Fitment of radio frequency identification tags that enable usage to be electronically recorded.
Commonality across NZDF	Yes	All services will be issued with the same type of weapon.
Proven in Service	Yes	Supplied to military and police organisations.
Proven supply chain	Yes	Contractor has representatives in NZ and is entering into a support contract with the NZDF.
Supportable within current NZDF trades and resources	Yes	The Introduction into Service Plan includes conversion training for maintainers and initial train the trainer for operators.
Value for money	Yes	The cost model in the Implementation Business Case demonstrates this.
Assessment: Benefits realisation is scheduled for full implementation by 2020.		

STRATEGIC BEARER NETWORK

Project Description: This project will provide Satellite Communications (SATCOM) equipment to the New Zealand Defence Force (NZDF). A number of mobile (land based) terminals, maritime terminals for the Navy and fixed anchor station terminals will be purchased. This SATCOM equipment will access the US Department of Defense (DoD) Wideband Global SATCOM (WGS) constellation enabling deployed forces to meet current and future strategic information exchange requirements (and meet the growing demand for bandwidth).

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the Major Projects Report, Volume 3.

SECTION 1: ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once defence industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of acquisition phase

Description of acquisition work

There are two parts to the Strategic Bearer Network acquisition. The first is the share allocated to the NZDF for the build and launch of WGS Satellite Nine. These costs are detailed in the MoU with the US DoD, are fixed and are managed by the NZDF. The second part is the acquisition of the infrastructure to enable the NZDF to access the WGS satellites. This includes the acquisition of mobile (land based) terminals, maritime terminals and fixed anchor stations. This part is managed by the MoD Acquisition Division.

It was agreed with the NZDF to split the first acquisition of WGS infrastructure across three financial years, with an iterative approach to delivering the capability. These three stages are:

- Early Access (EA) in FY 12/13. Early Access will deliver a limited number of mobile terminals and a means of operating a temporary anchor station so that the NZDF can start using the WGS constellation to establish communications links. This will allow the NZDF to develop tactics, techniques and procedures, identify logistics requirements, integrate the equipment into Defence networks and familiarise itself with the new technology. Options were included for maritime terminals and fixed anchor stations. This will meet approximately 10% of the project's total deliverables.
- Initial Operating Capability (IOC) in FY 13/14. This will deliver the first fixed anchor station, maritime terminals and additional mobile terminals. This will build on the lessons learned in Early Access. This will meet approximately 40% of the projects total deliverables.
- Full Operating Capability (FOC) in FY 14/15. This will deliver the remaining anchor stations and terminals to the users in the NZDF. This will meet approximately 80% of the project's total deliverables. Note FOC will not be achieved until the full capacity of the WGS constellation is available post launch of WGS Satellite Nine in 2017/18.

The project has delivered the remaining land mobile terminals and is negotiating a Foreign Military Sale order for the maritime terminals with the US Government. The location for the second anchor station will be on or near RNZAF Base Whenuapai.

A number of documents were used to develop the requirements for Early Access. These included:

- The NZDF Strategic Communications Operational Concepts Document;
- The NZDF Strategic Communications Operational Requirements Document;
- The Memorandum of Understanding concerning the joint production, operations and support of Wideband Global Satellite Communications; and
- The Introduction Into Service Plan for the strategic bearer network.

How Defence decided to acquire the Capability Solution

The strategic bearer network acquisition project team commenced a tender process in November 2012 for Early Access. Twelve responses were received and from the nine compliant tenders two successful tenderers were chosen to enter into contract negotiations. These were GigaSat Asia Pacific for the supply of mobile terminals and Rockwell Collins Australia for the supply of a fixed anchor station.

The tender included a detailed section on the tenderers' background, relevant experience, and proven track record of the proposed solution. The response to this was included in the tender evaluation and the ability to provide proven equipment was a mandatory requirement. In addition all equipment has to be certified by the US Government to access the WGS satellites. This provides a level of interoperability built into the system.

The option for the maritime terminals was not taken up as the operational and commercial tender evaluation criteria were not met. The option for the fixed anchor station was taken up as this allowed a head start into the delivery of Initial Operating Capability.

Contracts were signed with GigaSat Asia Pacific on 1 May 2013 and with Rockwell Collins Australia on 26 June 2013. Deliveries commenced in August 2013 and the first connection through the WGS satellite was scheduled for the last week in August.

Maritime terminals were the subject of a dedicated tender which was developed in September 2013 and released to industry in early October 2013. Despite an extended tender process in 2014 there were no successful tenderers for the maritime terminals. The MoD then engaged with the US Government to purchase the terminals directly through a Foreign Military Sale. This is scheduled to be signed in August 2016.

Contractor for Mobile Terminals	GigaSat Asia Pacific, operating out of Canberra.
Contractor for Anchor Stations	Rockwell Collins Australia, operating out of Sydney.

1.2 Project Budget

Budget variation

	Date approved	Total (NZ$ million)
Original budget at Approval to Commit (Note1)	14 November 11	88.9
Including budget for NZDF to manage the MoU	14 November 11	51
Including budget for MoD acquisitions (Note 2)	14 November 11	32.3
Current approved budget	14 November 11	88.9
Variation on original approved budget		Nil

NOTE 1. The approved budget includes a contingency fund of NZ$5.6m.

NOTE 2. The MoD currently has NZ$26.3m of its acquisition budget appropriated. The remaining $6m is intended to replace obsolete equipment at the mid-point of the MoU as the Satellite has a longer life than the user terminals, in particular the mobile terminals. The MoU will provide the NZDF with 20+ years access to the constellation but most mobile terminals will reach their end of life after approximately 10 years.

Explanation of major budget variations

There are no major budget variations.

1.3 Financial Performance

Project expenditure to 30 June 2016

	Total (NZ$ million)
Life to date expenditure (cumulative)	57.4
Remaining balance of approved budget	31.5
Forecast commitments MoU	10.4
Forecast commitments MoD	15.3
Contingency	5.60

Total forecast expenditure

Forward Cover

To remove uncertainty from a future cash flow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A Forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline – is the price of certainty of future cash flows.

	Total (NZ$ million)
Approved budget	88.9
Total forecast expenditure	83.2
Gross project variation (forecast)	5.7
Foreign exchange impact	(1.4)
Actual project variation (forecast)	7.1

Variance explanation

Nature of variation (forecast)	Total ($million)	Explanation
Actual project variation-	7.1	Of which 5.6m is project contingency
Foreign exchange impact	0	
Total	7.1	

Project Contingency (as at 30 June 2016)

	Total (NZ$ million)
Contingency built into the budget	5.6
Total contingency expended	0
Remaining balance	5.6

Explanation of major contingency draw downs

There have been no major contingency draw downs to date.

1.4 Schedule/Timeframe Progress

The following dates are those in the MoU and those for contract acceptance of acquisitions.

		Original forecast at Approval to Commit	30 June 2016 forecast / achieved	Variation in acquisition phase (months)
Acceptance Date	WGS Satellite Nine	2018	2018 (forecast)	Nil
	Early Access	30 June 2013	20 August 2013 (achieved)	2
	Initial Operating Capability	30 June 2014	30 September 2014 (achieved)	3
	Final Operating Capability	30 June 2015	30 December 2017 (forecast)	30

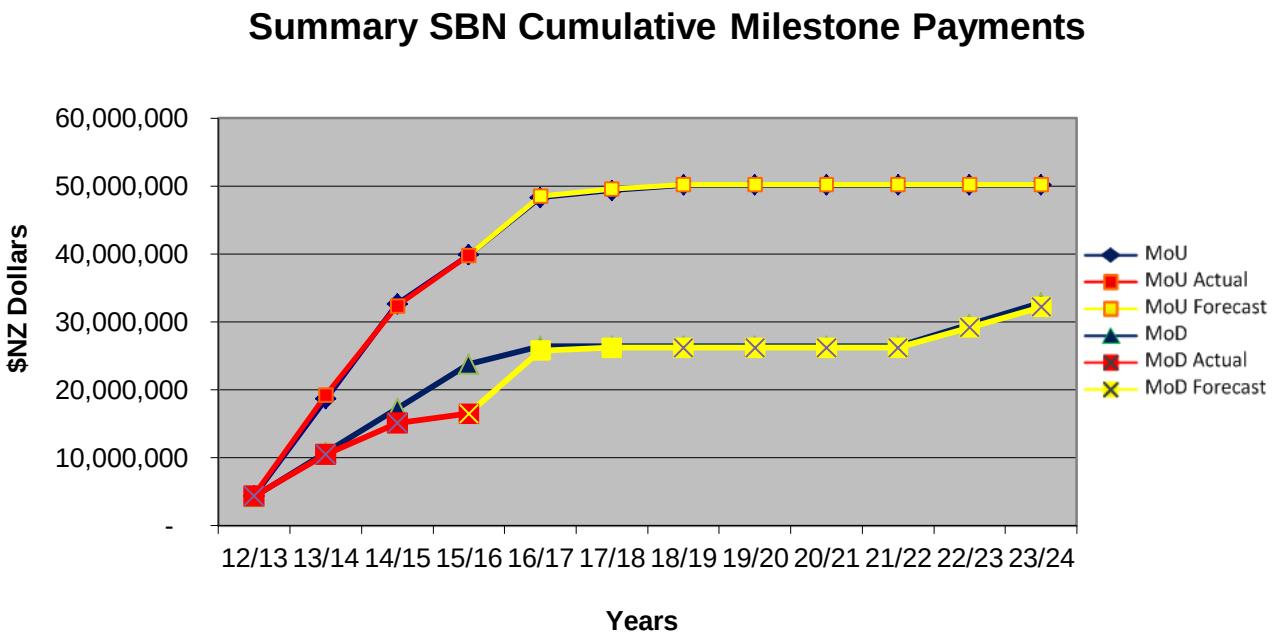
History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
30 June 2013	2	There was a delay in producing the supporting documentation.
30 June 2014	3	There was a delay in producing the supporting documentation and processes to operate and maintain the mobile terminals.
30 June 2015	18	Delivery times for the maritime terminals are longer than expected. This long lead time combined with fitting into the Navy ship installation schedule has effectively put over a year's delay into the project. There have also been delays in the identification of a location for the second anchor station.
30 June 2016	12	Arrangements to complete the acquisition of the maritime terminals and second anchor station has added 12 months to the schedule.

Progress of Strategic Bearer Network Phase 1 against the Milestone Payments Schedule

NOTE: This graph displays the project's progress by comparing actual milestone payments against the milestone payments schedule agreed to in the MoU and acquisition contracts. Milestone payments are made upon the contractor's provision of key deliverables and are therefore a good way to identify timing and size of schedule slippage.

MoU milestone payments are made in August of each year and the final payment coincides with the estimated operational date for Satellite Nine. Contractual payments are summarised for each year and estimated.



SECTION 2: INTRODUCTION INTO SERVICE

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the test and evaluation process, which demonstrates the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

2.1 Summary of Introduction into Service Phase

Description of Introduction into Service phase

Over the reporting period an additional seven small mobile land terminals have been contractually accepted by the MoD and delivered to the NZDF for completion of introduction into service activities.

Contract acceptance involved the following activities and deliverables:

- Inspection and inventory of the equipment.
- Installation, Set to Work, and Acceptance Tests (ISAT) of the equipment including integration with defence networks.
- Operations and maintenance training and manuals.
- Technical documentation, software applications and drawings.
- Spares.
- Recommended Through Life Support Plans (TLSP).
- Warranties.

Since delivery the NZDF (units from the NZ Army and RNZAF) has undertaken the following introduction into service activities:

- Initial Operational Test and Evaluation (IOT&E).
- Deployment of mobile equipment on operations and exercises.
- Development of Standard Operating Procedures (SOPs) for the use of the equipment.
- Codification / entry of equipment into asset and engineering management.
- Evaluation of training, documentation and Through Life Support Plan (TLSP) for suitability.
- Evaluation of equipment operation for reliability, availability and maintainability.
- Development of ILS documentation, integration of training documentation and maintenance SOPs.

The equipment has performed to specification and exceeded it in most scenarios. It has also been successfully integrated into the Defence networks. There has been a delay in declaring interim operating capability as some of the peripheral equipment was not part of the main order.

Status of the Introduction into Service Plan

Separate Introduction into Service plans are being developed for each family of terminals. This has been completed for the large mobile land terminals and is underway for the small terminals. The plan for maritime terminals will be developed as they are delivered and we move towards Full Operating Capability (FOC).

The NZDF Satellite Network Operations Centre (SATNOC) has been established and manages all NZDF WGS communications and the MOU with the US Department of Defence.

2.2 Schedule of Introduction into Service

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements.

Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

	Initial Estimate	30 June 2016 Estimate	30 June 2016 Actual	Variance (months)
Early Access accepted by Crown	30 June 2013	N/A	20 August 2013	2
Early Access Introduction into Service by NZDF	30 June 2013	N/A	29 November 2013	5
IOC accepted by Crown	30 June 2014	N/A	17 June 2014	-
IOC Introduction into Service by NZDF	30 June 2014	N/A	30 September 2014	3
FOC accepted by Crown	30 June 2015	30 December 2017	N/A	30
FOC Introduced into Service by NZDF	December 2018	December 2018	N/A	-
Explanation	FOC accepted by the Crown is when the entire infrastructure has been acquired and delivered to the NZDF. There is a longer lead time in the tender evaluation, contract negotiation, delivery and installation of the maritime terminals than originally forecast and this has led to the slip in FOC by 30 months. The dates for FOC Introduction into Service by the NZDF are significantly later than the delivery of the MoD acquisition as the full capabilities of the WGS constellation are not available until all nine satellites are launched and operational.			

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Operational Requirements

Operational Requirements	Delivery	Comment
The primary focus for SBN will be the South Pacific but the required support area is global.	100%	The seven WGS satellites launched so far are already able to provide global coverage. Two of these are covering the Pacific region.
SBN will facilitate the transfer of information and data: • to support deployed forces; • to conduct network enabled operations (all deployed forces on the network); and • to support Command and Control of the deployed forces (primarily through systems such as DC2S).	100%	WGS has already been used to support NZDF operations and exercises in NZ, the South Pacific and further afield. NZDF networks have been implemented over the WGS bearer and testing will continue as DC2S is rolled out to the deployed forces.
SBN will provide connectivity into the deployed maritime and land environments by providing these units with SATCOM terminals.	66%	Mobile terminals have been used to support both NZ Army, RNZAF and Joint operations. As yet no maritime terminal has been installed.
SBN must operate within NZ and international radio frequency regulations governed by the International Telecommunications Union.	75%	Radio licenses have been issued for use of mobile and fixed WGS terminals though further work is required for the operation of maritime terminals.
SBN will need to support a minimum of three networks on the strategic bearer (an intelligence network, the defence network, and welfare).	100%	The Defence networks have been proven to work over WGS.
SBN must provide the data throughput requirements for maritime and land units as provided in the NZDF Strategic Communications Operational Requirements Document.	50%	Mobile and fixed terminals have met the specifications required of the ORD. Maritime terminals are yet to be tested.

SBN deployed terminals must be capable of meeting a minimum E1 (2.048Mbps) data throughput for each user.	75%	All terminals delivered to date exceed the specifications required. Maritime terminals are yet to be tested.
The NZDF will establish the Satellite Communications Management Cell within the NZDF Network Operations Centre.	100%	The NZDF has established the Satellite Network Operations Centre (SATNOC) in the Freyberg Building.
SBN will support up to six deployed maritime and six deployed land units simultaneously.	66%	The current anchor station can support sixteen deployed units. Maritime deployments are yet to be tested.
Assessment: Benefits realisation is scheduled for full implementation by 2020.		

PART 3B: PROJECT INFORMATION REPORTS

DEFENCE COMMAND & CONTROL SYSTEM

Introduction: The 2010 Major Projects Report included the Joint Command and Control System Programme. It reported that of the four projects identified in that programme, only the Defence Command & Control System Project had commenced, and that the other three were still in the concept stage.

On 18 July 2011, however, Cabinet cancelled the Joint Command and Control System Programme. It did so because the capability gaps identified in the 2008 Business Case, and which were to be addressed by the three projects other than Defence Command & Control System, had significantly reduced. The previously agreed scope and structure of the Programme, therefore, was no longer appropriate.

Accordingly, this Project Information Sheet reports on the Defence Command & Control System Project only.

At the same time as the Cabinet decision, the lead for the acquisition of the Defence Command & Control System Project transferred from the Defence Force to the Ministry of Defence. Governance remains with a Ministry of Defence/Defence Force Capability Steering Group accountable to the Capability Management Board.

The project team engages closely with the NZDF's CIS Branch and the NZDF Intelligence Community to progress and develop the project.

For information on description of the Acquisition Work and the next steps, refer to the Major Projects Report, Volume 3

SECTION 1: ACQUISITION PHASE

1.2 Project Budget

Budget Variation

	Date Approved	Total (NZ$ million)
Original budget at Approval to Commit	24 September 2008	23.6
Current approved budget	24 September 2008	23.6
Variation on approved budget		0.0

Explanation of major budget variations

Date of Individual Variation	Total (NZ$ million)	Explanation
N/A	N/A	N/A

1.3 Financial Performance

Project expenditure to date (as at 30 June 2016)

	Total (NZ$ million)
Life to date expenditure (cumulative)	18.3
Remaining balance of approved budget	5.3
Forecast commitments	2.7

Total forecast expenditure (as at 30 June 2015)

Forward Cover

To remove uncertainty from a future cashflow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A Forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline – is the price of certainty of future cashflows.

	Total (NZ$ million)
Approved budget	23.6
Total forecast expenditure	21.0
Gross project variation (forecast)	2.5 under spend
Foreign exchange impact	0.5 (favourable)
Actual project variation (forecast)	3.0 under spend
Explanation	Underspend of $3 million due to no longer anticipating use of project contingency.

Project Contingency (as at 30 June 2015)

	Total (NZ$ million)
Contingency built into the budget	3.0
Total contingency expended	0.0
Remaining balance	3.0

Explanation of major contingency draw downs

Draw down	Total	Explanation
N/A	N/A	N/A

Major reallocations of funds within the approved budget

Date of individual variation	Total ($m)	Explanation
N/A	N/A	N/A

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date.

		Original Forecast – Investment Case	30 June 2016 Forecast/Achieved	Variation in Acquisition phase
Acceptance Date	**Initial Operating Capability**	July 2010	June 2011[9] (achieved)	11 months
	GCCS-M Full Operating Capability	August 2011	Terminated October 2013 – to be replaced with GCCS-J	N/A
	GCCS-J Interim Operating Capability	Note[10]	April 2017	N/A
	GCCS-J Full Operating Capability	Note[11]	June 2018[12]	N/A[13]

[9] Initial Operating Capability is defined as the installation of the Global Command and Control system – Version 4 (Common Operating Picture only) and technical and operator training completed for the Restricted Multi-Agency network.
[10] This Stage was included for the first time in the 2015 report.
[11] GCCS-J was included for the first time in the 2014 Major Projects Report.
[12] GCCS-J Full Operating Capability is defined as the completion of the installation of GCCS-J throughout the NZDF, and all support and technical and operating training facilities operational. Exemptions may include RNZN ships where installations are based on each vessel's maintenance periods.
[13] Not applicable to the acquisition phase as Full Operating Capability will be delivered during the IIS phase.

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
June 2009	7 - 10	**Approval for release -** The primary reason for the delay is the time taken on development and the need to gain the release of functions of the Global Command and Control System from the US.
September 2009- April 2010	**Note** the overlap with the delay above.	**Project placed on hold -** The NZDF's Assistant Chief of Development commissioned an independent review of the Joint Command and Control System Programme and subsequently placed the project on hold between September 2009 and April 2010. This was intended to allow time to resolve issues relating to project management and the required level of sophistication, functionality, and scope of the system.
June 2010	Nil	**Technical Complexity -** Integrating evolving information management software into existing NZDF networks is an ongoing challenge, particularly in view of the other capability upgrade projects.
April 2011	12	**Intelligence Functionality -** The initial intelligence database provided by the US Navy did not meet NZDF requirements. The US Navy withdrew the product and advised NZ to wait for a new database which is expected by June 2012.
April 2012	12	**Intelligence Functionality -** The new database product has become available. Initial evaluation of the product occurred in April 2012 and concluded with a recommendation to proceed to a Proof of Concept in Defence House in April 2013.
June 2013	4	**GCCS-M 4.1/I3 Proof of Concept -** Detailed evaluation of the planned GCCS-M Proof of Concept concluded that GCCS-J was a significantly more suitable product, and the process for seeking Ministerial approval to evolve to GCCS-J was initiated.
October 2013	Nil	**Cabinet Approval to adopt GCCS-J -** Adoption of GCCS-J provides benefits, including enhanced Intelligence features and less-risky technical integration onto existing NZDF networks.
November 2013	Nil	**Defence governance committee Approval to proceed in 2 phases** - Phase 1 to be a pilot of up to 50 clients on three networks, and synchronised with the implementation of Radiant Mercury. The original proposed install schedule of January/February 2014 was deferred by the Defense Information Systems Agency to begin 17 March 2014.
August 2014	Nil	**Presentation of Mid-Pilot Progress report – Defence governance committee** informed of progress with the NZDF Operational Evaluation of GCCS-J and potential impact of scope of Phase 2.
September 2014	Nil	**Introduction into Service plan –** The plan to see DC2 capability transition from Phase 1: Pilot through to Full Operational Capability (FOC)

May 2015	Nil	**Update provided to Defence governance committee on DC2S Pilot phase – Defence** agreed that a rollout of phase 2 would begin, and that the pilot phase will continue in parallel. It notes the pilot phase has been unable to assess the cut down version of GCCS-J client, known as the Joint Command and Control Common User Interface (JC2CUI).
Dec 2015	Nil	**EWS (Enterprise Widget Storefront) client release –** DISA received approval to provide EWS to New Zealand. EWS superseded the JC2CUI client. An installation occurred in late February 2016.
March 2016	Nil	**EWS evaluation –** Familiarisation briefings were conducted with experienced Agile Client users at Headquarters Joint Force New Zealand. Feedback identified EWS has potential as a client solution. It needs to be established whether Commander Joint forces wants EWS to be taken further.

SECTION 2: INTRODUCTION INTO SERVICE PHASE

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the test and evaluation process, which demonstrates the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

2.1 Summary of Introduction into Service phase

Description of Introduction into Service phase

The Introduction into Service (IIS) stage remains under development. IIS responsibilities continue to be shared between the project team and the receiving organisations/units. The project team continue to manage the physical installation, and the receiving unit manages the internal change timings (such as system readiness). Together the team and organisation identify business change requirements and identify the entry and exit criteria for IIS.

Status of Introduction into Service phase

The roll-out of the Global Command and Control System - Version 4, less Intelligence functionality (GCCS-M4.0.3), on the Multi Agency Network was completed in December 2010. This included operator training.

The roll-out of the GCCS-M4.0.3 to upgrade NZDF sites previously using an obsolete earlier version of GCCS was completed in May 2012. This included operator and technical training.

The roll-out of the Global Command and Control System - Version 4 (less Intelligence functionality), onto the rest of the NZDF SWAN network, less ships, was 80% completed by October 2012. The remaining 20% involved addressing technical issues related to the installation of GCCS-M software onto existing infrastructure. The search for alternatives was the trigger for considering an upgrade to GCCS-J.

As at 30 June 2016:

- The absence of the Intelligence functionality, limitations on database size, and technical incompatibility with NZDF network architecture constrained the performance of GCCS-M on NZDF networks. The upgrade of GCCS-M to GCCS-J received Ministerial approval.
- The upgrade to GCCS-J on all NZDF networks is occurring in two parallel phases; Phase 1 is the limited deployment on static headquarters and support element sites from the period commencing September 2013. Phase 2 is deployment across the rest of the NZDF including ships and deployable headquarters. The completion of ships in this period is dependant on ships maintenance schedules.
- The implementation of the Radiant Mercury cross domain system is occurring in two phases; Phase 1 is complete and provides a limited cross domain solution. Further development is needed to extend the range of business rules, potentially add Reliable Human Review (RHR), and conduct a second training course.
- HMNZS *Te Kaha* was fitted with a GCCS-J interim server solution as a ship trial in February 2015. A GCCS-J server solution was fitted to HMNZS *Canterbury* in September 2015. HMNZS *Te Mana* is currently having GCCS-M replaced with a Navy engineering change process approved permanent GCCS-J fit.
- Implementation of GCCS on smaller ships has commenced as ship trials. HMNZS *Wellington*, *Otago* and *Endeavour* have GCCS-J reachback solutions[14] fitted.

[14] The reachback solutions are where there is no GCCS-J application server installed on-board the ship. Instead, the GCCS-J client connects to a GCCS-J server back ashore i.e. in an NZDF data centre. The reachback solutions have been deployed typically for

- The Global Lite application is being installed on-board as a trial for OP Calypso in June. This is being done to prove its suitability as a solution for synchronising data from ships sensors into GCCS-J, particularly on the smaller ships such as offshore patrol vessels and inshore patrol vessels.
- Inshore Patrol Vessels remain to be started.
- Work to enable connectivity with classified international data feeds will continue.
- The upgrade of the training facilities at the Marine Warfare Training Centre (MWTC) was completed in July 2015.

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements.

Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

2.2 Schedule of Introduction into Service

	Initial Forecast	30 June 2016 Forecast	Actual	Variance
GCCS v4- Test of System and concept viability	Not provided	N/A	25 June 2010	N/A
GCCS v4- Test of multi-agency design and build	Not provided	N/A	December 2010	N/A
Achieve initial operating capability multi-agency	July 2010	N/A	December 2010	5
Achieve Full Operation capability multi-agency	August 2011	Cancelled[15]	N/A	N/A
GCCS-J Phase 1 (pilot)	September 2014	September 2016	N/A	N/A
GCCS-J Phase 2 (final)	June 2015	April 2017[16]	N/A	N/A
GCCS-J Full Operating Capability	Not provided	June 2018	N/A	N/A

smaller ships e.g. OPVs. On-board servers have been used typically for larger ships e.g TEK and CAN. Having a server on-board enables the solution to work without the ship needing an active communications link e.g. if the ship is working in a network disconnected environment. It is also beneficial to have an on-board server if there are lots of clients to support, to reduce bandwidth requirements.

[15] Cabinet SEC Min (13) 14/2 refers.

[16] Installs on ships subject to vessel availability.

NOTE	The acceptance and introduction into service occurs concurrently because the system design and build has to be undertaken in New Zealand on operational networks.

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Capability and Operational Requirements

Defence Command and Control System – Progress as at 30 June 2015		
Operational Requirements	**Requirement likely to be met**	**Explanation**
Implementation of base infrastructure, hardware and software.	Yes	Initial indications of GCCS-J Pilot are that these requirements will be met.
System integration with current NZDF information networks and hardware.	Yes	
Command and control software to be supplied to NZDF headquarters sites, 10 RNZN ships, distributed Air Force bases, Army headquarters, and deployed headquarters.	Yes	
Provide updated location, track and sensor information.	Yes	
Supports email, web browser and collaborative software tools across the NZDF's Secure Wide Area Network (SWAN).	Yes	The GCCS-J pilot has successfully deployed GCCS-J in SWAN. For phase 2, the project will use the new Secret Information Environment (SIE), which similarly provides these email, web browser and collaboration tools.
Establish ongoing system support arrangements and staff training requirements.	Yes	These arrangements are being put in place through the Joint Command and Control Office concept. There are no risks currently identified that could prevent the goal being achieved.
Assessment: All requirements likely to be met. The Defence Command and Control System project is out of scope for benefits realisation, as its business case was approved by Cabinet pre-2010.		

PROJECT PROTECTOR REMEDIATION MULTI-ROLE VESSEL, OFFSHORE AND INSHORE PATROL VESSELS

Introduction: Through the Protector Remediation Project, Defence will remediate capability shortfalls and deficiencies which are present in the delivered vessels. Project Protector delivered a Multi-role Vessel (MRV), two Offshore and four Inshore Patrol Vessels (OPVs & IPVs). These vessels were acquired to perform a range of sealift and naval patrol tasks for the NZDF and civilian agencies. The ships were delivered with capability shortfalls and deficiencies that were subject to a mediation claim and settlement.

For information on the background and description of acquisition work, refer to the Major Projects Report, Volume 3

Project Budget

	Date Approved	Total (NZ$ million)
Crown Budget Phase 1	July 2010	11.9
Crown Budget Phase 2	March 2011	48.0[17]
Departmental Consolidation	July 2014	0.9[18]
Total		60.8
Current Approved Budget		48.9

Financial Performance

Project crown expenditure to date (as at 30 June 2016)

	Total (NZ$ million)
Approved Budget	60.8
Life to date expenditure (cumulative)	55.9
Remaining balance	4.9
Forecast commitments	2.9

[17] The original budget was $53 million. In April 2014, Cabinet approved the transfer of $5 million from Project Protector Remediation to the Platform Systems Upgrade Project.
[18] In the 2015 Budget Update the balance of Departmental Funding was transferred to Capital.

Total forecast expenditure (as at 30 June 2016)

	Total (NZ$ million)
Approved budget	60.8
Total forecast expenditure	58.8
Gross project variation (forecast)	2.0 (under spend)
Foreign exchange impact	0.0
Actual project variation (forecast)	2.0 (under spend)
Explanation	N/A

Project Contingency (as at 30 June 2016)

	Total (NZ$ million)
Contingency built into the budget	8.7
Total contingency expenditure approved	7.0
Remaining contingency	1.7

Explanation of major contingency draw downs

Drawdown & Date	Total Expenditure approved (NZ$ million)	Explanation
18 October 2012	2.5	Production Consolidation
8 July 2013	1.2	Production Consolidation
8 April 2014	3.3	Transferred to the PSU project for the completion of phase 2 work on HMNZS *Te Mana*
TOTAL	7	

Major reallocations of funds within the approved budget

Date of individual variation	Total ($m)	Explanation
13 October 2011	-12.844	Reprogram 1 Outcome
21 January 2012	1.0	Mission Systems – Gun
31 May 2012	7.5	Mission Systems – Additional Funding
30 July 2012	5.0	ILS – Funding
8 April 2014	1.7	Transferred to the PSU project for the completion of phase 2 work on HMNZS *Te Mana*

Schedule/Timeframe / Progress

The year to June 2016 has been focussed on completion of the scope of work.

The macro level schedule for this project is practically finished with the completion of the ballast work on *Canterbury*, programed for the docking in September 2016. Minor completion work under Logistic Command management will continue thereafter.

"*Operational Capability Statements"* have been endorsed by the Naval Capability board for the seven vessels of the Protector fleet incorporating the work completed under both Project Protector and Protector Remediation.

As at 30 June 2016 the Project was 97% complete and the plan anticipates project closure for both Protector and Protector Remediation in 2016.

Outcome of Remediation Programme (30 June 2016)

Items Complete

Engine Lubrication System

Modifications to the engine control system and the addition of 200 tons extra ballast have effectively remediated concerns with respect to *Canterbury's* engine lubrication system.

Echo-sounder

Canterbury's echo-sounder has been remediated to ensure the crew can get accurate information on the depths in which the ship is operating. The echo sounder has been installed and tested and this item has been completed.

Monitoring Tools

This involves the acquisition of monitoring tools that are used to ensure optimal use of the OPVs' Service Life Margins, and their ability to accept future capability upgrades. This product has been delivered and is installed on *Wellington* and *Otago.* This item has been completed.

Sea Boat Relocation

The reconfigured RHIB launching system has been completed and certified as a SOLAS/LRS Fast Rescue Boat. From an operational perspective the boat system is fully configured for naval operations with the most demanding requirement to perform as a helicopter crash boat with actual performance to be determined through Operational Test and Evaluation currently underway.

Automated gangways and shell doors have been installed and commissioned.

Landing Craft-Medium (LCM)

Canterbury's landing craft have being remediated. The replacement lifting structure, bow ramps and a revised ballast system have been completed.

Appropriate arrangements have been installed on *Canterbury* to allow the LCM to be secured alongside to allow for loading by the ship's cranes and through the new shell doors.

Aviation Integration on *Canterbury*

The relocation of the starboard alcove in conjunction with earlier work to resize the Hangar doors for NH90 operations has resulted in a full reconfiguration of the aviation facilities suitable for the (limited) operation of NH90 helicopters in addition to SH2G Seasprites.

Canterbury's Surgical Facility

The surgical facility has been fully outfitted to provide a comprehensive level 2+ surgical facility including the provision of cardiac safe power systems.

Ship Monitoring Data Acquisition System

Sea keeping issues represent a major issue for Protector vessels and the Ship Monitoring and Data Acquisition System has been installed on *Canterbury* to allow full recording of a significant number of ship parameters to provide support for operations and through life assessment. Sensors have been installed and provide data to the recording system. The data system collects real data to assist in the determination to what if any further (sea keeping) changes to *Canterbury* are necessary.

All ship installations are complete and the shore based analysis system has been delivered.

LCM – Automated Line Handling (2015)

The launch and recovery of the LCM was hazardous with the LCM acting as a pendulous weight on the ship's cranes. An Automated Line Handling System has been installed.

Communications Detection System (Karearea) (2015)

Daronmont Technologies have delivered seven Karearea Communication Detection Systems. Karearea provides intercept, location and display of radio transmissions. All systems have been installed and are operational.

Naval Gun System (TYPHOON and TOPLITE) (2015)

Rafael Defence Industries have delivered the TYPHOON (including TOPLITE Sensor) weapon system for *Canterbury*, *Otago* and *Wellington* and TOPLITE sensors for the IPV class.

The TYPHOON systems have been installed and tested on *Canterbury*, *Otago* and *Wellington*.

The Toplite systems have been installed and accepted on *Hawea*, *Rotoiti and Taupo.* The same work is complete on *Pukaki*. Final testing by the Navy, however, is delayed through sea day availability within the RNZN Fleet Plan.

OPV Cross Connect (2016)

The OPV Cross connection work was removed at Capability Steering Group direction.

Obstacle Avoidance Sonar (2016)

Three Wide Angle Sub Surface Profile Systems have been delivered comprising a tender mounted multi beam echo sounder with wireless connection to the host ship or unit. The systems provide real time 2D and 3D imaging of ocean flow.

Air Capable Radar (2016)

An integrated radar system has been designed, installed and tested to provide an aviation airspace management capability to *Canterbury* and the Offshore Patrol Vessels.

Sensor Manager and Tactical Display

Sensor and Display of the tactical picture within the Protector Fleet is provided using the existing tactical display system AIMS-ISR. The systems have been delivered and installed and provide integration of other mission system component both legacy and new.

Programme of Work to Completion

Ballast Conversion for *Canterbury*

Conversion of the Void 14 to water ballast on HMNZS *Canterbury* is nearing completion. Completion of the work has been aligned to the next docking period in September 2016.

Benefits Realisation

The Protector Remediation project is out of scope for benefits realisation, as its business case was approved by Cabinet pre-2010.

NETWORK ENABLED ARMY TRANCHE ONE

Description: Network Enabled Army (NEA) Tranche 1 is to deliver modern communications to the land force units most often deployed by the Government – Special Operations Forces (SOF); and a land force commitment, including infantry, a Task Group Headquarters and communications personnel, of around 200 personnel. It is part of the wider NEA Programme.

ACQUISITION PHASE

The acquisition phase procures the capability solution. Deeper analysis of requirements and options may be required once industry is engaged. Included in this stage are processes for tendering, contract negotiation and acceptance of the deliverables.

1.1 Summary of acquisition phase

In April 2015, Cabinet approved NEA Tranche One funding for new digital radios and associated equipment as part of the NEA Programme (CAB Min (15) 11/7 refers).

The Tranche 1 Acquisition Phase Charter went through the Defence NEA Governance process in April 2016. This established the agreed schedule.

Tranche 1 is due for completion by June 2018.

How Defence decided to acquire the Capability Solution

NEA Tranche 1 has a range of interlinked capability sets that are being delivered through a series of acquisitions. These capabilities are outlined in Volume 3. They were developed through the NEA Programme Business Case. This was referred to the Minister of Defence and provided the basis for Tranche 1 approved by Cabinet.

1.2 Project Budget

Budget variation

	Date approved	Total (NZ $ M)
Original budget at Approval to Commit	1-Mar-15	106
Current approved budget	1-Mar-15	106
Variation on original approved budget		0

1.3 Financial Performance

Project expenditure to 30 June 2016

Total (NZ$ million)	
Life to date expenditure (cumulative)	3.5
Remaining balance of approved budget	102.5
Forecast commitments	102.5

Total forecast expenditure

Forward Cover

To remove uncertainty from a future cash flow in a foreign currency, Forward Exchange Contracts are used to purchase the funds required to satisfy the forecasted project costs. A Forward Exchange Contract is a contract to buy/sell a nominated amount of currency on a given date. The rate is struck at the time of the contract and becomes the contract rate. This is the rate that will be used on the agreed future date to settle the contract and receive/pay the foreign currency regardless of what the market rate is on the day. The resulting gain or loss when the contract is compared to the market rate on the day – or at any point in the timeline – is the price of certainty of future cash flows.

Project expenditure to 30 June 2016

Total (NZ $ M)	
Life to date expenditure (cumulative)	3.5
Remaining balance of approved budget	102.5
Forecast commitments	102.5

Total (NZ $ M)	
Approved budget	106.0
Total forecast expenditure	106.0
Gross project variation (forecast)	0.0
FOREX Impact	0.0
Actual project variation (forecast)	0.0

Project Contingency (as at 30 June 2015)

Total (NZ $ M)	
Contingency built into the budget	0.0
Total contingency expended	0.0
Additional funding	0.0
Remaining balance	0.0

Note: NEA Tranche 1 Project contingency is not handled as a separate item. It is embedded in the overall Programme.

Explanation of major contingency draw downs

There are no current contingency drawdowns

Drawdown	Total (NZ$ million)	Explanation
N/A	N/A	N/A

1.4 Schedule/Timeframe Progress

	Original forecast at Approval to Commit	30 June 2016 forecast / achieved	Variation in acquisition phase (months)
Acceptance Date	N/A	N/A	N/A
Comment	Tranche 1 is scheduled to complete by June 2018. The initial Acquisition Timetable is not yet finalised		

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
N/A	N/A	N/A

SECTION 2: INTRODUCTION INTO SERVICE

2.1 Summary of Introduction into Service Phase

The introduction into service phase develops the force elements required to generate NZDF outputs at a specific level of capability. Part of this stage is the test and evaluation process, which demonstrates the capability has met specific standards of safety and is operationally effective in accordance with the suite of operational concept documentation.

Description of Introduction into Service phase

Planning for the Introduction into Service (IIS) stage has commenced. IIS responsibilities and processes have been reviewed and confirmed. The key participants in IIS are the Programme Team and Project Team, Defence Logistics Command, Training and Doctrine Command and the receiving units. The Programme Business Change Manager has worked with Army to identify business change requirements across the organisation.

Status of the introduction into service plan

IIS plans will be produced for the systems that will be delivered under Tranche One acquisition.

2.2 Schedule of Introduction into Service

Levels of Capability

Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements.

Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

	Initial Estimate	30 June 2016 Estimate	30 June 2016 Actual	Variance (months)
Special Forces Electronic Warfare Introduction into service complete	June 2015	N/A	May 2016	11
Special Forces Electronic Warfare achieve directed operating capability	September 2015	September 2016	N/A	12
Battalion Headquarters Command Post Systems Introduction into Service Complete	December 2017	December 2017	N/A	N/A

Battalion Headquarters Command Post operational test and evaluation.	June 2018	November 2018	N/A	5
Battalion Headquarters Command Post achieve directed level of capability	June 2018	December 2018	N/A	6
Explanation	N/A			

Summary of Through Life Operating Cost Estimates

Tranche 1 is scheduled to complete by June 2018. The initial Acquisition Timetable is not yet finalised.

Benefits Realisation

Scheduled benefits realisation has yet to be finalised but is likely to be post-2021.