




MAJOR PROJECTS REPORT 2014

1 July 2013 – 30 June 2014

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

A109 TRAINING AND LIGHT UTILITY HELICOPTER

Project Description: This project is providing the NZDF with a training and light utility helicopter capability. Five A109LUH (NZ) helicopters and a flight training simulator have been acquired to replace the current training helicopters for the RNZAF. An additional (sixth) 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 2014 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

In December 2003, Cabinet agreed that the Ministry of Defence engage with industry to seek further information on the capability, availability, price and supply of helicopters to meet the NZDF's light utility and training requirements. An Invitation to Register Interest was issued in June 2005. Four companies responded with potential helicopters to fill the capability requirements. The requirements for training and light utility tasks, including counter-terrorism, were re-confirmed during the selection process for the medium utility helicopter, as any aircraft acquired would supplement the medium utility helicopter.

In 2006, Cabinet agreed that the Ministry of Defence issue a Request for Tender for up to six aircraft, within a funding limit of NZ$110 million. Evaluation of the responses to the tender judged that the A109 training and light utility helicopter, based on the version being produced by AgustaWestland for the Swedish Defence Force, would provide the best available training and light utility platform. The evaluation determined that six helicopters would cost NZ$154 million, in excess of the funding limit. Five A109 helicopters and a flight simulator would, for NZ$140 million, provide an affordable solution for training, light utility tasks and counter-terrorism support, as well as greater potential for maritime light utility tasks. Defence put this option to Cabinet in 2007, and Cabinet agreed to the purchase of a fleet of five A109s and a flight training simulator. In May 2008 a contract was signed with AgustaWestland for the aircraft at a cost of NZ$139.3 million. The project's budget allocated funding for spares was used in July 2008 to fund an additional helicopter to be broken down for spares.[1]

[1] Breaking down an aircraft for spares is an established and cost efficient way of obtaining a spares pool. This approach is adopted by other Defence partners.

A Resident Project Team was based in Cascina Costa and then Vergiate, Italy to oversee the acquisition from June 2008 to December 2011. The team has worked with the contractor to ensure the helicopters were provided within budget, to schedule, and to the contract's function and performance specifications. A key task for the project team was monitoring the quality of AgustaWestland's production line and product support programmes at its various European sites. The team has also worked closely with Sweden's Ministry of Defence, whose parallel acquisition of the A109LUH training and light utility helicopter provided a valuable source of knowledge for resolving production line issues. For example, alongside the Swedish team, the project team were instrumental in establishing a 'user-group' to allow all A109LUH customers to share appropriate knowledge and experiences.

Following the delivery of the final helicopter and the simulator in late 2011, the Resident Project Team returned to New Zealand and disbanded. In January 2012 the Acquisition Project Manager transitioned to a liaison role between the MoD and NZDF in order to oversee the closure of the remaining items of contractual work. At June 2014 a number of important items, including the cockpit armour and Air Transportation Trolley, remained outstanding against the contract deliverables resulting in the acquisition phase of the contract remaining open. Closure is scheduled for the second half of 2014.

How Defence decided to acquire the Capability Solution

Responses to the 2005 Registration of Interest		
	Aircraft	**Cost (NZ$ million)**
Single-engined aircraft	Eurocopter AS350B3 Squirrel	Capital 27.6 Whole of Life - Not assessed at that time.
	Bell 407	Capital 30.4 Whole of Life - Not assessed at that time.
Twin-engined aircraft	AgustaWestland A109E Power ***Preferred Tenderer***	Capital 38 to 40 Whole of Life $45.02 per year, based on a fleet of six aircraft.
	Boeing/MD 902 Explorer	Capital 40 Whole of Life $44.41 per year, based on a fleet of six aircraft.
	Eurocopter EC135 P2T2	Capital 44.7 Whole of Life $40.36 per year, based on a fleet of six aircraft.
Assessment	The four unsuccessful tenderers did not meet the training and light utility capability and operational requirements for a variety of reasons.	

Option	**Benefits**	**Risks**	**Cost (NZ$ million)**
<u>Option 1</u> A109 light utility helicopter 5 aircraft 1 flight training simulator ***Preferred Option***	• Meets level four and five capability requirements. • Provides growth potential for the maritime light utility role.	• No allowance for attrition. • Affordability of acquisition costs higher than the funding limit prescribed by Cabinet. • Higher operating costs.	Capital 140 Operating Costs per year 5.43

<u>Option 2</u> EC 635 5 aircraft 1 flight training simulator	• Meets all level four capability requirements. • Lower acquisition costs than A109. • Lower operating costs than A109.	• No allowance for attrition. • Does not meet level five capability requirements, and nor is there future growth potential for maritime duties. • Difficult to deploy by C-130 Hercules.	Capital 126 Operating Costs per year 5.14
<u>Option 3</u> A109 light utility helicopter 4 aircraft in altered configuration 1 flight training simulator	• Provides an option that is close to the Cabinet funding limit.	• Does not meet level four capability requirements. • Provides inadequate counter terrorism capability – little capacity for other government agency support. • Higher operating costs per aircraft. • No specialist equipment. • No allowance for attrition.	Capital 114 Operating Costs per year 4.2
<u>Option 4</u> EC 635 5 aircraft in an altered configuration 1 flight training simulator	• Provides an option that is close to Cabinet funding limit. • Meets most level four capability requirements. • Lower acquisition costs than A109. • Lower operating costs than A109.	• No allowance for attrition. • Compromises some level four capability requirements. • Only able to operate in benign environments. • Does not meet level five capability requirements and nor is there future growth potential for maritime duties. • Limited specialist equipment.	Capital 110 Operating Costs per year 5.14

1.2 Project Budget

Budget variation

	Date Approved	Total (NZ$ million)
Original budget	29 April 2008	139.3
Current approved budget	27 April 2010	140.5
Variation on approved budget		1.2

Explanation of major budget variations

Date	Total	Explanation
27 April 2010	1.2	Funds to cover adverse foreign exchange movements

1.3 Financial Performance

Project expenditure to 30 June 2014

	Total (NZ$ million)
Life to date expenditure	129
Remaining balance of approved budget	11.5
Forecast commitments	3.2

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	140.5
Total forecast expenditure	132.2
Gross project variation (forecast)	8.3 (under spend)
Foreign exchange impact	4
Actual project variation (forecast)	4.3 (under spend)

Variance explanation

Nature of variation (forecast)	Total (NZ$ million)	Explanation
Actual project variation	4.3 favourable	**Prime Contract Under Spend on Spares.** The Project Team is forecasting an under spend of NZ$0.6M due to savings to be made by not taking up the full options of spares and radios. **Project management costs and ancillary contracts.** The latest forecasts include a NZ$0.3 Million over spend in ancillary contracts and a NZ$0.24 Million under spend on project management costs. Project Management and Ancillary expenses are not initially determined on a fixed milestone payment basis. They are forecasts that will change as the project progresses and as more reliable information becomes available on how these funds need to be allocated.
Foreign exchange impact	4	**Note.** Whilst these funds contribute to the total under spend, they cannot be used by the project team because the extra funds are not part of the approved budget.
Total	8.3	

Project contingency (as at 30 June 2014)

	Total (NZ$ million)
Contingency	6.2 (EUR 3 million) 1.7 7.9
Total contingency allocated	5 (0.22 Foreign Exchange Impact)
Remaining balance	2.9

Explanation of major contingency draw downs

Draw down	Total (NZ$ m)	Explanation
Technical and Engineering Support	0.89	This included: • improvement of the Flight Simulator; • restoration of communications equipment; • improvement of the Global Positioning System; and • an engineering review.

Cancellation of snow skis	(0.64)	Return of funds from cancellation of snow skis.
Qualification Test Guide for Flight Training Simulator	1.27	To simplify the certification and maintenance of the flight training simulator.
Global Positioning System hardware	(0.04)	Return of funds for Global Positioning System hardware.
Qualification Review Work – approved June 2010	0.10	Engagement of the Italian Civil Aviation Authority to assist in the Qualification Review work.
Visual Database Generation Station Training – approved July 2010.	0.06	To provide pre-requisite training for the Visual Database Generation Station (to be operated in support of the flight training simulator).
Fly Away Kit – approved October 2010	0.72	For the provision of a Fly Away Kit - a set of spares held to specifically support deployed aircraft.
Flight Training Device Field Service Representative – approved November 2010	0.80	Funding for a Field Service Representative in support of the Flight Training Device.
Dehumidification Equipment for Aircraft – approved October 2011	0.20	Funding to purchase dehumidification equipment for aircraft to prevent avionics unserviceability and corrosion (as general issues, not solely specific to A109).
Flight Planning System – support for conduct of FPS acceptance – approved June 2012	0.37	Funding to provide a specialist consultant to conduct evaluation and acceptance testing of the Flight Planning System.
Training Course – Maintenance of Emergency Floatation System – approved June 2012	0.09	Funding to provide for maintenance training on the Emergency Floatation System provided with the A109LUH (NZ).
Additional Spares & Protective Equipment – approved October 2012	0.27	Funding to purchase additional spares not on the attrition framework.
Additional Spares & Protective Equipment – approved October 2012	0.12	Funding to purchase additional ground support equipment.
Dehumidification Kits – approved May 2013	0.1	Funding to purchase Five Dehumidification Kits from Sweden.
Emergency Floatation System - Approved May 2013	0.08	Funding for the provision of Spares for the Emergency Floatation System.

HCM Attachment Points – approved December 2013	0.18	Fitting of Rappelling points for HCM attachment during training/sniping.
HCM Vox Solution – approved December 2013	0.05	Provision of Alpha900 helmets and facemasks for HCM to prevent Voice Operated Intercom interference.
Certification of floatation equipment – approved June 2013	0.04	Funding for certification of emergency floatation equipment and additional tooling costs.
Radio Test Set upgrade and radios – approved May 2014	0.035	Upgrade of Secure Radio test set and purchase of appropriate hand held radios (x2) to allow RNZAF independent testing.
Life Raft Training and Tooling – approved May 2014	0.11	Provide training and tooling to enable RNZAF support of pilot life rafts provided with the aircraft.
Total	**4.8**	

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date

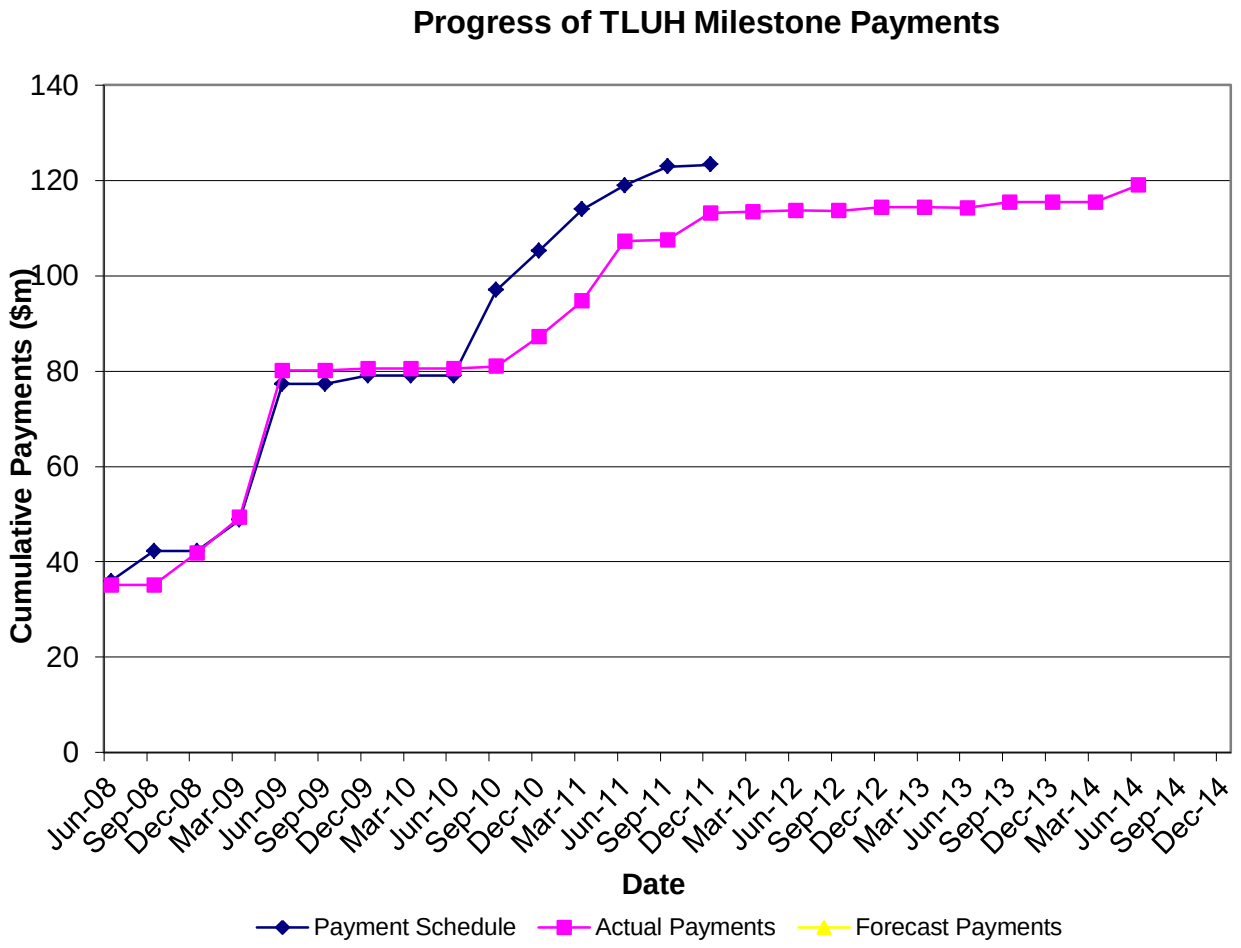
		Original forecast at Contract Signing	30 June 2014 forecast / achieved	Variation in Acquisition phase (months)
Acceptance Date	First Helicopter	September 2010	achieved: December 2010	3
	Fifth Helicopter	May 2011	achieved: September 2011	4
	Sixth Helicopter	N/A	achieved: November 2011	NIL

History of variations to schedule

Date of individual variation	Variation length (months)	Explanation
June 2010	2	This delay has resulted from minor issues arising in the formal qualification testing of the A109s. There is a corresponding delay in reaching the Qualification Review. The delivery date of the last helicopter remains unchanged. **Note.** If the Qualification Review is not held in September, the delivery of the first two aircraft will not occur in 2010.
June 2011	3 – 4	Date for the conduct of Qualification Review 2 is rescheduled. The delivery of the final helicopter is tied to the successful outcome of this review.

Progress TLUH 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 upon the contractor's provision of key deliverables and are therefore a good way to identify 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

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 stood up a Helicopter Introduction into Service Team in July 2006. The Introduction into Service Management Plan identifies the team's work streams for the introduction of both the medium utility (NH90) and the A109LUH (NZ) training/light utility helicopters. The work streams are 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 relating 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 the New Zealand Police. 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 No 230 (Mission Support) Squadron);
- acquisition of the NH90 helicopters;
- interface with Project Protector vessels;
- infrastructure – the successful completion of Project Takitini; and
- provision of the flight training simulator.

The Introduction into Service Team is supported by an RNZAF Integrated Logistics Support Team. 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 to 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 A109LUH (NZ)), 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 final phase of the Introduction into Service Plan is the merger of the NH90 and the A109LUH (NZ) helicopters into a single unit – No. 3 Squadron – which is currently operating the Iroquois helicopters at RNZAF Base Ohakea. To ensure this merger is seamless, a 'Helicopter Transition Unit' (HTU) has been established and a 'Helicopter Transition Management Plan' has been developed, which integrates the build up of the new helicopter capabilities with the drawdown of the legacy capabilities. A Joint Project Office (JPO) was set up within the HTU in 2011 to integrate all aspects of helicopter capability delivery including Trials and Development (T&D)[3], Operational Testing and Evaluation (OT&E), training, retrofit, regression testing and follow on Acceptance Testing and Evaluation (AT&E).

Following the initial A109 capability release in FY12/13, allowing the conduct of New Zealand based non-tactical transport tasks with the helicopter, the first Helicopter Basic Course (HBC) commenced on 27 January 2014. This HBC is the first training course to be run with students, both pilots and helicopter crewmen that have not previously flown helicopters. The HBC students on this course are due to graduate in late 2014. Capacity for the conduct of light utility operations remains limited by available crews at this time. A concerted effort to repopulate helicopter instructor personnel has paid dividends over the last year although there remains a shortage of non-instructor pilots.

At the heart of the A109 training system is the Synthetic Training System. This consists of a simulator (Level 3 Flight Training Device, with motion and 220° visuals) and a Virtual Interactive Procedure Trainer, housed within a purpose built training centre, adjacent to the new helicopter squadron hangar complex. This equipment continues to prove its worth as the HBC progresses.

The completion of the release of the final light utility operational capability has been delayed by staff shortages, particularly pilots, and the achievement of the final operational capability will not be complete until counter terrorist capabilities are completed in late 2015.

Nevertheless, as the primary role of the helicopter is training, the system is considered ready to transition into service in the last quarter of 2014. HQ NZDF Capability Branch, with the support of MoD, intends to offer the system to the RNZAF next month.

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.

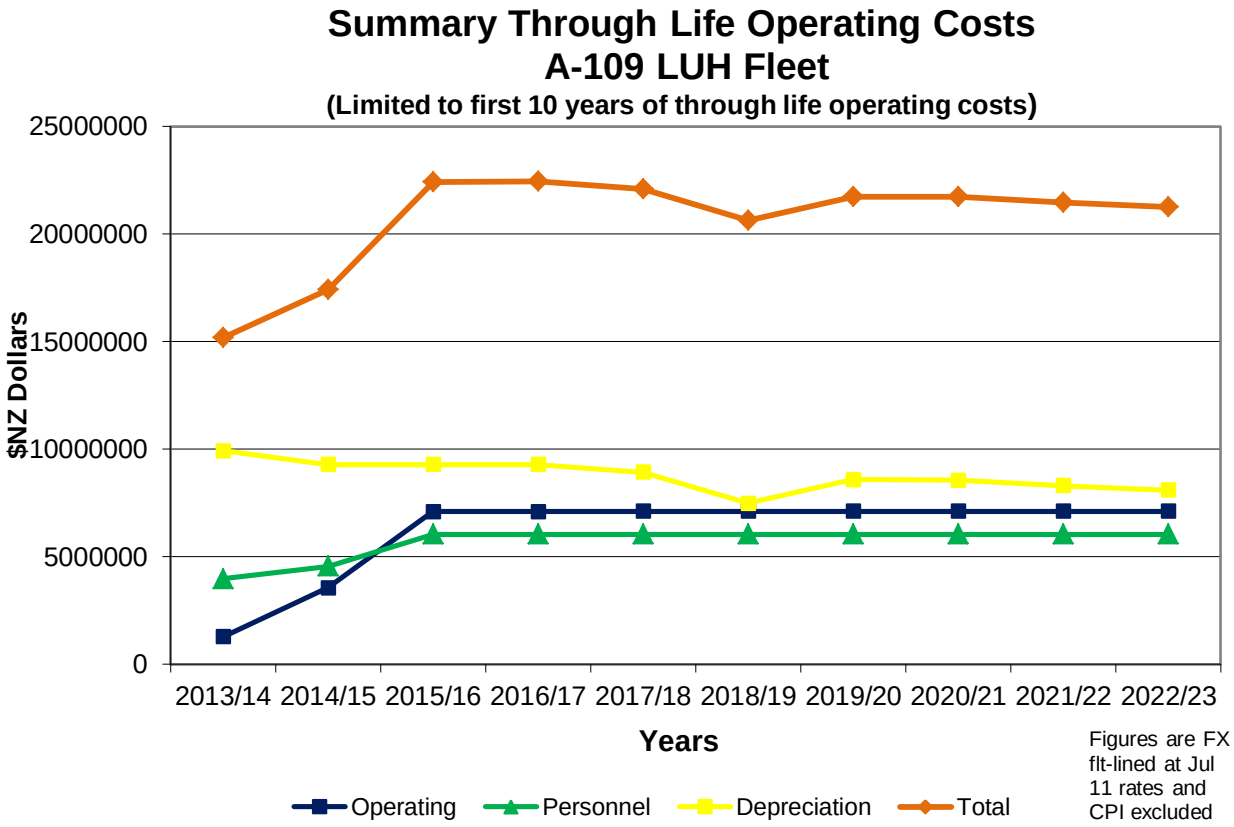
NZDF Output Plan, 2009, S1-12

[3] T&D is a component of IIS and is conducted by the user Unit. T&D is where the system is characterised, Standard Operating Procedures are developed and the user units develop their familiarity and proficiency with the system.

	Initial Estimate[4]	30 June 2014 Estimate	Actual	Variance (months)
Date platform accepted by Crown	September 2010	N/A	December 2010	3
Delivery of platform to New Zealand	Late 2010	N/A	March 2011	3
Commence operational test and evaluation	Not provided	N/A	April 2011	N/A
Finish operational test and evaluation	March 2011	July 2014	N/A	-
Achieve initial operating capability	December 2011	N/A	September 2011	-3
Establish operational level of capability[5]	December 2012	December 2015	N/A	-
Establish directed level of capability	Not known at time	December 2015[6]	N/A	-
Explanation	The A109 provides both a training and light utility role. The above capability milestones cover the development of both of these roles to a level of capability which will be developed in phases and in concert with the NH90. Completion of OT&E represents all aspects of required capabilities tested. The provision of initial operating capability represents basic NZ transport tasks only with limited qualified crews.			

[4] This date was chosen because it was when the A109LUH (NZ) helicopter was selected and concrete planning for the aircraft's Introduction into Service began.
[5] This is required for Employment Context 1D: Terrorist and Asymmetric Threats.
[6] The capability is achieved in combination with the development of the NH90.

Summary of Through Life Operating Cost Estimates



SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Operational Requirements

Progress as at 30 June 2014 The Explanations are Subject to Change as the Project Progresses and Solutions are Implemented		
Operational Requirements	**Delivery**	**Comment**
Cruise at 140 knots indicated air speed, at sea level in normal conditions	Yes	
Fly in instrument meteorological conditions	Yes	
Carry four passengers/crew in the cabin	Yes	
Conduct single or dual pilot operation with removable instructor controls	Yes	Remains subject to further analysis and procedure development.
Accommodate the maximum size range of pilots while wearing night vision equipment	Yes	
Operate with twin gas turbines	Yes	
Conduct winch training	Yes	
Conduct under-slung load training	Yes	
Conduct (ship) deck operations	Not yet	While on paper the helicopter is capable of deck operations, a significant volume of work is required to achieve the capability. By the end of 2011 the ability to transport the A109 on HMNZS *Canterbury* had been investigated and an aircraft landed on board *Canterbury* to check interfaces. The results of this testing are being evaluated with work ongoing to mitigate the minor issues in compatibility identified. The ability to conduct embarked 'deck' operations is not scheduled until 2016 at the earliest due to resource limitations.
Operate using night vision instrument systems without distraction	Yes	
Operate with a fully integrated digital cockpit	Yes	

Operate with a four axis autopilot	Yes	
Survive small arms fire	Yes	The A109 LUH (NZ) will meet level five requirements for self-protection but meeting these requirements alone will not guarantee survival if the aircraft is engaged by small arms fire. This is the case for any helicopter that accords with these requirements.
Be transported by C-130 Hercules aircraft with minimal disassembly	Yes	The transportation equipment has been redesigned to meet operational requirements. Final confirmation of suitability for use in this task is with AgustaWestland.
Conduct external secure communications	Yes	
Mount a MAG-58 door gun	Yes	
Assessment: Only one capability is yet to be delivered. Full capability is expected by 2016.		

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence, could occur several times during the coming year.
Likely	Likely to occur about once per year.
Possible	Possible, likely to occur at least once over a ten-year period.
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years.
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years.

Active Risks at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	There is a risk that the lateral Centre of Gravity envelope does not support RNZAF training requirements	Introduction into Service	Low	Helicopter Crewman training could be compromised or require significant reappraisal	Likely	Centre of Gravity restrictions being investigated with AgustaWestland.

4.2 Issues

	Issues	Phase	Severity	Impact	
1	Introduction into service personnel resources are limited. There are single points of failure. Recent pilot resignations have exacerbated the issue.	Introduction into service	High	The conduct of IIS to originally planned milestones and achievement of planned flying rates has not been achieved because of the limited number of trained aircrew.	Constant management of tasks, priorities and available resources and expectation as to what can be achieved and by when. An organisational redesign process is underway.
2	There is an issue with the cabin roof restraint rings configuration.	Introduction into Service	Low	Restricted movement and reduced outputs from A109 crewmen.	A solution has been identified and parts are being provided by AW. Roof rings planned to be fitted during routine scheduled servicings as they occur Jul-Dec 14.
3	There is an issue with the night formation lighting being incompatible with night vision goggles.	Introduction into Service	High	Night formation flight on NVGs not possible.	Work is underway to modify the light circuits of the aircraft to mitigate the formation lighting issues. Resolution is expected in the later half of 2014.

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 2014 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
		+ 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 2014, no additional funding had been sought.

1.3 Financial Performance

Project expenditure to 30 June 2014

Total (NZ$ million)	
Life to date expenditure (cumulative)	253.8
Remaining balance of approved budget	11.0
Forecast commitments	7.5

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	264.8
Total forecast expenditure	261.3
Gross project variation (forecast)	3.5
Foreign exchange impact	(3.4)
Actual project variation (forecast)	0.1

Variance explanation

Nature of variation (forecast)	Total (NZ$million)	Explanation
Actual project variation-	0.1	N/A
Foreign exchange impact	3.4	
Total	3.5	

Project contingency (as at 30 June 2014)

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

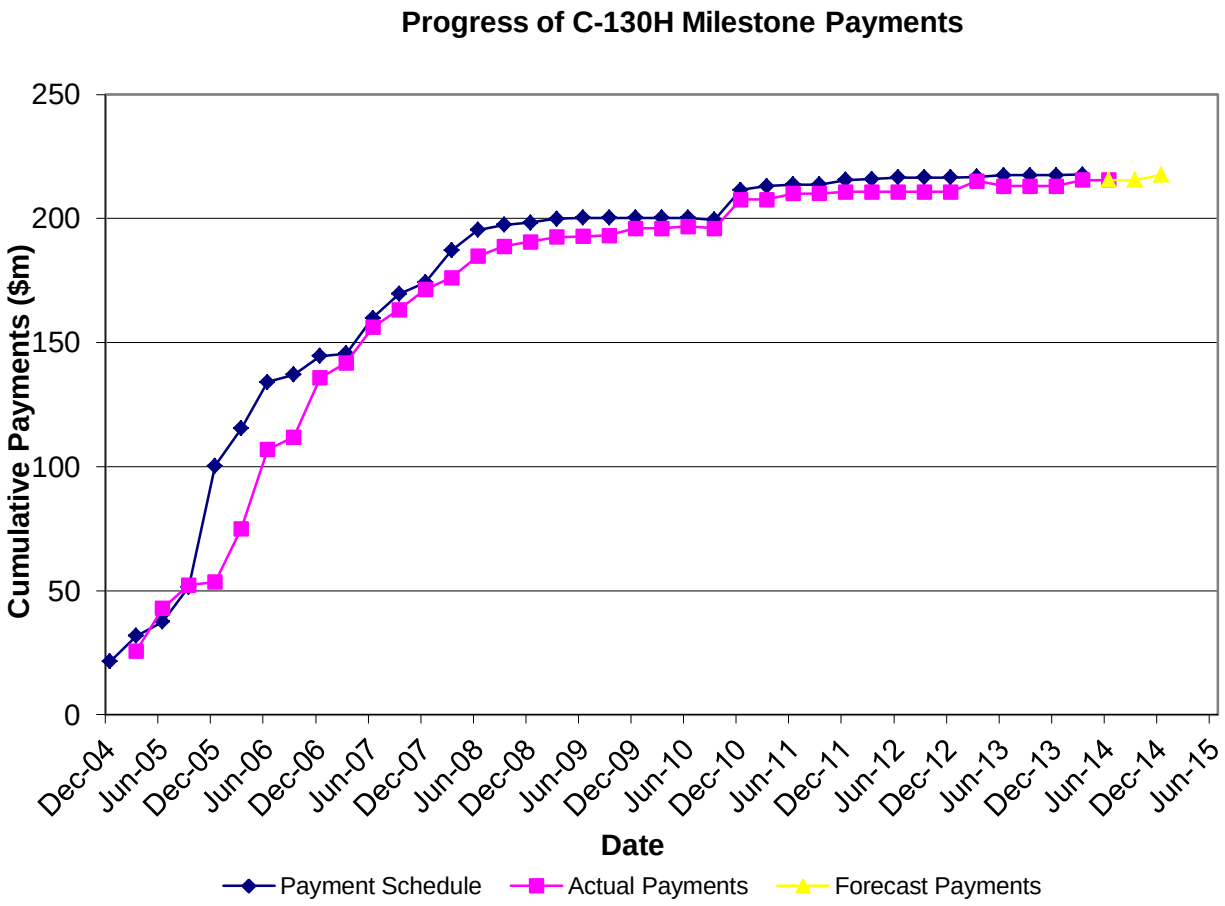
		Original forecast at Approval to Commit	30 June 2014 forecast / achieved	Variation in acquisition phase (months)
Acceptance Date	First Aircraft	Mid 2007	October 2010 achieved (provisional acceptance)	+40
	Last Aircraft	Mid 2010	August 2015 forecast	+62
Comment		New forecast schedule developed post implementation 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.

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[7]. 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.



[7] 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 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 3, Search and Rescue;
- Phase 4, Aircraft Self Protection System; and
- Phase 5, High Latitude Operations.

OT&E has yet to be completed for the following roles/phases:

- Phase 2, Airborne Operations, are currently in progress and is scheduled for completion by July 2014, and
- Phase 6, Night Vision Capability is scheduled for completion by mid 2015 (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. While the software has been improved in content and stability since initial delivery, it has only recently (March 2014) been deemed operationally acceptable from an airworthiness or capability perspective. Software version V119 has been delivered and accepted by the RNZAF as the baseline software load. 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. Full capability release is planned to be achieved in July 2014 subject to airworthinees board approval. At that point the IIS Phase of the project will be complete although one production aircraft has still to be delivered. Capability Branch will handover the residual Risks and Issues to the RNZAF for In-Service management. In summary, while the project is carrying risks and managing issues on the path to achieving full capability release, these risks and issues are being managed in an integrated and coordinated way.

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.

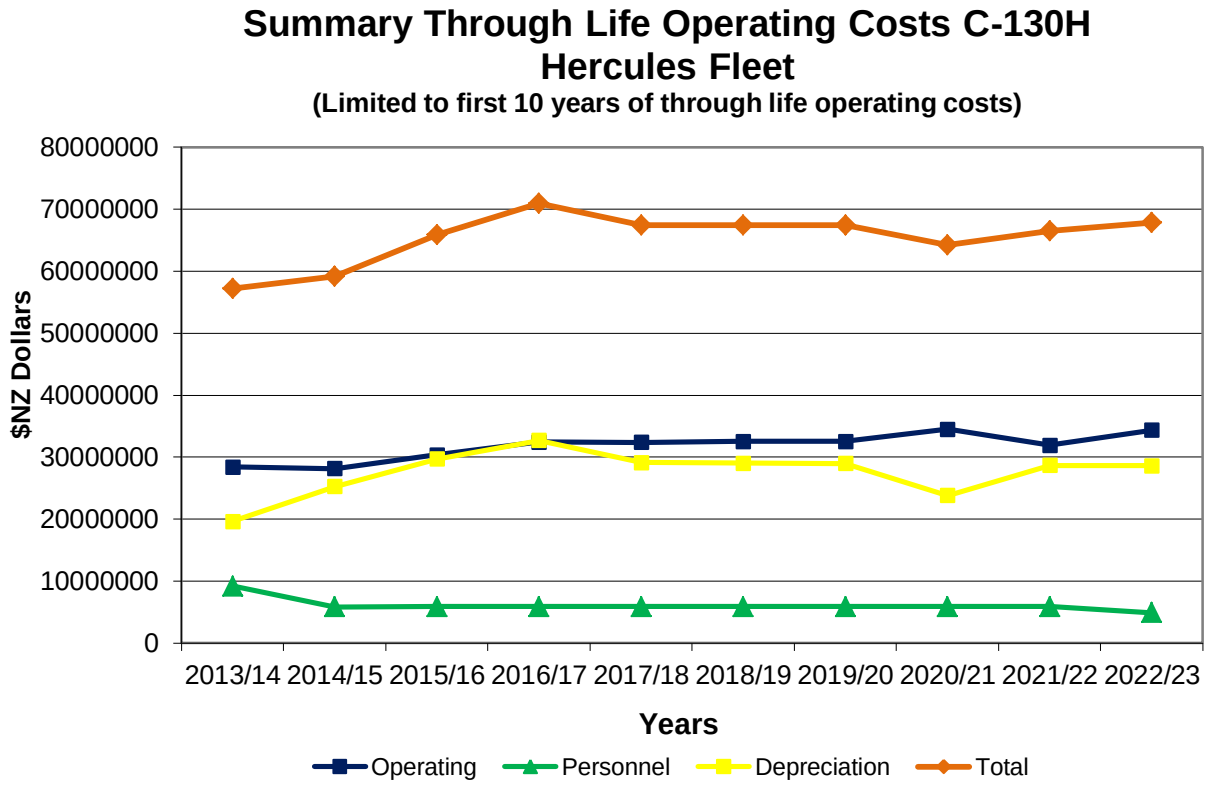
Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

	Initial Estimate	30 June 2014 Estimate	30 June 2014 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	September 2013	N/A	-
Achieve initial operating capability	August 2008	August 2012	August 2012	48
Establish directed level of capability	October 2010	August 2014	N/A	-

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 is scheduled to be established by August 2014 with aircraft upgraded and crews trained, the project is continuing through to August 2015 to upgrade all five aircraft.

Summary of Through Life Operating Cost Estimates



SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Operational Requirements

Operational Requirements	Delivery	Comment
Tactical airlift	Yes	The requirement will be declared through completing the Operational Test and Evaluation (OT&E) phase. Expected to be completed by July 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	The requirement will be declared through OT&E. Expected to be completed by July 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 to be absorbed within the contingency) to resolve this requirement shortfall.
Surveillance	Yes	The requirement will be declared through OT&E. This is expected to be completed by July 2014.
Maritime Search and Rescue	Yes	The requirement will be declared through OT&E. This was completed 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. This is expected to be completed by July 2014.
Assessment: All requirements will be met.		

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence, could occur several times during the coming year
Likely	Likely to occur about once per year
Possible	Possible, likely to occur at least once over a ten-year period
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years

Active Risks at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	**Software**. Future software builds may not meet the required standards. Although this risk is reducing it still requires attention.	Acquisition / Introduction into Service	Medium	Possibility of delays in the introduction of new software builds.	Possible	Software will be reviewed prior to acceptance. In addition, software testing will take place in the Systems Integration Laboratory prior to sign off. Test flights will be undertaken to test for system stability/fixes/regression prior to acceptance.
2	**Production Phase.** Labour costs may exceed approved budget.	Acquisition / Introduction into Service	High	Possible need to seek additional government funding.	Possible	Close monitoring of the project budget and further review post completion of the second production aircraft.
3	**Production Phase.** A combination of work arising, increased production scope, and parts lead-time may result in the further delay for the completion of production aircraft.	Introduction into Service	High	Furthers delays may lead to increased project costs and/or a temporarily reduced operational capability.	Possible	Close monitoring and periodic review to pro-actively reduce delays. The last aircraft has had some work completed in parallel in the annex area in Woodbourne.

4.2 Issues

	Issues	Phase	Severity	Impact	Treatment
1	Production delays continue to affect project timelines and aircraft release dates.	Introduction into Service	High	Delays in achieving upgrade milestones impact upon a range of operational, training and personnel activities.	NZDF and MoD are actively managing the Transition Plan with on-going internal stakeholder engagement through the Joint Project Office. Experience gained on the first Production aircraft resulted in a revised, but realistic timeline and the aircraft are on track to meet these dates.

2	C-130 LEP navigation database does not support all required airfields or airways.	Introduction into Service	Medium	Reduced operational capability which may require higher workloads for aircrew.	A contract (with through-life support) is in place to transition data to a replacement Jeppesen navigation database scheduled for implementation. Software delays by Honeywell mean delivery will now be in September 2014.
3	Multiple System Processor Reset/Swaps.	Introduction into Service	High	Operational capability could be significantly affected.	Standard Operating Procedures/checklists have been put in place to mitigate effects whilst System Processor reset fixes are progressively incorporated into software builds.
4	Qualified Flying instructor (QFI)/Qualified Aircrew Instructor (QAI) manning remains critical.	Introduction into Service	High	Insufficient QFI and QAI on RNZAF No.40 Squadron to meet required personnel levels.	Qualified aircrew that have been posted to staff appointments are being used temporarily to bridge the gap until sufficient personnel are qualified.
5	Reduced flying hours are impacting throughput of crew members and constraining the training and advancement of personnel.	Introduction into Service	High	Increased training burden on RNZAF No40 Squadron and advancement of crewmembers – Co-Pilot to Captain.	Addressed through the reduction in ab-initio aircrew to RNZAF No40 Squadron. The reduction of operational tasking has enabled more crew to be trained.
6	Aircraft delivery delays are causing a lack of currency, continuity and training. Note: This is related to issue 5, but is more about the impact of delays on the ability to deliver operational outputs.	Introduction into Service	High	The ability to maintain operational outputs is at risk. Limited training hours are disrupting this Introduction Into Service period and could prevent the RNZAF from reaching the required level of capability within the agreed timeframe. This would lead to a temporarily reduced operational capability.	Individual flying currencies and continuation are being managed carefully. Conversion courses are being tailored to allow for essential personnel only.

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 are being acquired from NH Industries to replace the Royal New Zealand Air Force Iroquois fleet. An additional (ninth) helicopter is being 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 2014 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 tabled in section 2.1b. 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 is being 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) is working with the contractor to ensure the helicopters are 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 will provide 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 have been conducted and a detailed design, test and qualification process for the NH90 helicopter's specific capability characteristics will be undertaken. A summary of the current risks and issues is provided in section 5.

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 IC-FC retrofit was accepted by the NZDF in mid June 2014. The remaining three IC-FC aircraft were returned to the NZDF by mid July 2014 (9 weeks ahead of schedule). The final aircraft to be delivered from France (also in the Final Configuration) is expected to be accepted in France in September and arrive in New Zealand in early October 2014.

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
NH Industries – France ***Preferred Supplier***	NH 90
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 2014)

	Total (NZ$ million)
Life to date expenditure (cumulative)	637.5
Remaining balance of approved budget	134.2
Forecast commitments	39.6

Total forecast expenditure

	Total (NZ$ million)
Approved budget	771.7
Total forecast expenditure	677
Gross project variation (forecast)	94.7 (under spend)
Foreign exchange impact	94.7
Actual project variation (forecast)	0.0
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 2014)

	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

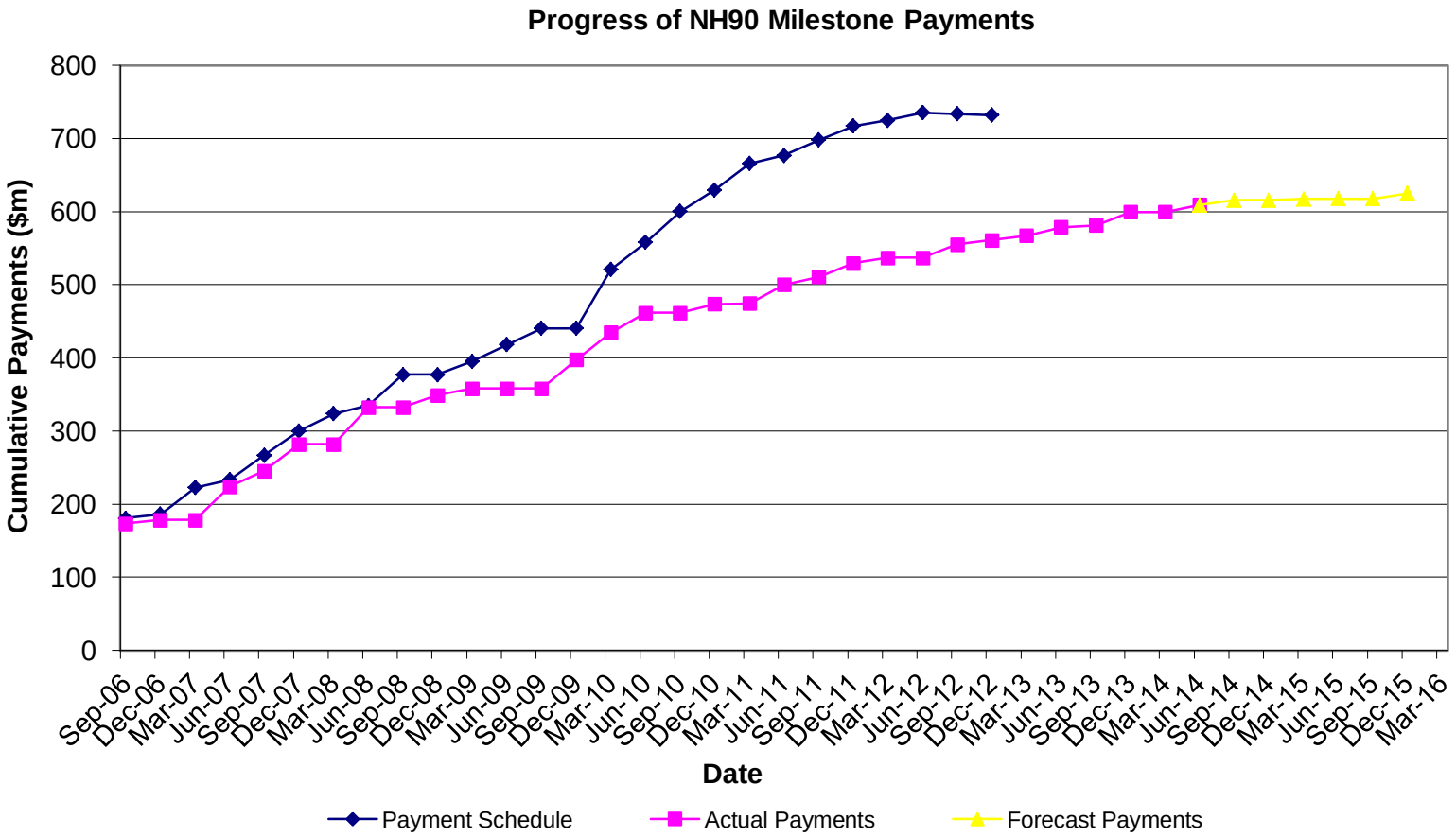
Variations in forecast acceptance date

		Original forecast at Contract Signing	30 June 2014forecast / achieved	Variation in Acquisition phase (months)
Acceptance Date	First platform	November 2009	December 2011 achieved	25 months
	Last platform	June 2011	September 2014 forecast	39 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 MUH 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 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.

[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 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 is the merger of the NH90 helicopters and the training/light utility helicopters (A109) within a single unit – No. 3 Squadron – which is currently operating the Iroquois helicopters at RNZAF Base Ohakea. To ensure this merger proceeds smoothly, a Helicopter Transition Unit (HTU) was established and Helicopter Transition Management Plan has been developed which integrates the build up of the new helicopter capabilities with the drawdown of the legacy capabilities. A Joint Project Office (JPO) was set up within the HTU in 2011 to integrate all aspects of helicopter capability delivery including Trials & Development, Operational Testing & Evaluation (OT&E), training, retrofit, regression testing and follow on OT&E.

While a JPO would have been set up regardless, there is no doubt that the overheads of Provisional Acceptance (A109) and Interim Configurations (NH90) have added to IIS workloads and the complexity of synchronising ongoing Acquisition work with IIS. However, this has been the reality of Western military aerospace projects since the 1980s, particularly with increasingly software driven systems delivering updates incrementally. It is likely that in the future blending of Acquisition and IIS phases will become deeper and integration will occur earlier. Notions of distinctive phases and neat handover gates between the two will sit uncomfortably with the realities of military aerospace capability delivery.

The first eight 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. The upgrade from IC to FC of the first four helicopters delivered will mean they will be unavailable for Air Force tasking for seven to eight months each from January through July 2014. 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 pre-delivery expectations (based on global user experience) that effective flying rates would be difficult to sustain have not been borne out by initial flying operations thus far. However, the numbers of aircraft being flown have been small due to upgrade activities and the spares and maintenance personnel establishment have been available at final fleet levels. The final aircraft in the FC configuration will be delivered in October 2014 and subsequently all eight flying aircraft (and affected spare parts) will be upgraded from the 'Final Configuration' (FC) to the 'Final Configuration plus' (FC+). This upgrade will impact on aircraft availability in the first half of 2015. The full fleet of eight FC+ aircraft is expected to be available at the HTU for NZDF flying from mid 2015.

As the IC-FC upgrade begins to return aircraft to the NZDF from June 2014, flying rates are expected to increase, although the implementation of the FC-FC+ upgrade through early 2015 presents some risk to completion of capability development activities, and management overheads remain high.

The other major MUH IIS risk remains the personnel resource available to achieve tasks within projected timelines, with shortages of personnel across a number of key support organisations. Maintenance tasks are proving to be more labour intensive than anticipated and the ability of the

current maintenance establishment at the HTU to cope with supporting a full fleet flying rate is in some doubt. Given that the NZDF has not yet had a full fleet available to fly, it will take some time to gain experience with all eight aircraft available and to identify potential issues with personnel numbers and spares holdings. The requirement to sustain legacy (UH-1H) operations concurrently with IIS within existing RNZAF personnel baselines remains a strain on current personnel resources, with the consequence that tasks may take longer to achieve, may not be done properly or may not be done at all. Following a number of pilot resignations through 2013, a concerted effort to repopulate pilot instructor ranks has paid dividends but had to be balanced with less rapid progress in delivering capability.

2.2 Schedule of Introduction into Service

Levels of Capability

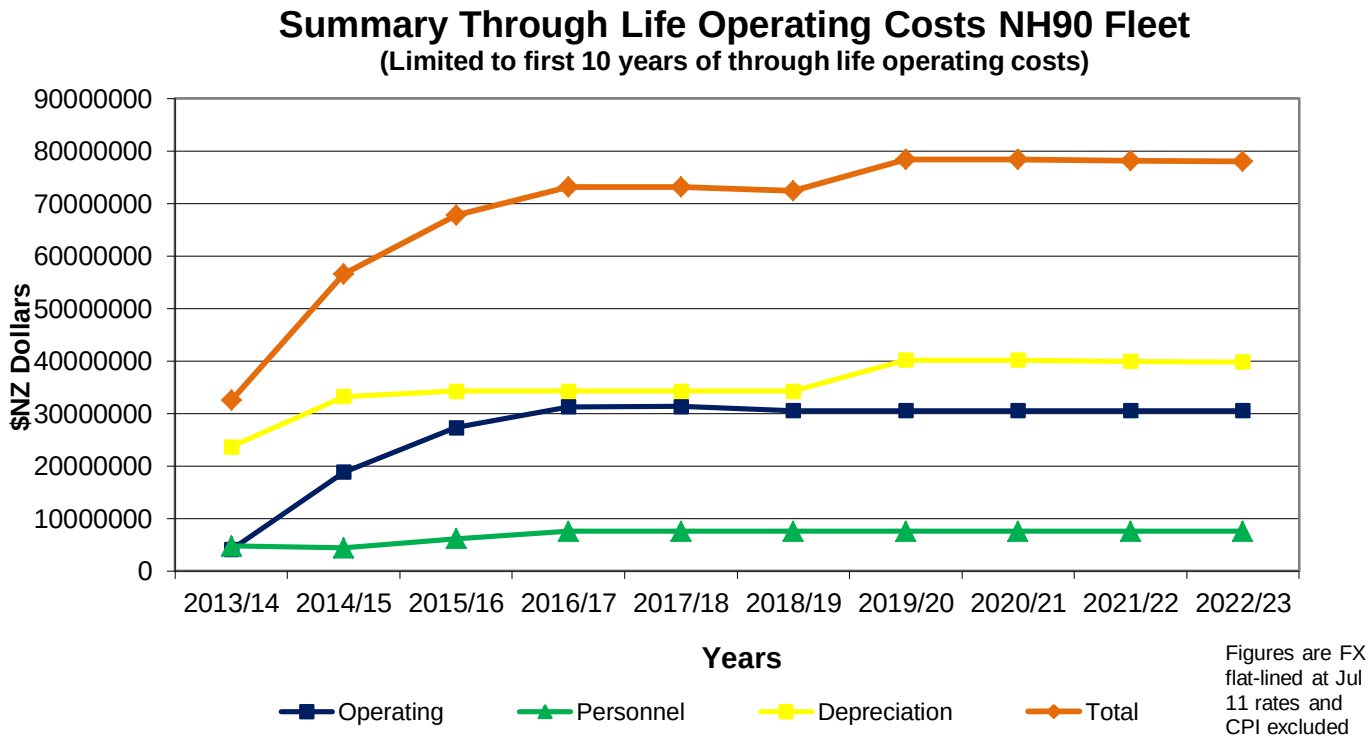
Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements. Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with 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 2014 Estimate	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	December 2015	N/A	-
Establish directed level of capability	March 2013	December 2015	N/A	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 EC1D outputs. This is required in order to provide the capability's ability to operate according to NZDF's Employment Contexts 1D, which deals with terrorist and asymmetric threats. Directed Level of Capability: Attainment of the level of capability is primarily governed by aircrew generation.

2.3 Summary of Through-life Cost Estimates



SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Capability and Operational Requirements

Progress as at June 2014 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 (eg ADF C-17), civil airlift charter eg 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 (depending on sea state and positioning on the ship).

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 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 and an initial capability in this regard is not expected to be developed prior to June 2016.
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.		

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence could occur several times during the coming year.
Likely	Likely to occur about once per year.
Possible	Possible, likely to occur at least once over a ten-year period.
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years.
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years.

Active Risks at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	**Delivery of Spares and Support Equipment.** There is a chance that contracted support equipment may not be delivered in accordance with the delivery schedule.	Acquisition and Introduction into Service	Low	**Operational Outputs.** The RNZAF may have to reduce the planned number of initial flying hours with consequent impacts on introduction into service progress.	Possible	The Project Team has worked closely with NH Industries to ensure that spares and support equipment are available to support flying operations. As of June 2014, almost all (99%) of spares consignments had been delivered to New Zealand. The remaining spares are expected in New Zealand by December 2014. As a result this risk is considered to have a low likelihood of occurring.
2	**Engine Issues.** The NH90 engine may suffer damage or failure as a result of foreign object damage (FOD) and/or thermal imbalance.	Acquisition and Introduction into service	Medium	Until the FOD **screen is supplied** NZ flying operations may damage engines with consequent repair costs and reduced flying rate. The originally supplied FOD screen was not cleared for use in snow conditions limiting the effectiveness and flexibility of NH90 operations. The temporary 'fix' for the thermal imbalance is labour intensive and inefficient.	Likely	Qualified FOD screens, cleared for use in snow conditions, have been delivered to the RNZAF. Temporary operational procedures are in place to minimise the chance of thermal imbalance. NH Industries is providing the FC-FC+ upgrade which implements semi-automatic engine venting in order to prevent inadvertent thermal imbalance upon engine start. Risk should be negated by mid 2015 and completion of FC+. Risk is extant in the interim.

3	**Software Development may not meet Contract Specification.**	Acquisition and Introduction into Service	Medium	**Operational Outputs.** The delay in final configuration provision may prolong the time taken for the NH90 to reach its directed level of capability.	Possible	Close monitoring of progress in any delay of Final Configuration and Final Configuration+ software releases. The IC to FC upgrade is on schedule and has raised the level of confidence in the upgrade process and risks to software delivery.
4	**Transportation and Operation with the multi-role vessel.** As the ability to transport the NH90 as cargo on *HMNZS Canterbury* and to land on and fly off the ship deck under certain sea conditions has yet to be fully determined, there may be limitations to achieving this.	In Service	Medium	**Operational Outputs.** The ability to transport and operate the NH90 as a ship-borne capability on *HMNZS Canterbury* may not be possible in very high sea state conditions.	Possible	The NH90 has completed First of Class Flight Trials on HMNZS *Canterbury* and an approved transportation tie-down scheme has been provided. Operations will be possible from a calm sea state but only after crew training for air and deck crews (currently scheduled in 2016).
5	**Operating Costs of Capability.** As the costing models initially supplied in the contract are incomplete, they may not take into account all the tasks to be undertaken by the NH90 as identified in the NZDF Statement of Operating Intent.	In Service	Medium	**Operating Budget.** The through-life costs of the medium utility helicopter are likely to increase.	Likely	The RNZAF requested more information from NH Industries to enable the development of a mitigation strategy. In the meantime, the known financial impact for the Introduction into Service is being incorporated into the NZDF Five Year Resource Plan.
6	**Life of the NH90 Airframe.** The fatigue life modelling utilised by NH Industries may not be accurate and may not take the NZDF Statement of Operating Intent into consideration.	In Service	Medium	**Operational Outputs.** The life of the airframe or the annual available flying hours may be reduced.	Possible	An independent assessment of the fatigue life modelling has been conducted and issues /gaps identified for ongoing management and analysis.

7	**Personnel resources.** As introduction into service personnel resources are limited they may create a single point of failure.	Introduction into Service	High	May slow down the development and provision of capability.	Likely	Constant management of tasks, priorities and available resources and management expectation as to what can be achieved and by when.
8	**Delivery of Final NH90 Configuration.** As the NH90 is being delivered in three configurations representing progressive product improvements to ultimately achieve the contracted state, there may be a risk that the delivery of the final configuration of the NH90 will be delayed.	Acquisition and Introduction into Service	Medium	**Full capability release** may not be achieved on schedule.	Possible	The project team will manage this in conjunction with NH Industries. The RNZAF will monitor and consider alternative options for provision of shortfalls that may eventuate.
9	**Retrofit Activity.** As retrofit activity is planned to upgrade the existing fleet from September 13 to September 14, there may be risks for IIS as during most of this period only 3 aircraft will be available to conduct IIS activities and progress the Transition Plan.	Acquisition and Introduction into Service.	Medium	Delivery of the Transition Plan and DLOC may be delayed.	Likely	Constant management of tasks, priorities and available resources and management expectation as to what can be achieved and by when. Close coordination is planned between the Crown and NHI to minimise risk. At July 2014 the retrofit was completed ahead of schedule.

10	**Readiness of Role Equipment.** There is a chance that some role equipment including External and Internal Auxiliary Fuel Tanks, Chaff and Flare Dispenser, Cargo Rolling Device, Ballistic Protection, Bottom Life Raft, Fast Roping and Rappelling Device, Pintle Machine-Gun Mount may not be ready prior to acceptance.	Acquisition and Introduction into Service	High	**Operational Outputs.** The delay in provision of this role equipment will prolong the time taken for the NH90 to reach its directed level of capability.	Likely	The Project Team is working alongside NH Industries to qualify and deliver most of the role equipment in the agreed timeframe. With regard to the Fast Roping and Rappelling Device, and Pintle Machine-Gun Mount the RNZAF are developing solutions in concert with local industry (Rappelling) and Australia (Pintle Machine-Gun Mount).

4.2 Issues

	Issues	Phase	Severity	Impact	Treatment Actions
1	**Qualification and Design Acceptance Process.** Delays in the certification of other countries' variants of the NH90 helicopter have delayed the Qualification and Design Acceptance Process for the New Zealand variant.	Acquisition	Medium	**Schedule.** The qualification of the Final Configuration design may be delayed which will impact on the schedule of the remaining helicopters.	The Introduction into Service team has evolving plans to mitigate the consequential impacts of the delays to certification for other nation's aircraft. The IC-FC retrofit is running to schedule and the FC-FC+ retrofit is currently being planned with NHI for October 2014-January 2015 timeframe.

2	**Synthetic Training.** An NH90 simulator was not acquired as part of the project.	Introduction into Service and In Service	High	**Crew Currency and Availability.** Crews have to deploy to Europe for up to a month twice a year to satisfy emergency training and currency requirements. During this time the Transition Plan is disrupted.	ADF simulator training in Australia will ease the time lost to travel. The preferred solution would be to use a certifiable NZ based synthetic training system. Discussions with Australia are underway to investigate the availability of training in Australia and NZ personnel are visiting the Mid Range Training Device (MRTD) currently being used by the French Armed Forces to assess the potential to purchase a similar system.
3	**Personnel.** Personnel have been and continue to be lost from the IIS project due to posting and/or resignation.	Introduction into Service	High	**Personnel Availability**. Trained personnel continue to be lost from the project, with aircrew resignations hitting particularly hard.	Defence Personnel Executive is aware and examining mitigation strategies. Internal postings and aircrew regeneration plans have borne fruit in the early 2014 period.
4	**Air Transportation**. The NH90 has been delivered without qualification for air transport.	Acquisition.	High	**Air Transportation**. The ADF has withdrawn its clearance for NH90 to be transported by C-17. Any deployment by air will require OEM support and may have to be taken at risk of impacting fatigue life.	MoD is working with NHI to acquire air transportation schemes for the NH90 which can be trialled in 2014.

P-3K ORION MISSION SYSTEMS UPGRADE

Project Description: This project is upgrading the mission management, sensors, communications, and navigation systems for the six RNZAF P-3K Orion surveillance and reconnaissance aircraft. Also being acquired is a flight deck trainer. The prime contractor undertaking the upgrade is L-3 Communications Integrated Systems.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the 2014 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 P-3K Systems Upgrade commenced following Cabinet's authorisation to seek proposals from industry in December 2002. The acquisition project team released an Invitation to Register Interest in February 2003 with the corresponding Request for Tender closing in October 2003.

On 5 October 2004, a fixed price contract was signed with L-3 Communications Integrated Systems to undertake the P-3K Systems Upgrade Project, at a cost of NZ$373.1 M. The approval included the Mission Systems Upgrade, the digitised Communications and Navigation Systems Upgrade, and a flight deck trainer.

In August 2005, three aircraft received an immediate enhancement of their electro-optical sensors. This was to provide an early, yet partial, increase in the capability to cover core surveillance requirements during the acquisition phase. This upgrade was conducted by L-3 Communications Integrated Systems through a sub-contractor, SAFE Air Ltd, in Blenheim.

The first aircraft to undertake the upgrade was delivered to the L-3 Communications Integrated Systems facility in Greenville, Texas in September 2005. This aircraft was the prototype for the design and development of the upgrade project and progressed through an acceptance testing and evaluation programme, returning to New Zealand following Provisional Acceptance in April 2011. The remaining aircraft, including the three with enhanced electro-optical equipment, have been upgraded in Blenheim by SAFE Air Ltd. These aircraft are known as "production airframes". The first production aircraft was inducted into SAFE Air Ltd's Blenheim facility in August 2010 and provisionally accepted in March 2012; the second Production aircraft was inducted for upgrade in March 2012 and provisionally accepted on 27 September 2012; the third production aircraft was inducted for upgrade in September 2012 and provisionally accepted on 30 April 2013; the fourth production aircraft was inducted for upgrade in October 2012 and provisionally accepted on February 2014; and the fifth and final production aircraft was inducted for upgrade in April 2013 and is expected to be provisionally accepted in July 2014.

The acquisition phase has involved extensive project planning, contract management and administration, a series of system and critical design reviews and approvals, and the ongoing monitoring and inspection of contract deliverables. 22 Contract variations have occured, primarily to ensure the contractor meets the functional and performance requirements of the mission systems, and to accommodate frequent advances in technology.

The ability to accommodate regular technology updates has been an important aspect of delivering the P-3K2 Orion capability and has required an innovative acquisition strategy. L-3 Communications Integrated New Zealand contractor, Beca Applied Technologies Ltd., into the software development team so that ongoing in-country software support is available after delivery.

How Defence decided to acquire the Capability Solution

Tender Companies	
EADS CASA (Spain)	
Lockheed Martin Tactical Systems (USA)	
L-3 Communications Integrated Systems (USA) ***Preferred Tender***	
Assessment	L-3 proposal was judged to provide the best capability with lowest risk, the lowest price, the strongest technical support and the most acceptable programme management arrangements.

1.2 Project Budget

Budget variation

	Date Approved	Total (NZ$ million)
Original budget at Approval to Commit	October 2005	373.1
Current approved budget	March 2012	377.3
Variation on originally approved budget		4.2

Explanation of major budget variations

Date of Individual Variation	Total	Explanation
March 2012	$4.2 million	An additional NZ$4.2M has been required for a range of project management and ancillary costs and a realignment of the induction schedule in order to cover operational requirements. This has been funded through a fiscally neutral transfer between the Boeing 757 Modification Project and the P-3 Mission System Upgrade Project.

1.3 Financial Performance

Project expenditure to 30 June 2014

Total (NZ$ million)	
Life to date expenditure (cumulative)	325.4
Remaining balance of approved budget	51.9
Remaining balance already committed	6.0

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	377.3
Total forecast expenditure	331.4
Gross project variation (forecast)	45.9
Foreign exchange impact	44.0
Actual project variation (forecast)	1.9

Variance explanation

Nature of variation (forecast)	Total (NZ$ million)	Explanation
Actual project variation	1.9	**Forecast Project management costs and ancillary contracts.** The two expenses are not initially determined on a fixed milestone payment basis. They are forecasts that will change as the project progresses and as more reliable information becomes available on how these funds need to be allocated.
Foreign exchange impact	44 favourable	**Note.** Whilst these funds contribute to the total under spend they cannot be used by the project team because the extra funds are not part of the approved budget.
Total	**45.9**	

Project Contingency (as at 30 June 2014)

	Total (NZ$ million)
Contingency built into the budget	15.2
Total contingency expended	18.7
Additional funding	4.2
Remaining balance	0.7

Explanation of major contingency draw downs

Draw down	Total (NZ$ million)	Explanation
Spare electro-optical turret, additional spare parts, and staff costs	6.1	Purchase of a third spare electro-optical turret after it was determined that the turrets reliability presented an in-service support and operational risk. An increase in the project's spares list was required to cover new or updated communications equipment not originally covered in the contract. Extension of two NZDF secondees based in Texas.
Government Furnished Material budget, Flight Deck Trainer features, Tempest radar warranty and software changes	1.8	Project management - costs of trainees and flight test crew. Government furnished materiel budget. Additional features in the Flight Deck Trainer. Warranty on radar emissions test. Changes to the data management system software.
Engineering and communications equipment	0.6	Re-design of the digital display of information for the navigation system. Radar gas maintenance system. Engineering changes and weight reduction.
Engineering and communications equipment	3.5	Radar maintenance capability. Additional spares.
Cost recovery for additional aircraft spares	(0.2)	Cost of additional aircraft spares recovered from the NZDF.
Engineering Support and Communications Equipment	2.1	Contractor Engineering Liaison support. High Frequency radio link automation.
Supplier Fuel	0.2	Reimbursement of fuel used by supplier

Project Management	0.6	Additional Salary extension for Project Manager
Project Management	0.6	Additional funding for costs of extension of Project Managers
Testing	0.1	Military Satellite Communication System Testing
Contractor Funding	1.1	Contractor overhead funding
Engineering Liaison	0.6	Extension of Engineering Liaison Services
Engineering Liaison	0.1	Extension of Engineering Liaison Services
Contract Extension	1.1	Extension of Engineering Technical Services
Contract Extension	0.4	Extension of Engineering Liaison Services
Total	**18.7**	

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date

		Original forecast at Approval to Commit	30 June 2014 forecast / achieved	Variation in Acquisition phase
Acceptance Date	First aircraft	May 2008	April 2011 (achieved)	35 months
	Last aircraft	September 2010	July 2014 (forecast)	46 months

History of variations to schedule (Prototype Aircraft)

Date of individual variation	Variation length (months)	Explanation
Between January 2007 and June 2009	17	The size of the software integration task, in particular the development of the data management system that integrates the information being received from multiple sensors and other equipment, has been greater than the contractor anticipated. The contractor's overrun in this area is in the order of 200,000 man-hours at the contractor's expense.
24 April 2007	1	The Crown agreed to a request for a one month contract change due to a delay in the delivery by sub-contractor of the P-3K2's radar. This had a corresponding impact on other project deliverables.
23 January 2008	5	The Crown agreed to a five-month schedule relief aimed at obtaining a realistic work schedule. The contractor's original work schedule contained errors of logic, implied resource bottlenecks, and made unrealistic projections.

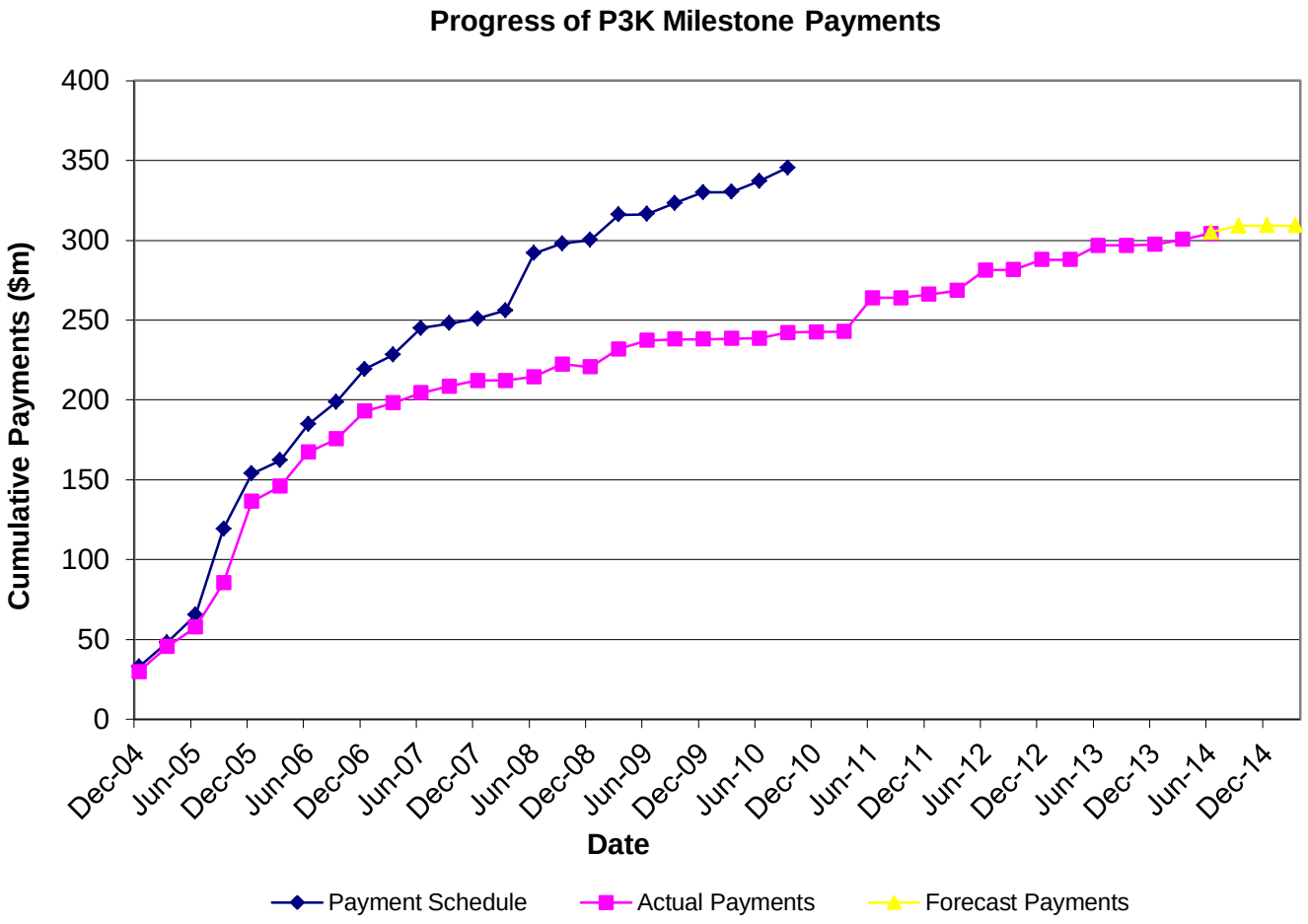
December 2009- July 2010	7	Test flights were delayed while a serviceability issue with the prototype aircraft was resolved. The aircraft had loose fasteners on its wing straps. The flight tests were also delayed due to engine servicing and replacement issues and two aerodynamic problems: an airspeed indication problem caused changes in stall performance and take-off distances, and a periodic yaw problem caused by the dome antenna aft of the wing.
July 2010 – Apr 2011	8	Test flights were delayed due to a combination of aircraft "unserviceabilities", resolution of non compliant issues and the ability of the prime contractor to achieve their testing schedule and contract specifications.
February 2014 – July 2014	6	Unserviceability issues with no spares remaining to recover.

History of variations to schedule (Production Aircraft)

Date of individual variation	Variation length (months)	Explanation
April 2011 – Ongoing	+36 forecast	Post the provisional acceptance of the prototype aircraft a revised schedule was agreed that balanced competing demands for training, test and evaluation and remedial work being conducted by the contractor. As part of this re-establishment of the schedule, Defence negotiated a six month extension to the upgrade of the last two aircraft to enable the Orion fleet to maintain capability until the upgraded aircraft can be introduced into service.

Progress of P-3 Orion Upgrade 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[9]. 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.



[9] 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

In April 2005, the RNZAF stood up the P-3K2 Introduction into Service Team and drafted the Introduction into Service tasks and requirements. A Transition Plan was developed in August 2006, which described the transition schedule of the P-3K Orion into the P-3K2 and the merger into No 5 Squadron.

In November 2006 the RNZAF established a Programme Management Office to coordinate the P-3K2 upgrade project in conjunction with the other fixed and rotary wing projects. In October 2010 this was subsumed into the HQ NZDF Capability Branch, Programme Delivery, as 'Air Introduction into Service'.

In November 2007, the Introduction into Service plan was developed and included the core planning and coordination of tasks to prepare for, receive and employ the P-3K2 aircraft. It included issues concerning:

- Personnel and training;
- Research and development;
- Information;
- Concept of operations and doctrine;
- Infrastructure and organisation;
- Equipment and/or platforms;
- Airworthiness; and
- Finance.

The Introduction into Service Team is supported by an Integrated Logistics Support Team provided by the RNZAF Directorate of Project Engineering and Certification. Logistic support concepts and analysis have been completed and a variety of other plans listed below are in progress.

A Joint Project Office was established at RNZAF Base Whenuapai in October 2010 to integrate all aspects of fixed wing capability including Trials and Development, Operational Test and Evaluation (OT & E), training, retrofit, regression testing and follow on Acceptance, Test and Evaluation.

Status of Introduction into Service phase

The Introduction into Service Team has developed the following:

- life-cycle management plans;
- OT & E plans;
- personnel and training plans;
- security certification and accreditation review; and
- transition course and operational conversion course.

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.

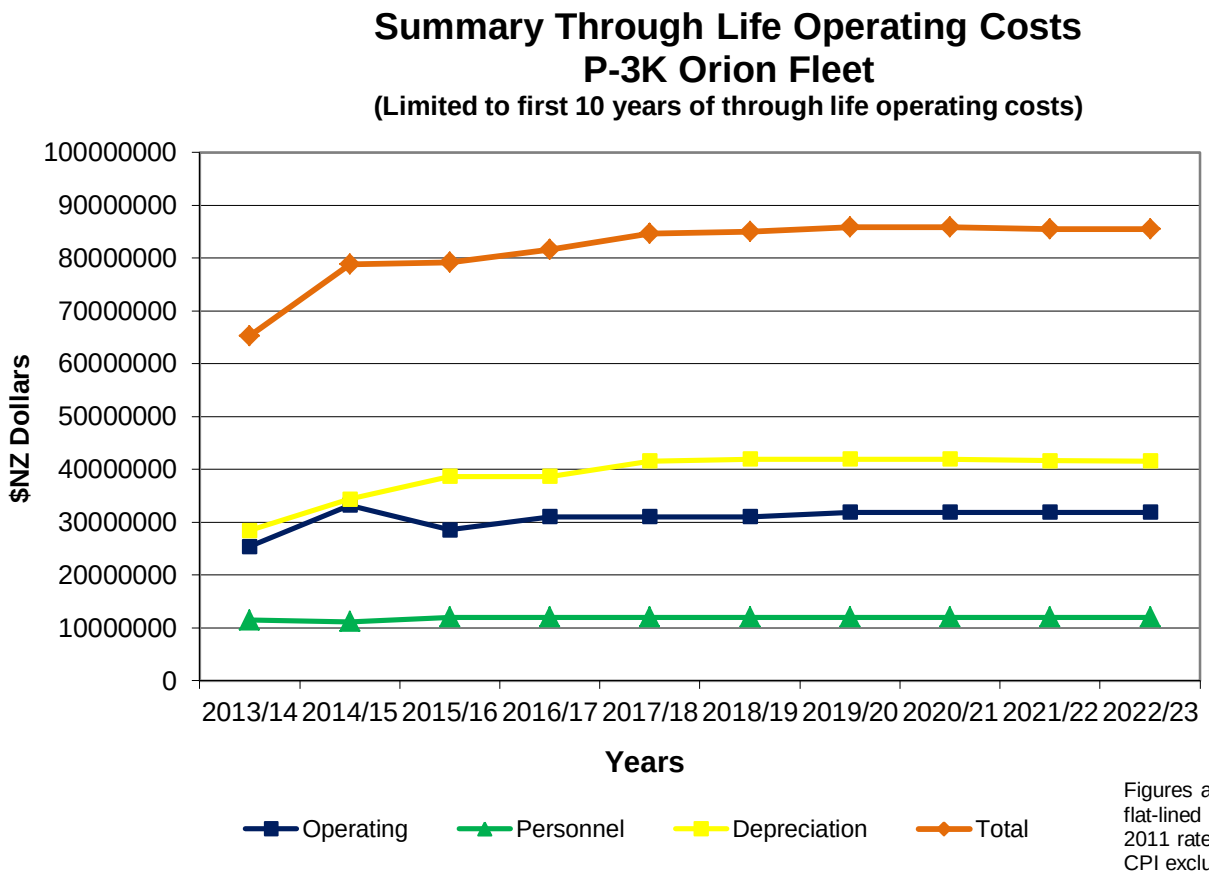
Directed Level of Capability: the maintaining of military capability at a minimum capacity from which force elements may be generated within a specified response time to achieve the operational level of capability.

NZDF Output Plan, 2009, S1-12

	Initial Estimate	30 June 2014 Estimate	Actual	Variance (months)
Date prototype accepted by Crown	May 2008	N/A	April 2011	35
Commence operational test and evaluation	May 2008	October 2012	October 2012	0
Finish operational test and evaluation	December 2008	October 2014	N/A	-
Achieve initial operating capability	May 2009	December 2012	March 2013	3
Establish operational level of capability[10]	Not provided	N/A	N/A	N/A
Establish directed level of capability	April 2011	June 2015	N/A	-
Explanation	The remaining milestone for introduction into service is uncertain the ability to conduct concurrent residual acquisition testing, introduction into service and in service tasks and roles with limited personnel, asset and system resources.			
	The originally planned schedule for the P-3K2's test and evaluation over the maritime and land environments was realigned to accommodate prototype delays and to maintain directed operational outputs. The operational capability of the P-3K2 will be released in three phases. Initial operational capability was achieved in March 2013 with P-3K2 aircraft available, P-3K2 crews trained and task supporting systems in place.			

[10] This is required for Employment Context 1D: Terrorist and Asymmetric Threats.

2.3 Forecast of Annual P-3K through Life Cost Estimates



Figures are FX flat-lined at Jul 2011 rates and CPI excluded

SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Operational Requirements

Operational Requirements	Delivery	Comment
Gathering and dissemination of information – active and passive sensors.	Yes	Initial capability achieved for Search and Rescue and domestic surveillance.
Application of force – weapons with precision guidance ability.	Partial	The requirement was identified but no new or upgraded capability was included in the scope of this project. The legacy torpedo capability has been retained. A project to deliver air-to-surface weapons capability for the P-3K2 Orion fleet may be considered in the future.
Interoperability – secure systems to share reconnaissance and intelligence information.	Yes	
Access to airspace – compliant communications and navigation systems.	Yes	Delivered aircraft have achieved project Performance Based Navigation standards.
Self protection – sensors.	Partial	The sensors will provide situational awareness. They are not a self-protection system. A project that would equip the P-3K2 Orion fleet with a self-protection capability has been considered.
Assessment: Most requirements will be met.		

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence could occur several times during the coming year.
Likely	Likely to occur about once per year.
Possible	Possible, likely to occur at least once over a ten-year period.
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years.
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years.

Active Risks as at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	Serviceability problems with aircraft systems may cause delays in Introduction into Service phase.	Introduction into Service	High	Further schedule delays could be possible.	Likely	NZDF has mitigated the impact of this risk by improving the logistics processes to deliver replacement equipment.

4.2 Issues

	Issues	Phase	Severity	Impact	Treatment Actions
1	Competing Demands on NZDF Resources. There are competing demands on finite resources for operational outputs as well as training and residual upgrade testing activities.	Acquisition / Introduction into Service	High	Delays in achieving remaining upgrade and Introduction Into Service activities (with resulting delays in delivering upgraded aircraft and progressing the Transition Plan).	Resource allocation is being managed, by necessity, on a daily basis by the Joint Project Office.
2	Work required after aircraft acceptance. All upgraded P-3K2 aircraft were 'provisionally' accepted. As a result, work is required on these aircraft to complete them after delivery.	Acquisition / Introduction into Service	Medium	Providing access for the Contractor makes the aircraft personnel and supporting systems unavailable for other tasks and further diverts resources. Rescheduling of Introduction Into Service activities (trials and development, operational test and evaluation and supplemental type certification) as further remedial work is delayed.	JPO planning includes provision for remedial work which will be addressed on a case by case basis in conjunction with other priorities. The late delivery of software updates and deferred spares by the contractor forces continual revision of these plans.
3	The Contractor's turn-around time to repair failed equipment has delayed final aircraft acceptance, Introduction into Service and In Service activities.	Acquisition / Introduction into Service	Medium	The last aircraft encountered delivery delays due to upgrade equipment failure prior to delivery.	Loaning previously delivered equipment has assisted the contractors post upgrade testing phase.

				This is because the contractor did not have any replacement equipment (all other equipment having been previously delivered and being required for NZDF operations).	Accept incremental delivery of aircraft on a system by system approach without all equipment (depending on the nature of the compromise) with partial withhold of milestone payment, pending equipment delivery.
4	Equipment obsolescence and compliance has impacted the acquisition and Introduction Into Service phases and will continue through the life of type of the aircraft.	Acquisition / Introduction into Service	Extreme	Denial of full capability exploitation of onboard and offboard equipment, and reduced aircraft sustainability and availability.	An Obsolescence management plan is being developed. An Obsolescence Management Cell has been established by the RNZAF. Planned spiral upgrades to replace obsolete items and address obsolete compliances.

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 part-task trainers;
- 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 2014 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	154.61
Current approved budget	3 December 2013	154.61
Variation on original approved budget		NIL

Explanation of major budget variations

Date of individual variation	Total (NZ million)	Factor	Explanation
N/A			

1.3 Financial Performance

Project expenditure to date (30 June 2014)

	Total (NZ$ million)
Life to date expenditure (cumulative)	74.81
Remaining balance of approved budget	79.8
Forecast commitments	73.85

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	154.61
Total forecast expenditure	148.66
Gross project variation (forecast)	5.95
Foreign exchange impact	5.95

Actual project variation (forecast)	0
Variance explanation	See below

Nature of variation (forecast)	Total ($million)	Explanation
Actual project variation-	0	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	5.95	
Total	5.95	

Project Contingency (as at 30 June 2014)

	Total (NZ$ million)
Contingency built into the budget	14.05
Total contingency expended	0
Remaining Balance	14.05

Explanation of major contingency draw downs

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

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date.

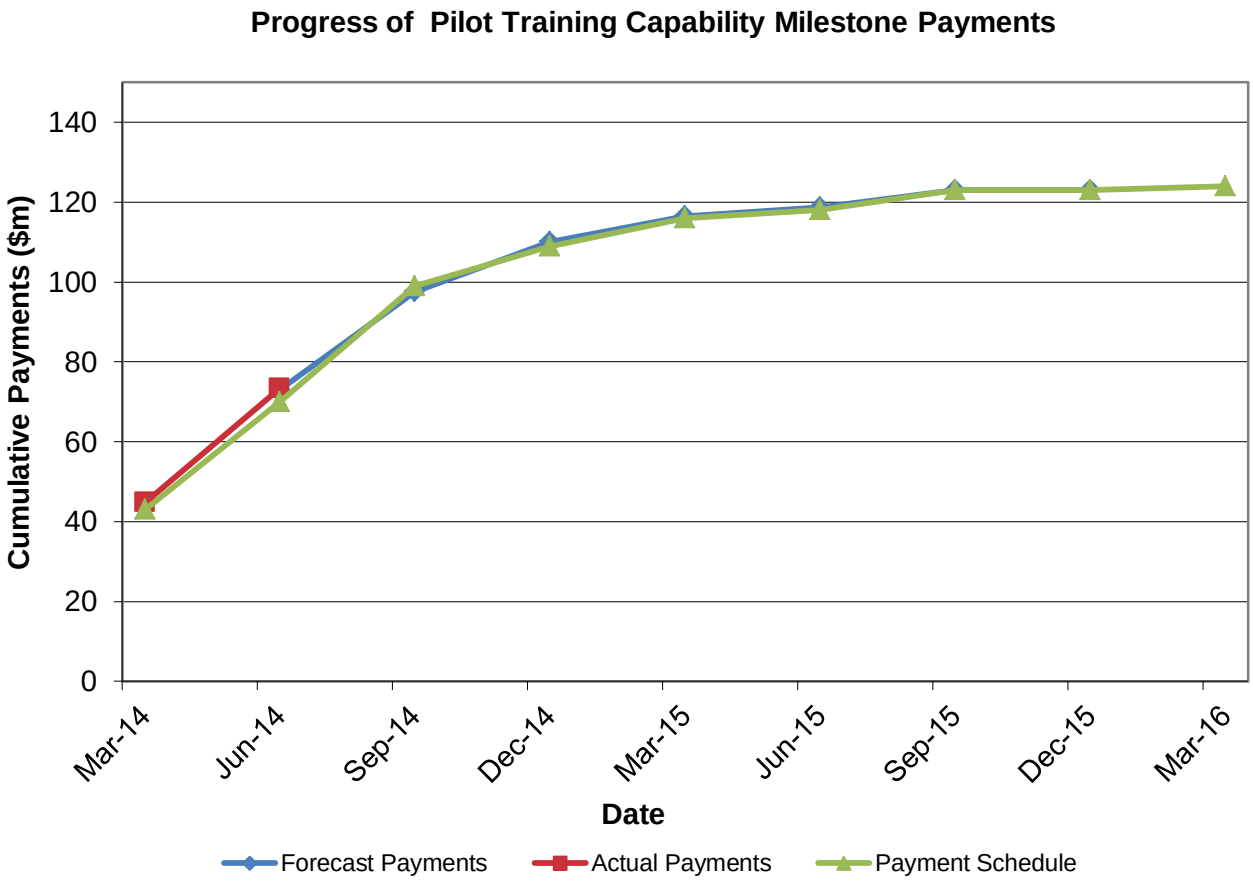
	Original forecast at Approval to Commit	30 June 2014 forecast/achieved	Variation in Acquisition Phase (months)
Acceptance Date	December 2015	December 2015	Nil
Comment	N/A		

History of variations to schedule

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

Progress 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

The PTC IIS Transition Plan was completed by 30 June 2014, and was then to be submitted for approval by Defence governance structures. At the same time the infrastructure work at RNZAF Base Ohakea has been progressed as planned, as this work is fundamental to delivery of the aircraft and simulators.

2.2 Schedule of Introduction into Service

Levels of Capability

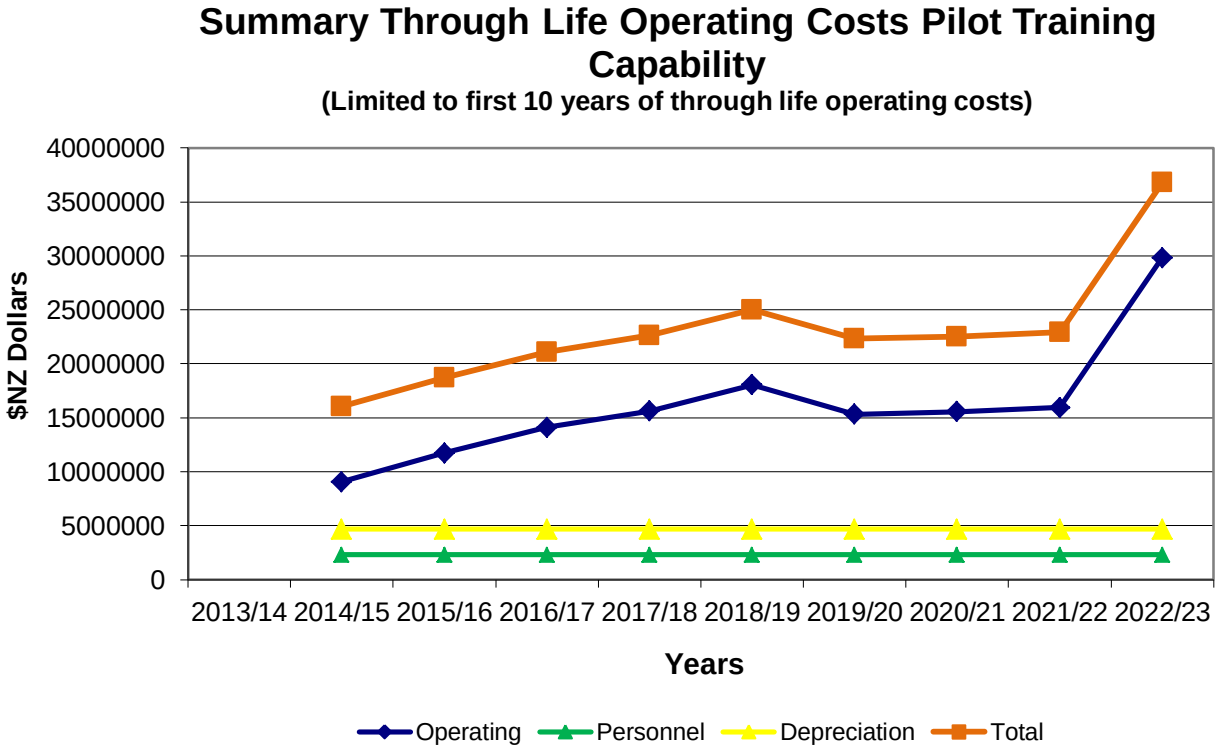
Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements.

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 2014 Estimate	30 June 2014 Actual	Variance (months)
Date Platform accepted by Crown	December 2015	December 2015	N/A	N/A
Commence operational test and evaluation	June 2015	June 2015	N/A	N/A
Finish operational test and evaluation	December 2015	December 2015	N/A	N/A
Commence first Wings Course	January 2016	January 2016	N/A	N/A
Commence first Flying Instructors Course	January 2016	January 2016	N/A	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.			

2.3 Summary of Through Life Cost Estimates



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	Schedule on track for commencement January 2016
Deliver the RNZAF Flight Instructors Course to produce Flying Instructors.	Yes	Schedule on track for commencement January 2016
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		

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low: Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium: Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High: Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme: Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost Certain	Very high probability of occurrence, could occur several times during the coming year
Likely	Likely to occur about once per year
Possible	Possible, likely to occur at least once over a ten-year period
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years

Active Risks at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	If the infrastructure upgrades at Ohakea are not on the scheduled critical path and are delayed, this may have a serious impact on the project.	Acquisition	Medium	The target of commencing the first Wings/FIC course in January 2016 will not be met.	Possible	A dedicated infrastructure manager at Ohakea has been assigned. The floor plans for the training centre have been finalised. The site for the centre has been cleared. Construction of the hangar upgrade is underway. There is full engagement and visibility of progress with Beechcraft.
2	The required number of experienced Flying Instructors may not be supplied by the RNZAF for the project.	IIS	Medium	The full capability may not be delivered within the existing schedule.	Possible	Capability Branch is actively engaged with the Air Component Commander to ensure there is a full number of appropriately qualified instructors available.

4.2 Issues

	Issues	Phase	Severity	Impact	Treatment
1	Fuel Tanker availability at Ohakea from January 2016 will be an issue unless additional resources are allocated to account for the increased PTC capability.	IIS	High	Inability to deliver capability at the desired level of effort.	Current RNZAF-wide solution in-work for aircraft fuel tankers.

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 2014 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 took in 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	Installation work at Devonport Naval Base under the existing dockyard management contract

The HVAC, IPMS (including IBS), GT-ECM and PDCS projects have all passed Factory Acceptance Trials and are currently being installed in *Te Kaha*.

In December 2013 Cabinet was informed that phase 2 of the project was behind schedule and would incur a significant increase in cost. As a result, Cabinet approved changes to appropriations by way of a fiscally neutral adjustment of $6.0 million from identified Defence projects to the Platform Systems Upgrade project for completion of phase 2 work on the first frigate, HMNZS *Te Kaha*. This took the current appropriation for completion of the PSU project to $65.4 million. Cabinet directed Defence to report back in the first quarter of 2014 with a plan for commissioning the phase 2 upgrade work on the second frigate, HMNZS *Te Mana*. An Independent Performance Review of the project was undertaken in late 2013. All conclusions and recommendations have been accepted by Defence. The review examined the issues and contributing factors leading to the current situation and documented the 'lessons learnt'.

The additional $22.2 million, including contingency provisions required to complete the phase 2 work on HMNZS *Te Mana*, was achieved by way of a fiscally neutral adjustment of $12.4 million from underspent projects in the Defence acquisitions portfolio and $9.8 million from the reprioritisation of the New Zealand Defence Force's capital funds. This took the total appropriation for the PSU project to $87.6 million.

Siemens, the Integrated Platform Management Systems contractors, and Noske-Kaeser, the Heating Ventilation and Air Conditioning contractors, supported by other contractors have commenced commissioning of the equipment aboard HMNSZ *Te Kaha* and on current estimates she should be released from phase 2 work in August/September 2014.

HMNZS *Te Mana* will be inducted into the upgrade project during the period October 2014 to January 2015 and is expected to be completed mid-2016.

On Board Operator Training (OBOT)

Agreement on the scope of the OBOT deliverables was reached and as such, a project team to deliver the OBOT requirements established. In response to the Request for Tender for the OBOT requirement, the evaluation team reported that neither respondent was capable of delivering a compliant solution. The project team is currently reviewing the requirements to ascertain where possible changes can be made so that the OBOT capability can be delivered.

A proposal from the IPMS Contractor Siemens is under review by Defence.

Resources

The Project has employed several Contractors to assist in the management of the project (as per the Independent review), and NZDF seconded personnel have been increased.

Funding

There has been a NZ$28.2 million increase in the baseline figures for the project. This increase is to cover completion of Phase 2 work on HMNZS *Te Mana* and *Te Kaha*.

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[11]
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 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	• Phase 2 budget will cover the heating, ventilation and air conditioning upgrade and the integrated platform management systems upgrade. Cabinet approval of the Phase 2 budget was be sought in the last quarter of 2010. • This will include all under spends within Phase I to ensure the project is maintained within the NZ$57.6 million, however the project is unlikely to have any remaining contingency and this matter will need to be addressed as a risk to the project. • 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.

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

	• 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 2014)

	Total (NZ$ million)
Life to date expenditure (cumulative)	56.2
Remaining balance of approved budget- Phase 1 and phase 2	31.4
Forecast commitments	30.1

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	87.6
Total forecast expenditure	86.4
Gross project variation (forecast)	1.2 under spend
Foreign exchange impact	(1.2)
Actual project variation (forecast)	0
Explanation	30 June 2013 forecast results in a negligible project variation.

Project Contingency (as at 30 June 2014)

	Total (NZ$ million)
Contingency built into the budget	1.2
Total contingency expended	0.9
Previous Balance	0.3
Funding to provide additional contingency cover **March 2012** **December 2013**	 0.7 1.6
Remaining balance	2.6
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 2013.

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date.

	Initial Estimate	30 June 2014 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	Sept 2014 (forecast)	21
	Te Mana December 2012	June 2016 (forecast)	See April 2014 variation note below

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 (forecast)	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* will most likely not be available to commence PSU until early 2015, once she returns 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.

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. Included in the plan is an Integrated Logistics Support Impact Statement, which details the methods for supporting the upgraded systems throughout their lives.

As noted in the Project Management Plan for PSU, 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 4 and 5 trials will be conducted by the Crown with contractor assistance and RNZN crewing, and successful completion will be documented through a certificate of conformance and an acceptance certificate, respectively.

There will be Category 6 and 7 trials for each of the two phases: Phase 1 consisting of the propulsion power upgrade and stability enhancement and Phase 2 consisting of upgrades to the heating, ventilation and air conditioning systems and the procurement of an Integrated Platform Management System.

Phase I

After completion of the contractor test phase, the ships will enter into a Naval Test, Evaluation and Acceptance programme under the responsibility of the RNZN. Category 6 ship qualification trials will focus on performance and functional aspects of the implemented solutions under seagoing and operational conditions. Category 7 (First of Class) trials will be conducted to establish and record the performance envelopes of the implemented solutions, and to establish the baseline against which future performance can be compared.

Phase 2

A detailed Operational Release Programme and Naval Test Plans for Category 6 and 7 trials are complete. During the Operational Test and Evaluation phase the Category 6 and 7 trials will focus on operational effectiveness, suitability, operational setting and scenario based assessments of capability. The aim of these plans is to ensure the ANZAC Frigates' progress toward operational service in a detailed, controlled and safe approach with the key objectives of the trials being:

a. to prove the material readiness of the machinery and mission systems prior to work-up;

b. collect baseline data for ongoing performance measurement and management of the ships' machinery and mission systems;

c. ensure Ship's Company are adequately trained to fully utilise and support all machinery and mission systems;

d. identify system problems and deficiencies and collect the technical information required for corrective action to be initiated;

e. review training requirements and the provision of training effectiveness data for feedback to training establishments; and

f. assess the utility of the mission systems.

Status of Introduction into Service phase

Phase 1

Most of the Introduction into Service components for the first phase have been managed to date through the Platform Systems Upgrade Project Team, on behalf of the RNZN. The Project Team has worked to ensure that documentation required to support and manage the capability in-service has been delivered in the required RNZN format and that the necessary spares are delivered to the Naval Supply Depot for issue. In addition, the Introduction into Service Navy Orders and publications have been drafted on behalf of the RNZN. The manufacturer's equipment training has been delivered along with the necessary material and resources to enable the RNZN to develop and deliver their training in the future.

The Introduction into Service process for the first phase is ongoing. Deliverables for in-service use of ships, which include such items as reference material, spares, and training packages, were delivered for HMNZS *Te Kaha* by December 2009, as implementation work was being completed on the ship. In February 2010, Category 5 sea acceptance trials, which were part of the acceptance from the contractor, were carried out on *Te Kaha*, and demonstrated the successful integration and performance of the propulsion engines. Following these, the Project Team recommended that the RNZN conduct Category 6 and 7 trials over the proceeding months.

As at June 2013, a number of Category 6 trials remain outstanding for *Te Kaha* and HMNZS *Te Mana*. It is anticipated that these and the Category 7 trials will be completed during the Operational Test and Evaluation phases for PSU Phase 2 before Operational Release is achieved.

In relation to the completed stability work, there is a need to carry out 'inclining' testing of *Te Kaha*, as she is yet to be inclined following extensive modification. This is an important activity that will show whether the stability characteristics of the modified vessel are consistent with the allowable tolerances that were modelled for the upgrades during the design phase.

A post-PSU Inclining Experiment was conducted for *Te Mana* and the Interim Trim and Stability Book does have the ship modifications conducted as part of the Stability Enhancement and Compartment Changes element of the Platform Systems Upgrade. The major stability impacts for the changes are:

- partial plating in of the Quarterdeck to provide additional buoyancy;
- the addition of 27.4 tonnes of solid ballast; and
- increasing the maximum Full Load Displacement to 3,720 tonnes.

The stated aims of the Stability Enhancement have been met and the Lightship values will be reflected in the actual displacement and a Final Trim and the Stability Book will be issued accordingly. A post PSU Inclining Experiment is still to be programmed for *Te Kaha.*

Phase 2

The Introduction into Service plan will commence late 2014. Planning is complete.

2.2 Schedule of Introduction into Service

In May 2008 Defence sought Joint Ministers (Defence and Finance) authorisation to adopt a revised acquisition strategy to allow the propulsion systems component of the PSU to be undertaken in conjunction with the engine replacements planned for during the frigates' extended maintenance periods in 2009 and 2010. However, the tight timeframe prevented the other elements of the Platform Systems Upgrade project from being ready at that time and were, therefore, rescheduled for implementation during subsequent maintenance periods. In November 2011 the Capability Management Board directed that the project implementation phase be delayed until January 2013 to allow additional time to:

- address issues with individual and unit training, and to explore early delivery of simulation enablers;
- complete the design and testing of equipment;
- determine the impact of the project on shore based training infrastructure;
- review and develop doctrine and concept changes brought about by the extensive changes;
- review and accept integrated logistic support products, including the consideration increased maintenance periods if issues with the OBOT are unresolved; and
- develop IIS planning.

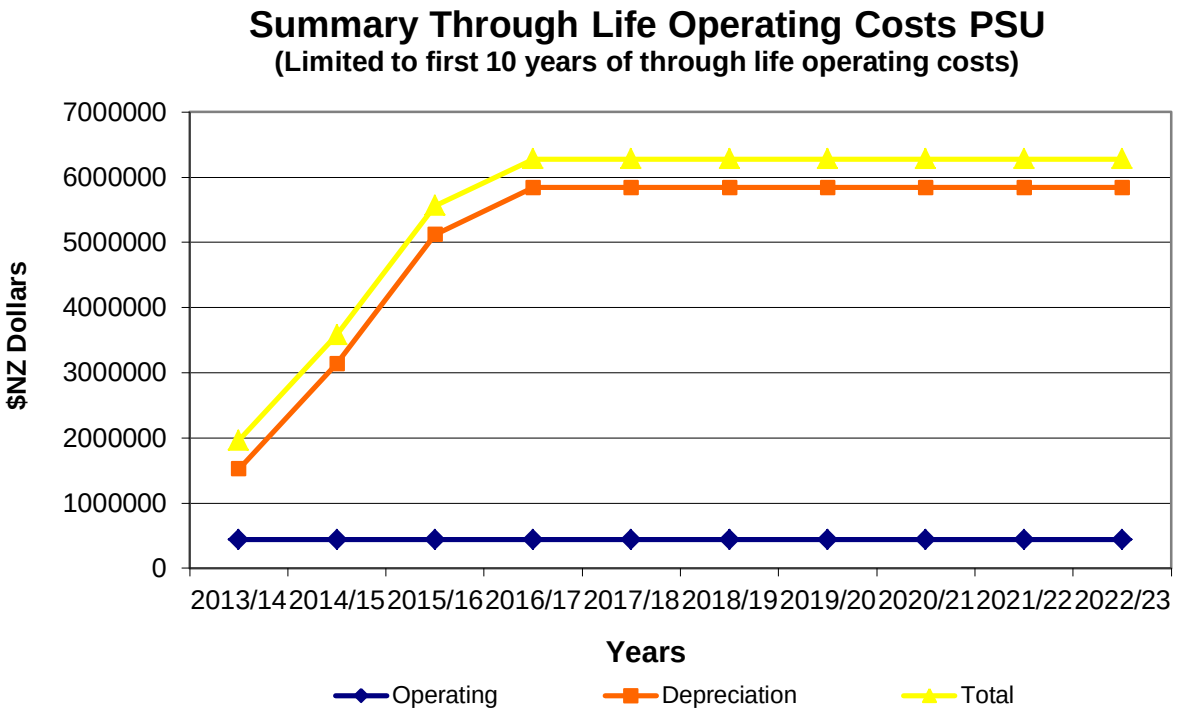
In addition, the project is being monitored closely to ensure adequate staffing and resource levels.

The schedule of introduction into service, taking the revised upgrade schedule into consideration, 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	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 MANA* – Phase 2	June 2014 – May 2015	June 2016	N/A	N/A	September 2016
HMNZS *TE KAHA* – Phase 2	January 2013 – TBA	September 2014	December 2014	December 2014	Q2 2015

Work is currently underway to define the various IIS elements for Phase 2 of the project, as well as to determine and develop a prioritised action plan.

Summary of Through-life Cost Estimates for ANZAC Frigates[12]



[12] Through life costs are calculated for the capabilities as a whole, in this case the ANZAC frigates.

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.	Likely	
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.	To be confirmed	The contract processes for the HVAC and the IPMS elements have been completed and the systems will be implemented in 2013 and 2015/16.
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.	To be confirmed	
Assessment: An assessment will be made once there is clarity on the 3rd and 4th requirement.			

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risk

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence, could occur several times during the coming year.
Likely	Likely to occur about once per year.
Possible	Possible, likely to occur at least once over a ten-year period.
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years.
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years.

Active Risks as at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	**Unexpected Costs:** If there are further costs associated with the project that could not have been anticipated and were, therefore, not included in the original estimates, there may not be enough funding to complete the project.	Acquisition	Low	Extra funding may be necessary to cover the unforeseen cost increases.	Almost certain	Additional funding has been approved to complete the project.
2	**Resources:** If project staffing is inadequate this may impact on completion of the upgrades of the frigates.	Acquisition	Medium	This could result in a delayed return of the frigates and therefore availability for operational tasking.	Possible	MoD Project Director and the NZDF Capability Branch to manage requirements, including additional funding. Additional personnel have been employed and seconded from NZDF

Issues

	Issue	Phase	Severity	Impact	Treatment Actions
1	**Schedule:** Because timing of work is being synchronised with the Navy's operational requirements schedule forecasts can change.	Acquisition / IIS	Medium	This could result in the second frigate entering Phase 2 later than expected, in addition to any delays in completing the first frigate.	Work with the Navy on achieving optimum entry of the second frigate. This has occurred and is being managed within the agreed timeframes

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 2014 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

On 6 November 2012 the Cabinet Committee on State Sector Reform and Expenditure Control:

a. Agreed in principle that the combat, surveillance and self-protection systems of the ANZAC frigates be upgraded;

b. Approved Option 4[13] in the Detailed Business Case (DBC) as the level of capability required at an indicative capital cost of $354-$374 million, by undertaking upgrades to air, surface and underwater defensive and surveillance systems;

c. Noted that this will enable the ships to conduct combat, surveillance and protection operations in the presence of most of the likely threats in the Asia-Pacific region and provide a credible capability in coalition operations elsewhere; and

d. Authorised the Secretary of Defence to:

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

   (2) 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[14] 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

[13] Option 4 is described in Volume 3*, Capability Definition Phase*.

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

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 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 2014):

a. Lockheed Martin Canada (LMC). A contract was awarded to LMC on 29 April 2014. As the Prime System Integrator, LMC will provide the Combat Management System and integrate the various sensors (procured by LMC for the Crown) such as the radars, Infra Red Search and Track, Tactical Data Link, Local Area Air Defense missile system ship fit components, Radar Electronic Countermeasures, naval laser warner system and trainable off board decoys. The contract does not currently include the detailed design or installation phases. The former will be initiated by an agreed Contract Change Proposal at the end of the Preliminary Design phase and the latter, at the end of detailed design when costed work packages have been developed. Subject to the Crown's agreement on the installation package, it is intended to conduct the refit in Victoria, Canada between late 2016 and 2018 (including trials).

b. Communications Electronic Support Measures (ESM) System. A Foreign Military Sales (FMS) case was established with the US Government on 6 May 2014 for the provision of a system for each frigate, including training and spares.

c. Thyssenkrupp Marine Systems Australia (TKMSA). A contract was awarded to TKMSA on 20 May 2014 for the provision of the Preliminary Design phase which extends from May 2014 to April 2015.

d. MBDA(UK). A contract was awarded on 21 May 2014 for the provision of Sea Ceptor active missiles.

e. Thales (Australia). A contract was awarded to Thales on 11June 2014 for the upgrade to the hull mounted sonar, and supply and installation of a replacement underwater telephone system. Both systems will be fitted to the ships in Auckland in early 2016.

f. Anti-Ship Missile Defence. A contract is expected to be awarded in early July 2014 for the provision of off board decoys.

g. Torpedo Defence. A contract is expected to be awarded in mid July 2014 for the provision of a torpedo defence system.

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	446.19
Current approved budget	14 April 2014	446.19
Variation on original approved budget	N/A	NIL

Explanation of major budget variations

Date of individual variation	Total (NZ million)	Factor	Explanation
	N/A		

1.3 Financial Performance

Project expenditure to date (30 June 2014)

	Total (NZ$ million)
Life to date expenditure (cumulative)	8.63
Remaining balance of approved budget	437.56
Forecast commitments	422.59

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	446.19
Total forecast expenditure	431.22
Gross project variation (forecast)	14.97
Foreign exchange impact	14.79
Actual project variation (forecast)	0.18
Variance explanation	Foreign exchange impact

Nature of variation (forecast)	Total ($million)	Explanation
Actual project variation-	14.97	Foreign exchange impact and uncommitted cost
Foreign exchange impact	14.79	
Total	0.18	

Project Contingency (as at 30 June 2014)

	Total (NZ$ million)
Contingency built into the budget	30.16
Total contingency expended	0
Remaining Balance	30.16

Explanation of major contingency draw downs

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

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date.

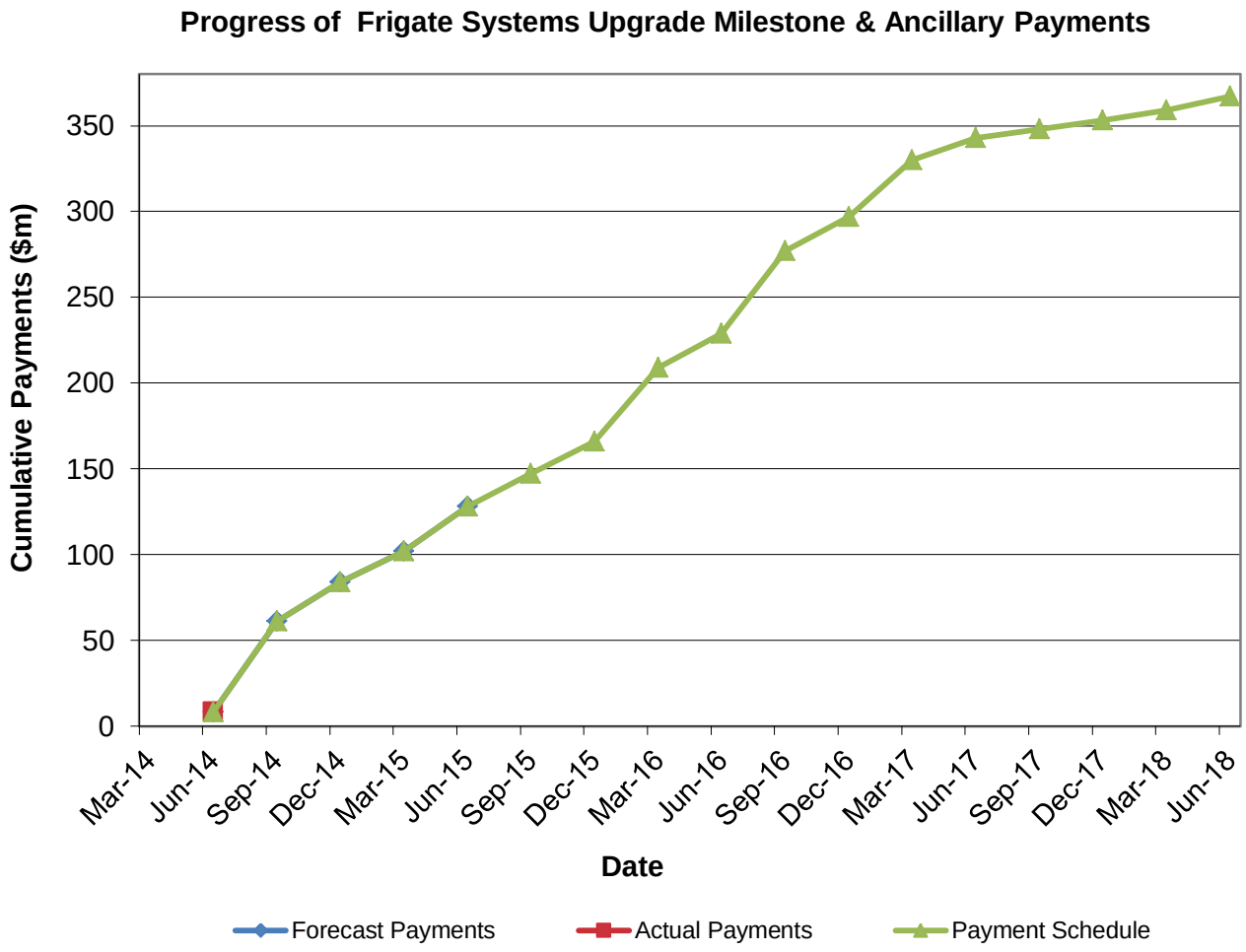
		Original forecast at Approval to Commit	30 June 2014 forecast/achieved	Variation in Acquisition Phase (months)
Acceptance Date	Ship One	March 2017	August 2017	N/A
	Ship Two	February 2018	August 2018	N/A
Comment		N/A		

History of variations to schedule

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

Progress against the Milestone Payments Schedule[15]

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.



[15] 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 (ECP). 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.

Certification Safety and Security: Prior to IIS a safety case must be raised and approved 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

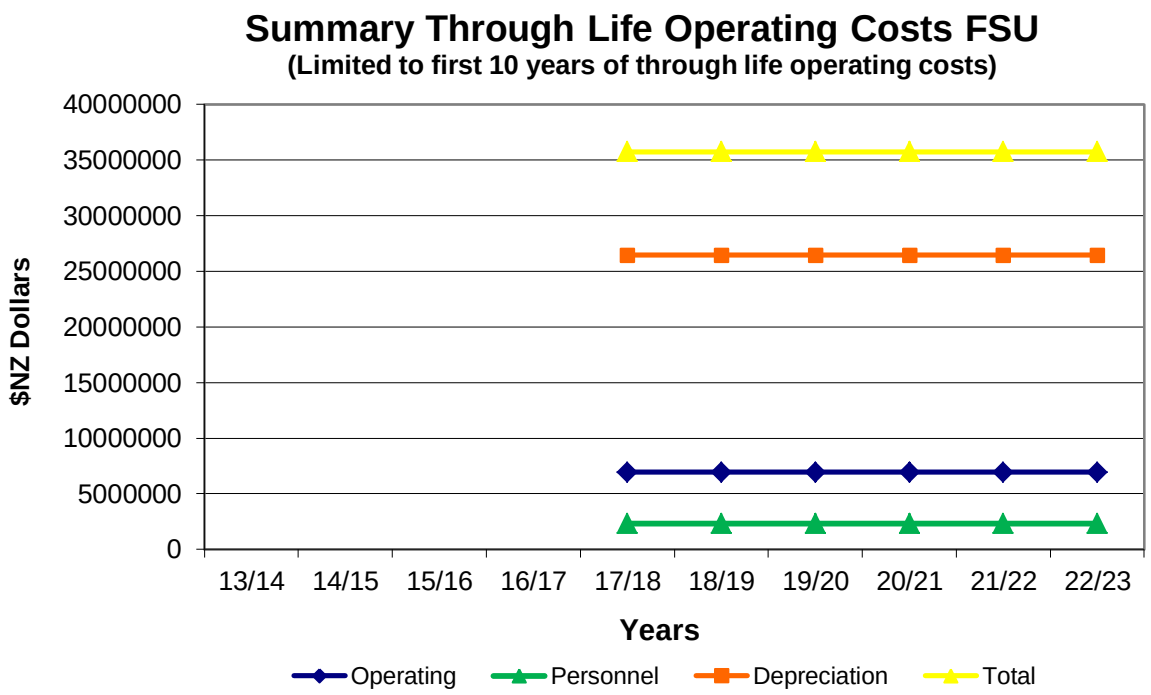
Initial Operating Capability: this is the first time the capability being introduced can achieve some or all of the operational requirements

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 2014 Estimate	30 June 2014 Actual	Variance (months)
Date Platform accepted by Crown	Ship 1 March 2017 Ship 2 February 2018	Ship 1 August 2017 Ship 2 August 2018	N/A	N/A
Commence operational test and evaluation	May 2017	August 2017	N/A	N/A
Finish operational test and evaluation	February 2018	September 2018	N/A	N/A
Achieve initial operating capability	May 2017	September 2017	N/A	N/A
Establish directed level capability	July 2018	September 2018	N/A	N/A
Explanation	N/A			

2.3 Summary of Through Life Cost Estimates



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 contributing to the Intelligence, Surveillance and Reconnaissance objectives of a task force commander and provide local area air defence to high value units.
ASSESSMENT: Contracts will have been placed to achieve all of the above operational requirements by mid July 2014.		

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low: Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium: Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High: Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme: Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost Certain	Very high probability of occurrence, could occur several times during the coming year
Likely	Likely to occur about once per year
Possible	Possible, likely to occur at least once over a ten-year period
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years

Active Risks at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	Preliminary Design. During the preliminary design period unexpected constraints may emerge that have potential impact on cost and or schedule.	Acquisition	High	Increased cost, schedule delay or reduction in capability	Possible	Contingency funds have been factored in to overall project costs.
2	Detailed Design Period. If the detailed design period takes longer than currently planned it may be necessary to amend the schedule.	Acquisition	High	Schedule Disruption	Possible	Preliminary design activity is tailored to identify potential problem areas early with participation from Prime Systems Integrator (LMC) and likely installation facility (Seaspan).
3	Readiness of ships for refit. Should unforeseen programming conflicts occur the arrival of ships at the refit facility may be delayed.	Acquisition	High	Schedule delay and Penalty payments	Possible	Contingency funds have been factored in to overall project costs and rescheduling order of ships entering refit may mitigate in extremis.
4	Material Condition of Ships. Should material defects be encountered during the refit process there may be an impact on cost and or schedule.	Acquisition	High	Increased cost and or schedule delay	Likely	Pre Refit Condition Assessment will be conducted. Funding may need to be apportioned between NZDF (Commander Logistics (COMLOG)) and project. Project contingency funds have been factored in to overall costs.
5	Provision of Government Furnished Equipment (GFE). Lead times, export controls and availability of some GFE may result in delayed provision.	Acquisition	Medium	Schedule Disruption	Likely	Engagement with relevant authorities is underway.

6	Operational Support Data. A number of new systems require access to operational data that if it cannot be sourced from partner navies may increase support costs or reduce capability.	Through Life Support	Medium	Increased through life support effort required by Navy	Possible	Engagement with partner navies indicates that cooperation through existing processes will be sufficient to manage the requirements of the new systems.
7	Integration of ANZAC unique systems with CMS 330. A number of systems, most notably Sea Ceptor missile system and 5 inch gun control unit have not been previously integrated with CMS330. Unforeseen issues may impact upon project delivery.	Acquisition	Medium	Schedule Delay Increased Cost Reduced Capability	Possible	System technical specifications define the expected levels of integration and performance place the burden of this risk primarily with the PSI.
8	If IIS activities are not properly resourced from both a personnel and ship availability perspective, then: delivery of full capability may be delayed or additional costs may be incurred; benefits realisation may be delayed, resulting in reputation risk.	Acquisition	Medium	Reduced Capability	Possible	IIS plans to be developed in consultation with appropriate organisations.

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.

The helicopters are currently stored at Kaman's facility in Connecticut, USA. A Defence Project Team has been located there to oversee the regeneration of the aircraft from storage; finalise design, installation and testing of the modifications required; and undertake provisional airworthiness certification. Once delivered to New Zealand the helicopters will be offered for acceptance by the NZDF and 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 2014 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

The Ministry of Defence has established an on-site team of Defence staff to work with Kaman in Connecticut to supply these deliverables.

Kaman has completed New Zealand specific modifications on four helicopters and the first three aircraft have commenced flights in Connecticut to enable Kaman to prepare their instructors for the training and acceptance tests. Deliveries of updated publications and training material have commenced with the remaining documents expected in the coming months. Training of NZDF personnel will occur in Connecticut in September to October 2014.

Penguin missiles were delivered to Norway by the RNZAF in March and are now undergoing refurbishment for their delivery to New Zealand in 2015.

Tests have been conducted in Connecticut to test the helicopter to Penguin missile interface and the military satellite communication system on the helicopters.

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 2014)

Total (NZ$ million)	
Life to date expenditure (cumulative)	44.6
Remaining balance of approved budget	207.7
Forecast commitments	189.9

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	252.3
Total forecast expenditure	234.5
Gross project variation (forecast)	19.5
Foreign exchange impact	18.2
Actual project variation (forecast)	1.3
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 2014)

Total (NZ$ million)	
Contingency built into the budget	21
Total contingency expended	0.0
Remaining balance	21

Explanation of major contingency draw downs

Draw down	Total (NZ$ million)	Explanation
N/A	0.0	N/A
Total	0.0	

Major reallocations of funds within the approved budget

Date of individual variation	Total ($m)	Explanation
2014	31.9	Transfer from MoD to NZDF 2013 October Baseline Update.

1.4 Schedule/Timeframe Progress

Variations in forecast acceptance date

		Original forecast at Contract Signing	30 June 2014 forecast / achieved	Variation in Acquisition phase (months)
Acceptance Date	First platform	Delivery to New Zealand January 2015	January 2015	0 months
	Last platform	Delivery to New Zealand August 2015	August 2015	0 months

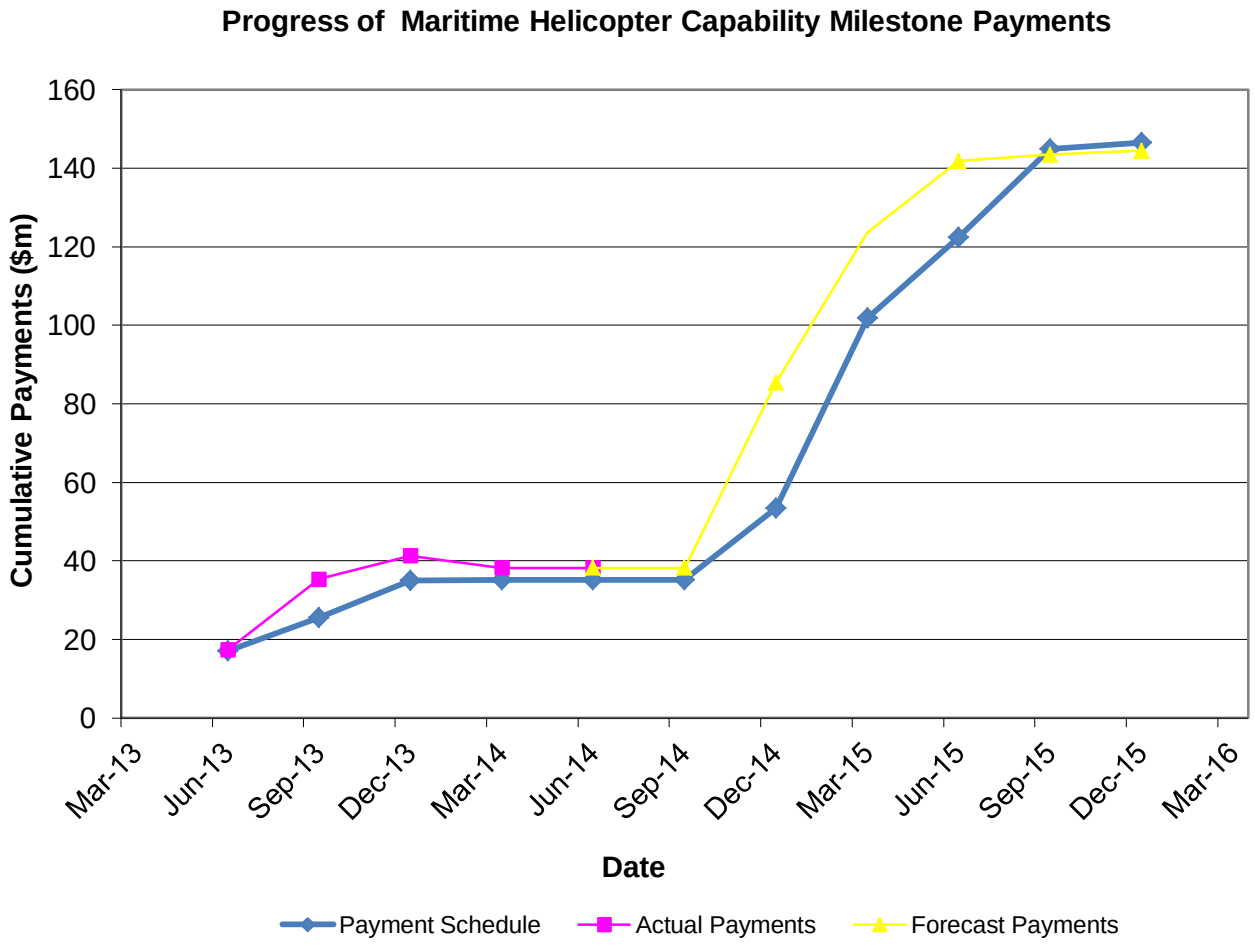
History of variations to schedule

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

Delivery of the first helicopters is scheduled for 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 MHCP 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

The IIS plan has been prepared ahead of the first delivery of helicopters in January 2015.

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.

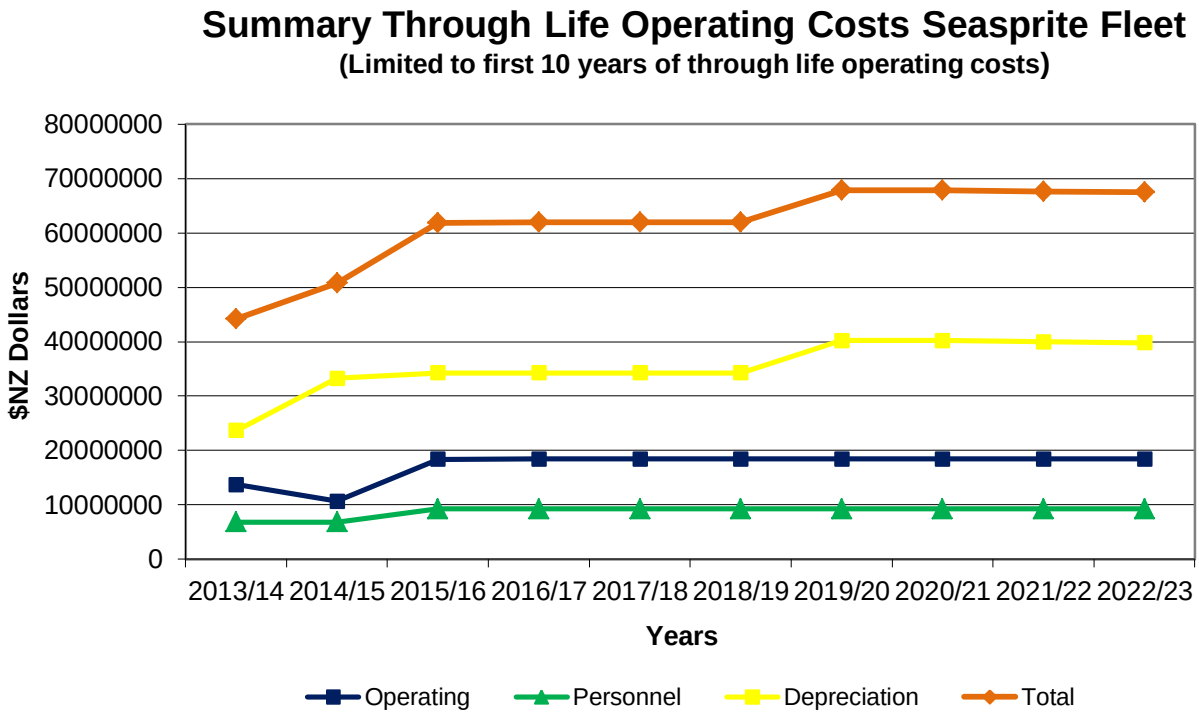
Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

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 2014 Estimate	Actual	Variance
Date first helicopter accepted by Crown	Oct 2014	Oct 2014	N/A	N/A
Delivery of first helicopter to New Zealand	Jan 2015	Jan 2015	N/A	N/A
Commence operational test and evaluation	Feb 2015	Feb 2015	N/A	N/A
Finish operational test and evaluation	March 2016	March 2016	N/A	N/A
Achieve initial operating capability	April 2016	April 2016	N/A	N/A
Establish operational level of capability	2016	2016	N/A	N/A
Establish directed level of capability	2016	2016	N/A	N/A
Explanation	This project entered the acquisition phase in May 2013. Delivery, testing and operational dates will be revised after the first aircraft has completed regeneration, modification and acceptance testing in Connecticut.			

2.3 Summary of Annual Through-life Cost Estimates



Figures are FX flat-lined at current year rates and CPI excluded

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.		

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence could occur several times during the coming year.
Likely	Likely to occur about once per year.
Possible	Possible, likely to occur at least once over a ten-year period.
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years.
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years.

Active Risks at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	**Verification of specifications.** There is a risk that we may determine that specification requirements have not been adequately demonstrated.	Acquisition	Medium	**Schedule & Cost.** This may require further testing to be completed at Crown expense.	Possible	Early establishment of an on-site team with a specific focus on completing the verification review as soon as possible, and use of some project contingency funds if further testing is needed.
2	**Support contracts.** There is a risk that the support contracts may not be established in time to meet the in-service date, because of personnel limitations.	In Service	Medium	**Schedule.** Introduction into service and pilot training may be delayed.	Possible	Establish specific monitoring of progress at Governance level.
3	**Simulator delay.** The Simulator may take longer than planned before it is ready to support in-service training.	In Service	Medium	**Schedule.** Introduction into service and pilot training may be delayed.	Possible	Use aircraft to fill the gap for training if the simulator encounters delays.
4	**Specialised equipment.** There is a chance that delivery of items of equipment held by the Australian Defence Force may be delayed.	Acquisition	Medium	**Schedule.** Delay to testing until items are received.	Possible	Early consultation with third parties to expedite acquisition.
5	**Insufficient personnel**. The project may be compromised because of insufficient people being available during the acquisition and introduction into service phases.	Acquisition	Medium	**Schedule & Cost.** This may result in the capability not being delivered on time, within budget, or to full potential.	Possible	The cost of contractors to staff some IIS activities, have been provided for in the introduction into service budget. Pre-contract due diligence.

6	**Availability of Flight Instructors.** If the availability of qualified flight instructors is limited, this may lead to delays in the delivery or attainment of maritime helicopter capability	Introduction Into Service	High	**Schedule & Cost.** This may result in the capability not being delivered on time	Possible	Treatments include reconversion of former QHI and greater utilisation of Naval Reserve Officer QHI

MEDIUM/HEAVY OPERATIONAL VEHICLES

Project Description: This project is replacing the New Zealand Defence Force's (NZDF) aging medium and heavy operational vehicle fleet with new vehicles. Trucks are essential to transport troops and supplies.

Current military operations require trucks that can operate in difficult terrain, and handle bulk loads including pallets, containers and liquids. Forces on deployment may need to be supplied with everything they need (such as fuel, food, water and ammunition) across widely dispersed operations. Trucks need to protect the occupants through the provision of armour and electronic countermeasures as required. They need to support contemporary communications equipment. They need to be reliable, efficient and easy to use and provide support even when deployed in remote places.

Up to 200 new trucks are being procured from Rheinmetall MAN Military Vehicles (Australia) (RMMVA), replacing 290 vehicles in the current fleet. They will be delivered from November 2013 through to December 2015. On entry into operational service, they will allow the retirement of many current Mercedes Unimog and MB 2228 series trucks.

The new trucks are assembled in Vienna, Austria and then shipped to Auckland, where the manufacturer's agents (MAN) will complete NZ compliance. The MoD will do final acceptance and take delivery in Auckland, and the trucks will be transferred to NZDF ownership for distribution.

Some specific sub components (dump bodies and semi trailers) will be manufactured in New Zealand under subcontract to RMMVA. These components will be matched to the relevant trucks in New Zealand for final inspection prior to delivery.

For information on Policy Value, Better Business Case Milestones, Capability Definition Phase and/or Summary of Acquisition Phase, refer to the 2014 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

How Defence decided to acquire the Capability Solution

To test the market, an MHOV RFI was issued in December 2011 on GETS. The response to the RFI was good, with responses from the five top military truck manufacturers. Analysis of the RFI revealed the Rheinmetall MAN Military Vehicles Australia (RMMVA) offer was the most cost

effective (costs were primarily based on the United Kingdom Ministry of Defence support Vehicle Project).

On 10 December 2012, Cabinet agreed to the purchase of up to 200 MHOV vehicles to replace the current fleet, which is reaching the end of its life and has operational limitations. Cabinet approved an indicative capital cost of up to $135.000 million, and authorised negotiations with the UK MoD and RMMVA to achieve that (CAB Min (12) 44/15 refers).

The Detailed Business Case (DBC) noted that the purchase via the UK MoD and Rheinmetall MAN Military Vehicles (RMMV) may take the form of all or any of the following:

- direct from RMMV (but with pricing and specifications as per the UK MoD purchase where applicable);
- through the UK MoD contract with RMMV, whereby some of their production commitment is diverted to New Zealand; and/or
- surplus vehicles direct from the UK MoD.

Leveraging the large UK MoD procurement of 7,500 vehicles, thereby securing significant cost reductions, was time sensitive and conditional on allowing an uninterrupted production of MHOV on the RMMVA production line. The critical time was the end of March 2013, at which point the production line was to finish the UK MoD order. There was some flexibility into April, and meeting this deadline was the focus of the project team.

Initial negotiations with the UK MoD indicated that 68 vehicles in two variants could be transferred from UK production contracts. However, the UK MoD advised on 22 February 2013 that no surplus vehicles would be available, and no UK production contracts could be transferred due to potential shortages in the UK fleet.

Negotiations for the supply of vehicles were then undertaken with RMMVA (Rheinmetall RMMVA Military Vehicles (Australia). RMMVA generically covers Rheinmetall MAN Military Vehicles (RMMV) and their subsidiaries, including RMMV (Australia), MAN Truck and Bus (UK); and their subcontractors including MAN Automotive Imports (NZ).

The negotiations resulted in a contract for the supply of 194 vehicles, together with five semi trailers, peripheral equipment (including armour protection kits), logistic support and training packages.

The six recovery vehicles included in the DBC fleet of 200 vehicles and offered by RMMVA are too large for NZDF requirements. RMMVA is currently developing a smaller recovery variant for a number of users, including the UK. The capital to procure up to six of this variant has been included in the project, subject to it meeting user requirements.

During the reporting period, all 194 vehicles have been manufactured. Vehicle deliveries to the NZDF have totalled 130, 62 vehicles were in transit to NZ, and 13 vehicles are required for the Dumper and Tractor/trailer requirements and will be accepted as systems in late 2014. Purchase of the additional accessories, including appliqué armour/passenger pods/runflat inserts, has also occurred.

Parent company	Rheinmetall MAN Military Vehicles (Australia) Ltd
Prime contractor at contract signing	Rheinmetall MAN Military Vehicles (Australia) Ltd
Current prime contractor	Rheinmetall MAN Military Vehicles (Australia) Ltd

1.2 Project Budget

Budget variation

	Date approved	Total (NZ$ million)
Original budget at Approval to Commit	28 March 2013	135
Current approved budget	30 April 2014	138.7
Variation on original approved budget		3.7

Explanation of major budget variations

Date of individual variation	Total (NZ$ million)	Factor	Explanation
2014	10.34	FX	Additional $10.34m approved as technical adjustment for FX movement 2013 October Baseline Update.
2014	(6.6)	Transfer of funding to the Platform Systems Upgrade Project	Cabinet approved a transfer from MHOV to the Platform Systems Upgrade project [SEC Min (14) 4/2].

1.3 Financial Performance

Project expenditure to 30 June 2014

	Total (NZ$ million)
Life to date expenditure (cumulative)	82.0
Remaining balance of approved budget	56.7
Forecast commitments	27.9

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	138.7
Total forecast expenditure	132.2
Gross project variation (forecast)	6.5
Foreign exchange impact	4.8
Actual project variation (forecast)	1.7

Variance explanation

Nature of variation (forecast)	Total ($million)	Explanation
Uncommitted costs	1.7	

Project Contingency (as at 30 June 2014)

	Total (NZ$ million)
Contingency built into the budget	2.3
Total contingency expended	1
Remaining balance	1.3

Explanation of major contingency draw downs

Drawdown	Total (NZ$ million)	Explanation
Transfer of funds	1	Transferred to Platform Systems Upgrade Project

1.4 Schedule/Timeframe Progress

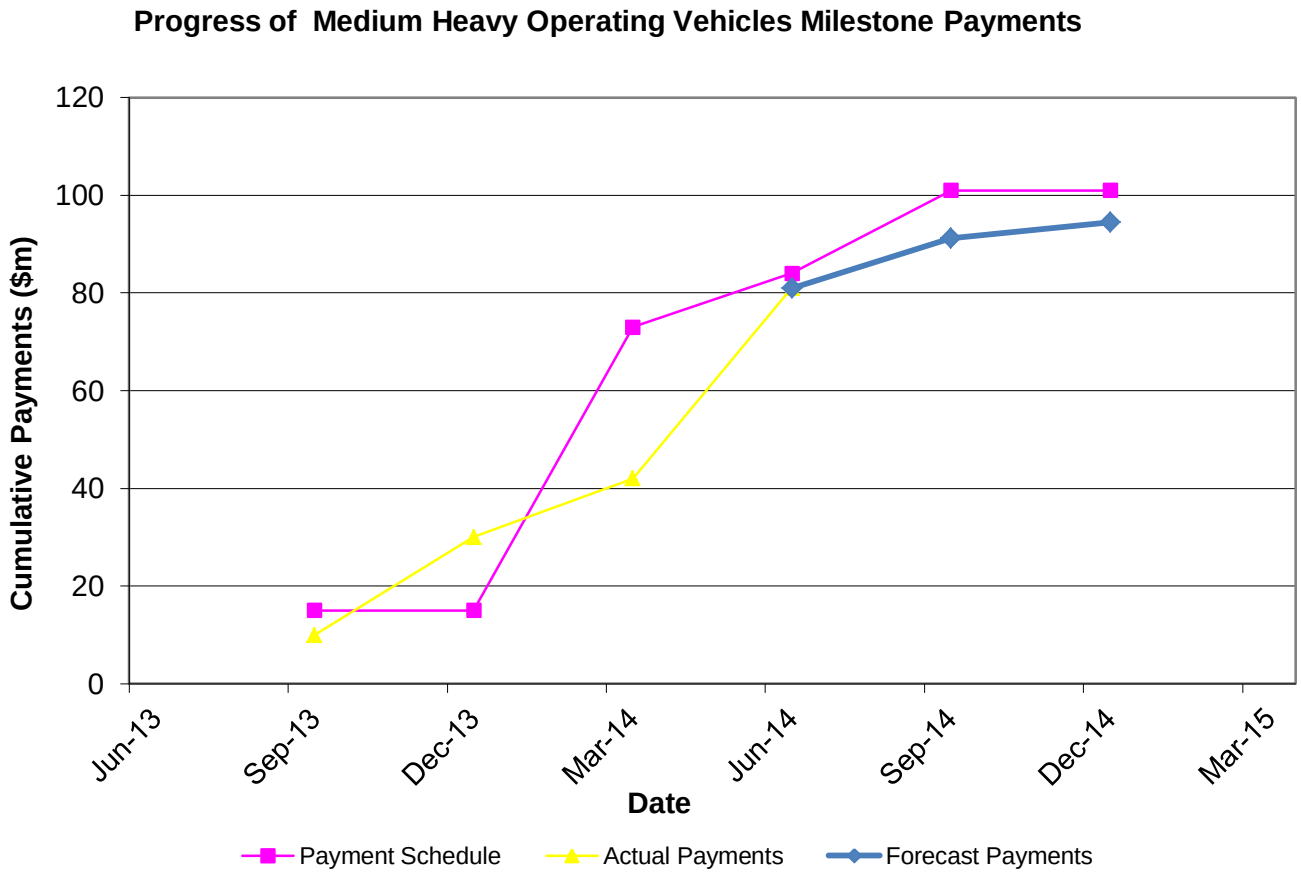
Variations in forecast acceptance date

		Original forecast at Approval to Commit	30 June 2014 forecast / achieved	Variation in acquisition phase (months)
Acceptance Date	First vehicle	November 2013	November 2013 (achieved)	0
	Last Vehicle	September 2014	September 2014 (forecast)	N/A

History of variations to schedule

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

Progress of MHOV 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[16]. 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.

An additional $3.8 million is available through the NZDF for infrastructure and IIS. It is anticipated that this money will be expended in 2013/14 and 2014/15.

[16] 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 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

Introduction into service is being managed by the NZDF MHOV Project Manager and delivered primarily through the Transition into Service Team. This team will:

- conduct maintainer and operator training – 100 and 300 people respectively;
- imbed training plans for follow on training;
- receipt the vehicles, determine support equipment and spares required through ILS evaluations;
- issue equipment to user units;
- validate other contract deliverables (A frames, armour, test equipment, wheel chains, publications, etc) to ensure they are fit for purpose; and
- establish an In-Service Support Contract between the NZDF and the Original Equipment Manufacturer (RMMVZ).

Status of the Introduction into Service plan

The Introduction into Service Plan was signed in July 2013 and is being implemented. The IIS plan was reviewed and reconfirmed in May 2014.

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.

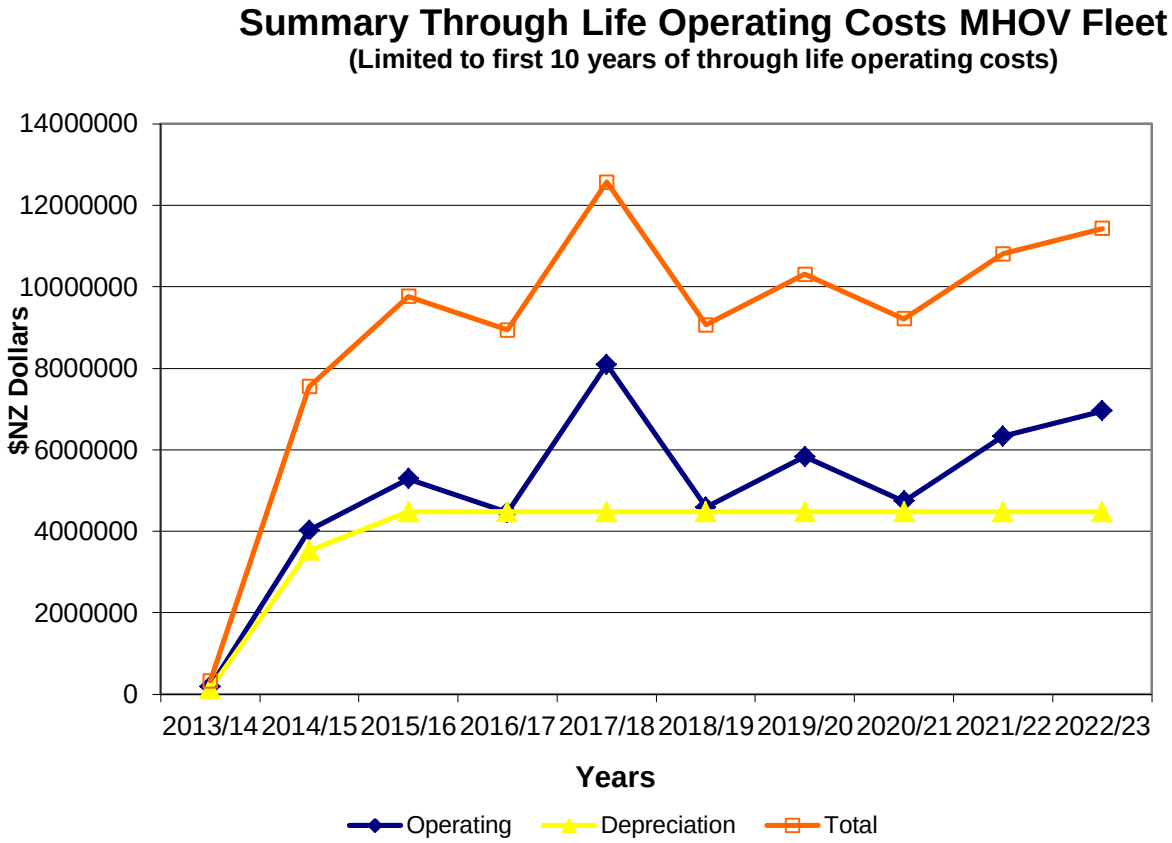
Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

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 2014 Estimate	Actual	Variance (months)
Date first batch accepted by Crown	13/14	1 November 2013	November 2013	0
Date last batch accepted by Crown	14/15	1 September 2014	N/A	N/A
Commence operational test and evaluation	TBA	October 2014	N/A	N/A
Finish operational test and evaluation	TBA	December 2017 (Ex SK17)	N/A	N/A
Achieve initial operating capability	TBA	December 2014 HADR	N/A	N/A
Establish directed level of capability	TBA	December 2017 (Ex SK17)	N/A	N/A
Explanation	The initial release of capability will be realised in December 2014 in reaching a basic Humanitarian and Disaster Relief (HADR) Capability. Operational Test and Evaluation (OT&E) planning will proceed through 2014/2015 to Exercise Southern Katipo 2015, where this medium will be used to evaluate the Initial Operational Capability (IOC) for a Light Task Group. OT&E planning and delivery will continue until Full release of Operational Capability for a Combined Arms Task Group which will be realised in December 2017 during Exercise Southern Katipo 17, integrating all other project outputs within the Distribution Capability (Tranche 1) of the LTCP – modules and trailers.			

2.3 Summary of Through Life Cost Estimates



SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Operational Requirements

Operational Requirements	Delivery	Comment
Can be fitted with NZDF specified voice and data communication equipment	Yes	The Network Enabled Army Programme will provide communication equipment compatible with the fleet.
Can be equipped with active and passive protection	Yes	Armour kits have been purchased as part of the contract.
Comply with current safety regulations	Yes	The MHOV Safety Case is in development, based on the UK MoD MHOV Safety Case.
Transportable by air and sealift	Air: Yes Sea: Trial required	Initial Air Trials have been conducted using the small truck. Sea trial timings are yet to be confirmed.
Transport range of military loads including bulk liquids, palletised and containerised loads, NZDF modules, personnel, weapons and ammunition, loose loads	Trial required	The physical trials are timed for the 2014 /15 financial year.
Off road mobility including some self recovery	Yes	All trucks have off-road capability. Recovery winches fitted to around a third of the fleet.
Integrated load handling for some	Yes	Around a third of the trucks have integrated load handling (i.e. crane or similar permanently fitted to truck).
NZTA compatible	Yes	All trucks successfully able to be registered for use on NZ roads.
Operate in wide range of climate and lighting conditions	Yes	Proven by the British Army in service in Afghanistan. NZ vehicles only used at home to date.
Run on standardised military fuel	Yes	Verified by the British Army during the truck's development

Commonality across fleet	Yes	Achieved with the selection of three different sizes of vehicles from the MAN family of vehicles. A high level of commonality has been achieved between these variants.
Proven in service	Yes	Proven by the British Army in service in Afghanistan.
Supportable in NZ	Yes	NZDF personnel are being trained to maintain the trucks. Maintenance in NZ is also available from the manufacturer.
Proven global supply chain	Yes	The manufacturer has a proven global supply chain of parts and services through partners (Penske).
Supportable within current NZDF trades and resources	Yes	IIS plan includes conversion training for maintainers.
Value for money over 20 year life	Yes	The cost model is in the Detailed Business Case and demonstrates this.

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence could occur several times during the coming year.
Likely	Likely to occur about once per year.
Possible	Possible, likely to occur at least once over a ten-year period.
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years.
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years.

Active Risks at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	**Functional Performance Specifications (FPS):** The high level user requirements for the Dumper, (semi)Trailer and Ring Mounts have been signed off. They have yet to be delivered, and until they have, there is a risk that they may not meet the requirement.	Acquisition	High	A risk that the FPS will either not be met, or incur unexpected costs beyond those allowed for.	Likely	Each of these systems will have a design review to ensure the design meets the requirements before manufacture commences. NZDF personnel will attend these reviews, along with MoD.
2	**Operating Budget:** If in-service support arrangements do not leverage the characteristics of modern vehicles, and apply obsolete concepts and processes, then operating costs may be higher than anticipated.	IIS	High	Increase in the annual operating budget, an adjustment of the level of support to be provides, or a reduction in the planned usage rate.	Likely	NZDF is applying the manufacturer's service requirements and is training maintainers to use modern tools / systems as required by the manufacturer. Manufacturer has reviewed and approved the training, which is also necessary to maintain the warranty.
3	**Organisational Plan:** The new MHOV fleet is smaller than the replaced fleet, necessitating vehicles to be shared between Units for raining purposes. If the mechanism for this is not effective, there is a risk to completion of training.	IIS	High	Less efficient management and utilisation of MHOV, and unnecessary additional costs with retention of legacy trucks	Likely	Land Transport Capability Programme's Business Change Manager (BCM) will work with Defence Logistics staff to support the introduction of the sharing mechanism (called the Managed Fleet Utilisation, MFU).

4	**Recovery Vehicles:** The User Requirement for recovery vehicles is not yet finalised. Depending on the eventual agreed requirement, there may not be an RMMVA solution for all or part of the requirement.	Acquisition	High	NZDF will have a capability gap in medium / heavy vehicle recovery when the current medium recovery vehicles are withdrawn from service.	Likely	A number of actions are being taken to either extend the life of the present vehicles, upgrade the present vehicles, or purchase alternative vehicles.

4.3 Issues

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	**Operational Compliance:** Successful management of vehicle compliance is essential in order to prevent illegal usage and fines.	Introduction Into Service (IIS)	High	Issue needs ongoing management to prevent adverse impact on usage of the vehicles	Almost certain	This issue was well understood prior to MHOV being contracted. Dealing with it involves information and training. Current actions include: • Initial 2-year State Highway Over-weight Permits applied for each truck (excludes local roads). • Transport Compliance Manager being recruited. • Training focus on compliance management including BESS (Bridge Engineering Self Supervision) qualification for all drivers. • Clear guidance for units receiving MHOV provided in the Introduction into Service Instruction around compliance, and operating the vehicles safely.

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 2014 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.

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 SBN.

How Defence decided to acquire the Capability Solution

The SBN 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. A minimum of one maritime terminal (for HMNZS CANTERBURY) was required to meet Initial Operating Capability, with a further four maritime terminals required to meet Full Operating Capability.

Contractor for Mobile Terminals	GigaSat Asia Pacific, operating out of Canberra.
Contractor for first Anchor Station	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 which has been limited to the management of the MoU only and can be released once WGS Satellite Nine is launched and operational.

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 2014

	Total (NZ$ million)
Life to date expenditure (cumulative)	30.4
Remaining balance of approved budget	58.5
Forecast commitments MoU	31.8
Forecast commitments MoD	21.1
Contingency	5.6

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	88.9
Total forecast expenditure	83.3
Gross project variation (forecast)	5.6
Foreign exchange impact	Nil
Actual project variation (forecast)	5.6

Variance explanation

Nature of variation (forecast)	Total ($million)	Explanation
Actual project variation-	5.6	Contingency
Foreign exchange impact	Nil	
Total	5.6	

Project Contingency (as at 30 June 2014)

	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.

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 2014 forecast / achieved	Variation in acquisition phase (months)
Acceptance Date	WGS Satellite Nine	2018	2018	Nil
	Early Access	30 June 2013	20 August 2013	2
	Initial Operating Capability	30 June 2014	30 August 2014	2
	Final Operating Capability	30 June 2015	30 December 2016	18

History of variations to schedule

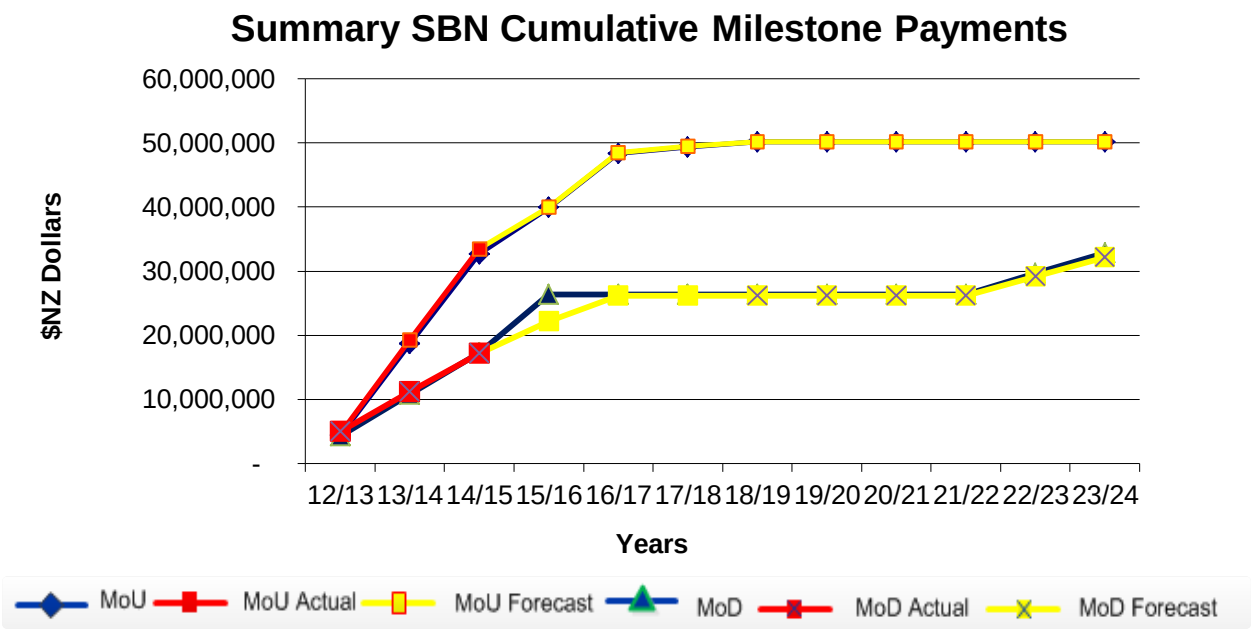
Date of individual variation	Variation length (months)	Explanation
30 June 2014	2	There was a delay in producing the supporting documentation and processes to operate and maintain the mobile terminals.

30 June 2014	18	Delivery times for the maritime terminals are longer than expected with 13 months the current estimate from the suppliers. This long lead time combined with fitting into the Navy ship installation schedule has effectively put over a year's delay into the project. This delay only affects the maritime terminals.

Progress of SBN 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 the following equipment has been contractually accepted by the MoD and delivered to the NZDF for completion of IIS activities:

- Two 2.4m mobile terminals.
- Two 1.3m mobile terminals.
- One anchor station with dual 6.3m terminals.

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 IIS activities in preparation for declaring Interim Operating Capability (IOC):

- 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 (with the exception of the smaller terminals which need more testing). It has also been successfully integrated into the Defence networks. There has been a delay of two months in declaring IOC as the raw engineering data required for some codification and documentation efforts has been slow to emerge. One issue was raised when an untrained operator damaged one of the terminals but this has been addressed through additional training.

Status of the Introduction into Service Plan

The IIS Plan for IOC is nearing completion. The plan will be modified to include any additional requirements to achieve Full Operating Capability (FOC). All terminals will be used to support OP TIKI VI (anti piracy) and an additional two of the larger terminals are due for delivery in July 2014 to ensure minimal disruption to IIS activities and support for in country training and exercises.

The NZDF Satellite Network Operations Centre (SATNOC) has been established and manages all NZDF WGS communications and the MOU with the US DoD. The first anchor station has been delivered and is managed by the NZDF Communications and Information Systems (CIS) Branch.

A tender for maritime terminals was released in December 2013 and responses are currently under evaluation.

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.

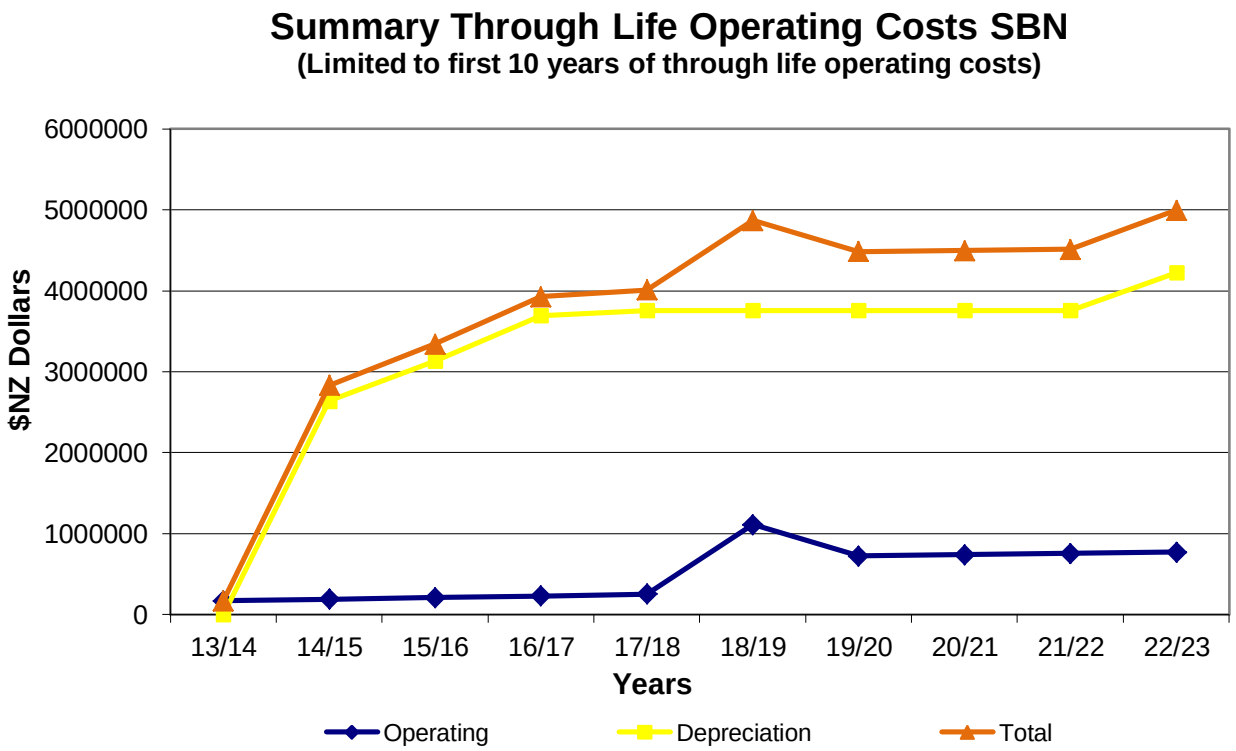
Operational Level of Capability: the generation of military capability so that force elements are able to carry out specific military tasks in accordance with the NZDF Output Specifications.

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 2014 Estimate	30 June 2014 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	30 August 2014	N/A	2
FOC accepted by Crown	30 June 2015	30 December 2016	N/A	18
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 18 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.			

Summary of Through Life Operating Cost Estimates



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 six 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).	50%	WGS has already been used to support NZDF operations and exercises in NZ and the South Pacific. Support to NZDF operations further afield is scheduled from August 2014. 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.	50%	Mobile terminals have been used to support both NZ Army and RNZAF exercises and will support its first mission from July to November 2014. 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 the internet).	66%	The Defence network and internet have been proven and the throughput achieved is considered sufficient to support additional networks.
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.	90%	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 eight deployed units.

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence, could occur several times during the coming year.
Likely	Likely to occur about once per year.
Possible	Possible, likely to occur at least once over a ten-year period.
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years.
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years.

Active Risks at 30 June 2014

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	If there are delays or long lead times in the delivery of orders this may flow into delivering capability.	Acquisition	Medium	Later delivery to NZDF units than originally planned	Likely	Early engagement with suppliers has been attempted but formal engagement through the tendering process is required. Indications are that maritime terminals will have a 13 month delivery. This may affect the RNZN installation schedule.
2	If the costs of the project rise above estimates this may impact on meeting all the project requirements.	Acquisition	Medium	Less funding available for other parts of the project	Likely	A change to the MoD appropriation has been made bringing funding forward from the out-year. This will cover the increased cost of the maritime terminals. There is no change to the Cabinet approved budget.
3	If untrained personnel are used to operate or maintain the equipment it may be damaged.	Introduction Into Service	Medium	Increased down time due to repairs, higher consumption of spares	Likely	MoD is running another full training session and NZDF is tightening up the access to the terminals and adherence to the procedures.
4	A second anchor station is in scope of the project though its location is yet to be identified which may create additional requirements for the project.	Acquisition	High	Consent and budget requirements will depend on the location	Possible	Potential sites have been identified and radio licenses sought. Preference is for the second site to be on defence land.
5	If there is a problem with one of the satellites NZ access may be compromised.	All	Medium	Less capacity will be available to NZ	Unlikely	Redundancy has been built into the satellites and the constellation with overlapping coverage areas.

PART 3B: PROJECT INFORMATION SHEETS

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

Introduction: Through the Project 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 work the project background and Description in Acquisition, refer to the 2014 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]
Total		59.9
Variation on approved budget		0

[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.

Financial Performance

Project crown expenditure to date (as at 30 June 2014)

	Total (NZ$ million)
Approved Budget	59.9
Life to date expenditure (cumulative)	42.1
Remaining balance	17.8
Forecast commitments	17.5

Total forecast expenditure (as at 30 June 2014)

	Total (NZ$ million)
Approved budget	59.9
Total forecast expenditure	59.6
Gross project variation (forecast)	0.3 (under spend)
Foreign exchange impact	0.0
Actual project variation (forecast)	0.3 (under spend)
Explanation	N/A

Project Contingency (as at 30 June 2014)

	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 2014 has been focussed on delivering the components necessary for the installation work in the next year. The project is focussed on the installation phase on the vessels with plans being closely coordinated with the fleet operational and maintenance plans.

The macro level schedule for this project remains unchanged from the 2013 Major Projects Report and is planned to be completed by December 2015 with project closure in June 2016.

As at 30 June 2014 the project was 76 % complete and the plan anticipates work completion of around 90% (2015) and complete by June 2016.

All major equipment supply has now being contracted and will be available to complete the installation on the ships in accordance with the fleet maintenance schedule allowing operations of the vessels as appropriate.

In April 2014, as part of rebalancing the Defence Portfolio, Cabinet approved, *inter alia*, a fiscally neutral transfer of $5 million from Protector Remediation to the Platform Systems Upgrade Project. The transfer was funded through a formal reprogram and drawdown of contingency and was approved by the Secretary of Defence on 16 April 2014.

Outcome of Remediation Programme (30 June 2014)

Items Complete in Previous Reports

Engine Lubrication System

Modifications to the engine control system and the addition of 200 tons additional ballast have effectively remediated concerns with respect to *Canterbury's* engine lubrication system. The Naval Authority have advised (inter alia) that whilst they are satisfied that the lube engine oil issue is resolved operating restrictions will remain in force until RHIB relocation is complete.

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 and the LCM's are undertaking Operational Test and Evaluation.

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.

A weight reduction programme, including replacement of the steel ballast system with lighter weight material, has maintained the LCM weight within the Crane Limits. Notwithstanding, the LCM weights remain near the currently approved limits of *Canterbury's* cranes. The project has provided appropriate documentation and is working with the Naval Authority to increase of the safe working load of the cranes.

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. Additional tie down points have been installed on the flight deck to allow for the conduct of Australian MRH90 First of Class Flight trials.

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. The systems have been installed and certified and are scheduled for operational release during Exercise Southern Katipo13.

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.

A first release user interface has been developed for near real time provision of command advice that requires tailoring through the operational environment.

Programme of Work to Completion

Ballast Conversion for Canterbury

Design for the conversion of void spaces to ballast tanks is completed. The design will allow the loading of *Canterbury* to the "load line" irrespective of cargo. Purchase of materials and components is progressing and preproduction of key components will commence shortly. The decision on implementation has been deferred to allow appropriate analysis of actual (vice theoretical) ship sea keeping performance in light of the considerable changes in weight and

weight distribution as part of the production phases of remediation. It is expected that the ballast changes will be implemented when the ship next docks.

LCM – Automated Line Handling

The launch and recovery of the LCM is hazardous with the LCM acting as a pendulous weight on the ship's cranes. Currently, the LCM is restrained using manual line handling from the LCM deck to forward and aft of the LCM. An Automated Line Handling System has been designed and production of the system has commenced. The ship integration design has been completed and the ship repairer tasked with installation when *Canterbury* enters planned maintenance in September through December 2014.

OPV Cross Connect

The OPVs were delivered with insufficient Service Life Margin (80 vice 150 tonnes). Cross connection of two wing fuel tanks will allow additional margin for damage stability and ice accretion particularly in the end of life condition. Appropriate designs have been developed to provide the necessary cross connection and will be implemented during routine maintenance periods for *Wellington* and *Otago*.

Ship Motion Data Acquisition Systems

Ship Motion and Data Acquisition Systems have been developed and are in production for the IPV and OPV. All ship installations are complete and the shore based analysis system has been contracted for delivery in October 2014.

Mission Systems

Obstacle Avoidance Sonar (WASSP)

The pre-production prototype of the Wide Angle Sub-Surface Profiler (WASSP) has been undergoing local tests and trials. WASSP provides detailed profiles of the seafloor in high resolution 2D or 3D views, generated in real time. Final contract negotiations are nearing completion for delivery of two production units and production baseline update of the the trial unit.

Communications Detection System (Karearea)

Daronmont Technologies has been contracted to provide the Karearea Communication Detection System. Karearea provides intercept, location and display of radio transmissions. The installation of the system is programmed for late 2014 – early 2015 within scheduled maintenance periods.

Naval Gun System (TYPHOON and TOPLITE)

Rafael Defence Industries has been contracted to provide the TYPHOON (including TOPLITE Sensor) weapon system for *Canterbury*, *Otago* and *Wellington*. Additional TOPLITE sensors have been contracted for the IPV class.

All equipment has been delivered ready for ship installation. *Otago* and *Wellington* have been modified for installation of the typhoon systems for commissioning and trials through September 2014. *Canterbury* installation will occur in the next maintenance period.

The Toplite system is being installed on *Hawea* and will be commissioned with the OPV Typhoon systems. The *Rotoiti* system will be installed in the second quarter of 2015. Installation of the other two systems has been deferred.

Air Capable Radar

Studies have identified an alternative approach to the difficulties associated with tracking aircraft. Technology now allows parallel processing of the existing radar signals alleviating the need to replace the existing radars with expensive alternatives.

Engineering trials have been completed successfully and equipment has been purchased for installation on *Canterbury* in the next maintenance period.

Sensor Manager and Tactical Display

Sensor and Display of the tactical picture within the protector Fleet is provided using the existing. display system AIMS-ISR. The new capabilities itemised above are to be integrated into the sensor manager as the equipment is installed. A complete hardware and software refresh has been trialled and production has commenced to support the installation schedule.

MAJOR PROJECT RISKS AND ISSUES

Risks identified at project establishment (and managed on an ongoing basis)

	Risk	Phase	Treatment Actions
1	Civil classification to Lloyd's Register may compromise military capability and operational envelopes.	Throughout Project	LRS requirements to be considered as part of Design Review process. Naval Authority to grant Flag State waivers as appropriate.
2	Design delays may impact on production schedules.	Pre Production	No work to be authorised without design completion.
3	Operational demands on in-service ships may impact on production schedules.	Production	Conduct tranches of work during programmed work periods.
4	Introduction into service delays. NZDF may not be ready for introduction into service.	IIS	Capability Release schedules to be advised to Introduction into Service authorities.
5	Original Project Protector specifications may be misaligned with current capability requirements.	Design and Feasibility	Optimise remediation outcomes within Capability Requirements. Document variations from Protector Specification highlighting operational and procedural remedies and enhanced requirements where appropriate.
6	Some capability requirements may not be achievable within existing platforms.	Design and Feasibility	Optimise remediation outcomes within capability requirements. Document variations from Protector Specification highlighting operational and procedural remedies and enhanced requirements where appropriate.
7	Some aspects of the intended scope of the remediation programme may prove unworkable.	Design and Feasibility	Due diligence of each aspect of the programme to validate solution prior to work commencing.
8	A change of strategic direction may modify remediation scope.	Throughout Project	Each solution to be validated against current strategic direction.
9	Production delays.	Production	Close oversight and early award of work with appropriate rescheduling for best effect.
10	Foreign Exchange Volatility. Any rapid reduction in NZ exchange rate may make solutions purchased from overseas less affordable.	Throughout Project	Pre purchase of FOREX when contract signature.

Issues

	Issues	Related Risk	Impact	Treatment Actions
1	Impact of other Dockyard Work (Commercial and Navy Programme) on Dockyard resourcing – particularly the overlap with the *Te Mana* Platform Systems Upgrade Project Phase 2	9	Specific work items may be delayed but still contained within the project completion timeframe.	Appointment of Programme Director (Maritime) to integrate and coordinate work streams. Naval Programme Office is being created. Early Start for Programming, Scheduling and Estimating for both *Canterbury* and *Te Mana*. Clear Scope of work identified to provide planning window for Production period
2	Uncertainty regarding detailed structures as the Dockyard Management Contract moves from Competitive to Alliance based structure.	9	Should agreement fail to be reached delays to production schedules may occur.	Major Remediation work completes within the one year transition period to the new arrangements.
3	Unavailability of ships to undertake the work.	3,9	Production activities could be delayed.	Project team represented at the Fleet Planning Meetings. Modification and 'splitting' of the work packages to make best use of the maintenance time available.

DEFENCE COMMAND & CONTROL SYSTEM

Introduction: The 2010 Major Projects Report included the Joint Command and Control System (JCCS) Programme. It reported that of the four projects identified in that programme, only the Defence Command & Control System (DC2S) Project had commenced, and that the other three were still in the concept stage.

On 18 July 2011, however, Cabinet cancelled the JCCS 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 DC2S, had significantly reduced. The previously agreed scope and structure of the Programme, therefore, were no longer appropriate.

Accordingly, this Project Information Sheet reports on the DC2S Project only. At the same time as the Cabinet decision, the lead for the acquisition of the DC2S Project transferred from the NZDF to the MoD. Governance remains with a MoD/NZDF Capability Steering Group (CSG) accountable to the Capability Management Board.

Project team membership includes one seconded NZDF specialist, and a further NZDF secondee (an Intelligence specialist) was assigned in December 2012.

The project team engages closely with the NZDF's CIS Br 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 2014 Major Projects Report, Vol 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 2014)

	Total (NZ$ million)
Life to date expenditure (cumulative)	9.1
Remaining balance of approved budget	14.5
Forecast commitments	13.5

Total forecast expenditure (as at 30 June 2014)

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	22.6
Gross project variation (forecast)	0.9 under spend
Foreign exchange impact	0.7 (favourable)
Actual project variation (forecast)	0.2 under spend
Explanation	In the 2012 report, an under spend of NZ$ 0.6 million was forecast. This is no longer the case due to adjusted contract costs.

Project Contingency (as at 30 June 2014)

	Total (NZ$ million)
Contingency built into the budget	3.4
Total contingency expended	0.0
Remaining balance	3.4

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 2014 Update	Variation in Acquisition phase
Acceptance Date	**Initial Operating Capability**	July 2010	June 2011[18] (achieved)	11 months
	GCCS-M Full Operating Capability	August 2011	Terminated October 2013 – to be replaced with GCCS-J	N/A
	GCCS-J Full Operating Capability		June 2015[19]	N/A

[18] 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.
[19] 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.

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	N/A	**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		**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	N/A	**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	N/A	**CSG 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 Jan/Feb 2014 was deferred by Defense Information Systems Agency to begin 17 March 2014.
August 2014	N/A	**Presentation of Mid-Pilot Progress report -** CSG informed of progress with the NZDF Operational Evaluation of GCCS-J and potential impact of scope of Phase 2.

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 2014:

- 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 will occur in two phases; Phase 1 was the limited deployment on static headquarters and support element sites over the period September 2013 – October 2014, and Phase 2 was deployment across the rest of the NZDF including ships and deployable headquarters over the period October 2014 – December 2015.
- The implementation of the Radiant Mercury cross domain system will occur in two phases; Phase 1 is complete and provides a limited cross domain solution. Phase 1 will inform the requirements for Phase 2, which is forecast to occur in early 2015.
- The existing trial fit of GCCS-M 4.0.3 on HMNZS *Te Mana* will remain in use until it can be upgraded to GCCS-J late in 2014. HMNZS Te Kaha will be fitted with a GCCS-J interim solution as she comes out of extended maintenance and sea trials, and will be in place by late 2014. Subject to NZDF confirmation, fitting of GCCS-J to HMNZS *Canterbury* is expected to occur as the ship is available in 2016, probably during its scheduled maintenance period from June – September 2016.
- Implementation of GCCS on smaller ships is under NZDF review and likely to be integrated with existing systems (Action Information Management System-Intelligence Surveillance and Reconnaissance and/or Electronic Chart Precise Integrated NavigationalSystem) already in-service on those ships.

- Work to enable connectivity with classified international data feeds will continue, with completion scheduled for December 2014.
- Upgrade of training facilities will occur during Phase 2.

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.

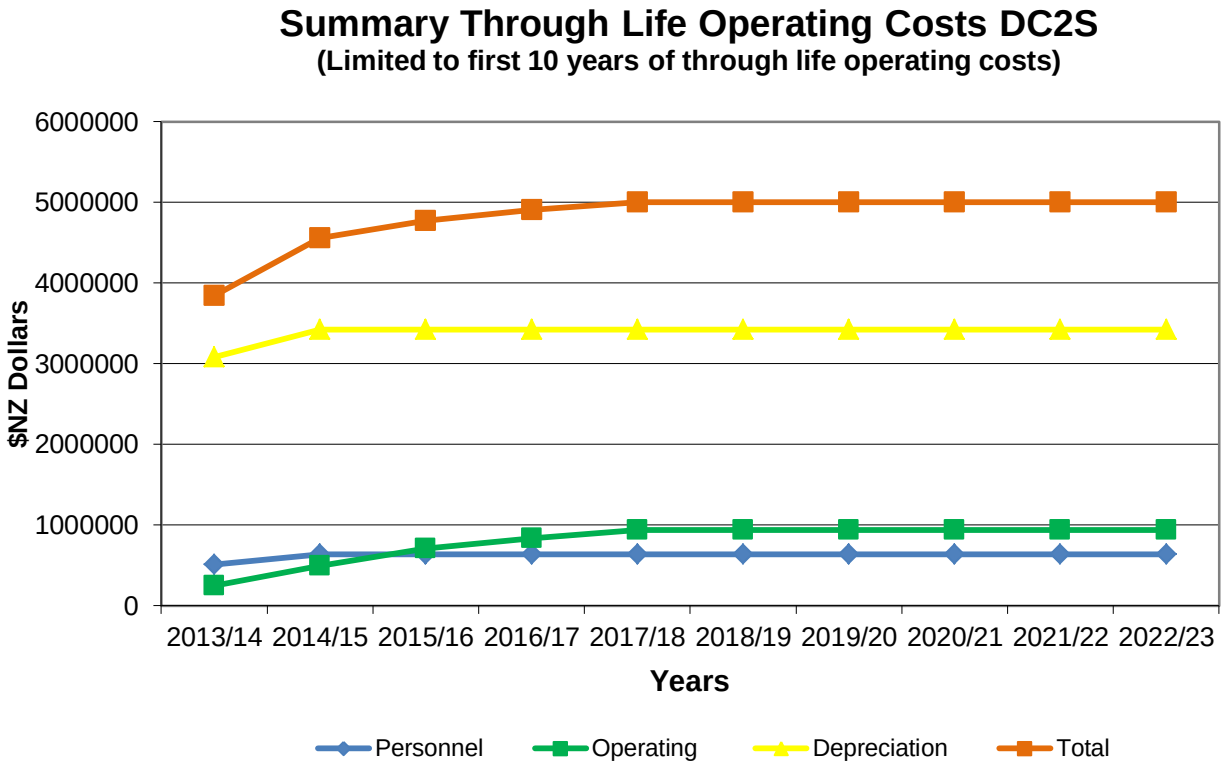
NZDF Output Plan, 2009, S1-12

2.2 Schedule of Introduction into Service

	Initial Forecast	30 June 2014 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[20]	N/A	N/A
GCCS-J Phase 1 (pilot)	September 2014	October 2014	N/A	N/A
GCCS-J Phase 2 (final)	June 2015	June 2015[21]	N/A	N/A
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.			

[20] Cabinet SEC Min (13) 14/2 refers
[21] Installs on ships subject to vessel availability, and may be beyond June 2015

3.3 Summary of Through-life Cost Estimates



SECTION 3: OPERATIONAL CAPABILITY

3.1 Progress towards Delivery of Capability and Operational Requirements

Defence Command and Control System – Progress as at 30 June 2014		
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.	Yes	Email and web browser exist and are being integrated. The collaborative software tools will be introduced at a later phase of the project. There is, however, no indication that these will not be delivered.
Establish ongoing system support arrangements and staff training requirements.	Yes	These arrangements are being put in place through the Joint C2 Systems Support Office (JC2 SSO) concept. There are no risks currently identified that could prevent the goal being achieved.
Assessment: All requirements likely to be met.		

SECTION 4: MAJOR PROJECT RISKS AND ISSUES

4.1 Risks

Key:	
	Low. Little or no impact on ability to deliver outputs, meet objectives and goals. Little or no resource allocation or management effort required.
	Medium. Degrade the ability to deliver outputs, meet objectives and goals. A moderate level of resource allocation or management effort is required.
	High. Significantly degrade the ability to deliver outputs, meet objectives and goals. A high level of resource allocation or management effort is required.
	Extreme. Goal achievement or output delivery unlikely. Significant resource allocation or management effort required.

Likelihood	
Almost certain	Very high probability of occurrence, could occur several times during the coming year.
Likely	Likely to occur about once per year.
Possible	Possible, likely to occur at least once over a ten-year period.
Unlikely	Plausible, unlikely, likely to occur during the next ten to forty years.
Rare	Very low likelihood, but not impossible, very unlikely during the next forty years.

Risks identified at contract signing

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	**Foreign Military Sales (FMS) process.** This method of equipment acquisition may be time consuming.	Acquisition	Medium	**Schedule.** May cause delays to the Acquisition of the Defence Command and Control System.	Likely	Enhance relationships between project team and US agency contacts to get an improved understanding of likely procurement timings through the FMS process.

Active Risks

	Risk	Phase	Rating	Consequences	Likelihood	Treatment Actions
1	**Lack of end user endorsement.** There is a risk that the delivered Defence Command and Control System capability may not meet user expectations.	Introduction into Service	Low	**Operational Outputs.** Without endorsement of the solution by the end user the system may not be actively deployed or fully introduced into service.	Possible	Increase stakeholder engagement. Use of pilot systems (Proofs of Concept) and testing. Interdependencies are being identified, analysed and addressed.
2	**Uncertainty about the full capabilities of the Global Command and Control System-version 4.** There is a risk that the currently selected technical solution may not deliver the expected level of capability.	Acquisition / Introduction into Service	Medium	**Schedule and Capability Requirements.** The current solution may result in either reduced capability for the end user, or in the need to delay the project whilst alternative solutions are sought.	Possible	Confirm capability requirements and mitigate risk to these through use of Proofs of Concept and the possible development of alternative system/source options. Conduct due diligence of the product before final FMS commitment. In addition, and if required investigate potential alternative suppliers.
3	**CIS resources**. The NZDF's CIS branch may not have the capacity, networks, or resources to support DC2S.	Introduction into Service	High	**Schedule.** May generate delays for the system's introduction into service.	Possible	Ensure that engagement with CIS is open, ongoing and orientated toward problem resolution.

4.3 Issues

	Issues	Phase	Severity	Impact	Treatment Actions
1	**User and system requirements.** Requirements are currently defined at the programme level, not the project level. In addition some requirements are only 'place holders' rather than actual, measurable requirements.	Acquisition / Introduction into Service	High	**Schedule.** The project's progress will be delayed as the detailed operational requirements are confirmed by the project team.	The project team is leading a review of the NZDF's user requirements. Progress has been frustrated by the poor Intelligence performance of the GCCS-M product. The implementation of GCCS-J, will allow the operational requirements review to be completed by March 2014.
2	**Project Vision and Management.** There were initial limits to the management and co-ordination of the NZDF's Network Enabled Capability strategy.	Acquisition / Introduction into Service	Low	**Capability Requirements**. There may have been a reduction in the capability and organisation benefits to be delivered.	The project management lead was transferred from the NZDF to MoD in July 2011. The project team have worked closely with key external and internal stakeholders to improve communication and relationships.
3	**Personnel.** The availability of appropriately skilled, qualified NZDF personnel to the project.	Acquisition / Introduction into Service	Medium	**Schedule.** Without sufficient skilled and qualified NZDF personnel to progress the development of the project the agreed schedule will be challenging to meet.	Close engagement with the NZDF to ensure sufficient skilled and qualified personnel are available to contribute to the projects development. Due to the nature of this work, utilising contractors is unsuitable.