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MAJOR PROJECTS REPORT 2024

MANATŪ KAUPAPA WAONGA
NEW ZEALAND MINISTRY OF DEFENCE

Te Kāwanatanga o Aotearoa
New Zealand Government

Front cover: top, the southern lights viewed from the bridge wing of HMNZS *Aotearoa* en route to Antarctica, delivering supplies to McMurdo Station. *Aotearoa* was delivered under the Maritime Sustainment Capability project and achieved Operational Release in December 2023. (LAC Jenkins)

Bottom, NZ7011 – our first C-130J-30 Hercules delivered under the Future Air Mobility Capability – Tactical project – took off on its inaugural flight in March 2024.

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Other Major Projects Reports

This is the latest in a series of reports focusing on major Defence-led projects that, during a financial year, are delivering new capability approved by the Government. Earlier reports, focused on a range of projects during the financial years between 2009/10 and 2022/23, are available under the Publications section of the Ministry of Defence website.

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MANATŪ KAUPAPA WAONGA
NEW ZEALAND MINISTRY OF DEFENCE

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• ANZAC Frigate Phalanx Close-in Weapon System (CWIS)	2010-2012
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The *Major Projects Report* series from 2009/10 to 2022/23 are also available on the Ministry of Defence website. www.defence.govt.nz

[1] This project was listed as Network Enabled Army Tranche One in the editions from 2015 to 2020.

FROM THE SECRETARY OF DEFENCE

The Defence Major Projects Report (the Report) is an annual review of the Ministry of Defence's management of medium- to high-scale and medium- to high-risk Defence acquisition projects and programmes. The Report is undertaken at the request of Parliament's Foreign Affairs, Defence and Trade Select Committee. This is the fifteenth Major Projects Report since 2010.

The 2023 Report pointed to a strategic environment that was deteriorating at a rate not seen in decades. The twelve months covered by this publication has not seen any improvement. Russia's illegal invasion of Ukraine continued, strategic competition in the Indo-Pacific intensified and extended into the South Pacific, and conflict in the Middle East widened.

The Government's investment in Defence capability is critical to how New Zealand is able to respond to this environment. It is through such investment that the New Zealand Defence Force can deploy with confidence, able to undertake successfully the tasks expected of it, often working alongside friends and partners.

The Government's investment in Defence is significant. During the reporting period, the Ministry was delivering capability worth around $6 billion. Of that total funding, 97 percent related to projects included in this report. Highlights include:

- delivery of the fourth and final P-8A Poseidon aircraft, and the achievement of Interim Operational Release for Search and Rescue, Maritime Surveillance, Humanitarian Aid and Disaster Relief, and Anti-Submarine and Anti-Surface Warfare tasks;
- achievement of Operational Release for the Maritime System Capability (HMNZS Aotearoa) and the ANZAC Frigate System Upgrade. The latter followed the successful live firing of the Sea Ceptor missile capability; and
- delivery of the new Bushmaster protected vehicles, and the commencement of driver and maintainer training.

Significant highlights achieved after 30 June 2024, but prior to publication of this report, include:

- practical completion of new infrastructure at the Royal New Zealand Air Force Base Ohakea for the P-8A Poseidon capability;
- delivery of all five C-130J Super Hercules and the achievement of Interim Operational Release following flights to Antarctica over the 2024/25 Austral summer; and
- successful Factory Acceptance Tests for the Fixed High Frequency Radio Refresh, with installation underway.

Achieving milestones across the portfolio of projects has not been without challenge. The last two Major Projects Reports explained that whilst all projects were forecast to be delivered on budget and to scope, delivery schedules were under pressure. The picture in this Report is improving as a number of projects achieve Operational Release. Moreover, the P-8A Poseidon and C-130J-30 Super Hercules capabilities, which together account for over 60 percent of the value of the portfolio in delivery, are both within budget and hit their key milestones ahead of schedule.

As the Ministry prepares to start implementing a new Defence Capability Plan, improving our performance against Schedule is a priority. Buying military off-the-shelf, resisting making changes to a capability's agreed baseline design, and exploring joint procurement

opportunities with Australia will be important in achieving this priority.

Also critical is the ongoing scrutiny by Parliament of the Ministry's delivery performance, of which the Major Projects Report continues to be an important enabler. I therefore welcome the publication of this report.

Brook Barrington
Secretary of Defence/Te Tumu Whakarae mō te Waonga

17 February 2025

THE MAJOR PROJECTS REPORT

This report provides information about projects led by the Ministry of Defence that are being delivered in collaboration with the NZDF. These projects have been funded to deliver major defence capability, following approval of their business case by Government.

A summary of performance in relation to each project's schedule, cost, and capability in the year 1 July 2023 to 30 June 2024 can be found on pages 13 to 15.

This report is designed to be read either on its own, or with other editions in the series, and in conjunction with the Ministry of Defence Annual Report for the same year in review. Each edition includes the history of the project or programme up to the point when the Government made the decision to invest.

Projects in this edition

The Major Projects Report 2024 includes details of 9 projects and two programmes.

Air

The three Air Domain projects included are:

- Air Surveillance Maritime Patrol (ASMP): a fleet of four P-8A Poseidon aircraft have been delivered, replacing the former P-3K2 Orion Maritime Patrol fleet. The project is also delivering a flight training simulator, infrastructure and other elements to support the capability.

Programmes and Projects

Defence uses both projects and programmes as temporary structures, designed to deliver capability. A programme is set up to coordinate, direct and oversee a set of related projects and activities. A project is created specifically to deliver one or more products under an agreed business case and may be part of a programme or may stand alone.

Projects and programmes in this report are assessed as medium- or high-risk, with whole of life costs greater than $25 million. These Ministry of Defence-led projects and programmes are at a point in their life cycle where a range of activities may be underway, including:

- industry engagement
- contracts being developed for the delivery of new or upgraded capability
- designing, building, developing or upgrading capability
- planning for integration of the new capability into service.

As well as providing a reference point for information on each project or programme, this series of reports provides a longitudinal overview of the Ministry's performance in management and delivery of significant capability projects.

Almost all feature in multiple editions, reflecting the reality of a long-term lifecycle for many major Defence projects.

The Major Projects Report provides a summary of each programme and project's history and purpose – what it has been expected to achieve, including policy objectives and capability requirements.

It summarises the definition phase that led to each project's funding for delivery, and outlines expenditure for each project across delivery.

- Future Air Mobility Capability – Tactical (FAMC): replacing the Royal New Zealand Air Force's tactical airlift fleet of C-130H(NZ) Hercules, as well as training and support equipment, and a flight simulator.
- Operational and Regulatory Aviation Compliance Sustainment (ORACS): a series of phased projects that are addressing changes to the technological and regulatory aviation environment, ensuring that the NZDF's air operations are effective, safe and secure.

Maritime

Four projects and one programme of work sit under the Maritime Domain in this report. The first three focus on the Anzac-class frigates:

- Anzac Frigate Systems Upgrade (FSU): completed upgrades of the weapon and sensor systems of HMNZS *Te Kaha* and *Te Mana*.
- Frigate Sustainment Communications (FSC): part of the ongoing programme of work to ensure the frigates remain operable until the end of their service lives; equipment is being replaced to ensure ongoing interoperability with partners and other capabilities recently acquired for the NZDF, such as the P-8A Poseidon.
- Frigate Sustainment Programme: this multi-phase programme can enable the Anzac frigates' service life to be extended beyond the original 30-year design life. The first phase of the programme is being undertaken between 2023 and 2026.
- Dive and Hydrographic Vessel (DHV): this project delivered HMNZS *Manawanui*, which was commissioned on 12 June 2019.
- Maritime Sustainment Capability (MSC): built and delivered HMNZS *Aotearoa*, a polar-compliant replenishment tanker that supports naval fleet and land operations.

Information

The Information Domain project:

- Fixed High Frequency Radio Refresh (FHFRR): replacing the NZDF's existing high frequency radio system.

Land

The first two of these Land Domain projects are part of the Network Enabled Army Programme:

- Network Enabled Army C4[2] (NEA C4): was the first project approved under the overarching Network Enabled Army Programme. It is delivering modern communications to land forces to improve situational awareness and support deployed commanders' decision-making at all levels.
- Network Enabled Army Reconnaissance and Surveillance (NEA R&S): these capabilities enable collection of information that can be processed into intelligence to support decision-making by the New Zealand Army. This project will deliver uncrewed aircraft and remotely piloted systems, along with remote ground sensors and associated training and through-life support.
- Protected Vehicle – Medium: is replacing the armoured Pinzgauer fleet with a fleet of NZ5.5 Bushmaster vehicles, along with spares, ancillaries and a training package.

When projects are complete

When a project finishes its delivery (or acquisition) phase, it is no longer included in the report. In December 2023 Maritime Sustainment Capability achieved operational release, completing its delivery phase. However with around $6.5 million expenditure taking place during the 2023/24 financial year some details are included in this report.

[2] C4 is the abbreviation for Command, Control, Communications and Computers.

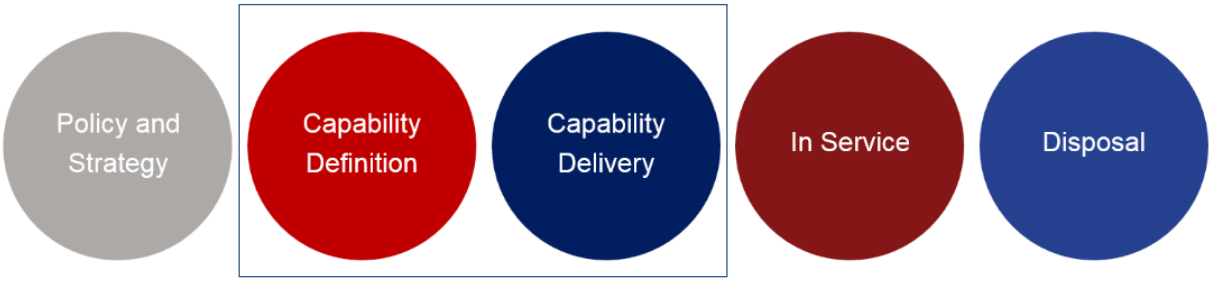
Previous editions

Previous editions of the Major Projects Report series from 2009/10 to 2022/23 are available on the Ministry of Defence website.

DELIVERING DEFENCE CAPABILITY

The Defence Capability Management System (CMS) is operated by the Ministry of Defence and the New Zealand Defence Force. It supports cost-effective design, delivery and maintenance – and eventual disposal – of military capability.

The CMS is designed to deliver the right military capability for New Zealand at the right time, for the right price. Within it, a framework provides the guidance, standards, tools, enablers and people that are required to deliver the capability successfully. The system has been developed specifically for the New Zealand Defence context, based on an assessment of international best practice.



The Secretary of Defence and the Chief of Defence Force have separate formal accountabilities for phases of the life cycle (shown above), the CMS' design reflects the requirement for close collaboration within Defence and shared accountability for the success of the system as a whole.

This is demonstrated in the presence – throughout the CMS' governance arrangements, management processes and framework – of people from both the Ministry and the NZDF.

For each project that was in the delivery phase of its lifecycle during the 2023/24 financial year, this report outlines key information about the programme of work, along with the work undertaken during its definition phase.

As Defence-led projects, teams are established to define, develop and deliver the capability and are comprised of personnel from both the Ministry and NZDF. They include the Ministry's policy and project specialists, and draw on NZDF subject matter experts, reflecting the technical and business functions required.

Since 2017 Integrated Project Teams (IPTs) have been established for most major capability projects currently in delivery.

Seven of the projects in this report are being delivered under the IPT structure:

- Air Surveillance Maritime Patrol
- Anzac Frigate Systems Upgrade
- Dive and Hydrographic Vessel
- Future Air Mobility Capability Tactical
- Maritime Sustainment Capability
- Operational and Regulatory Aviation Compliance Sustainment and
- Protected Vehicle - Medium.

A further two projects, Fixed High Frequency Radio Refresh and Frigate Sustainment – Communications, are managed by Project Leads.

Network Enabled Army and the Frigate Sustainment Programme are managed by a Programme Director and Programme lead respectively.

Within the context of Government policy and strategy, in this phase the Ministry and Defence Force work together to define the future capabilities that are needed. Business cases are prepared to enable Government to make investment decisions. Using the Government's Better Business Case model, projects progress through the stages of the investment process, supported at each stage as required by these business cases:

- Initial thinking in the **indicative business case**
- A decision to go to market through the **detailed business case** or **single stage business case**
- The final decision on the capability and the commitment of funding through the **project implementation business case**.

Brief explanations of these terms can be found at the end of this report.

The Capability Delivery Phase seeks proposals to deliver the capability required by Government, and has been designed to deliver a solution that achieves the required outcomes and benefits. The process spans the planning to source and integrate new capability, gaining approval to commit to and execute a contract, managing the capability integration process, acquiring and accepting the deliverables, and the interim operational release of the new capability before the transition to operational release and being in service.

Continuous Improvement in Performance

In Budget 2015 the Ministry's operating funding increased by $27.1 million over four years, enabling implementation of the significant change programme that delivered improvements across the joint Capability Management System (CMS). Reviews of the resulting Defence procurement policies and processes by Sir Brian Roche KNZM and PWC between 2018 and 2022[3] reinforced this. In 2018 Sir Brian concluded that the change programme had addressed structural, operational and information deficiencies and was able to provide *"decision makers with a strong level of confidence and assurance to support informed decision making"*.

The 2019 follow-up recommended shifting the programme to a business-as-usual and continuous improvement focus and the final report, published in 2022, reported that the *system was successfully embedded*".

An increasingly mature and resilient system that has so far achieved what it was set up to do, Sir Brian noted in 2019 that risks cannot be stopped completely from materialising, as uncertainty outside the system's control can and will occur.

The original Major Projects Report (2010) first discussed the difficulty in meeting targets across the key performance metrics of schedule, budget and capability. If two are held steady, pressure is often felt on the third. Where possible, Defence's preference is to hold steady on budget and capability. This means schedule is often under pressure. COVID-19 led this pressure to emerge in delays to a number of projects (see pages 13-15). Vulnerabilities in international supply chains were exposed along with availability of specialist expertise, including military expertise, and business continuity planning.

However, as Sir Brian went on to conclude in 2022, the "*quality of people involved in the CMS, the processes and logical management approach and the strategic governance instilled through the system, meant that overall project outcomes held up well*".

[3] Review of Defence Procurement Policies and Practices for Major Capability Projects (2018), *Follow-up Review: Defence Procurement Policies and Practices for Major Acquisitions* (August 2019), *Review of Defence Procurement Policies and Practices 2021* (August 2022).

INDEPENDENT REVIEW REPORT

AUDIT NEW ZEALAND
Mana Arotake Aotearoa

INDEPENDENT ASSURANCE REPORT

TO THE READERS OF THE MINISTRY OF DEFENCE'S MAJOR PROJECTS REPORT FOR THE YEAR ENDED 30 JUNE 2024

We have carried out an independent assurance engagement on the project status reports included in the *Major Projects Report 2024* prepared by the Ministry of Defence. The purpose of this report is to express a limited assurance conclusion on whether any matters have come to our attention to indicate that the project status reports provided by the Ministry of Defence are not fairly stated.

The information that falls within the scope of the assurance engagement is the project status reports on pages 13 to 110 that cover the following acquisition projects:

- Air Surveillance Maritime Patrol;
- Future Air Mobility Capability – Tactical;
- Operational and Regulatory Aviation Compliance Sustainment;
- ANZAC Frigate Systems Upgrade;
- Frigate Sustainment – Communications;
- Frigate Sustainment Programme;
- Dive and Hydrographic Vessel;
- Maritime Sustainment Capability;
- Fixed High Frequency Radio Refresh;
- Network Enabled Army Programme;
- Network Enabled Army C4;
- Network Enabled Army ISR – Reconnaissance and Surveillance; and
- Protected Vehicle – Medium

These projects are collectively referred to as "the specified acquisition projects".

MPR 2024

MANATŪ KAUPAPA WAONGA
NEW ZEALAND MINISTRY OF DEFENCE

Limited assurance conclusion

Based on our work described in this report, nothing has come to our attention that causes us to consider that the project status reports included in the *Major Projects Report 2024* have not been fairly stated.

Our limited assurance engagement was completed on 1 April 2025 and our conclusion is expressed as at that date.

Emphasis of matter

We draw attention to *Changes to reporting guidance in 2023/24* on pages 13-14 which describes the change to the basis for reporting schedule performance against the approved baseline milestone as approved by the Defence Capability Governance Board and explains how that guidance has been applied in this report. Our conclusion is not modified in respect of this matter.

Basis of conclusion

The review was carried out under section 17 of the Public Audit Act 2002 and in keeping with the Auditor-General's Auditing Standard 7: *Other Auditing Services* and the External Reporting Board's International Standard on Assurance Engagements (New Zealand) 3000 (Revised): *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*.

A limited assurance engagement is not an audit and the procedures that have been performed are substantially less than for an audit where reasonable assurance is provided. As a result, the level of assurance that has been obtained is substantially lower than the assurance that would have been provided had an audit been performed.

Our assurance engagement involved carrying out procedures and making enquiries to obtain evidence about whether the project status reports have been fairly stated. These procedures and enquiries included:

- reconciling the non-financial information in the project status reports to supporting documentation provided by the Ministry of Defence;
- reconciling financial information in the project status reports to the Ministry of Defence's audited financial statements for the year ended 30 June 2024;
- seeking explanations from the Ministry of Defence staff for any questions arising from the reconciliations; and
- considering the effect of events subsequent to 30 June 2024 on the fair disclosure of the project status reports up to the date of this independent review report.

Fair disclosure of the project status reports requires that the information, where applicable, is:

- relevant;
- faithfully represented;

- understandable;
- timely;
- comparable; and
- verifiable.

We have obtained sufficient evidence and explanations that we required to provide a basis for our conclusion.

Inherent limitations

The project status reports contain certain future-focused disclosures about expected achievements, planned time frames, forecast expenditure, and intended capability requirements. There are also disclosures about project risks. Some forecast information relies on the expert judgement of the Defence staff involved in each project and assumptions about future events and management's actions. This information is, by its nature, inherently uncertain, because events do not always occur as expected and variations may be material.

Because of the inherent limitations in evidence gathering procedures, it is possible that fraud or error may occur and not be detected.

Responsibilities of the Secretary of Defence

The Secretary of Defence is responsible for preparing the *Major Projects Report 2024* to fairly disclose information about the specified acquisition projects. It is therefore his responsibility to decide what information is included in the report and what is not. The project status reports are expected to include:

- a description of the project;
- the status of the project as at 30 June 2024;
- financial performance against the budgets approved by Cabinet;
- expected achievements;
- planned time frames; and
- intended capability requirements.

Audit New Zealand's responsibility

Our responsibility is to express a limited assurance conclusion based on the procedures we have performed and the evidence we have obtained about whether anything has come to our attention that causes us to consider that the project status reports are not fairly stated.

Independence and quality control

We have complied with the Auditor-General's:

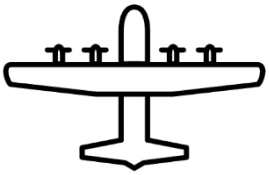
- independence and other ethical requirements, which incorporate the independence and ethical requirements of Professional and Ethical Standard 1 (Revised): *Code of Ethics for Assurance Practitioners* issued by the New Zealand Auditing and Assurance Standards Board; and
- quality control requirements, which incorporate the quality control requirements of Professional and Ethical Standard 3 (Amended): *Quality Control* issued by the New Zealand Auditing and Assurance Standards Board.

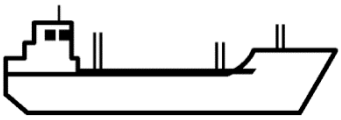
We are independent of the Ministry of Defence. Audit New Zealand also performs functions and exercises powers under the Public Audit Act 2001 as the auditor of the Ministry of Defence on behalf of the Auditor-General. Other than the audit of the Ministry of Defence, Audit New Zealand has no relationship with, or interests in, the Ministry of Defence.

Jonathan Roylance
Associate Director, Specialist Audit and Assurance Services
Audit New Zealand

1 April 2025

MAJOR PROJECTS IN DELIVERY 2023/2024





STATUS OF PROJECTS

The summaries in this Report provide a high-level overview of each project, describing policy objectives and capability requirements, recent developments, and financial reporting for the 2023/24 year.

Throughout all phases of a project, Defence works to ensure that the capability and benefits sought:

- can be realised within the approved budget
- are delivered within the agreed timeframe, and
- comply with contractual requirements that align with government policy.

Performance at 30 June 2024

Defence-led projects that feature within this report do so because they fit specific criteria. Notably each project is either medium/high for scale or risk, or they have been assessed as medium/high in both.

Defence assesses projects' performance in relation to Cost, Schedule and the overall Capability that is being delivered. Even when the circumstances in which projects are operating are favourable, it is not uncommon for pressures to impact progress, and affect delivery.

Fixed price contracts and strong project management help to maintain projects within their approved budgets. Capability continues to be delivered and – in several instances – are now available for tasking. However the impact on project schedules is clear, and performance has been impacted in the achievement of major milestones.

This does not mean a capability is unavailable or that outputs cannot be delivered. This was demonstrated over recent years with HMNZS *Te Mana*, *Aotearoa* and *Manawanui*, between them, supporting relief efforts in the wake of Cyclone Gabrielle in February 2023, operational outputs including supporting New Zealand and Tonga, providing supplies to New Zealand's Antarctic research presence, participation in Rim of the Pacific exercises, hydrographic surveys and supporting the disposal of explosive remnants of war.

Changes to reporting guidance in 2023/24

In December 2023 the Defence Capability Governance Board (CGB), which is chaired by the Secretary of Defence and the Chief of Defence Force, approved changes to the reporting process for projects. Guidance for reporting processes forms part of the Capability Management Framework under which major projects are delivered (see page 6).

This guidance was for Defence-led projects to report Red for Schedule when delivery of any Governance milestone was delayed past the baseline date in the current core controlling document (eg the most recent business case).

At the time changes were approved, a number and range of projects were assessed as being at more than 80% of Operational Release level and the Board considered that having projects like these reporting red for Schedule did not accurately reflect project performance. CGB requested advice on how to better capture project performance for Schedule between Interim Operational Release and Operational Release.

For projects in delivery, like those in the Major Projects Report, baseline dates for Governance Milestones are forecast and included in the Project Implementation Business Cases (PIBC) that inform investment decisions made by Cabinet or, where delegated, at ministerial level. An example of the latter is when the Ministers of Finance and Defence agreed to the purchase and modification of a Dive and Hydrographic Vessel, as recommended in the PIBC.

Achievement of Interim Operational Release and Operational Release as Governance Milestones and are defined as:

- Interim Operational Release: the point at which the inherent capability is understood also that it can be most effectively employed on operations.
- Operational Release: the point at which the capability system has proven to be effective, safe and suitable for its intended roles and, in all respects, is ready for operational service.

These definitions were not changed, however the system has been updated so that once 80 percent of capability is considered to have been delivered, Schedule performance against the approved baseline milestone may be reset to Green with the approval of CGB.

Projects will remain Red if delivery of any Governance Milestone, with the exception of Operational Release, is delayed past the baseline date in the current Core Controlling Document, or if less than 80% of the capability is delivered at the baseline date for Operational Release.

For this edition of the Major Projects Report, the summary table below reflects the new guidance for performance reporting. If the previous guidance was being applied at 30 June 2024, these three projects would have been reporting Red for Schedule at 30 June 2024:

- Anzac Frigate Systems Upgrade
- Dive and Hydrographic Vessel
- Operational and Regulatory Aviation Compliance Sustainment (ORACS) Phases 1A and B.

This is reflected in the summary table on pages 15-17.

Schedule

At 30 June, four projects were reporting Red or Amber for Schedule.

- The Protected Vehicle – Medium project reported Red in the 2023 edition of this report series as, although all 43 vehicles have been delivered, the first batch was delivered after its scheduled delivery date. The initial delivery took place in April 2023, when the governance milestone was November 2022.
- The Network Enabled Army Reconnaissance and Surveillance project was reporting Red at 30 June as completion of procurement, a governance milestone, had not been achieved.
- ORACS Phase 2A was reporting Red for Schedule due to a delayed Interim Operational Release.
- The Air Surveillance Maritime Patrol project's infrastructure works at RNZAF Base Ohakea remain behind schedule overall, which is reflected in the project's Amber rating for Schedule. However both the aircraft delivery and achievement of the capability's Interim Operational Release 1 were ahead of schedule and at 30 June 2024 the project was still forecasting to achieve Operational Release in 2025.

Cost

While forecasting to remain within appropriation, some projects have accessed project contingency (see table below).

Capability

All projects continue to expect to achieve delivery of the agreed capability.

Summary of project status at 30 June 2024

This table summarises the projects' status for baseline cost, schedule, and capability to be delivered. See *Changes to Reporting Guidance in 2023/24* (page 13) for information about how reporting in relation to Schedule changed during the year in review.

The information in this table reflects reporting as at 30 June 2024 on 8 of the 9 projects included in this report. HMNZS *Aotearoa* achieved Operational Release in December 2023, and at 30 June the Maritime Sustainment Capability project is preparing for closure and is therefore not included.

The Dive and Hydrographic Vessel project is included as the sinking of HMNZS *Manawanui* off the coast of Samoa took place in October 2024, therefore the financial year-end status reporting information for this project is available.

	Risks or issues will have little or no impact on the ability to deliver project outputs, objectives or goals. Little or no resource allocation or management effort is required.
	Risks or issues may temporarily degrade the ability to deliver project outputs, objectives and goals. A moderate level of resource allocation or management effort is required.
	Risks or issues could degrade the ability to deliver project outputs, objectives and goals. A high level of resource allocation or management effort is required.
	The risks or issues could significantly degrade or prevent the ability to deliver project outputs, objectives and goals. Significant resource allocation or management effort is required.

Project	Cost		Schedule		Capability	
Air Surveillance Maritime Patrol	G	Project remained within appropriation; with use of contingency.	A	Interim Operational Release 1 and 2 were achieved on schedule. Amber reflects infrastructure delays, which are being managed. Operational Release is unaffected.	G	No change to the capability that will be delivered.
Anzac Frigate Systems Upgrade	Y	Project remained within appropriation, with use of contingency.	G	Operational Release expected in 2024.	G	No change to the capability that will be delivered.
Dive and Hydrographic Vessel	G	Project remained within appropriation, with use of contingency.	G	Operational Release date expected in Q3 2024.	G	No change to the capability that will be delivered.
Fixed High Frequency Radio Refresh	G	Project remained within appropriation.	G	Green status reflects re-baselined project schedule approved in August 2023.	G	No change to the capability that will be delivered.
Frigate Sustainment Communications	G	Project remained within appropriation.	Y	The project continues to schedule.	G	No change to the capability that will be delivered.
Frigate Sustainment Programme	G	Project remained within budget	Y	The project continues to schedule.	G	No change to the capability that will be delivered.

Project	Cost		Schedule		Capability	
Future Air Mobility Capability – Tactical	G	Project remained within appropriation, with some prior use contingency.	G	The project continues to schedule.	G	No change to the capability that will be delivered.
NEA C4	G	Project remained within appropriation.	Y	Project continues to schedule.	G	No change to the capability that will be delivered.
NEA Bushmaster C4 Integration	G	Project remained within appropriation	Y	Project continues to schedule, noting potential for delay.	G	No change to the capability that will be delivered.
NEA R&S	G	Project remained within appropriation, with use of contingency.	R	Milestone for completion of procurement not met.	G	No change to the capability that will be delivered.
ORACS[4] Phase 1A	G	Project remained within appropriation.	G	ADS-B Out capability was delivered by the regulatory deadline, however the project's achievement of Operational Release is delayed.	G	No change to the capability as signed off in the Business Case.
Phase 1B	G	The projected cost was within budget.	G	As reported in previous editions, the software solution's global rollout was delayed. The project will re-baseline when the schedule is confirmed by the provider.	G	No change to the capability as signed off in the Business Case.
Phase 2A	G	The project remained within appropriation.	R	Delayed achievement of Interim Operational Release.	G	No change to the capability as signed off in the Business Case
Phase 2B	G	The project remained within appropriation.	Y	The project was on schedule having achieved approval to commit.	G	No change to the capability as signed off in the Business Case.
Phase 2C	G	The funding decision for this project was	G	The project's schedule, confirmed on 24 June	G	No change to the capability as signed off

[4] Operational and Regulatory Aviation Compliance Sustainment project, which is being delivered in phases.

Project	Cost		Schedule		Capability	
		made on 24 June 2024. The project remained within appropriation at 30 June.		2024, remained on schedule at 30 June.		in the Business Case.
Protected Vehicle – Medium	A	The project remained within appropriation, but working on ways to ensure schedule delays did not affect project management costs.	R	Delivery of first batch of vehicles was behind schedule.	G	No change to the capability as signed off in the Business Case.

AIR

AIR SURVEILLANCE MARITIME PATROL

New Zealand's new fleet of P-8A Poseidon maritime patrol aircraft have replaced the NZDF's P-3K2 Orion aircraft and are being deployed. The project is also delivering infrastructure and training support to maintain and manage the new capability.

Until the retirement of the P-3K2 Orion fleet in 2023, those aircraft had patrolled New Zealand's oceans for 57 years. NZDF's maritime patrol aircraft (MPA) have played a significant role in promoting security and helping to protect New Zealand's sovereignty, trade routes and the international rules-based order. They also supported search and rescue, resource and border protection, disaster response, and engagement with our key security partners, and Government policy has stressed the importance of maritime patrol over many decades.

In April 2017 Cabinet noted the policy value of New Zealand's MPAs, and the *Strategic Defence Policy Statement 2018* stated that they:

- provide a key maritime combat capability that can also support other government agencies on a range of domestic contingencies;
- enable the Government to offer a highly valued capability to international coalition operations; and
- provide a wide area surveillance capability that is critical to maintaining awareness of activities in New Zealand's maritime domain.

THE PURPOSE OF THIS PROJECT

The project was initiated to identify capability and user requirements for a replacement to the current maritime patrol aircraft capability. Options for the type and number of aircraft that would be required to support Government policy would be explored, and recommendations for replacements would be made along with any recommendations relating to infrastructure, training and support requirements.

Since the Government's decision in July 2018 to acquire the new capability, the project has delivered four P-8A Poseidon aircraft, and is progressing delivery of a flight training simulator, and supporting infrastructure at RNZAF Base Ohakea, where RNZAF No.5 Squadron is now based.

The infrastructure component of the project includes an aircraft hangar, squadron headquarters, and operations centre. Airfield works have included runway and taxiway strengthening, lighting for maintenance operations at night, the apron where the aircraft will be parked, and an aircraft rinse facility.

The Air Surveillance Maritime Patrol (ASMP) project was part of a wider scope of work,

The first P-8A Poseidon arrived in New Zealand in December 2022.

initiated in 2015 under the name Future Air Surveillance Capability.

The scope initially included exploring options for a complementary capability to support the work of other government agencies, such as search and rescue and fisheries surveillance.

The decision was made to investigate options for delivering the support for this civilian capability under a separate project, the Enhanced Maritime Awareness Capability Project. That project has not entered the delivery phase and so does not feature in this edition of the *Major Projects Report*. However delivery of some capability to improve maritime awareness and protection against maritime threats was approved as part of Budget 2024. Funding was approved for a cloud-based application subscription that provides a real time picture of what is happening in New Zealand's maritime domain. This platform will be used by multiple government agencies, increasing the ability to detect and respond to malicious activity, natural disasters, and potentially hostile vessels (including illegal fishing) in our exclusive economic zone and across the Pacific.

CAPABILITY REQUIREMENTS

The following capability requirements were identified to support policy objectives:

The ability to multi-task: New Zealand has a small air force by international standards and therefore its assets are required to perform multiple roles.

Community size/close relationship with user community: Being part of a group of partner countries with the same platform provides access to critical mission and logistics support in different locations. It was considered best for New Zealand to participate in as large a user community as possible, with as many friends as possible, for support.

Already developed: Maritime patrol is a sophisticated technology that requires significant research and development investment to achieve. It was therefore considered that New Zealand should look to identify a capability which had already been developed and worked from the get-go.

Successful introduction into foreign markets: Maritime patrol involves complex systems which tend to be more demanding to keep operational than basic ones. It was therefore considered best for New Zealand to go with a proven capability.

Support for technology growth path: The *Strategic Defence Policy Statement 2018* stated, *"As partners acquire ever-more sophisticated capabilities, contributing to coalition operations will require high-level network interoperability and contributions that do not present a defensive liability to them… To retain New Zealand's reputation, freedom to act, and mitigate risks to mission and personnel, Defence must strive to keep pace with technological evolutions"*.

In the context of maritime patrol technology advancing rapidly, and becoming increasingly IT-based and therefore requiring regular upgrades, it was considered that New Zealand should look to a platform which will be fully supported through the upgrade path and where upgrade costs could be shared with other users.

THE BUSINESS CASE PROCESS

Prior to the approval of an Indicative Business Case for the project, Boeing and the United States Government advised that June 2017 was the deadline for New Zealand to secure the price benefits of being part of a large US purchase. This was subsequently extended, at New Zealand's request, to 30 November 2017, and then 14 July 2018. In relation to the 14 July 2018 deadline Boeing and the US Government advised that if New Zealand delayed beyond that date, price increases were expected.

It was therefore necessary to accelerate consideration of the P-8A to preserve that option for the Government.

In December 2016 Cabinet had invited the Minister of Defence to report back in June 2017 with an Implementation Business Case on which Ministers could make a decision on whether to

conclude a US Foreign Military Sales Letter of Acceptance (see page 22 for more details) for the P-8A. The business case took the approach of considering whether an alternative to the P-8A would be available in the same timeframe if Cabinet decided to not acquire that type of aircraft.

Information used to inform the business case on alternatives was from open source, or was provided by companies in response to a Request for Information. Information on the P-8A was sourced from the Letter of Offer provided by the United States Government.

On assessing that there was no better alternative to the P-8A (one that would meet all of New Zealand's requirements), a full Implementation Business Case recommending the acquisition of the P-8A was developed for the Government's consideration.

Better Business Case Milestones History

2016	
29 February	**Strategic Assessment** approved by Vice Chief of Defence Force and Deputy Secretary (Policy)
7 December	Cabinet **authorised** New Zealand to issue a Letter of Request to the US Government for detailed cost and availability information for the P-8A; and **Invited** the Minister of Defence to report back in June 2017 with an Implementation Business Case on which Ministers could make a decision on whether to conclude the Letter of Acceptance for the P-8A. EGI-16-MIN-0338
2017	
7 April	Cabinet noted the **Policy Value of New Zealand's Maritime Patrol Aircraft** CAB-17-MIN-0137
2018	
2 July	Cabinet agreed to recommendations as outlined in the **Implementation Business Case** for the order of four Boeing P-8A Poseidon maritime patrol aircraft, training systems and other support equipment and services through the United States' FMS process, and acquisition of infrastructure and other components as required to bring the P-8As into service. CAB-18-MIN-0305

CAPABILITY DEFINITION PHASE

From the approval of the Project Charter in March 2015, it was 40 months until the Implementation Business Case was approved by Cabinet in July 2018. During this time a range of work was undertaken by the project.

How Defence identified and assessed operational requirements

Key user requirements

In addition to the capability requirements outlined on page 19, the following key user requirements were developed following consultation across NZDF and the Ministry of Defence in March and July 2017:

Operate: The user shall be able to conduct missions worldwide as directed.

Process and Exploit: The user shall be able to process and exploit all data collected by the MPA.

Interoperability: The user shall have the capability to interoperate with organisations, platforms, systems and applications in a manner necessary to fully utilise the MPA.

Communicate: The user shall have the means with which to receive and disseminate information and intelligence to military and other government agencies, platforms, systems and applications.

'Find, Fix, Track, Target, Engage and Assess' for Anti-Submarine Warfare (ASW): The user shall be able to conduct effective and persistent ASW.

'Find, Fix, Track, Target, Engage and Assess' for Anti-Surface Warfare (ASuW): The user shall be able to conduct effective and persistent ASuW.

Support Search & Rescue and Surveillance of South Pacific and Southern Ocean: The user shall be able to conduct search and rescue including the ability to deploy survival equipment in the New Zealand and Fiji Search and Rescue Regions (Maritime). The user shall be able to conduct surveillance operations in the regions of the South Pacific and Southern Ocean of interest to New Zealand. The user shall be able to conduct maritime reconnaissance operations for vessels of interest within the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR, April 1982) areas of interest to New Zealand.

Defend from Threats: The user shall be able to defend themselves from threats to the capability.

Support the capability: The user shall have the capability to support the MPA.

How Defence analysed options in the Capability Definition phase

The project team considered each maritime patrol aircraft option available in the market and the indicative costs for each, which were derived from the Request for Information data, and the US Letter of Offer for the P-8A.

It was assessed that a number of a smaller class of maritime patrol aircraft in the market had insufficient range for New Zealand's vast ocean region and would not meet New Zealand's demanding requirements. There were also satellites and remotely piloted aircraft systems, which offered the potential to assist with some lower order, civilian surveillance tasks, but which could not perform the full range of functions.

It was assessed that only large, manned aircraft, like the P-3 Orion, had the full package of speed, endurance and sophisticated military functions necessary. That market was limited to three options:

- **US Boeing P-8A Poseidon** – the US investment in a replacement for its Orion fleet.
- **Japanese Kawasaki P-1** – Japan's investment in a replacement for its Orion fleet.
- **A concept aircraft**, exemplified by the Lockheed Martin "Sea Hercules" - a design proposal based on the well-known military transport aircraft.

How Defence considered interoperability

Interoperability was one of the key considerations of the ASMP project, as reflected in the third key user requirement, and the

capability requirement for the MPA replacement to have a large community size to allow access to critical mission and logistics support in different locations (also noted above).

How Defence considered through-life costs and issues

Maintaining the capability throughout its life will require ongoing upgrades, replacement and planning for obsolescence. An ongoing and planned schedule of upgrades is the preferred approach, rather than major injections of capital funding, as and when obsolescence becomes a pressing requirement.

In general, the ASMP project is replacing the existing maritime patrol aircraft with a contemporary version. In considering the available options it was recognised that one way to reduce through-life risks was to share these with other users. It was known that the P-8A was also being acquired by Australia, the United Kingdom, the United States and Norway, and that operating the same capability as used by allies and partners has advantages. These include leveraging the economies of scale of being part of a much larger fleet, including sharing costs for through-life support and non-recurring engineering costs for upgrades. Without a wide pool of operators to share development costs, New Zealand would need to fund a higher proportion of such costs; what this would amount to would depend on the number of other users of the capability, and whether they would be willing to enter into a shared costs approach.

Estimates for through-life capital sustainment and operating costs were considered, including hardware and software refreshes, major aircraft and engine restoration and overhauls, and personnel costs for operating, maintaining and sustaining the proposed delivery of outputs from the P-8A capability.

Requirements Analysis

The P-8A was the only capability of the three options that met all of the criteria. It was also the lowest capital cost and lowest risk option.

ACQUISITION PHASE

How Defence decided to acquire the Capability Solution

Procurement of the P-8A capability was only possible from the United States Government via the Foreign Military Sales (FMS) process. FMS is a programme that allows our government to purchase defence articles and services, as well as design and construction services, from the US Government, on a “no-profit” and “no loss” basis to that government.

Following approval from Cabinet in December 2016, Defence issued a formal Letter of Request to the US Government for supply of the P-8A and associated systems.

The final Letter of Offer was issued from the US Government on 1 June 2018. Following Cabinet approval, the Letter of Offer was accepted by the Secretary of Defence on 9 July 2018.

Contract Status at 30 June 2024

MPA: P-8A	The Government of the United States of America, via Foreign Military Sales
Infrastructure: Horizontal Works	Fulton Hogan (Prime)
Infrastructure: Vertical Works	Hawkins Limited (Prime)

SCHEDULE/TIMEFRAME PROGRESS

Schedule of Capability Integration – P-8A fleet

	Initial Estimate	At 30 June 2024 (Forecast/Actual)	Variance (months)
Delivery of first P-8A to NZ	April 2023	December 2022 (Actual)	-4

Interim Operational Release 1	July 2023	June 2023 (Actual)	-1
Operational Release	2025	2025 (Forecast)	-

ASMP CAPABILITY INTEGRATION

Capability Integration Plans (CIP) are designed to be living documents, and are reviewed and updated as required as a project progresses through its life cycle.

For ASMP, the CIP was first released for review in mid-2017, and the fourth, and final planned version of the CIP was approved in November 2021. Any further revisions will be made on an as required basis.

This most recent version has been updated with a range of changes, including consolidating health and safety information, and expanded details of how the capability integration process and initial operational release of the capability will be managed.

The plan is developed to ensure the full benefits of the P-8A capability are realised by the NZDF. It identifies major areas of planning and coordination that are required to deliver all elements of the capability, ensuring operational release takes place. Activities within the CIP include:

Infrastructure: construction of new squadron headquarters and facilities to house aircrew, mission support and maintenance personnel, hangar facilities and the operational apron area in front of the hangar for four P-8A aircraft at RNZAF Base Ohakea.
Mission Support: ensuring the ground functions required to plan a mission are in place.
Training: aircrew, mission support personnel and maintenance staff will be qualified to operate, support and maintain the P-8A aircraft with training from US Navy and contractor instructors.
Airworthiness: there are required certification activities that will ensure the RNZAF can safely operate and maintain the P-8A capability, and meet safety and legislative obligations. These activities relate to design acceptance of the aircraft and simulators (technical airworthiness), and organisational approvals to ensure the RNZAF can safely operate the aircraft in a mission environment (operational airworthiness). These approvals come from the NZDF Airworthiness Authority.
Interim Operational Release 1 had been achieved in June 2023, releasing the capability to undertake Search and Rescue.

DURING THE 2023/24 YEAR

The aircraft

The last of the four P-8A aircraft was delivered in July 2023 and in August all four aircraft had been accepted into service, and trials and development for achieving Interim Operational Release 2 (IOR2) were on track.

IOR2 was achieved in December 2023 releasing the capability to support Search and Rescue, Surveillance, and Humanitarian Aid and Disaster Relief, Anti-Submarine and Anti-Surface Warfare tasks.

Infrastructure

Work continued on Te Whare Toroa, the building infrastructure at Ohakea that will house around 200 personnel, the P-8A aircraft, and equipment. This fully integrated facility will contain an operations centre, flight training simulation device (FSTD), maintenance hangars, storage and logistics areas.

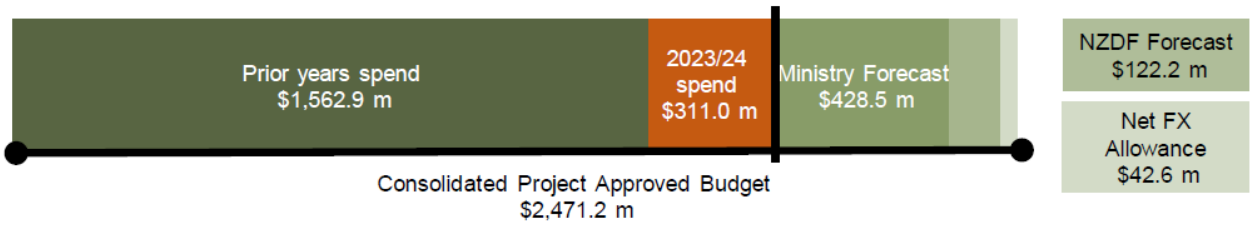
As part of the training simulation capability, the Ministry sought Requests for Proposals for a qualification solution that would enable the integration of the new P-8A FSTD into the RNZAF qualification programme. This was awarded to Nova Systems NZ Ltd.

At 30 June, practical completion of the new facility was scheduled for late 2024 and the project was seeking quotes for installation of wayfaring signage, shelving and window blinds.

DEVELOPMENTS POST 30 JUNE 2024

Practical completion of the new facility at Ohakea was achieved in December 2024.

ASMP PROJECT BUDGET AND EXPENDITURE



At 30 June 2024 Air Surveillance Maritime Patrol project costs were:

		Ministry $000	NZDF $000	Consolidated project $000
Budget	Current approved project budget	2,348,697	122,541	2,471,238
	Allowance for foreign exchange movements	125,140	-	125,140
	Original approved project budget	2,223,557	122,541	2,346,098
Forecast	Forecast total project cost			
	capital expenditure	2,297,111	122,153	2,419,264
	non-capitalised expenditure	5,287	-	5,287
	Effect of foreign exchange movements	82,491	-	82,491
	Forecast cost using hedged rates	2,219,907	122,153	2,342,060
	Forecast project variance	3,650	388	4,038

FUTURE AIR MOBILITY CAPABILITY - TACTICAL

Replacing the Royal New Zealand Air Force's tactical airlift capability – an aging fleet of C-130H Hercules – will allow the New Zealand Defence Force to maintain timely and effective air transport capability for military and wider government responses.

THE PURPOSE OF THIS PROJECT

With the C-130H aircraft approaching the end of their economic life, inspection and analysis suggested that the fleet was able to be maintained as airworthy until at least the early- to mid-2020s. The first of the five Hercules in the fleet was retired in early 2023.

Maintenance costs were increasing, and the airframe structure would reach the point where the cost and effort required to inspect and remediate structural issues may have further impacted availability and the ability to retain capability during the managed transition to the new aircraft over a period of time.

The Future Air Mobility Capability (FAMC) project was initiated in 2017 to look at the future of the air mobility capability provided by the Royal New Zealand Air Force (RNZAF). FAMC examined options for air mobility, identified key priorities and made recommendations for the preferred replacement for the C-130H.

Five investment objectives were identified for this project:

- The Defence Force retains an air mobility capability that provides timely and effective air mobility for military response options;
- The Defence Force retains an air mobility capability that provides timely and effective air mobility for wider government response options;

- The Defence Force retains an air mobility capability that is for the sole use of New Zealand, and able to be employed at the Government's discretion;
- The Defence Force retains an air mobility capability that can support up to three concurrent air mobility operations; and
- The air mobility capability is interoperable with that of key defence partners.

CAPABILITY REQUIREMENTS

The capability requirements necessary to support these objectives are:

- The Defence Force needs a reliable, available and supportable airlift fleet to project and support sustained military operations into the future.
- A reliable, available and supportable airlift fleet is needed to support non-military Government tasks into the future.
- Due to the risks associated with some military airlift operations, and the requirement for a high level of readiness to support a number of non-discretionary and time-sensitive tasks, there is a need for New Zealand to at least own the tactical airlift component within a wider fleet mix.
- The Defence Force and Government agencies need a sufficient reliable and supportable airlift fleet to allow for concurrent tasks.
- The future airlift fleet needs to be interoperable with that of key defence partners.

In addition to these essential requirements, Government agencies registered a number of desirable requirements for the future capability:

- Enhanced surveillance capability for humanitarian and disaster relief missions.
- Reliable cargo and passenger transportation to Antarctica that has no point of safe return.
- Enhanced VIP transport capability.

FAMC Better Business Case Milestones

2017	
10 July	Cabinet approval of the **Indicative Business Case** CAB-17-MIN-0366
6 September	Approval of the **Project Charter** by the Secretary of Defence and Chief of Defence Force
2019	
10 June	Cabinet approval for the Secretary of Defence to undertake a formal FMS process for procurement of C-130J-30 tactical aircraft, simulator and associated services and support as proposed in the **Detailed Business Case** CAB-19-MIN-0268
2020	
2 June	Cabinet approval of procurement via FMS of five C-130J-30 Hercules, training and support equipment, a simulator, and sustainment as recommended in the **Project Implementation Business Case** CAB-20-MIN-0251

CAPABILITY DEFINITION PHASE

The definition phase took place over a 33 month period from approval of the project charter in September 2017, to Cabinet's decision on the Project Implementation Business Case in June 2020.

How Defence identified and assessed capability and operational requirements

The Indicative Business Case developed a comprehensive long list of possible options for consideration by stakeholders:

- Scale, scope and location: what levels of coverage are possible?
- Service solution: how can airlift be provided?

- Procurement model: how can Government procure air mobility?
- Implementation: when can services be delivered?
- Funding: how can it be funded?

A workshop was convened on 22 September 2016 where subject matter experts evaluated all potential long list options against the project's investment objectives and the critical success factors.

Following this analysis, the Indicative Business Case identified four shortlist options for further detailed analysis:

- Option 0: do nothing: no replacement of current capability (retained as a baseline comparator).
- Option 1: replacement of current capability by procuring a fleet of one aircraft type – a single fleet mix.
- Option 2: replacement of current capability by procuring a fleet of two aircraft types – a dual fleet mix
- Option 3: replacement with an enhanced level of capability.

A multi criteria decision analysis (MCDA) process, involving stakeholders from across the Defence Force and other government agencies, was undertaken in September 2017 to assess fleet mix benefits, costs and risks. The MCDA process examined different numbers of different types of aircraft that were relevant to the project. It included development of a spectrum of plausible fleet mixes for consideration by decision-makers and the criteria against which senior evaluators could evaluate the relative value of these fleet mixes.

The following aircraft classes were in scope for the project: corporate business jet, civilian combi, civilian medium, civilian large, military light tactical, military medium tactical, and military heavy strategic.

The MCDA looked at the whole air mobility fleet, not just the military tactical transport component. A total of 17 fleet mixes were considered by stakeholders. All 17 fleets were judged to be able to meet the overall air mobility requirements and potentially deliver the desired benefits. However, the MCDA process suggested that some would deliver more benefits than others.

An initial assessment of the MCDA drew the following conclusions:

- A military transport aircraft is essential to meeting the requirements (an air mobility fleet comprising only civilian types is not viable);
- The majority of the overall fleet needs to be military transport aircraft; and
- Seven is the functional minimum size for the overall air mobility fleet.

The MCDA evaluation of the fleet mixes took place in September 2017. The overall conclusion was that:

- Military Medium transports should form the core of any future air mobility fleet; and
- A minimum overall air mobility fleet of seven is desirable.

How Defence analysed the requirements options in the Capability Definition phase

Defence released a Request for Information (RFI) in mid-2016 to canvass the market for potential air mobility options. All major aircraft suppliers responded with various air mobility solutions.

Request for Information responses and other market research indicated that two aircraft were considered to be in the Medium Tactical class as it related to New Zealand's requirements: the Lockheed Martin C-130J (Hercules) and Embraer KC-390.

It was recommended that the KC-390 be discounted from consideration as, at that time, it represented a considerable risk and this recommendation was accepted by Cabinet in June 2019. There was a high degree of uncertainty around its price, and, with no operators at the time of the decision, there was no history of support, training or maintenance. Additionally, the aircraft being made outside of the five eyes nations was going to create issues with installing and integrating the required

systems. The onus of bringing the aircraft up to an operating capability would have fallen primarily on New Zealand. In comparison, the C-130J was a proven aircraft in service with over 20 nations, and in particular all of our five eyes partners.

This approach was in line with the findings of the independent Review of Defence Procurement led by Sir Brian Roche, which concluded that Defence should "avoid solutions that are unproven, highly developmental and/or unsupported by a reliable evidence base".

The Project Implementation Business Case considered how many C-130J aircraft were necessary. As noted above, the Detailed Business Case analysis looked at the entire air mobility fleet and found that seven was the functional minimum size for the overall air mobility fleet, with medium tactical aircraft as the core. As the current air mobility capability has two B757s, any consideration of a medium tactical replacement has to start from the base of the current two B757 aircraft.

The Project Implementation Business Case noted that our aging fleet of C-130H aircraft were struggling to meet existing demands: the number of aircraft available for operations on any particular day, the range of operations that can be undertaken, and the ability to respond and undertake concurrent tasks were all limited. Further, they would not meet the future demands for response and concurrency that Government forecast through its policy priorities.

It was estimated that the new C-130J fleet should have around double the availability of the current fleet. This means that from a five aircraft fleet three aircraft should always be available, taking into account scheduled and unscheduled maintenance demands. This would also mean that often four aircraft may be available, especially to meet pre-planned tasks where maintenance can be scheduled around forecast mission.

Reducing the fleet size to four, even factoring in the availability increase, would not consistently provide three aircraft available for operations, which is the minimum needed to deliver against policy. Five aircraft are the minimum number required to consistently deliver three available aircraft and meet the response and concurrency requirements of Government, whilst also offering the capacity to achieve future expansion of mandated Government outputs and provide surge capacity.

How Defence considered interoperability

The C-130(H) airlift aircraft have been interoperable with key partners. The ability to perform airlift missions jointly with or on behalf of partners has been a valuable contributor to New Zealand's defence relationships and to shared security objectives. Therefore, one of the five investment objectives identified for this project is that the air mobility capability is interoperable with that of key defence partners.

One of the key criteria used for determining the preferred option was:

- *Community size/Close relationship with community* - Being part of a group of partner countries with the same platform provides access to critical mission and logistics support in different locations. It would be best for New Zealand to participate in as large a user community as possible, with as many friends as possible, for support.

This was one of the criteria that determined the C-130J was the preferred option. Over twenty countries had fleets of C-130J aircraft, including Five Eye partners Australia, Canada, the United Kingdom and the United States.

The C-130J can be procured either commercially from the manufacturer, or through the US Government Foreign Military Sales (FMS) system. The Detailed Business Case recommended purchase of the C-130J through the US Government FMS system as it offers a number of advantages over a direct commercial sale procurement, one of which is interoperability advantages.

How Defence considered through-life costs and issues

The estimated whole of life costs of the aircraft and systems are based on:

- Initial capital investments that include: five C-130J-30 Hercules Tactical aircraft complete with EO/IR, civilian SATCOM system, and all aircraft fitted for large aircraft infra-red counter measure, with three fitted; initial spares; initial capital support items; full motion simulator (Level D); initial capital deployment requirements; integrated logistics support costs; infrastructure; training and personnel costs; and, estimated end-of-service life disposal costs.
- Foreign Military Sale acquisition process for the airframes, initial aircraft spares, simulator systems, initial training and publications, and other support equipment. The capital costs of the equipment components are based on not to exceed price contracts with the USAF.
- Through-life capital investment reflecting future upgrades and refreshes, through-life capital sustainment, and rotables.
- Through-life operating costs of personnel, direct operating costs and consumables, ongoing training, and maintenance and utility costs.
- The key operating and personnel cost drivers: aircrew numbers and aircrew size, fuel burn, and planned flying hours. The C-130J-30 capability is to operate from one operating base and with one squadron (No. 40 Squadron, as with the C-130(H)).
- Personnel requirements being: six crews, maintainers, and logistics support personnel. Other than a simulator manager, no personnel costs are included to operate the simulators/training devices as the Defence Force is planning to use external contractors.
- Defence will internally conduct the two levels of aircraft maintenance and after the initial six year deeper servicing will determine the necessary arrangement for the second deeper level cycle and repaint that occurs 12 years after introduction.
- The Defence Capability Plan Review 2019 economic assumptions for inflation and forward foreign exchange rates from the Treasury's New Zealand Debt Management office. Foreign exchange risks for projects are managed through forward cover of currency as soon as approval to commit to contract is received.
- Aircraft delivery planned from December 2024 with initial operating capability release expected during FY 2024/25. Expenditure will be capitalised and created at the initial operating capability date encompassing all the capital costs up to that date. Full operating release is planned for December 2025.
- A 30-year service life with each aircraft system, with initial operating capability starting the first year after delivery to the designated main operating base (Whenuapai).
- Infrastructure investment includes a new simulator building and security improvements to the hangars and storage facility. The C-130J-30 fleet will be accommodated in the existing 40 Squadron Hangar and 5 Squadron Hangar.
- Initial capital investment delivery contingency is based on the results of Quantitative Risk Analysis workshops, and project team estimate.

Requirements Analysis in the Capability Definition Phase

The Indicative Business Case assessed that the preferred way forward was to discard shortlist option zero, and to further explore shortlist options one, two and three in a detailed business case.

Description of the Capability and Operational Requirements

Capability Requirements necessary to support policy objectives include:	**Operational Requirements** necessary to support the capability include:
1. The Defence Force needs a reliable, available and supportable airlift fleet to project and support sustained military operations into the future. 2. A reliable, available and supportable airlift fleet is needed to support non-military Government tasks into the future	1. Due to the risks associated with some military airlift operations, and the requirement for a high level of readiness to support a number of non-discretionary and time-sensitive tasks, there is a need for New Zealand to at least own the tactical airlift component within a wider fleet mix. The requirement to own does not apply for an aircraft dedicated to strategic airlift operations or non-military Government tasks where military airlift attributes are not needed. 2. The Defence Force and Government agencies need a sufficiently reliable and supportable airlift fleet to allow for concurrent tasks. 3. The future airlift fleet needs to be interoperable with that of key defence partners.

History of Cost Estimates in the Capability Definition Phase

	2017	2019
NZ$(billion)	$1.6 – $3.4	$1.414
Cost estimates developed in the 2017 Indicative Business Case were based on replacement of both Tactical and Strategic Fleets and ranged across all three options. The 2019 figure reflects the tactical fleet costs only. These are initial capital cost estimates.		

ACQUISITION PHASE

Letters of Request seeking details on cost for the aircraft, a full flight simulator, training and sustainment support were submitted under the US Government Foreign Military Sales programme, following the Government's announcement in June 2019 that the Lockheed Martin C-130J-30 Hercules was the preferred platform.

The signing and execution of the Letters of Offer and Acceptance for the acquisition and sustainment of the new capability took place on 4 June 2020. The project team worked with the US Air Force (USAF) Program Management Agency to finalise the Statement of Work that the US Government issued to Lockheed Martin for production of New Zealand's C-130J-30 aircraft. By the end of 2020, the aircraft had been placed on contract with a confirmed price and schedule.

SCHEDULE/TIMEFRAME PROGRESS

	Estimate at Approval to Commit	At 30 June 2024 (Actual/Forecast)	Variation in acquisition phase (months)
Delivery of first aircraft	2024	2024 (Forecast)	-
Delivery of final aircraft	2025	2025 (Forecast)	-

FAMC CAPABILITY INTEGRATION

Description of Capability Integration phase

A Capability Integration Plan (CIP) has been developed to identify and schedule the range of tasks that are necessary to prepare the NZDF to receive, effectively operate and sustain a C-130J-30 air mobility capability during the 'Capability Delivery' and 'In-Service' phases.

It includes a range of requirements, such as:

- suitably qualified and experienced personnel needed for the process of integrating the capability into service with the NZDF
- training for pilots, and loadmasters (including instructors), maintenance personnel, with subjects from avionics systems (instruments, electrical, communications, navigation, radar, sensors) to aircraft systems like airframe, propulsion, and aircraft mechanical systems
- sustainment requirements and processes for the capability, such as for engine and propeller maintenance.

Status of the Capability Integration Plan

As a living document, each Capability Integration Plan (CIP) is updated and amended as a project progresses through its lifecycle. The second iteration of the FAMC-Tactical CIP was approved in April 2022, updating the version that was approved initially in November 2019.

With the major support contracts signed in June 2020, the project team continue to refine the detail and work with the NZDF to ensure all arrangements are in place prior to aircraft delivery.

Schedule of Capability Integration

	Initial Estimate	30 June 2024 (Forecast)	Variance (months)
Interim Operational Release	2024/25	2024/25	0
Operational Release	Q4 2025	Q4 2025	0
As at 30 June FAMC – Tactical was forecast to achieve full benefits realisation after Operational Release.			

DURING THE 2023/24 YEAR

The aircraft

At the start of the 2023/24 year all five aircraft were in production. In August the project was reporting that the first aircraft had all engines fitted and was being functionally tested. In November, the aircraft had been painted and commenced the ground testing phase of systems. The first engine runs took place prior to Christmas, and the first test flight in March. In June, as aircraft testing continued to progress, plans were made for the second aircraft to commence operational testing immediately after its completion. The project was reporting that

remaining three aircraft were in the final production stages.

Training and support

Training for maintenance, pilots and loadmasters was undertaken as part of the project delivery. Training of crews took place with the US Air Force, and by September the project was reporting that Crew 1 (Pilots and Loadmaster) had graduated from Rhode Island Air National Guard unit and were transitioning to Little Rock Air Force Base for further experiences. Early in 2024 the first four maintenance personnel had returned to New Zealand and were establishing training.

Over 280 manuals were being reviewed and revised to ensure they reflected the New Zealand aircraft configuration.

Flight Simulator

Manufacture of the full motion flight simulator commenced in Canada in April 2023 and work continued through the year.

Following the release of the Request for Tenders for construction of the flight simulator building at RNZAF Base Auckland in February 2023, Force Construction Limited was awarded the contract. In October piling had been completed, along with the concrete slab, and the erection and connection of tilt slab concrete walls was underway. The walls were up and pouring of floors was taking place a month later. In early 2024 the simulator building roof was installed and fitout was underway.

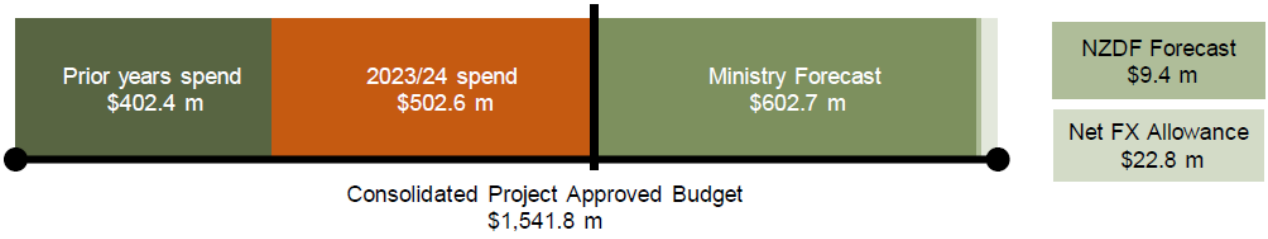
DEVELOPMENTS POST 30 JUNE 2024

An acceptance ceremony took place at the Lockheed Martin Aeronautics facility in August. On 8 August (US time) Sarah Minson, the Ministry's Deputy Secretary Capability Delivery and Chief of Air Force, Air Vice Marshal Darryn Webb formally accepted the first C-130J Hercules aircraft from the US Government and Lockheed Martin.

The first aircraft, NZ7011, was welcomed formally to New Zealand at a ceremony on 10 September at RNZAF Base Auckland, three months ahead of schedule. The second and third aircraft – NZ 7012 and 2013, arrived just under three weeks later, landing on 29 September.

The fourth aircraft, NZ7014, landed in New Zealand on 29 October, and the final aircraft landed in December.

FAMC PROJECT BUDGET AND EXPENDITURE



At 30 June 2024 project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	1,532,370	9,392	1,541,762
	Allowance for foreign exchange movements	38,115	-	38,115
	Original approved project budget	1,494,255	9,392	1,503,647
Forecast	Forecast total project cost	1,507,669	9,392	1,517,061
	Effect of foreign exchange movements	15,344	-	15,344
	Forecast cost using hedged rates	1,492,325	9,392	1,501,717
	Project variance	1,930	-	1,930

OPERATIONAL AND REGULATORY AVIATION COMPLIANCE SUSTAINMENT

This project is delivering platform-based capabilities that sustain effective, safe and secure air operations in response to a changing technological and regulatory aviation environment.

THE PURPOSE OF THESE PROJECTS

The Operational and Regulatory Aviation Compliance Sustainment (ORACS) project is equipping New Zealand Defence Force aircraft fleets with updated communication, navigation, air traffic management and identification systems. These must be updated due to a changing global aviation environment, new regulations and technological upgrades that improve safety and security. This is to ensure NZDF aircraft can sustain effective, safe and secure air operations.

ORACS is being carried out in two phases, ensuring that investment decisions are fully informed and best placed to meet compliance requirements. This phased approach was approved by the Government in April 2019 under the initial business case.

Phase One has delivered Automatic Dependant Surveillance-Broadcast (ADS-B Out) across NZDF fleets, excluding the NH90 helicopter fleet, to meet changes to civil aviation regulations. The NH90s are being upgraded under Phase 1B

Phase Two is addressing requirements for Performance-Based Navigation and secure communications.

Funding to start the first phase was approved in 2019, enabling the update of civil air traffic management systems to get underway for a range of NZDF aircraft fleets. The project is referred to in this report as Phase 1A. These upgrades were prioritised for delivery due to the fast approaching compliance date.

The upgrade of the NH90 helicopter fleet was excluded from the 2019 business case as a solution could not be confirmed and investment-quality information was not available at the time. In May 2020, a separate business case for the NH90 work was approved, meaning that ORACS Phase One could be delivered across fleets. This project is referred to in this report as Phase 1B.

Phase 2 is also underway, with three investment decisions approved between 2021 and 2024 relating to Performance-Based Navigation and secure communication systems.[5]

CAPABILITY REQUIREMENTS

The ORACS high level user requirements are:

1. Communications, navigation and surveillance capabilities that enable safe, efficient, compliant and unrestricted flying operations in civil controlled airspace, in order to deploy NZDF capability globally in support of New Zealand government policy objectives.
2. Communications, navigation and surveillance capabilities that enable safe, efficient, compliant and unrestricted military exercise and operational flying in order to deploy NZDF capability globally in support of New Zealand government policy objectives.
3. Communications capabilities that enable NZDF aircraft to securely receive and disseminate information with NZDF, Coalition and Other Government Agencies,

[5] For detail see the ORACS Better Business Case Milestones and summary of phases table on the next page.

in order to exercise and operate with defence partners in support of NZ government policy objectives.

4. Communications, navigation and surveillance capabilities that achieve the directed States of Readiness for operations, in order to meet anticipated flying requirements for the Government of New Zealand.
5. The ability to sustain communications, navigation and surveillance capabilities for NZDF aircraft fleets, in order to meet anticipated flying requirements for the Government of New Zealand.

The overarching user requirements for ORACS include:

- Compliance with all appropriate operational and technical standards
- Proven non-developmental low risk solutions
- Economy of operation and ownership
- Autonomy and freedom from operational restrictions imposed by third parties.

In addition, ADS-B Out solutions must comply with the equipage requirements of the regions/states the affected platform is likely to operate within, based on the relevant Concept of Employment and Statement of Operating Intent.

ORACS BETTER BUSINESS CASE MILESTONES

2019	
15 April	Cabinet approval of **ORACS Single Stage Business Case** CAB-19-MIN-0171
2020	
2 June	Cabinet approval of **Project Implementation Business Case** for Phase One: NH90 CAB-20-MIN-0251
2021	
20 December	Cabinet approval of **Single Stage Business Case** for phase 2a CAB-21-MIN-0550
2023	
3 April	Cabinet approval of phase 2b which involves delivery of an upgrade to secure communications. CAB-23-MIN-0109
2024	
24 June	Cabinet approval of phase 2c to upgrade NH90 navigational equipment and completes the secure communications upgrade. CAB-24-MIN-0220

Summary of Phases

Phase	Description	Approved
1A	Meet new air traffic management requirements and ensure safe aviation operations in military environments.	2019
1B	Phase 1A upgrades for the NH90 helicopters	2020
2A	Design and installation of encrypted radios for the B757 transport aircraft. Design work for encrypted radio upgrade on the C-130H Hercules aircraft and the Seasprite helicopters.	2021
2B	Encrypted radio upgrade for the NH90 and A109 helicopters.	2023
2C	Updating the navigation system for the NH90 helicopters to fully comply with updated Civil Aviation Authority requirements (Performance Based Navigation), and complete an upgrade to the NH90 fleet's encrypted radios.	2024

CAPABILITY DEFINITION PHASE

How Defence identified and assessed capability and operational requirements

Civil air traffic management

Air traffic management in controlled airspace is moving to a new technology called Automatic Dependant Surveillance – Broadcast (ADS-B) Out. This requires aircraft to continuously broadcast their GPS position, identity and status information, allowing ground controllers to track the aircraft more precisely and efficiently than current RADAR systems. ADS-B Out therefore results in more efficient air traffic management which means better flight times, lower fuel usage and less environmental impact. For ADS-B Out to be effective, all aircraft must have this system installed and operational. As a result, many aviation authorities around the world are requiring all aircraft have ADS-B Out capability to fly in their controlled airspace.

In New Zealand, the deadline was 31 December 2018 for flights above flight level 245 and 31 December 2021 for controlled airspace. In December 2020 the Minister of Transport extended the deadline for all aircraft flying in controlled airspace to be equipped with ADS-B Out to 31 December 2022.

Because the change has been driven by compliance regulations and the need to remain current with technologies, the possible options and the ways in which they were assessed were largely dictated by these changes. Therefore, the range of variables that would typically be considered was significantly decreased.

For example, ADS-B Out and military communications equipment effectively become a permanent and integral part of the aircraft so, realistically, the ownership should be the same as the aircraft in which it is installed (i.e. if the aircraft is owned, the specific compliance equipment should also be owned, as it is not feasible to de-link from the aircraft in the future).

Similarly, it is best installed and maintained through the same support arrangements as the rest of the aircraft.

The key variables when assessing the long list options therefore become scale and timing:

Variable	Description	Options within each variable
Scale	What capability systems should be provided by the project?	ADS-B Out and/or military communications and/or Secure Communications and/or Performance Based Navigation
Timing	When should capabilities be delivered?	Immediate priority or do later

Both of these variables were looked at fleet-by-fleet, and assessed against the critical success factors, which are: strategic fit, value, supplier capacity, affordability, achievability.

From the Long List Options Assessment, the following short-list options were identified for further investigation:

Option 0: Status quo. Platforms continue to use current systems, with no action taken to address regulatory mandates or issues of obsolescence.

Option 1: Immediate priorities only, now. The immediate priorities for each platform are acted on as soon as possible, but the remaining capabilities are not addressed.

Option 2: Immediate priorities now, other priorities phased. The immediate priorities for each platform are acted on as soon as possible, and the remaining capabilities still deemed priorities for each platform are addressed at a later stage with a separate business case.

Preferred Option

'Option 0: status quo' was eliminated as it did not meet the critical success factors or the project's intended benefits/investment objectives.

Option 0:

- Did not enable NZDF to maintain the ability to conduct air operations such as aircrew training and whole of Government support in civil airspace. As such, Defence would be unable to deliver key outcomes to government.
- Did not enable NZDF to maintain the ability to conduct air operations in military airspace such as movement of people and assets to support Government outputs.

Option 1: Immediate priorities only, now: was also eliminated. As with Option 0, it did not meet some of the critical success factors and only met one of the two key investment objectives.
Option 1:

- Did not enable NZDF to maintain the ability to conduct air operations in military airspace with secure communications.
- Did not enable NZDF to maintain the ability to conduct air operations in civil airspace with sufficient navigation systems.

Option 2: Immediate priorities now, other priorities phased: was the preferred option, as it met all investment objectives at the best value for money of the short-list options. Option 2:

- Enables NZDF to maintain the ability to conduct air operations in civil airspace.
- Enables NZDF to maintain the ability to conduct air operations in military airspace.

How Defence analysed the requirements options in the Capability Definition phase

In general, there are two ways to achieve upgraded solutions: off-the-shelf or custom design. An off-the-shelf solution will generally be the lower risk option; however, they often rely on the aircraft to be of a common configuration. As most of the NZDF's aircraft are bespoke they fall outside this category and require a custom design.

Alongside the fleet wide commonalities such as airworthiness certification by the RNZAF, there are three somewhat distinct elements to be considered when forming the procurement strategy:

- Selecting and acquiring the hardware.
- Design, integration and installation onto the first of each aircraft type and support of the airworthiness certification of the capability.
- Subsequent remaining fleet installation.

For work done under Phase One, for example – in some fleets – in order to match existing equipment, the hardware to be fitted to the aircraft will be a combination of an updated version of the current transponders and corresponding equipment that offers ADS-B Out capability. Direct sourcing this hardware is appropriate as there is no reasonable technical alternative and therefore no viable competition, removing the requirement to openly advertise a tender.

Some fleets have in-house RNZAF engineering services design, integrate, install the first prototype and complete the airworthiness certification of the systems. This lessens the complexity, risk and schedule – reducing overall cost.

For other fleets, the avionics software system is both bespoke and highly integrated. The systems are supported by Through Life Support contracts with industry, who will be further contracted to design, integrate, and work with NZDF who will manage the installation of the prototype and complete the airworthiness certification of the systems. Therefore although the system IP is owned by NZDF, a competitive approach to market seeking an alternative supplier would be difficult if not impossible.

How Defence considered interoperability

A key assumption of the ORACS project is that the New Zealand Government wishes to align NZDF capabilities, from an interoperability perspective, with those of Australia, the US Department of Defense, CANZUS, and NATO member states.

This will sustain effective, safe and secure air operations, and maintain interoperability with partners.

How Defence considered through-life costs and issues

The estimated whole of life costs were based on maintained ability to conduct air operations in civil and military airspace.

- As per the accounting standards reflected in Defence Force Order 77, standard avionic equipment depreciation will be assessed at 15 years.
- Cost estimates for the Phase One work stream were based on price estimates gathered from multiple suppliers, including defence industry, which were received during 2017 and 2018.
- Estimation of capability integration, project management costs and personnel costs was based on the project team's estimates of activities, duration, capability, and resource requirements.
- Forecast operating expenditure covers the estimated useful life of the respective capital investments and includes through life operating costs for repairs and maintenance.
- Costs have been converted into New Zealand dollars based on: The Treasury's New Zealand Debt Management forward exchange rate profiles for the Australian dollar, the Euro, and US dollars that were also being used for Defence Capital Plan Refresh 2019.
- Costs were inflated using Defence White Paper 2016 inflation rates.

ACQUISITION PHASE

Description of Phase 1(a) and (b) acquisition work

On 15 April 2019 Cabinet confirmed GOV-19-MIN-0014 which authorised the Secretary of Defence to commit and approve expenditure up to the amount of $56.832 million for Phase One systems, for most NZDF aircraft fleets.

That 2019 decision did not include upgrade of the NH90 helicopter fleet, as further work was required to confirm a solution.

On 28 May 2020, the Cabinet Government Administration and Expenditure Review Committee approved the ORACS NH90 Phase One Project Implementation Business Case, with $21.05 million funded from the NZDF's depreciation reserves.

How Defence decided to acquire the Capability Solution

In order to match existing equipment, the hardware to be fitted to most of the aircraft was direct sourced as a combination of updated versions of the current transponders and corresponding equipment. To install the equipment to the aircraft, existing maintenance and logistics support agreements were utilised.

For the T-6C fleet, for example, the solution offered by Textron Aviation Defense was a proven ADS-B solution providing the best balance between the least risk and best value for money. Therefore, a direct source to Textron as the supplier for all elements of the procurement; hardware, design, integration and installation went ahead.

Contracts (at 30 June 2024)

A range of contracts and service level agreements are in place for delivery of ORACS, including:

Fleet	Prime Contactor
T-6C	Textron Aviation Defense
A109	Flight Structures Ltd,
NH90	Nato Helicopter Industries

Service Level Agreements are in place for the B757, C-130 and SH-2G.

Phase 2A-2C

Performance Based Navigation (PBN)

For around 100 years aircraft have navigated at night and in poor weather conditions by flying in a series of straight lines between ground-based radio beacons. This can result in indirect and inefficient flight paths and requires large airspace separation buffers between aircraft to protect against the inaccuracies of ground-based navigation methods, and against possible

operational or human errors. PBN is reliant primarily on satellite-based technologies. Aircraft can fly routes directly between virtual waypoints at set geographical coordinates, rather than between physical beacons. Virtual waypoints can be set at any point along a route, which means they can be much more direct than those reliant on ground based navigation beacons.

Secure Communications

Secure communication is an essential requirement for the NZDF, as a significant number of NZDF operations require transmission of highly sensitive information. This includes both internal transmissions within NZDF, and transmissions with Five Eyes partners and other military coalition partners in complex strategic and tactical environments. To ensure that this sensitive information is secure, NZDF's communications must be too.

The ORACS Project is limited in competitive tendering ***options*** as it is providing upgrades to existing aircraft fleets, ***each of which*** have existing Through Life Support arrangements.

Although these arrangements are different for each fleet, they involve commercial organisations holding intellectual property rights for aircraft software and hardware. Open procurement activities would expose the Government to intellectual property and integration risk. Consequently, commercial activities undertaken for Phase 2 will be sole source through existing contracts, including through life support contracts.

SCHEDULE/TIMEFRAME PROGRESS

	Original forecast at Approval to Commit	At 30 June 2024 Forecast/Achieved	Variation (months)
Operational Release (all fleets and simulators excluding NH90)	June 2022	September 2024 (Forecast)	27
NH90 Helicopter	March 2025	March 2025 (Forecast)	-
Overall delays to OR for Phase 1(a) stemmed from a range of issues including alignment with maintenance servicing plans, and delays in delivery of simulator upgrades. For example, the A109 upgrades were programmed to take place during phase checks, which were rescheduled due to lower hours having been flown in 2021 as a consequence of COVID-19.			

ORACS CAPABILITY INTEGRATION PHASE

Description of Capability Integration Phase

Following the first of type installation and certification of the ORACS systems, the installation for each aircraft is actioned as they are scheduled for either a group or phase maintenance activity – unless an early deployment or commitment dictates otherwise.

The capability integration planning includes test equipment, ground and flight testing. Once each entire fleet's platforms have completed the installation and flight test required for certification then that fleet will be submitted for Operational Release.

Flight training devices are also being modified as required to reflect new aircraft configurations and ensure the training they provide reflects the current systems. A training needs analysis determines whether or not modification of a training simulator is required, and personnel are also provided from the affected aircraft operating units to complete operator or maintenance training on a 'train the trainer' basis for each aircraft.

ORACS OPERATIONAL CAPABILITY

Progress towards Delivery of Operational Requirements as at 30 June 2024

Note: these are subject to change as the project progresses and solutions are implemented.

Operational Requirements	Requirement likely to be met
Improved capabilities that sustain safe, efficient, compliant and unrestricted flying operations in civil controlled airspace, in order to deploy NZDF capability globally in support of NZ government policy objectives.	Yes. Both globally and in New Zealand, NZDF aircraft fly in civil controlled airspace alongside other air traffic. To safely carry out their tasks in this airspace, the aircraft must be equipped with the appropriate systems which must comply with regulations and remain in-step with modern technologies. Modifications on all affected fleets are either underway or are planned.
Improved capabilities that sustain safe, efficient, compliant and unrestricted military exercise and operational flying in order to deploy NZDF capability globally in support of NZ government policy objectives.	Yes. Systems are implemented.
Benefits realisation forecast for 2029.	

DURING THE 2023/24 YEAR

A range of work was underway or completed across the ORACS phases.

The A109 simulator update was completed enabling it to be operated with full ADSB-Out functionality, first of type testing for the NH90 upgrade was completed, and the business case was developed and approved for Phase 2C of ORACS.

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DEVELOPMENTS POST 30 JUNE 2024

NH90 fleet upgrades

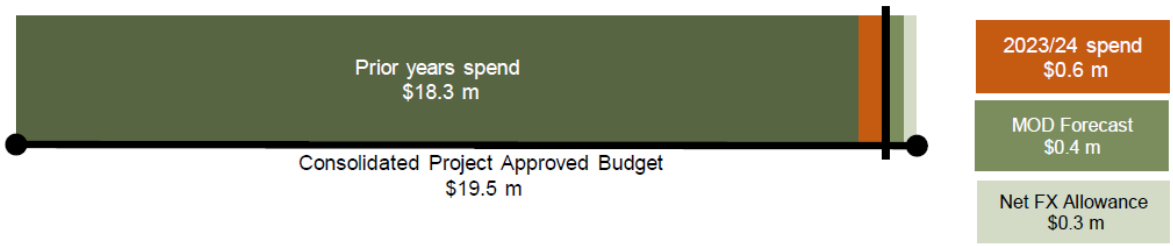
Ministry of Defence signed a contract with NATO Helicopter Industries (NHI) for navigation and secure radio upgrades for the NH90 fleet. The project was announced as part of Budget 24, and the business case was approved in June.

The contract with NHI covers both hardware and software upgrades and the company will undertake the hardware modifications in New Zealand – the first time the company, in partnership with Airbus NZ, has undertaken this work locally.

This makes New Zealand the first country using the NH90 helicopter to retrofit the navigation system and upgrade the secure communication system. The upgrades are expected to be complete by 2030.

ORACS PHASE 1A PROJECT BUDGET AND EXPENDITURE

Phase 1A ORACS

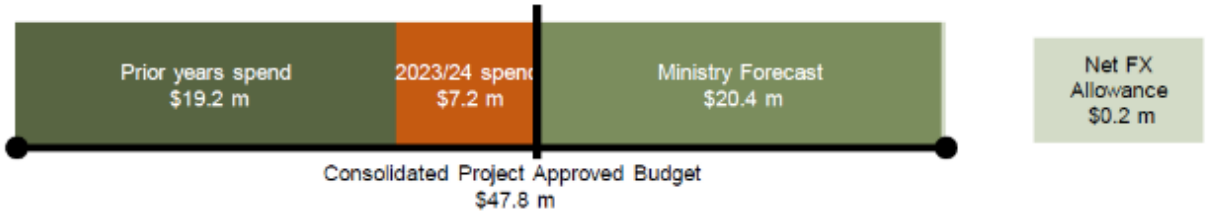


At 30 June project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	19,544	-	19,544
	Allowance for foreign exchange movements	-	-	-
	Original approved project budget	19,544	-	19,544
Forecast	Forecast total project cost	19,230	-	19,230
	Effect of foreign exchange movements	(258)	-	(258)
	Forecast cost using hedged rates	19,488	-	19,488
	Forecast project variance	56	-	56

ORACS PHASE 1B PROJECT BUDGET AND EXPENDITURE

Phase 1B ORACS

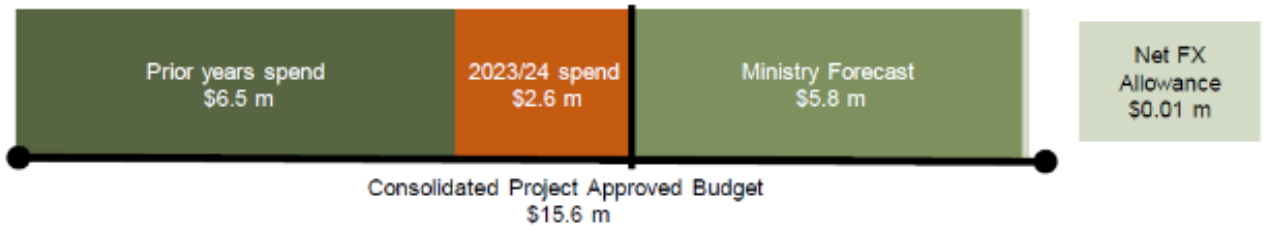


At 30 June 2024 project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	47,818	-	47,818
	Allowance for foreign exchange movements	920	-	920
	Original approved project budget	46,898	-	46,898
Forecast	Forecast total project cost	46,788	-	46,788
	Effect of foreign exchange movements	685	-	685
	Forecast cost using hedged rates	46,103	-	46,103
	Forecast project variance	795	-	795

ORACS PHASE 2A PROJECT BUDGET AND EXPENDITURE

Phase 2A ORACS



At 30 June 2024 project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	15,576	-	15,576
	Allowance for foreign exchange movements	1,518	-	1,518
	Original approved project budget	14,058	-	14,058
Forecast	Forecast total project cost	14,823	-	14,823
	Effect of foreign exchange movements	1,507	-	1,507
	Forecast cost using hedged rates	13,316	-	13,316
	Forecast project variance	742	-	742

ORACS PHASE 2B PROJECT BUDGET AND EXPENDITURE

Phase 2B ORACS

At 30 June 2024 project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	15,429	-	15,429
	Allowance for foreign exchange movements	359	-	359
	Original approved project budget	15,070	-	15,070
Forecast	Forecast total project cost	14,261	-	14,261
	Effect of foreign exchange movements	111	-	111
	Forecast cost using hedged rates	14,150	-	14,150
	Forecast project variance	920	-	920

MARITIME

THE ANZAC FRIGATES

The Anzac frigates' naval combat capabilities are one of three high-end military capabilities that can be deployed by the NZDF.[6]

The frigates (including an embarked naval helicopter) are able to detect, track and respond to surface vessels, submarines, and aircraft. They support the protection of the New Zealand sovereign territory, and maritime areas of interest, and contribute to upholding international rules-based order.

They can operate in combat roles and undertake constabulary and humanitarian tasks. Non-combat roles include search and rescue, border protection, fisheries patrol, disaster relief, and support to other government agencies.

The builds of *Te Kaha* and *Te Mana* were completed in July 1996 and May 1998 respectively, and the ships had a design life of 30 years. A through-life-maintenance cycle has been implemented to achieve this.

Since delivery, two major upgrades have been undertaken.

- The mid-life Platform System Upgrade (PSU)[7] project enabled key propulsion, auxiliary and control systems to remain operable up to the original 30-year design life.
- The Frigate Systems Upgrade (FSU)[8] refreshed the ships' combat capabilities with the replacement of key mission systems.

Technical studies have indicated it is possible to extend the frigates' lives out to the mid-2030s.

To achieve that extended service life and operational availability of the frigates, there is a need to ensure the frigates can continue to operate in a modern environment.

This section of the report (to page 66) includes information on Anzac Frigate-related projects that were in delivery during the 2023/24 financial year:

- FSU: which has delivered the systems upgrade to *Te Mana* and *Te Kaha* and at 30 June 2024 was working towards operational release and project closure. Operational Release was achieved in October 2024.
- Frigate Systems – Communications: both the completion of the Design Phase (approved 2021) and funding approval for the resulting solution build and installation phase.
- Frigate Sustainment Programme: aims to support extension of the service life of the frigates past their original 30 year design life.

[6] Along with Maritime Patrol Aircraft, and Special Forces.
[7] See *Major Projects Reports* from 2010 to 2017.
[8] FSU is in this edition of the *Major Projects Report* and has been included since 2014.

FRIGATE SYSTEMS UPGRADE

This upgrade restored the frigates' ability to fulfil combat roles and provide high quality surveillance in the contemporary and emerging security environment.

THE PURPOSE OF THIS PROJECT

This project helps ensure that the Government retains the ability to deploy HMNZS *Te Kaha* and *Te Mana* to the Pacific and beyond. The ships will be able to operate with confidence in low- to medium-threat environments.

In December 2020, *Te Kaha* returned from Canada – where the upgrade work took place – to New Zealand, and *Te Mana* returned in July 2022.

The Frigate Systems Upgrade Project (FSU), originally known as the Self Defence Upgrade, was initiated in 2007. The Royal New Zealand Navy had advised that the frigates were over 10 years old and that many of the surveillance and combat systems were in need of replacement. Threats in the maritime environment had also changed, with new technology – once only available to larger countries – now becoming available to small states and other groups.

This project is ensuring that the mission and weapon systems on board the Anzac-class frigates continue to contribute towards their combat viability, addressing the reduction in capability that occurred over time.

By maintaining the combat effectiveness and efficiency of the Anzac frigates over their remaining lives, this will sustain and enhance the Naval Combat Force's contribution toward government options for:

- defending New Zealand's sovereignty, its Exclusive Economic Zone and territorial waters
- operating with the Australian Defence Force to discharge our obligations as an ally of Australia
- contributing to peace and stability operations in the South Pacific
- contributing to whole-of-government efforts at home in resource protection
- participating in Five Power Defence Arrangements and other multilateral exercises or operations
- providing a physical demonstration of New Zealand's commitment to regional and global security, including protecting sea lines of communication.

The *Defence White Paper* published in 2010 had reiterated the requirement of the Government at the time that the frigates will provide effective, credible combat capabilities, and for the frigates to be given a self-defence upgrade by 2017[9] to address obsolescence and to improve their defensive capability against contemporary air and surface threats.

CAPABILITY REQUIREMENTS

The capability requirements necessary to support these policy objectives include:

- **Participation:** the ability to participate in national, allied and coalition activities to the Combined Force Commander in order to maximise the effective contribution made.
- **Strategic Situational Awareness:** the ability to achieve situation awareness of electromagnetic emissions to the Combined Force Commander and specified agencies

[9] Since publication of the *Defence White Paper 2010*, changes to the project's schedule have seen the completion date updated (see page 54, Schedule of Capability Integration).

in support of tactical and strategic objectives.

- **Air Threat to Others:** an ability for a defended surface unit to operate in an area under an air threat to the Combined Force Commander in order to undertake its designated mission.
- **Surface Threat to Others:** the ability to deliver the neutralisation of a surface delivery platform prior to its weapon launch to the Combined Force Commander in order for a defended unit in close proximity to be able to continue with its mission.
- **Effects Ashore:** the ability to deliver effects ashore from organic weapons to the Combined Force Commander in order to support land operations.
- **Through Life:** the Logistics Commander (Maritime) is able to deliver availability to the Commander Joint Forces New Zealand of a platform that can complete a mission throughout its remaining life.

FSU Better Business Case Milestones

2007	
June	Secretary of Defence and Chief of Defence Force approve the **original Project Charter**.
2008	
6 August	Cabinet agreed that all five options in the **Indicative Business Case** be fully developed for a main gate business case that will be prepared by officials. POL Min (08) 14/6
2012	
29 March	**Revised Project Charter** approved by Secretary of Defence and Chief of Defence Force.
12 November	Cabinet approved Option 4 of the **Detailed Business Case** and authorised the Secretary of Defence to issue Requests for Tender. CAB Min (12) 40/5A
2014	
14 April	Cabinet agreed to proceed with the FSU **Project Implementation Business Case** and authorised the Secretary of Defence to conclude contracts. CAB Min (14) 13/14
2017	
6 December	Cabinet approved **$148 million additional funding** to complete equipment installation. CBC-17-MIN-0037

CAPABILITY DEFINITION PHASE

A total of 44 months' work was undertaken during the project's definition phase, from June 2007 to February 2009, at which point work was suspended pending the outcome of the *Defence White Paper*. Following publication of that document, work recommenced in November 2010 and was concluded two years later (November 2012) when the Detailed Business Case (DBC) was approved.

How Defence identified and assessed capability and operational requirements

The project team carried out an analysis to identify technical requirements for the FSU.

A number of mission systems were identified as facing obsolescence and their support was becoming increasingly difficult and expensive. An Indicative Business Case (IBC) was developed and presented to Cabinet in which a range of options of increasing complexity and cost were identified.

Cabinet agreed in August 2008 that all five options should be developed and costed in the Detailed Business Case (DBC). Shortly after work on the DBC had begun, the Government announced work on a new *Defence White Paper*. Work on the FSU was paused until the White Paper had been completed in 2010 and the future of the frigates had been confirmed.

The DBC developed four options. The fifth option presented in the IBC, to counter higher levels of threats, was not advanced in the DBC due to its higher cost. An additional option that closely replicated the upgrade being planned for the Royal Australian Navy was included in the options analysis as an upper bound comparator.

The systems considered for upgrade or replacement were:

- Combat Management System
- Tactical Radar Systems
- Defensive Missile Systems
- Infrared Search and Track
- Radar Electronic Support Measures
- Underwater sonar
- Tactical datalinks
- Decoys
- Torpedo Defence System
- Combat System Trainer.

How Defence analysed the requirements options in the Capability Definition phase

The project team developed a cost-benefit model in order to compare various combinations of core combat system components, user requirements and the indicative costs for each system derived from Request for Information data. It assessed the contribution of each component to the benefits and then compared costs. The most cost-effective packages were grouped into four options that presented the greatest benefit for that level of cost.

How Defence considered interoperability

Interoperability was a key consideration of the FSU project. The frigates need to remain interoperable with our partners, especially Australia. The Anzac frigates are part of a joint capability programme between New Zealand and Australia. As a result, the frigates comprise New Zealand's main contribution toward naval combat force Anzac operations and exercises.

Under the original Anzac acquisition programme, New Zealand and Australia laid the foundations for joint management and support of the ships throughout their lives. This was formalised through the 1991 signing of an Implementing Arrangement for the Management of Assets and the In Service Support of the Anzac class frigates and shore facilities.

The Royal Australian Navy has an upgrade project for their Anzac class frigates underway, and systems common to both navies were incorporated in the options considered. Each of the options was designed to retain interoperability with Australia and other partners while providing a useful level of complementary capabilities.

How Defence considered through-life costs and issues

In general, the FSU project is replacing existing systems with contemporary versions. In many capability areas, the systems have been simplified in both architecture and quantity while increasing capability. However new technologies are being introduced as well, which are not currently in service.

Changes in through-life costs were estimated from a range of sources, including historic costs and industry information. From this broad base of information a cost model was developed resulting in a discounted net present cost for each option, allowing a financial comparison between options.

Requirements Analysis in the Capability Definition Phase

Options considered	Cost Estimates (NZ$ million)	Advantages	Disadvantages
Option 0: No upgrade	$0	No capital cost.	Does not meet policy expectations.
Option 1: Surveillance Capability This option would allow the ships to conduct surveillance missions but only in a low threat environment in the Southwest Pacific and to a limited extent elsewhere.	$253-271	Meets intelligence, surveillance and reconnaissance (ISR) requirements in low threat environments in the Southwest Pacific.	Does not meet ISR requirements, nor combat and protection roles outside the Pacific.
Option 2: Air Threat Capability This option undertakes most of the upgrades listed in Option 1 plus it provides the minimum requirements to defend the ship against air threats.	$298-318	Meets ISR requirements in all regions plus a minimum air defence capability.	Does not meet combat and protection roles outside the Pacific region.
Option 3: Limited Multi-Threat Capability This option builds on Option 2 by including an obsolescence upgrade to the existing sonar and the missile decoy system.	$313-332	Meets ISR requirements in all regions. Meets underwater surveillance and missile decoy requirements.	Does not meet combat and protection roles outside the Pacific region, including detection and defence against torpedoes.
Option 4: Multi-threat Capability In addition to Option 3, this option provides a practical and sustainable level of defence against torpedo threats and increases the number of missiles in the anti-ship missile system.	$354-374	Meets all policy expectations for ISR, combat and protection.	Higher capital cost than other options.

An additional option was developed to replicate as closely as possible the Australian Anzac frigate upgrade. This comparator was used to compare costs, benefits and risks.

Option 5: Australian Upgrade Comparator This option matches closely the upgrade path being pursued for the Australian Anzac frigates.	$411-431	Meets all policy expectations for ISR, combat and protection. Builds on development work undertaken by Australia.	High capital cost. Likely to incur higher support and maintenance costs. The result is an option of high cost and lower overall benefit compared to Option 4.
ASSESSMENT: Option 4 was assessed to be the best solution, restoring the frigates to their original baseline against contemporary threats and updating equipment, and giving Government the confidence to deploy the frigates alone or as part of a joint task force to regions where credible threats are likely to be faced. Option 4 was identified as achieving significantly increased deployment options for the frigates, via a relatively small marginal increase in cost over Options 1-3. Option 5 would provide an upgrade at higher cost and lower overall benefit.			

Description of the Capability and Operational Requirements

Capability Requirements necessary to support policy objectives include:	**Operational Requirements** necessary to support the capability include:
1. Participation: The Command shall be able to deliver the ability to participate in national, allied and coalition activities to the Combined Force Commander in order to maximise the effective contribution made. 2. Strategic Situational Awareness: The Command shall be able to achieve situation awareness of electromagnetic emissions to the Combined Force Commander and specified agencies in support of tactical and strategic objectives. 3. Air Threat to Others: The Command shall be able to deliver an ability for a defended surface unit to operate in an area under an air threat to the Combined Force Commander in order to undertake its designated mission. 4. Surface Threat to Others: The Command shall be able to deliver the neutralisation of a surface delivery platform prior to its weapon launch to the Combined Force Commander in order for a defended unit within 4 km to be able to continue with its mission. 5. Effects Ashore: The Command shall be able to deliver effects ashore from organic weapons to the Combined Force Commander in order to support land operations. 6. Through Life: The Logistics Commander (Maritime) shall be able to deliver availability characteristics to the Commander Joint Forces NZ	Combat Management System (CMS). The CMS is the human-machine interface used to control weapons and sensors in manual, semi-automatic and automatic modes. It provides the display mechanism for all ship sensors allowing disparate information from numerous sources to be fused into a single picture. The ship cannot operate in an ISR, intelligence or combat role without the CMS. Intelligence Systems. These are highly sensitive radio and radar receivers able to direction find and analyse emissions to aid in identification. They contribute to both tactical and strategic outputs. Radar Systems (Surveillance and Reconnaissance). Military radars use sophisticated technologies that allow the tracking of small and fast objects against a background of land and in the presence of a cluttered electromagnetic environment. Optronics (Surveillance and Reconnaissance). Use of both the visible and infrared spectra provides a significant passive means of detection, tracking and identification. Infrared Search and Track (IRST) systems provide near continuous 360° observation. The infrared component of these sensors allows a high level of capability to be maintained at night and in poor atmospheric conditions. Air Defence. Air defence against attacking aircraft or missiles is local area and point defence. They span a range from approximately 2km to 30km

in order to enable completion of a mission throughout the life of the platform.	from the ship and can include the ability to defend protected units (usually other vessels) within a limited range. This defence is considered credible for a general purpose frigate and is achieved using Point Defence Missile Systems. Closer in defence is conducted at ranges less than 2km and uses systems such as the Phalanx Close-in Weapons System (CIWS) and missile decoys such as chaff. Anti-Surface. Existing weapons provide strike capability for anti-surface warfare. The FSU project will need to bridge the capability gap in the sensors necessary to optimise the performance of these weapons. Under Sea Warfare. FSU User Requirements are for detection of and defence against a torpedo launched at the ship. Frigates' sensor-sharing capability will usually deter a submarine from undertaking surveillance near the ship. Support to Joint Task Force (JTF). The *Defence White Paper 2010* emphasised the NZDF being able to respond to security events in the Pacific region and further afield into Asia. NZDF frigates have an important role to provide defence for a task group and to provide multi-source high quality surveillance and reconnaissance data.
NOTE: The operational and capability requirements listed here were those identified in the suite of requirement documents produced during the Capability Definition Phase. During the tender and contract negotiation process these requirements are converted into function and performance specifications (FPS) that become the contracted deliverables. During the contract negotiation process the operational requirements have to be balanced against cost or viability considerations.	

History of Cost Estimates in the Capability Definition Phase

	2004	2008	2012
Costs (NZ$million)	300	287-845	354-374
Explanation	The early estimate was based on an assumed scope for the upgrade, before any planning work had been undertaken. The 2008 range included a high end option as a comparator that was not proceeded with.		

Estimated Acceptance Date in the Capability Definition Phase

Early estimates of an acceptance date, prior to the suspension of work on the project ahead of the *Defence White Paper*, was circa 2010.

ACQUISITION PHASE

Description of acquisition work

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

- Issue Requests for Tender for the lead contractor, supply of components and other

items as required to deliver the capability level; and

- Include in the Requests for Tender an option of acquiring a full combat inventory of 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[10] solution that was approximately 15-20% less expensive than the other three. The higher cost proposals would have resulted in a compromise in capability to maintain the total project cost within that agreed to at the Detailed Business Case stage. Of the two lower cost solutions, one tender had a noticeably lower evaluation score, and posed a higher level of project and schedule risk. Conversely, the Lockheed Martin Canada (LMC) tender was a thorough response with a lower level of risk reflective of FSU being an extension of LMC's existing Halifax Class Frigate upgrade for the Royal Canadian Navy.

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

On 14 April 2014, Cabinet approved the Project Implementation Business Case and authorised the Secretary of Defence to award contracts to LMC and others as required for equipment and services not forming part of the LMC contract. Cabinet approved NZ$446.193 million of capital expenditure for the acquisition and introduction into service of the FSU project (based on foreign exchange rates as at 1 April 2014). This included up to $20 million as a special contingency against risk in the design and installation stages.

In December 2017, following the detailed design phase of the project identifying higher than expected installation costs for the project, Cabinet authorised the Secretary of Defence to commit and approve additional expenditure of $148 million for the Frigate Systems Upgrade project bringing the total approved budget to $639.0 million. A contract change proposal for the installation phase was signed with Lockheed Martin Canada in December 2017. The project schedule and costs were re-baselined to reflect these changes.

Contracts completed

Prime contractor	Lockheed Martin Canada

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

SCHEDULE/TIMEFRAME PROGRESS

Variations in forecast acceptance date

	Original Forecast at Approval to Commit	Actual	Variation (months)
Acceptance: Ship One	March 2017	November 2020	44
Acceptance: Ship Two	February 2018	December 2022	58
Comment: Initial schedule estimates were made at the time the Project Implementation Business Case was submitted. At the time the contract was awarded, dates were confirmed as much as possible prior to completion of preliminary and detailed designs. Following completion of detailed design, in December 2017 approval for additional funding and a re-baselining of the schedule was received from Cabinet.			

History of variations to schedule at 30 June 2024

Date of individual variation	Variation length (months)	Explanation
December 2017	38	**Ship One:** The forecast variation to the acceptance date as a result of the re-baselining of this project in December 2017. Completion of the Detailed Design for the installation phase had identified that a revised schedule was required.
	39	**Ship Two:** As with Ship One, the new acceptance date was set as a result of the project's schedule re-baselining.
March 2019	42	**Ship one:** Due to delays with the industrial phase work for *Te Kaha*, a revised Acceptance date was provided by Lockheed Martin Canada.
August 2020	44	**Ship one:** Impact of COVID-19.
June 2022	58	**Ship two:** Impact of COVID-19, and completion of further work and trials.

FSU CAPABILITY INTEGRATION

Description of Capability Integration

An Introduction into Service Plan was developed to coordinate the test and evaluation processes required to bring the upgraded frigates back into operational service with the following main activities:

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

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

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.

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 are being provided; training systems, training data/documentation and training courses. These deliverables will be managed by the project's ILS manager liaising with the end users.

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

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

Schedule of Capability Integration

Unless stated, all dates are for Ship 1: *Te Kaha*.

	Initial Estimate (2014)	At 30 June 2024 (Forecast/Actual)	Variance (Months)
Platform accepted by Crown	Ship 1: March 2017 Ship 2: February 2018	Ship 1: *Te Kaha* November 2020 (Actual) Ship 2: *Te Mana* December 2022 (Actual)	44 58
Initial Operational Capability	May 2017	August 2021 (Actual)	51
Operational Test and Evaluation (OT&E) begins	May 2017	September 2021 (Actual)	52
OT&E ends	February 2018	November 2023 (Actual)	69
Operational Release	TBC	Q3 2024 (Forecast)	-

Explanation: A contract change proposal for the installation phase was signed with Lockheed Martin Canada in December 2017 following Cabinet approval of additional funding when the project schedule was re-baselined as well. In March 2019 Lockheed Martin Canada advised the Crown of a delay to *Te Kaha's* acceptance date. Since December 2017 further planning and analysis of the scope and scale of the OT&E, including alignment with international exercises required for OT&E, and ship maintenance activities delayed due to the upgrade programme resulted in a revised date of November 2022 both for the end of OT&E and for achieving Operational Release. Since early 2020 COVID-19 in New Zealand and Canada – including social distancing, travel restrictions and the availability of parts and personnel –impacted both New Zealand's integration tasks and the offshore FSU work programme and new forecast dates were set for Initial Operational Capability (now Interim Operational Release), OT&E and Operational Release.

FSU OPERATIONAL CAPABILITY

Progress towards Delivery of Operational Requirements

Note: these are subject to change as the project progresses and solutions are implemented.

Operational Requirements	Requirement met
Combat Management System (CMS)	Yes. The Lockheed Martin CMS 330.
Intelligence Systems	Yes. Both Radio and Radar electronic support measures have been enhanced by the separate systems bringing Signals Intelligence capability up to date.
Radar Systems (Surveillance and Reconnaissance)	Yes. Thales SMART S 3 Dimensional Multi Function Radar and SharpEye surface surveillance radar.
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.
Anti-Surface	Yes. A new surveillance sensor package combined with improved Command and Control for defence against asymmetric surface threats. A new 5 inch gun control system 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) and introduction of the Sea Sentor Torpedo Defence system.
Support to Joint Task Force	Yes. The overall upgrade generates the capability to maintain a presence in a contemporary threat environment, significantly contributes to the Intelligence, Surveillance and Reconnaissance objectives of a task force commander and provides local area air defence to high value units.
Contracts to achieve all of the above operational requirements have been awarded. Benefits realisation scheduled for September 2024.[11]	

[11] While the majority of the project's benefits are expected to be delivered, an early forecast benefit of reduction in through life costs is unable to be realised. The project is assessed as being able to deliver 84% of planned benefits.

DURING THE 2023/24 YEAR

Te Mana completed preparations for deployment in July – December 2023, including conducting Naval Operational Test and Evaluation (NOTE) during Exercise Bersama Lima 23, and completing radar trials in the East Australian Exercise Area as part of preparation for a live missile firing exercise that took place successfully in November.

After the live firing the project board was advised that NOTE activity had concluded in December 2023.

DEVELOPMENTS POST 30 JUNE 2024

Operational Release was achieved on 16 October 2024.

The project will progress now towards formal closure.

FSU PROJECT BUDGET AND EXPENDITURE

At 30 June 2024 project costs were:

		Ministry $000	NZDF $000	Consolidated project $000
Budget	Current approved project budget	623,537	15,408	638,945
	Allowance for foreign exchange movements	44,752	-	44,752
	Original approved project budget	578,785	15,408	594,193
Forecast	Forecast total project cost	595,510	13,281	608,791
	Effect of foreign exchange movements	22,284	-	22,284
	Forecast cost using hedged rates	573,226	13,281	586,507
	Forecast project variance	5,559	2,127	7,686

FRIGATE SUSTAINMENT – COMMUNICATIONS

This project will upgrade the external tactical and strategic communications capabilities of the two Anzac-class frigates, HMNZS *Te Mana* and *Te Kaha*.

The Purpose of this Project

The Frigate Systems Upgrade (FSU) project, covered earlier in this report, was designed to upgrade surveillance and combat systems. Along with other frigate upgrade projects, this has contributed to the ability to extend the life of the ships to the mid-2030s.

Under the Frigate Sustainment - Communications project, the upgrade of external communications equipment will ensure compliance of the frigates' communications capability with modern standards, and ensure the effectiveness of the communications capability through the remaining life of these ships.

There are two phases to the project. Phase one has delivered the detailed system design, a detailed design of the training facility and training material, and has purchased some equipment with long lead times. The build and installation of the solution is now underway.

Capability Requirements

The Anzac-class frigates are a core Defence Force capability, able to be deployed individually or as part of a joint task group in coalition operations. Along with offering a valued contribution that complements partner forces, the capability of these ships also strengthens the New Zealand Defence Force when it is operating independently.

The frigates operate across a spectrum of tasks, from constabulary and humanitarian tasks to combat roles within multinational coalitions.

Through this project, existing capability will be upgraded, replacing systems and equipment to ensure the frigates continue to operate seamlessly, with effective communications that maintain the ability to deliver and receive data and voice transmission to/from our principal partners, and the NZDF's air and land forces, both in training and on operations.

FS Communications Better Business Case Milestones

2014	
3 September	**Project charter (Anzac Communications Upgrade)** approved by Secretary of Defence and Chief of Defence Force
2019	
25 November	Cabinet confirmed the upgrade option in the **Single Stage Business Case** and authorised the Secretary of Defence to undertake a competitive tender CAB-19-MIN-0626
2021	
9 August	Cabinet approved commitment of funds for the Design Phase of the project and the Secretary of Defence to commit and approve expenditure for the Frigate Sustainment Communications project as outlined in the **Project Implementation Business Case (PIBC)**. CAB-21-MIN-0298
2023	
11 April	Cabinet authorised the Secretary of Defence to commit and approve expenditure for the Frigate Sustainment Communications project. CAB-23-MIN-0119

Capability Definition Phase

How Defence identified and assessed capability and operational requirements and options

Communications equipment for the frigates is not a new capability, however as the *Defence Capability Plan 2019* outlined, the upgrade to the ships' communications system will ensure continued interoperability with our key Defence partners and – along with the other upgrades already delivered – provide a greater capability to the New Zealand Defence Force than at any time since their introduction in the 1990s.

This upgrade will support interoperability with other capabilities that are being acquired for the New Zealand Defence Force, such as the P-8A Poseidon fleet and those being delivered under the Network Enabled Army programme.

Defence worked through a process to identify an upgrade option that would achieve the best value for money. This included workshopping possible options across dimensions of scale and scope, service solution and delivery, and implementation. Long listed options in each dimension were assessed against the project's investment objectives and critical success factors. From this, a short list was recommended for further analysis.

An economic assessment of short-listed options used a multiple objective decision-making (MODM) methodology, combining cost effectiveness analysis and scenario analysis. Economic analysis was undertaken using the equipment that would be acquired and values for each option were combined with the weighting information to score and compare each option. Further marginal and sensitivity analysis was carried out and a Monte Carlo simulation conducted to analyse which option would provide the best value for money relative to other options.

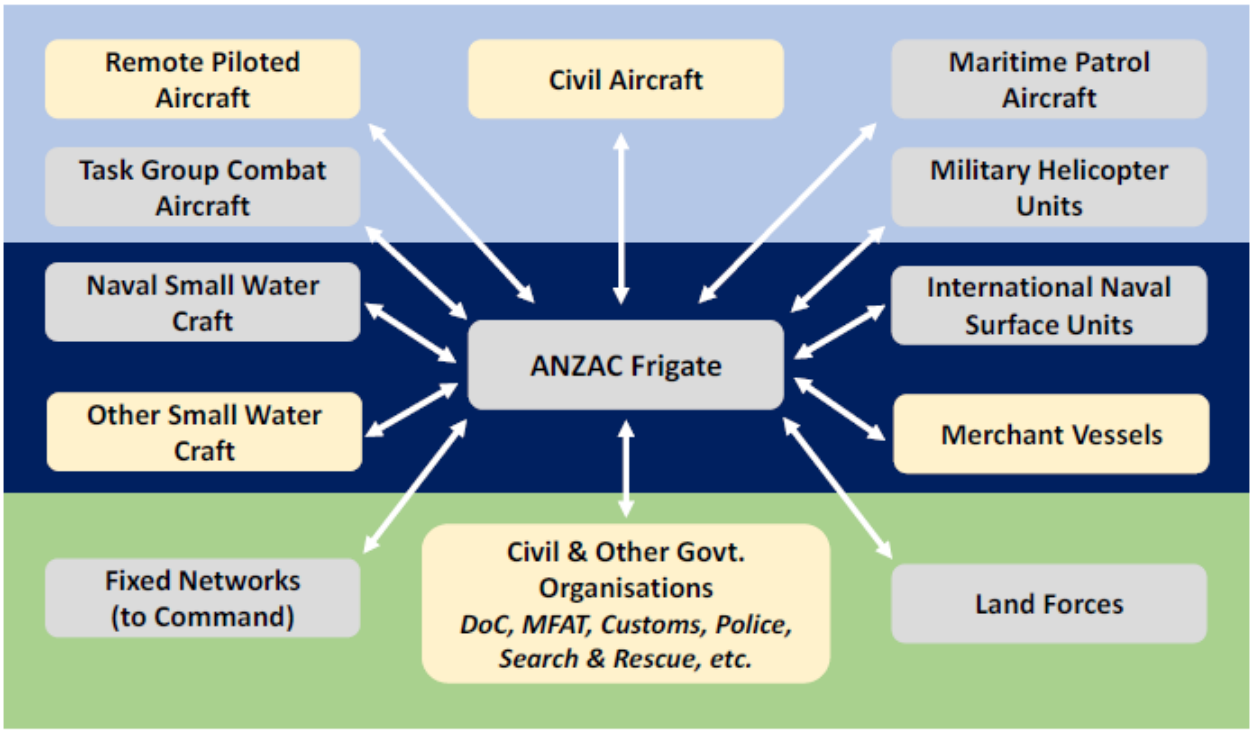


Figure: Anzac Frigate communications paths

How Defence considered interoperability

Interoperability is a core principle considered in Defence major projects, and is embedded in the decision-making process of the Defence Capability Management Framework.

The interoperability of the frigates is a primary consideration for this project, and will ensure the frigates maintain the ability to undertake the full range of roles required by Government.

Assessment of the changing technological environment in which the frigates and our international partners are expected to be operating formed part of the development of the business case, and recommendations for the preferred solution.

Refining options

The process undertaken included identification of the upgrade option that achieves the best value for money. In one workshop participants examined possible options across scale and scope, service solution and delivery and implementation. A long list of options in each of these were assessed against investment objectives and critical success factors. From this long list analysis, a short list was recommended for further analysis.

How Defence considered through-life costs

Within the proposals presented to the Government, investment objectives included minimising the through-life cost of the frigate communications system. These include elements such as management of training, software, documentation, maintenance, sparing, and base engineering support. The costs considered were based on estimates, with confirmed costs expected to be developed during the design phase.

When reviewing submissions made to the Request for Tenders, which is covered in more detail under the Acquisition Phase section, the evaluation team included a member who was qualified to consider and evaluate the through-life support category. This, and other categories (including technical, commercial, and integrated logistics) were evaluated independently, then a combined evaluation was conducted to deliver a moderated score for each supplier.

Through life support was one of the categories considered in the due diligence analysis of short-listed suppliers. The submission by SEA, the company that was ultimately selected for the design phase, was noted for its detailed through life support model and cost, which included providing support through experienced New Zealand-based companies and local industries.

Requirements Analysis in the Capability Definition phase

The Strategic Defence Policy Statement 2018[12] (SDPS), approved by Cabinet in May 2018, set out the Government's policy objectives for Defence, providing the policy framework for identifying Defence capabilities required to give effect to the Government's intentions.

Of the ten principal roles of the NZDF set out in the SDPS, frigate communications directly contribute to six of them:

- Defend New Zealand's sovereignty and territory and contribute to protecting New Zealand's critical lines of communication
- Meet New Zealand's commitments to its allies and partners
- Conduct a broad range of operations in the South Pacific, including leading operations when necessary, to protect and promote regional peace, security and resilience
- Make a credible contribution in support of peace and security in the Asia-Pacific region, including in support of regional security arrangements
- Protect New Zealand's wider interests by contributing to international peace and security and the international rules-based order

[12] The SDPS is on the Ministry of Defence website: https://www.defence.govt.nz/what-we-do/assessing-our-future-strategic-environment/strategic-defence-policy/

- Be prepared to respond to sudden shifts in the strategic environment.

The analysis of requirements considered current and future communications standards and equipment, and the changing information environment, and was focused on flexibility and adaptability being part of any solution.

Acquisition phase

Tender process

The Ministry's focus was on procuring a solution that would support the frigates through to end of life, along with the equipment and supporting services. The preferred solution was to engage a Prime Systems Integrator (PSI) that would:

- provide design services for the upgrade
- procure related equipment and initial spares
- provide integration services for installation and commissioning, including Harbour Acceptance Trials and Sea Acceptance Trials
- design and establish a suitable training facility, including appropriate training material
- and conduct initial training.

A Request for Information in 2017 resulted in 11 responses including several comprehensive responses with estimated costing, which indicated both a level of market capability to deliver, and an interest in the contract. It also provided indicative cost and risk information.

As part of the approval of the Single Stage Business Case, Defence received approval to approach the market with a Request for Tender (RFT), and developed contract and tender documents.

The RFT was issued on 4 December 2019 using the Government Electronic Tender System with an original closing date of 30 March 2020. The RFT period was extended twice, initially to 30 April to provide additional time for security clearance verification of potential suppliers, and then to the end of May to compensate for the impact of COVID-19. New Zealand had been at a Level 4 response to the pandemic, with the country in lockdown from 25 March to 27 April.

Following assessment of the proposals received, a shortlisting took place, after in-depth due diligence, and Systems Engineering & Assessment Ltd (SEA) was approved as the preferred supplier.

Contract as at 30 June 2024

Prime contractor	Systems Engineering & Assessment Ltd

Installation process

The installation phase is taking place in New Zealand, aligning with ship maintenance periods to reduce potential impact on the NZDF's ability to deliver outputs.

Although SEA is based in the UK, their proposal incorporated heavy use of New Zealand-based subcontractors, which was considered to provide a strong mitigation to COVID-19 related delays and restrictions – the effects of which at the time were still emerging – but were considered to have the potential to impact or delay the installation phase.

Schedule/Timeframe Progress

As with other projects, the contract's deliverables are tracked against an agreed delivery schedule and payment milestones. This table relates to the design phase alone, with the build and installation phase planned to commence after this is completed.

	Estimate at approval to commit 9 August 2021	At 30 June 2024 (Forecast/Actual)	Variation in acquisition phase (months)
Contract Execution, Design	July 2021	August 2021 (Actual)	1
Design completion	December 2022	August 2023 (Actual)	8
Acceptance of Interim Operational Release	2026	2026 (Forecast)	-
Acceptance of Operational Release	2027	2027 (Forecast)	-

The month variation for the contract execution relates to the timing of the business case being approved (a pre-requisite for the contract to be signed).

The delay in acknowledgement of the design completion occurred in part because of work to revalidate/confirm the proposal for the Build and Install phase, and a longer than estimated time for completing the design deliverables.

FS Communications Capability Integration

Description of Capability Integration phase

The Capability Integration phase is the period of time in which the tasks required to prepare the Service to effectively operate and support the solution that is being introduced. It's about making the capability part of Defence's "business as usual".

Status of the Capability Integration Plan

A Capability Integration Plan (CIP) was approved in 2021 and, as with other CIPs, is a living document that is expected to change in detail and focus as the project progresses through its lifecycle.

For example, the project drafted a Test and Evaluation Master Plan, which sits within the broader CIP. These support planning of test activities, management and scheduling of events like acceptance and/or operational testing and evaluation, and identify areas of critical performance requirements.

During the 2023/24 Year

Completion of the design phase was formally acknowledged in July 2023 and work continued on the Build and Install phase. Equipment deliveries took place.

The Test and Evaluation Master Plan was approved in September.

Developments post 30 June 2024

Equipment procurement is progressing, and work continues to be delivered by the Prime Systems Integrator, SEA and its New Zealand sub-contractors McKay Ltd, Marops Ltd and Beca.

FS Communications Project Budget and Expenditure

At 30 June 2024 project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	96,038	-	96,038
	Allowance for foreign exchange movements	3,197	-	3,197
	Original approved project budget	92,841	-	92,841
Forecast	Forecast total project cost	94,956	-	94,956
	Effect of foreign exchange movements	2,474	-	2,474
	Forecast cost using hedged rates	92,482	-	92,482
	Forecast project variance	359	-	359

FRIGATE SUSTAINMENT PROGRAMME PHASE 1

This is planned as a multi-phase programme, with Phase 1 designed to enable future work to be undertaken to extend the Anzac frigates' service life beyond the original 30 year life for which they were designed. This first phase of the programme is being undertaken between 2023 and 2026.

The Purpose of this Project

Since the frigates were built in the mid-1990s, cyclical maintenance has been undertaken, and specific upgrade programmes have been delivered. This investment has created the possibility to extend the ships' service life to the mid-2030s, beyond the 30-year life expectation of these vessels.

With the planned end of design life approaching in 2026 (Te Kaha) and 2028 (Te Mana), a decision was sought in 2023 on funding for initial system replacements and design preparation for projects that may be included in later phases.

FSP was established to manage a range of projects that support the frigates' life extension. This oversight is intended to provide a balance to delivering the capability for Defence, while not affecting the ships' availability for operational use, or the value of the investment in this programme.

The scope of phase 1 includes:

- Delivering system modifications or replacements that are necessary for future life extension work.
- Replacements that sustain regulatory compliance and interoperability.
- Where needed, documentation updates, training packages, infrastructure and updates to shore-based training and mission support systems such as the Combat Management System (CMS) trainer.

Capability Requirements

As an in-service capability, baseline requirements are taken from the existing capability, as well as the investment objectives, and the programme's expected benefits.

System requirements for each project within FSP will be used to define each project's specific deliverables.

User requirements are the baseline user need for capability. High Level User Requirements (HLUR) include:

- **Interoperability:** a capability that can inter-operate with NZDF, Australian and Coalition Partner Force elements, and applicable Government agencies.
- **Area of Operation and Endurance:** a naval capability that can be operated in maritime areas worldwide (excluding polar waters), and sustained so that a continuous presence is achieved.
- **Support:** a capability that adopts affordable and sustainable approaches to support, in order to ensure it is deployable through life.
- **Maritime Warfare Operations:** a capability that can locate, classify and track surface vessels, land targets, submarines and aircraft and, when necessary apply force against those targets until they no longer present a threat to the force, or assigned mission.
- **Maritime Security Operations:** a capability to establish the conditions for security and protection of sovereignty in the maritime domain.
- **Maritime Intelligence, Surveillance Reconnaissance (ISR):** a capability that can provide sustained ISR across all domains in the maritime environment.
- **Emergency Support**: the ability to deliver assistance to persons in distress on land or

at sea and, if necessary, move them to a place of safety.

The objectives of Phase 1 investment are to:

- Enable the extended service life of the Anzac frigates by ensuring a seaworthy (safe to operate) platform after the 30 year design life.
- Enable sustainment of naval combat capability effectiveness after the 30 year design life.
- Manage frigate availability for maritime security operations.
- Support sustainment of interoperability with partner nations after the 30 year design life.

FSP Phase 1 Better Business Case Milestones

2022	
2 May	**Programme Definition Document** approved by Secretary of Defence and Chief of Defence Force
2023	
11 April	Cabinet authorised the Secretary of Defence to commit and approve expenditure for Phase 1 of the Frigate Sustainment Programme, subject to funding being approved as part of the Budget 2023 process, as outlined in the **Single Stage Business Case** CAB-23-MIN-0119

Capability Definition Phase

How Defence identified and assessed capability and operational requirements and options

Phase 1 has been designed to focus on delivering projects that will enable decisions to be made in relation to proposed future life extension activities beyond the ships' design life (2028).

The Anzac frigates are already in service, and the FSP has been developed as a work programme to sustain the capability these ships deliver, rather than to deliver new capability.

The benefits of these operational frigates have been realised, and the goal of FSP is to sustain these benefits as the vessels age, and specifically to sustain them beyond the end of their design life. Benefits will be achieved progressively through the sustainment of the frigates' capability.

How Defence considered interoperability

As with other projects, FSP was developed with consideration of the six principles that underpin Defence policy. One of these is that Defence is a credible and trusted international partner. This upgrade and replacement equipment and systems delivered under this project will continue New Zealand's ability to be interoperable with partners, across a range of missions in a spectrum of environments.

As noted on the previous place, interoperability was identified as the first of the high level user requirements and the project scope noted that delivering an agreed level of system replacements during phase 1 of this project would sustain interoperability.

Acquisition Phase

All Platform projects will be delivered through the Maritime Fleet Support Services contract with Babcock New Zealand. This is the existing support partner arrangement for sustainment of the whole RNZN fleet at Devonport Naval Base.

Procurement of equipment and engagement of sub-contractors will be in accordance with the Government procurement rules. However overhaul, refresh or replacement of existing equipment may require sole source sub-contracts with the original equipment manufacturer.

Schedule/Timeframe

	Estimate at approval to commit	At 30 June 2024 (Forecast)	Variation
Estimated Completion of Installation	2026	2026	-

During the 2023/24 Year

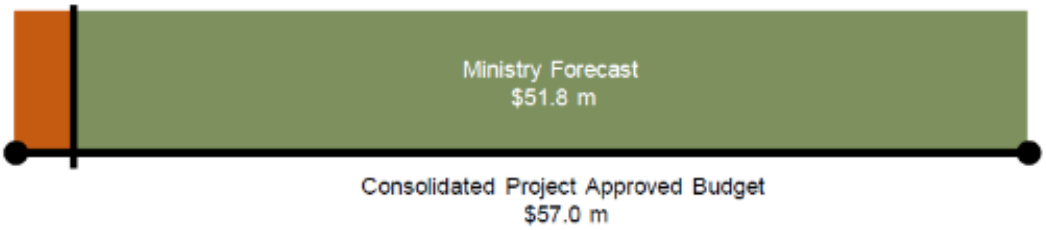
Information about the Cabinet approval of this project is available on the Ministry of Defence website[13].

Developments post 30 June 2024

Work continues on the first ship.

[13] Under the Publications section. Search for Defence Force Upgrading the Frigates (live link).

Frigate Sustainment Programme
Phase 1 Budget and Expenditure



2023/24 spend
$3.2 m

At 30 June 2024 project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	57,000	-	57,000
	Allowance for foreign exchange movements	-	-	-
	Original approved project budget	57,000	-	57,000
Forecast	Forecast total project cost	55,057	-	55,057
	Effect of foreign exchange movements	-	-	-
	Forecast cost using hedged rates	55,057	-	55,057
	Forecast project variance	1,943	-	1,943

DIVE AND HYDROGRAPHIC VESSEL

This project delivered a hydrographic and deep diving support capability. The fourth vessel to sail with the Royal New Zealand Navy under the name HMNZS *Manawanui* was commissioned and had been operating since 2020.

THE PURPOSE OF THIS PROJECT

The Dive and Hydrographic Vessel (DHV) project was set up to acquire replacement capability for the Royal New Zealand Navy's diving support and hydrographic functions.

The hydrographic survey vessel *Resolution* had retired in 2012 and the diving support vessel *Manawanui* was decommissioned in 2018. A replacement vessel was sought that could provide the capability to conduct operational and military tasking. This included hydrography (mapping the littoral[14] surface and subsurface environment), deep diving[15] operations and other specialist tasks, including support to the New Zealand Police and other government agencies.

THE ORIGINS OF THIS PROJECT

DHV's origins are linked with an earlier project, the Littoral Operations Support Capability (LOSC). Initiated in 2013, LOSC was set up to identify options to ensure the NZDF had equipment to support and enable operations in the littoral environment and to replace *Manawanui* and *Resolution*, the vessels that were supporting Navy's hydrographic, mine countermeasures and diving capabilities.

The project was initiated in August 2013 and, over the 52-month period that it was active, the team explored options for replacing the two vessels. Information developed as part of LOSC was used to inform recommendations and decisions made in relation to DHV. That work is outlined here to provide background.

The LOSC project sought information from industry, developed documentation to support the project, and worked on a business case:

- In October 2013 a request for information (RFI) sought to develop an initial set of user requirements with a target delivery date of mid-2017.
- In November 2014 the Secretary of Defence and Chief of Defence Force approved the project charter.
- In April 2015, Cabinet agreed that two options from the LOSC Indicative Business Case were to be taken forward for consideration during the *Defence White Paper 2016* process: a dive and hydrographic tender that would offer baseline capability; and the enhanced capability of a Littoral Operations Vessel.
- In June 2015 a further RFI released to the market included a refined statement of user requirements, updated project schedule and contract delivery date, enabling Defence to assess the commercial information it was holding, given changes in the ship design and construction market, and the global economy at the time. This information was used to inform the development of the Detailed Business Case.
- In July 2016, Cabinet considered the Detailed Business Case and agreed that a Littoral Operations Vessel was the preferred solution, authorising the Secretary of Defence to undertake a competitive tender, which was released in September 2016. The

[14] In a military context, 'littoral' refers to coastal areas, from shallow waters (generally from 60m deep), past the beach and onto land.
[15] Dive operations approximately 30m below the surface, used in salvage, ship repair, search and recovery, and underwater clearance.

request for tender sought a ship suitable for supporting littoral operations, along with a range of documentation, manuals and data, training, spares, support and test equipment. It closed at the end of November that year and an assessment and evaluation process was undertaken of the tenders received.

- By April 2017 costs had been assessed and due diligence activities undertaken to refine costs. During this time options were considered for addressing a funding shortfall within the wider Defence portfolio and LOSC was identified as part of an option for addressing the shortfall, which would reduce the project's funding and scope.

At the end of 2017, Cabinet reprioritised $148 million from LOSC to the Frigate Systems Upgrade project and directed Defence to report back with costed options for a Dive and Hydrographic Vessel.

LOSC Better Business Case Milestones

2014	
13 November	**Project charter** approved by Secretary of Defence and Chief of Defence Force
2015	
10 April	Cabinet agreed that two options from the **Indicative Business Case** be taken forward for further consideration – a Dive Hydrographic Tender and a Littoral Operations Vessel. CAB Min (15) 11/7
2016	
4 July	Cabinet agreed a Littoral Operations Vessel was the preferred solution in the **Detailed Business Case** and authorised the Secretary of Defence to undertake a competitive tender. CAB-16-MIN-0313
2017	
11 December	**Change of Scope** Cabinet reprioritised $148 million of funding to the Frigate Systems Upgrade project, reducing this project's scope from a Littoral Operations Vessel to a Dive and Hydrographic Vessel. CAB-17-MIN-0539

DHV Better Business Case Milestones

2018	
18 June	Cabinet agreed the **Single Stage Business Case** recommendation to purchase and modify a second-hand commercial offshore support vessel to provide continued support for the NZDF's dive and hydrographic capabilities. Cabinet delegated to Joint Ministers (Finance and Defence) authority to commit funds for the purchase, modification, and entry into service of the Dive and Hydrographic Vessel. CAB-18-MIN-0281
19 August	Ministers of Finance and Defence agreed to the procurement and modification of a Dive and Hydrographic Vessel, as recommended in the **Project Implementation Business Case**.

As a result of the change of scope, the LOSC project team was refocused to source a dive and hydrographic vessel.

THE DHV PROJECT

Overarching benefits that were identified in relation to a Dive and Hydrographic Vessel are:

- Underwater operational competencies are generated and maintained (including diving and hydrography seaworthiness, surface supplied breathing apparatus diving, and multi-beam echo sounder).
- The NZDF has the capacity and capability to support domestic operations, including deep diving and hydrography capabilities.
- Regional partners are supported in specialised areas, with improved options for the Government to provide underwater support.

CAPABILITY REQUIREMENTS

Capability requirements that were included in the scope of the DHV project are:

- deep diving
- ship-based military hydrography, including large-area hydrographic survey and precise and accurate data gathering on adverse weather conditions
- mine countermeasures
- search and rescue and
- support to other Government agencies.

CAPABILITY DEFINITION PHASE

How Defence identified and assessed capability and operational requirements

With the project scope refocused in the last quarter of 2017, work began on identifying suitable vessels that could meet Defence Force dive and hydrographic capability requirements.

A range of capability and operational requirements identified within the broader LOSC project's scope remained valid under the reduced scope of the DHV project, including:

- dynamic positioning to support use of remotely operated vehicles
- engines that are able to operate at low speed for extended periods of time to support hydrographic surveying
- a ship's crane designed for larger load lifts and operating on a platform that is fixed in location, by either multiple ship's anchors (four point mooring) or a dynamic positioning system
- deep diving below 30m which is required by New Zealand law to be undertaken from a vessel that has a precise-position-keeping system, as well as with hyperbaric support on site to provide divers with a safe environment in which to recover.

In sourcing a vessel from the commercial market, it was noted that capabilities delivered and supported by the NZDF's former dive ship and hydrographic vessel would be available in an existing offshore support vessel designed to support offshore oil and gas activities.

How Defence analysed the requirements options in the Capability Definition phase

The project considered three options for acquiring a suitable vessel; commissioning a new build, leasing and modifying a vessel, and buying and modifying a second-hand vessel.

A range of available ships was assessed against requirements (eg speed, deck area, build quality, accommodation, suitability for conversion to a military vessel, and price). Another key consideration was seakeeping and stability. Seakeeping refers to a vessel's motion responses to various sea conditions and is generally expressed in terms of crew comfort and workability, potential for damage to cargo and structure, and equipment/system availability.

An evaluation of shortlisted ships was conducted in early 2018 to evaluate the condition of the vessels and evaluate their suitability for modification, and discussions were held with ship designers to build understanding of the costs and risks of modification.

The comparative assessment of each option resulted in a recommendation in the Single Stage Business Case to acquire a second-hand

vessel. Cabinet agreed to this recommendation in June 2018.

How Defence considered interoperability

Defence considered interoperability in the communications capabilities of the vessel, and the ability to conduct vertical replenishment and boat transfer operations with partners.

How Defence considered through-life costs and issues

The DHV through-life costs were assessed using a range of data sources, including:

- operating costs for the platform supplied by the ship owner
- modification costs, based on quotes from the ship owner and estimates from contractors
- personnel costs estimated based on a crew of 39 full-time equivalent personnel
- general operating costs based on costs from *Manawanui*, adjusted to take account of the greater complexity of the vessel and higher number of sea days.

Requirements Analysis in the Capability Definition Phase

- The systems required for a Dive and Hydrographic Vessel to meet New Zealand Defence Force requirements are listed in the table below, along with the capabilities these systems support:

Table 1: System requirements to deliver capability

	Dynamic Positioning System	Dive System	Hydrographic Survey System	Heavy Lift Crane	Military Communications System	Weapons and Armoury
Hydrographic Survey			■		■	
Rapid Environmental Assessment			■	■	■	
Route Survey	■	■	■	■	■	
Mine Counter Measures		■			■	■
Underwater Search and Recovery	■	■	■	■	■	
Explosive Ordnance Disposal		■	■		■	■
Maritime Presence[1]					■	■
Training	■	■	■	■	■	■

[1] "Maritime Presence" covers generic maritime capabilities such as search and rescue and defence diplomacy.

History of Cost Estimates in the Capability Definition Phase

	30 June 2018
Cost (NZ$ m)	103.416

Estimates of Acceptance Date made in the Capability Definition Phase

	Initial Estimate	At Contract Signing (August 2018)	Actual date achieved
Vessel delivery commences	January 2019 (start of voyage to New Zealand)	March 2019	March 2019 (Actual)
Vessel delivered	May 2019	May 2019	12 May 2019 (Actual)

ACQUISITION PHASE

Description of DHV Acquisition Work

Following the reprioritisation of funding, the diving and hydrographic vessel option became the preferred option for acquisition.

How Defence Decided to Acquire the Capability Solution

The project had noted that, due to a downturn in the oil and gas industry, purchasing a second-hand offshore support vessel for conversion to a dive and hydrographic vessel was comparable on a cost-benefit basis to purchasing a new purpose-built vessel.

Therefore options that were considered were:

- Commission a new build vessel
- Lease and modify a vessel
- Purchase and modify a second-hand vessel.

A market study was commissioned, which confirmed that the market at the time for offshore support vessels was at an historic low for both lease and purchase, and that – at the time the Ministry of Defence was looking for a suitable vessel – there were early signs of a recovery in the market that would affect ship availability and pricing.

Acquisition and modification of a second-hand vessel was recommended as the preferred acquisition option to ensure the project remained within budget and schedule, and to limit risk.

A commercial shipbroker provided an initial list of offshore support vessels that were available to the market. This was refined to around 150 vessels that had the potential to be suitable for conversion and use as a dive and hydrographic vessel, based on a number of requirements including accommodation on board, speed, deck area, build quality and price.

A further detailed assessment and evaluation process resulted in a shortlist of six vessels with the MV *Edda Fonn* identified as the preferred vessel in April 2018.

Risk reduction, clarification and due diligence activities

Risk reduction and clarification activities had taken place during February and March 2018, and the project team met with ship designers and equipment manufacturers, allowing the Project to:

- undertake due diligence activity in relation to the six shortlisted vessels
- monitor the market while the project was progressing towards contract
- assess customisation costs

- engage early with the Fleet Personnel Training Organisation to ensure sufficient suitably qualified and experienced personnel would be available to crew the ship.
- plan for the development of a support agreement.

Following identification of *Edda Fonn* as the preferred vessel, the vessel was assessed further prior to purchase. The Project Team, enhanced with RNZN personnel and supported by Babcock NZ (the Prime System Integrator), carried out a detailed inspection of the ship. A marine survey of the MV *Edda Fonn* was also conducted by an independent ship surveyor and marine consultant. These surveys confirmed the material condition of the vessel was very good, with the survey company stating the vessel was equivalent to a ship aged five to ten years younger.

An initial comparative seakeeping analysis was also undertaken by an independent contractor to explore the ship's seakeeping characteristics against those of HMNZS *Canterbury* and the RNZN offshore patrol vessels. The analysis assessed the expected characteristics of the vessel were it to be operated in the high to extreme sea conditions that occur in New Zealand's maritime area. It was concluded that the vessel's seakeeping performance was favourable when compared to *Canterbury* or the Otago Class offshore patrol vessels in most sea states, for a given speed and heading. The RNZN Naval Engineering Authority agreed that the initial seakeeping analysis showed *Edda Fonn* exhibited acceptable seakeeping characteristics for New Zealand waters.

The opportunity was taken for Project personnel to take part in 'sea-rides', embarking on the ship when it was carrying out commercial operations in the North Sea in September and October 2018. This greatly added to the knowledge of the vessel, and helped with the development of procedures for when the ship would be in service with the RNZN.

Contractual arrangements

On 20 August 2018 a Memorandum of Agreement was signed between the Chairman of Østensjø Rederi's Board and the Secretary of Defence. The MOA included:

- The purchase of MV *Edda Fonn*.
- Completion of stage one modifications to the vessel by Østensjø Rederi, including changes to the moon pool, installation and integration of a Surface Supplied Breathing Air diving system, installation and integration of a Remotely Operated Vehicle and associated systems and stations, and installation of a Multi Beam, and Single Beam Echo Sounder.
- Specific training in systems and equipment.
- The ship's delivery to New Zealand.

Stage 2 modifications focused on specific communication and military systems and equipment. At the start of the new financial year the project was anticipating signing a contract for the first of two phases of equipment installation as part of this second stage of modifications to *Manawanui*. In August 2019 a contract covering some modifications was signed with Babcock NZ and work orders covering the communications works were issued.

A request for tenders (RFT) was released at that time for the remaining military modifications. Babcock NZ was also the successful tenderer for that work and that modification work was added to the first contract with Babcock, and additional work orders issued.

Contracts completed

Ship acquisition and Stage 1 modifications	Østensjø Rederi
Stage 2 modifications	Babcock NZ

SCHEDULE/TIMEFRAME PROGRESS

Initial activity completion dates in this table were estimates at the time approval to commit to the purchase of the MV *Edda Fonn* was given by the Minister of Defence and the Minister of Finance.

	Estimate at approval to commit 19 August 2018	At 30 June 2024 (Forecast/Actual)	Variation in acquisition phase (months)
Vessel purchased	August 2018	August 2018 (Actual)	0
Completion of Stage One modifications	March 2019	March 2019 (Actual)	0
Delivery of Vessel to New Zealand/Transfer of ownership to Crown	May 2019	May 2019 (Actual)	0
Completion of Stage 2 modifications	November 2019	September 2023 (Actual)	46
Interim Operational Release (IOR)	April 2021	February 2020 (Actual)	-14
Operational Release (OR)	April 2021	July 2024 (Forecast)	39

At the time of approval to commit, IOR was forecast to commence November 2019 and end April 2021. OR was forecast to start March 2021 and conclude the following month.

A phased IOR for *Manawanui* was approved on 26 February 2020, earlier than the scheduled date of April 2021, and was achieved as part of a wider schedule adjustment to enable the vessel to participate in Exercise RIMPAC later that year.

In August 2020 the OR date was extended by 8 weeks to July 2021 as a result of unrecoverable delays that occurred during the COVID-19 Alert Level 4 and 3 responses. During the following months, the project identified that the July 2021 date would not be met, as a result of factors driven significantly by the ongoing impact of COVID-19, and identification of maintenance for the crane that had delayed testing and release of the capability. In August 2021 OR was re-forecast to take place in the second quarter of 2022, due to the continuing pandemic and unavoidable delays in accessing specialist technical support from overseas.

There was progressive release of capability ahead of the start of operational release, the ship was available for operations and completed multiple deployments. COVID-19 related delays and staff/personnel resourcing for the project, and delays to completion of Stage 2 modifications resulted in a delayed Operational Release, however this did not prevent the ship's availability for tasking.

History of variations to schedule at 30 June 2024

Date of individual variation	Variation length (months)	Explanation
2020/2021/ 2022	46	**Stage 2 modifications:** were affected by a range of issues, including technical (eg the complexity of integrating major equipment into the ship's existing infrastructure), to weather-related (strong winds preventing crane operations). In early 2020 some equipment installation was rescheduled for second half of 2020. In mid-2020 the project was reporting that most of the Stage 2 modifications were completed, but COVID-19 related travel restrictions limited the ability of foreign contractors to travel to NZ to implement some remaining modifications. This continued to impact completion through to the end of 2020 and by June were forecasting November 2021. In December 2021 the project had advised that a planned maintenance/modification period experienced delays due to COVID-19 related restrictions and that some work would be completed in the following year, along with contractor sea trials in February 2022. In June 2022 the Defence Capability Governance Board were advised that final modification work would be completed in 2023.
February 2020	-14	**Interim Operational Release:** the phased release for *Manawanui* began earlier than the schedule date of April 2021, and was part of a wider schedule adjustment to enable the vessel to participate in Exercise RIMPAC in 2020.
August 2020/August 2021/June 2022/March 2023	39	**Operational Release:** Impact of COVID-19 resulted in longer lead times for some equipment and the ongoing inability of overseas contractors to travel to New Zealand to implement modifications and/or conduct training. Estimates for achieving Operational Release were provided during the period that COVID-19 restrictions in relation to international travel were in place. Operational Release had been re-baselined in August 2020 to July 2021, and in August 2021 to the second quarter of 2022. In June 2022, the Defence Capability Governance Board were advised that Operational Release was expected to be achieved in the third quarter of 2022. Stage 2 modifications were not completed at that time, and by March 2023 the project was indicating that while they were exploring options to ensure all modifications to the ship to be would be completed by 30 June 2023, this was not expected to be achievable.

DHV CAPABILITY INTEGRATION PLAN

As part of the project's Capability Integration Plan, a Test and Evaluation Master Plan (TEMP) was developed, detailing the range of test and evaluation requirements. The document is usually comprised of a number of supporting test and evaluation plans, which cover the progression of the project's phases.

For the DHV project, developmental testing and evaluation was conducted as part of Stage 1 modifications to the vessel, which were completed ahead of its delivery to New Zealand. This phase included observation by the project

team of factory acceptance trials for systems being fitted into the ship.

Completion of installation of Stage 1 modifications led to the start of the acceptance test and evaluation (AT&E) phase. Harbour and Sea Acceptance Trials were completed in March 2019, confirming the materiel fulfilled the requirements and specifications of the contract. AT&E for this project was being completed progressively, with further Harbour and Sea Acceptance Trials and Operational Testing and Evaluation completed following the Stage 2 modifications.

Operational test and evaluation test systems in operating conditions to ensure an accurate evaluation of the capability can be made. For this vessel the focus has been on:

- evaluating the ship's readiness for service
- identifying any issues with individual equipment, sub-systems or systems that may need to be addressed
- evaluating the support system (including training, safety and sustainability)
- validating the standard operating procedures that are being developed for the vessel and crew
- helping in the development of plans for the ship's operational use.

DHV OPERATIONAL CAPABILITY

Delivery of Operational Requirements

Note: these are subject to change as the project progresses and solutions are implemented.

Operational Requirements	Likely to be met
Hydrographic Survey	Yes
Rapid Environmental Assessment	Yes
Route Survey	Yes (supporting capability) *Manawanui* will provide support for delivery of these capabilities.
Mine Countermeasures	
Underwater Search and Recovery	Yes
Explosive Ordnance Disposal	Yes
Maritime Presence (including search and rescue)	Yes
Training	Yes
Full benefits realisation was achieved in 2024.	

DURING THE 2023/24 YEAR

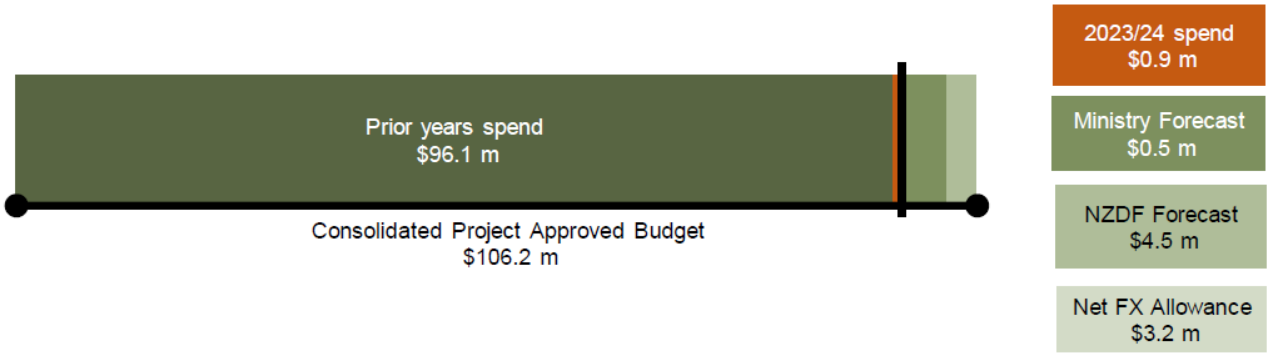
Phase 2 modifications to the vessel were completed in September 2023 and the ship completed harbour and sea acceptance trials, and Operational Testing and Evaluation ahead of deployment to the Pacific.

The Operational Release Recommendation Report was prepared in 2024.

DEVELOPMENTS POST 30 JUNE 2024

Operational Release was being sought when the ship grounded on a reef off the southern coast of Upolo, Samoa, on 5 October 2024 and sank the following morning. A Court of Inquiry released initial findings in November 2024. The direct cause of the grounding was determined to be a series of human errors.

DHV PROJECT BUDGET AND EXPENDITURE



At 30 June 2024 Dive and Hydrographic Vessel project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	101,186	5,000	106,186
	Allowance for foreign exchange movements	2,770	-	2,770
	Original approved project budget	98,416	5,000	103,416
Forecast	Forecast total project cost	97,549	4,497	102,047
	Effect of foreign exchange movements	(402)	-	(402)
	Forecast cost using hedged rates	97,952	4,497	102,449
	Forecast project variance	464	503	967

MARITIME SUSTAINMENT CAPABILITY

HMNZS *Aotearoa* has achieved Operational Release on 19 December 2023.

More information about the history and progress throughout the life of this project is available in previous editions of the *Major Projects Report* (2017 to 2023). These are available on the Ministry of Defence website.

THE PURPOSE OF THIS PROJECT

The Maritime Sustainment Capability project was set up to deliver a new replenishment capability to sustain Defence Force and coalition platforms. In achieving Operational Release at the end of 2023, it was considered sufficient objective evidence existed to demonstrate the new capability was seaworthy, effective and suitable for NZDF operations.

The Maritime Sustainment Capability project sought to deliver a range of benefits:

- Provision of an independent and complementary Maritime Sustainment Capability to New Zealand and its security partners.
- An improved ability to shape and react to events in New Zealand, Australia and the South Pacific.
- The provision to government of greater flexibility in response options to threats and emergencies.
- The provision to government of support to New Zealand's civilian and scientific presence in Antarctica.

CAPABILITY REQUIREMENTS

- Conduct maritime force logistic support
- Maintain deployable bulk fuel reserves
- Provide an effective and appropriate maritime platform
- Provide support to other government agencies with specific fitted capabilities.

Schedule of Capability Integration

	Initial Estimate	30 June 2024 (Actual)	Variance (months)
Interim Operational Release	December 2020	March 2021	3
Operational Release	November 2021	December 2023	25
Benefits Realisation	January 2022	April 2024	27

Operational release and benefits realisation were unable to take place until successful deployment of the ship to Antarctica in the 2021/2022 summer. This was completed in the first quarter of 2022. The voyage was a dependency as well for full benefits realisation.

DURING THE 2023/24 YEAR

In the second half of 2023 the ship underwent Sea and Readiness Checks, including harbour and sea training exercises before maintenance work was undertaken.

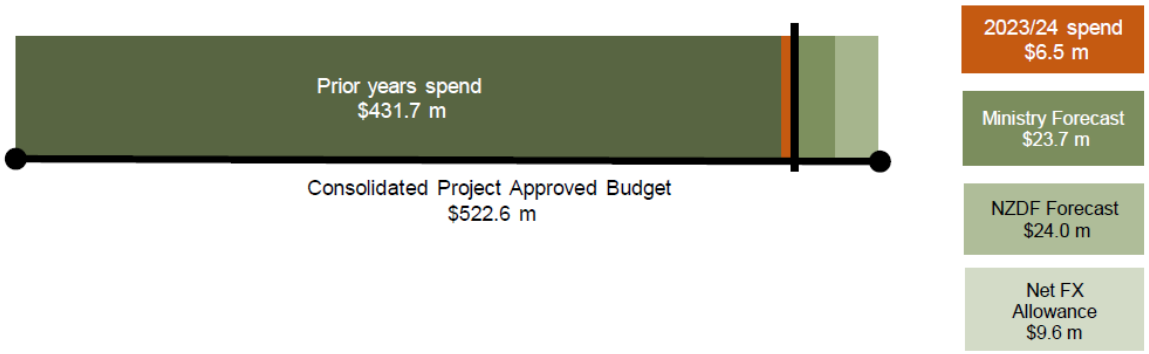
Operational release was achieved on 19 December 2023.

Post Operational Release the First of Class Flight Trials for the Seasprite naval helicopter were completed in April 2024.

DEVELOPMENTS POST 30 JUNE 2024

No developments to report.

MSC PROJECT BUDGET AND EXPENDITURE



At 30 June 2024 project costs were:

		Ministry $000	NZDF $000	Consolidated project $000
Budget	Current approved project budget	498,447	24,160	522,607
	Allowance for foreign exchange movements	26,832	-	26,832
	Original approved project budget	471,615	24,160	495,775
Forecast	Forecast total project cost	461,873	23,993	485,866
	Effect of foreign exchange movements	17,222	-	17,222
	Forecast cost using hedged rates	444,652	23,993	468,645
	Forecast project variance	26,963	167	27,130

INFORMATION

FIXED HIGH FREQUENCY RADIO REFRESH

The Fixed High Frequency Radio Refresh project is replacing the New Zealand Defence Force's existing high frequency radio system, which is at the end of its economic and operating life. It will increase the efficiency of system delivery through the rationalisation of the number of radio sites.

THE PURPOSE OF THIS PROJECT

The New Zealand Defence Force's (NZDF) existing high frequency (HF) radio system is around forty years old and, even with maintenance over time, has reached the end of its life. The Fixed High Frequency Radio Refresh (FHFRR) project[16] addresses this by modernising and upgrading the high frequency radio system and ensuring through-life support.

High frequency radio is an important part of NZDF's communications network. It enables long range communications with smaller assets that are deployed far from New Zealand, and provides resilience by acting as a back-up capability if satellite communications are unavailable.

[16] This project was formerly known as Strategic Bearer Network Project – Phase Two.

A viable and sustainable high frequency radio system supports NZDF in delivering against the outcomes in the Strategic Defence Policy Statement 2018 in the following ways:

- It supports NZDF operations in the South Pacific and within our Exclusive Economic Zone, where a range of assets rely solely on high frequency radio for long-range communications;
- It is part of a suite of communications tools, including satellite communications, which enable NZDF to operate independently, or lead operations with other government agencies and coalition partners; and
- It is an alternative communications medium for strategic communications with ships and aircraft deployed further afield.

CAPABILITY REQUIREMENTS

To support these policy outcomes, the following investment objectives and requirements were derived for the FHFRR project:

- Communications assurance – to retain alternate communications channels to satellite for deployed force elements. This is necessary for safer and more successful operations, and to provide a back-up system that can be provisioned at short notice.
- Retain communications with deployed force elements unable to use satellite communications. HF radio enables communications to be sent and received as needed.
- Retain communications south of 60° south in the Southern Ocean. Communication with platforms via satellite is difficult or unavailable in this area, and HF enables command and control and other information to be conveyed.
- Improve the efficiency of the high frequency radio capability through the rationalisation of equipment and consolidation of facilities as some radio communications migrates to satellite, and replacing end of life equipment with new equipment.

- Utilise new technology to improve the effectiveness of the high frequency radio capability, with modern equipment providing wider and more efficient communication.

FHFRR Better Business Case Milestones

2014	
4 June	**Project charter** approved by Secretary of Defence and Chief of Defence Force
2018	
18 June	Cabinet authorised Defence to undertake a competitive Request for Proposal process and evaluations to select a fixed high frequency radio capability as documented in the **Single Stage Business Case** CAB-18-MIN-0281
2019	
26 August	Joint Ministers (Defence and Finance) approved **implementation of approval thresholds.** This was agreed to by Cabinet in October 2018 as part of the investor confidence rating assessment of Defence and delegated approval of the FHFRR Implementation Business Case to the Minister of Defence (previously required to be approved by Cabinet). GOV-18-MIN-0075
2020	
19 February	The Minister of Defence agreed to proceed with FHFRR and authorised the Secretary of Defence to conclude acquisition and through-life support contracts as outlined in the **Project Implementation Business Case (PIBC)**.

CAPABILITY DEFINITION PHASE

Over a 68 month period between June 2014 and February 2020 (from Charter to PIBC approval) the project worked through a definition phase that included a two-part tender process, issuing both a Request for Proposals (RFP) and request for Best and Final Offers (BAFO).

How Defence identified and assessed operational requirements

Investment logic mapping in September 2014 determined key problems associated with the existing high frequency radio capability and the benefits that would occur from addressing those problems. The following were identified:

Problems:

- Deterioration of HF radio capabilities has the potential to impact operations within our region.
- If our satellite communications become unavailable, NZDF's military capability will be severely diminished.
- Our inability to meet the burgeoning demand for data through new technologies is constraining our operational choices.
- Duplication of communications infrastructure causes inefficient delivery.

Benefits:

- Safer, more successful operations through more self-reliant command and control.
- Greater certainty that the Defence Force can meet government requests now and in the future.
- Greater ability to maximise return on investment in new technologies.
- More efficient communications across the range of capabilities.

How Defence analysed options in the Capability Definition phase

The FHFRR project team developed a matrix of long list options to replace NZDF's current high frequency radio capability. A facilitated Multi-Criteria Decision Analysis (MCDA) was held to

assess the long list options, which resulted in the following options being shortlisted:

- **Option A** – this option retains the status quo, meaning that the system will be maintained until it eventually fails and will not be replaced;
- **Option B** – this option replaces the control system, reduces the number of radio sites, and reduces the number of channels. It does not upgrade the wideband radio technology, nor does it put in place support arrangements;
- **Option C** – this option is similar to Option B, but provides a greater number of channels (although this is still a reduction compared to present numbers). It introduces a mix of wideband and narrowband radio technologies and includes long-term support arrangements; and
- **Option D** – this option builds on Option C by increasing the number of channels from the previous option (still less than the current number). It also maintains a mix of mainly wideband radio technologies and involves taking up long-term support arrangements.

The project then considered the extent to which each option fulfilled the five critical success factors, with the findings shown below:

Critical Success Factors	Options			
	A	B	C	D
Strategic fit and business needs	No	Partial	Partial	Yes
Value for money	No	Partial	Yes	Yes
Supplier capacity and capability	Yes	Yes	Yes	Yes
Affordability	Yes	Yes	Partial	No
Achievability	Yes	Partial	Yes	Yes

How Defence considered interoperability

Upgrading NZDF's high frequency radio capability will ensure the continued ability to interoperate with New Zealand's Defence partners, with Government agencies in New Zealand, and with our neighbours.

How Defence considered through-life costs and issues

Through-life costs were calculated on the assumption that the upgraded capability would have a useful service life of 20 years and a residual value of zero.

Initial cost estimates were determined based on pricing information provided by industry in response to a Request for Information, cost information from other representative operators, and internal estimates of current operating costs.

Requirements Analysis in the Capability Definition Phase

Advantages	Disadvantages
Option A ($20.5m cost estimate[17])	
Affordable. No change required.	Does not provide an enduring communications solution.
Option B ($28.4–30.5m)	
Affordable. Achieves 75% of the required capacity.	Does not provide NZDF with an acceptable level of resilience in relation to its HF network.
Option C ($47.9–55.8m)	

[17] Cost estimates are for whole of life cost, assuming a 20 year useful service life and NPV discounted at 7%.

Provides for the bulk of expected usage (98% of current usage).	Utilises a mix of modern and legacy radios.
Option D ($51.6–59.3m)	
Meets NZDF current and future requirements. Greater capacity for All of Government usage.	Provides only marginally better capacity than Option C but at a higher cost.

Option C was recommended as the preferred option. It provides most of the benefit of an upgraded system in terms of meeting capacity requirements for current usage (relative to the cheaper Option B). Option C also provides greater value for money as it provides only marginally less capacity than Option D for a lower whole of life cost.

Description of the Capability and Operational Requirements

The NZDF's Capability Requirements are:

6. To enable strategic communications assurance and effective command and control of deployed units in the event that other communications bearers are unavailable.
7. To allow communications with smaller deployed forces physically unable to use satellite.
8. To enable communications with deployed force elements south of 60° south.
9. To improve the efficiency of the current high frequency radio system by rationalising the equipment being used and replacing obsolete equipment.
10. To provide a more effective communication service that is able to communicate with the Defence Force's next generation of capabilities.

Cost Estimate in the Capability Definition Phase

	2018
Estimate (NZ$ m)	20.8–27.2

Estimates of Acceptance Dates in the Capability Definition Phase

	Initial Estimate during Definition
Interim Operational Release	May 2021
Operational Release	January 2022

ACQUISITION PHASE

Description of acquisition work

The procurement strategy proposed in the Single Stage Business Case was to hold a competitive tender process for the provision of the fixed high frequency radio system under a purchase contract, and the ongoing support of the system under a through-life support contract.

In June 2018, Cabinet authorised Defence to approach to market with a competitive Request for Proposals process and undertake evaluations to select a fixed high frequency radio capability.

How Defence decided to acquire the Capability Solution

Request for Proposals

The open tender process commenced with a Registration of Interest process. This process invited respondents with the capacity, credibility, and ability to secure appropriate security clearances to express interest in receiving a Request for Proposal for the FHFRR project.

In August 2018, a Request for Proposals was issued to six respondents who had been preselected through the Registration of Interest process. The objective of the request was to invite respondents to submit proposals for the delivery of a fixed high frequency communications capability that will support NZDF's deployed and domestic operations in a sustainable manner, with appropriate consideration given to through-life support. Four proposals were received from three respondents (one company submitted two proposals).

These proposals were evaluated in accordance with the approved Tender Evaluation Plan. As none of the proposals were both within budget and met NZDF's minimum requirements, the decision was made to invite the three respondents to prepare and submit a Best and Final Offer.

Best and Final Offers

A request for Best and Final Offers was released based on the following revised project scope:

- A reduction in the total number of communications circuits; and
- A reduction in the total number of Internet Protocol (IP) capable channels.

All three respondents submitted responses. The evaluation of the Best and Final offers identified Babcock New Zealand Ltd as the preferred tenderer to upgrade NZDF's fixed high frequency radio capability and to provide through-life support.

Due Diligence

Due diligence was undertaken with Babcock in June 2019. The due diligence activity provided further opportunity to assess how the proposed solution would be delivered, assess the maturity of the proposed solution, assess how Babcock would managed its prime contractor responsibilities, and assess Babcock's ability to sustain the capability through-life.

Contract Negotiation

Initial contract negotiations were undertaken with the preferred supplier, Babcock NZ Ltd, in late 2019.

Following approval of the Project Implementation Business Case in February 2020, a contract was signed with final systems acceptance scheduled to occur in December 2022.

Contract Status at 30 June 2024

Prime contractor	Babcock New Zealand Ltd

SCHEDULE/TIMEFRAME PROGRESS

Systems Acceptance: variations in forecast

Estimate at Approval to Commit	30 June 2024 Forecast/ Actual	Variation in acquisition phase (months)
July 2023	February 2027 (Forecast)	43 months
Note: at 30 June 2024 factory acceptance testing was scheduled to take place in February 2025, and Interim Operational Release was scheduled for early 2026. The system that is being replaced continues to operate during this time.		

FHFRR CAPABILITY INTEGRATION

Description of Capability Integration Phase

HF is a critical alternative communications channel for NZDF operations and shall be maintained at a level that will not risk impeding operations. Decommissioning of equipment and sites during the upgrade will reduce the number of available operational circuits. The transition to the new HF system will be carefully planned to ensure that both new and legacy systems have sufficient capability to maintain minimum operational requirements.

Status of the Capability Integration Plan

An updated version of the project's Capability Integration Plan (CIP) was approved in 2024. The CIP, which was first approved in 2019, identifies and schedules the tasks necessary to prepare the NZDF to operate the capability effectively and introduce it into service. The CIP outlines the steps required to deliver the Operational Release of the Project, including integrating the capability into NZDF systems and processes. The CIP is a living document and is updated as required to reflect the project status at that time. For example, delays caused by the impact of the COVD-19 pandemic were noted as a change to the project.

Benefits Realisation

On 30 June 2024, the Project was forecasting that the Full Benefit Realisation date would be achieved in 2028, with no changes to the benefits that would be realised.

Schedule of Capability Integration

	Initial Forecast	At 30 June 2024 (Forecast)	Variance (months)
Interim Operational Release	30 March 2023	January 2026	34
Operational Release	31 August 2023	March 2027	43

History of variations to schedule at 30 June 2024

Date of individual variation	Variation length (months)	Explanation
2 October 2023	43	**Interim Operational Release/Operational Release:** Technical issues encountered during work leading up to Factory Acceptance Testing (FAT) meant that stage of work was delayed. A revised baseline schedule was approved by the Minister of Defence.

FHFRR OPERATIONAL CAPABILITY

Progress towards Delivery of Operational Capability

Operational Capability	Capability likely to be met
Communications assurance Retain communications with deployed force elements unable to use satellite communications Retain communications south of 60º South in the Southern Ocean Improve HF radio capability efficiency Utilise new technology to improve the effectiveness of the capability	Yes.
At 30 June 2024 Full Benefits Realisation was forecast to be achieved in 2028.	

DURING THE 2023/24 YEAR

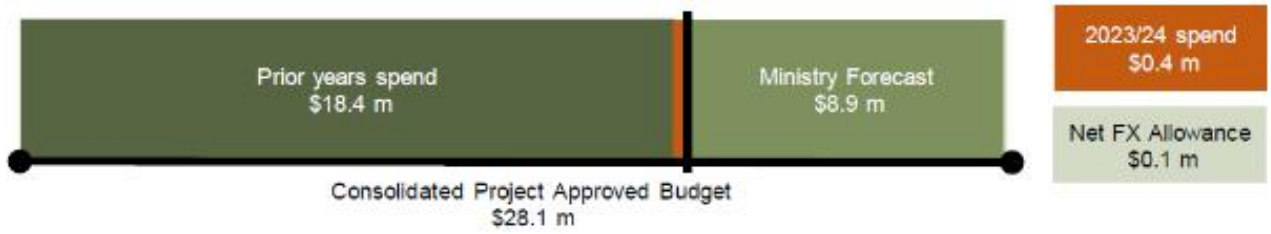
The project continued to work with Babcock and confirmed the approach to addressing the technical issues that had delayed FAT. A rebaselined schedule was presented to the Minister of Defence and approved in October 2023. Under that updated schedule, Factory Acceptance Testing was planned to take place in the first quarter of 2025, with operational release expected to take place in the 2026/27 financial year.

Infrastructure installations progressed as part of the upgrade of antennas and other supporting equipment.

DEVELOPMENTS POST 30 JUNE 2024

Factory Acceptance Testing was completed ahead of the updated schedule in October 2024, and accepted formally on 1 November.

FHFRR PROJECT BUDGET AND EXPENDITURE



At 30 June 2024 Fixed High Frequency Radio Refresh project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	28,110	-	28,110
	Allowance for foreign exchange movements	457	-	457
	Original approved project budget	27,653	-	27,653
Forecast	Forecast total project cost	27,767	-	27,767
	Effect of foreign exchange movements	394	-	394
	Forecast cost using hedged rates	27,373	-	27,373
	Forecast project variance	280	-	280

LAND

NETWORK ENABLED ARMY PROGRAMME

The Network Enabled Army (NEA) Programme is moving the New Zealand Army's planning, intelligence and communications functions to modern, interoperable, digital-based systems. This will increase information sharing capabilities between deployed units and the Army's command structure.

THE NEA PROGRAMME

The Network Enabled Army (NEA) Programme will provide the New Zealand Army and Special Operations Forces (SOF) with Command, Control, Communications and Computers (C4), Intelligence, Surveillance and Reconnaissance (ISR) capabilities.

Commanders will be able to make decisions more quickly, based on detailed real-time information. They will be able to communicate effectively with units on operations, other Government agencies, and/or security partners, in New Zealand, the Pacific or further afield.

The programme was planned to be rolled out through four tranches of funding to 2025-26 and currently, within the NEA Programme, the first two tranches have been approved, providing funding for Defence-led projects to deliver C4 and ISR capabilities.

This planned roll out will provide increased capability through each tranche, as well as building incrementally on the capability that is already in place. Managing NEA in successive tranches allows new technologies to be introduced as they mature, ensures that there are ongoing opportunities to evaluate progress and, if necessary, change priorities. It also ensures that the programme progresses at a rate that can be managed effectively and that does not overwhelm the users.

The Programme's origins lie within several projects that evolved over time. Starting as the ISR Project in 1994, this merged with the Communications Project in 2004 to become Land C4ISR. In 2010 the project combined with three others; Electronic Warfare, Combat Net Radio Replacement and Special Operations to become what is known today as the NEA Programme.

The Programme is providing the technology the Army needs, along with the concepts, training and support to make it work. It prioritises front line soldiers and their commanders, giving them the capabilities they need without burdening them with unnecessary equipment and capability. It allows for expansion and development over time.

APPROVAL OF FUNDING TRANCHES

Two funding tranches have been approved by Government.

Tranche One: The first tranche of $106 million in capital funding was approved by Cabinet in April 2015, with operating costs of $36.4 million approved to spend over the next four years, which formed the budget for the NEA C4 project.

Tranche Two: The approval of the Business Case for the second tranche of funding for the NEA Programme was announced in August 2019. The funding of $106.48 million[18] is being used to continue capability delivery by the C4 project and has enabled the start of delivery of ISR capability. Additional communications and network enhancements are being delivered, as

[18] Funded from the NZDF's accumulated depreciation reserve.

well as new sensor systems, intelligence gathering, and processing capabilities for the Army, equipping elements such as logistics and medical units that support front line soldiers.

Tranche Two also extends the capability through use of a combination of hardware, software, and wider sources of information (such as partners' information) that leverage the digital radio networks and information management systems delivered under Tranche One.

Engagement with industry in relation to the wider capability sought under this project has been underway since 2019 when Defence issued a Request for Information for tactical and networked enabled system of systems consisting of Intelligence, Surveillance and Reconnaissance (ISR) and Electronic Warfare (EW) capabilities for the New Zealand Army.

The ISR and EW systems are being sought to enhance the New Zealand Army's decision making cycle, and provide Land Forces and Special Operational Forces with increased Situational Awareness (SA), and improved Force Protection.

The first ISR project in delivery is Reconnaissance and Surveillance (R&S). The business case was approved in 2021 and contracts for supply and through life support of capability signed in 2023.

Other workstreams relating to NEA ISR are in definition, with investment decisions still to be made.

NEA Programme Better Business Case Milestones

2015	
January	**Programme charter approved** by Secretary of Defence and Chief of Defence Force
March	**Tranche One funding** approved by Cabinet.
2019	
July	**Tranche Two funding** approved by Cabinet. CAB-19-MIN-0370
2021	
November	Minister of Defence **authorises expenditure for delivery of the Reconnaissance and Surveillance** component of NEA Tranche Two. (Approved under Cabinet's Tranche Two funding decision in July 2019.)
2023	
21 August	Cabinet authorises expenditure for integration of communications systems into the Bushmaster NZ5.5 fleet of protected vehicles.

PROGRAMME SCHEDULE/TIMEFRAME PROGRESS

The NEA Programme was designed to be rolled out through four successive tranches of funding, based on the concept that each tranche would deliver, incrementally, capability that – while independent from previous tranches – would deliver the full benefits of a network enabled army once the whole programme was complete.

C4 (Tranche One and Two)

When approved in 2015, Tranche One had no set Initial Operational Release (IOR) or Operational Release (OR) dates. However the proposal in 2015 was that Tranche One capital funding would conclude in the 2017/18 financial year when the second funding tranche was expected to be sought. The Tranche Two business case approval in 2019 re-baselined the end date for Tranche One to December 2021 to align with activity schedules.

In August 2023, the Minister of Defence approved updated Operational Release dates for delivery of the full C4 Tranche One & Tranche 2 capability[i][19] to achieve a sustainable Light Infantry company and Light Infantry Battalion Group Headquarters).

At 30 June 2024 only IOR for the Common Universal Bearer System Project had not yet commenced, but remained forecast to be achieved on schedule in September 2024.

C4	Scheduled date (approved August 2023)	At 30 June 2024 (Forecast/Actual)	Variation (months)
Common Command Post Operating Environment Interim Operational Release	September 2023	October 2023 (Actual)	1
Mobile Tactical Command System Interim Operational Release	September 2024	September 2024 (Forecast)	-
Common Universal Bearer System Interim Operational Release	September 2024	September 2024 (Forecast)	-
Operational Release C4 capability	March 2026	March 2026 (Forecast)	-
History of variations: The final IOR requirement was approved for CCPOE one month after the baseline date of September 2023, however the other two components had achieved IOR in April 2022 and July 2023.			

ISREW (Tranche Two)

High level schedule dates for IOR and OR for Tranche Two's Reconnaissance and Surveillance (shown in the next table) were released during a tender process.

Respondents were advised these dates were subject to change depending on information received from providers under the Request for Proposal process.

These capabilities, Reconnaissance and Surveillance, Electronic Warfare and Information and Intelligence, are progressing. Project documentation, such as the Project Initiation Documentation, has been updated over the year.

At 30 June 2024, governance milestones were set in the Tranche 2 Single Stage Business Case. They will be revised in 2024-2025, to reflect the clarity now available through the definition and delivery phases.

[19] CUBS, CCPOE and MTCS

Reconnaissance and Surveillance	Original estimate (Released during tender phase)	At 30 June 2024 (Forecast/Actual)	Variation in acquisition phase (months)
Interim Operational Release	Q4 2023 (2021)	TBC	TBC
Operational Release[20]	Q4 2025	TBC	TBC
The extended timeframe for completion reflects, in part, the impact of COVID-19 on project resources and suppliers, with Army personnel required to support Operation PROTECT during a significant period of time from 2020 through to 2022, and providers reporting supply chain issues and constraints on operations due to social distancing and isolation requirements.			

The history of earlier schedule estimates are documented in the 2021 edition of the Major Projects Report, which is available under the Publications section of the Ministry of Defence website.

Bushmaster Communications

Cabinet approved the business case in August 2023 that will fund integration of advanced communications and digital systems needed for the Bushmaster vehicles to carry out NZDF operations.

The Bushmaster 5.5 vehicles are armoured to provide protection for troops while being transported around operational space. The vehicles are designed especially to protect those inside from Improvised Explosive Devices. The communication and situational awareness provided by real-time digital maps and radios will ensure people are safer operating in and around the vehicles.

At the time the purchase of the Bushmasters was approved, the new communications and digital systems being provided under NEA had not been designed. Bushmasters were selected in part because of their ability to incorporate new systems.

Equipping the vehicles with advanced communications is an important part of ensuring that New Zealand retains a credible, combat-capable Defence Force that is interoperable with our partners and ally Australia – deployable across a range of operations. .

A tagged contingency of $58 million was established for the communications project as part of Budget 23, covering technical work, procuring radios with a long lead time, remaining equipment, design and installation costs, and project costs.

It is anticipated that the delivery phase for the C4I Project will occur in 2024-2026.

[20] The Operational Release date relates to the overall NEA ISR capability, and no specific Operational Release date was set for the R&S component.

NETWORK ENABLED ARMY C4

This project is providing NZDF's land forces with systems, technology and infrastructure, including the basic network architecture on which the future NEA Programme will be built.

NEA C4 was established to deliver capability under funding from Tranches One and Two. The strategic C4 benefits are:

- improved interoperability
- improved Common Operating Picture (COP)
- improved ability to plan
- improved information management
- improved ability to pass data
- improved situational awareness
- improved ability to exercise Command and Control.

The network architecture is a major priority for the project and is delivering a combination of hardware (servers, routers, long distance communications links) and software (such as a battle management system that enables all functions across the network), along with industry specialist support.

The project has established the testing, experimentation and evaluation capabilities that enable hardware and software to be assessed prior to investing in it; ensuring it integrates with other NZDF systems and is compatible with our partners.

The NEA C4 Project was designed to put in place the basic network architecture including key software, battle management systems and communications methods. The required levels of interoperability with Army's Joint, interagency and multinational partners will have been achieved for the force elements receiving the NEA Capability.

NEA C4 is equipping Special Operations Forces, a deployable Task Group Headquarters, and a Light Infantry Company, and covers the requirements of most land deployments. It also includes smaller headquarters units, and training rotation forces for extended deployments. It puts in place the overall architecture to allow expansion and development over time; provides support, evaluation and testing processes; and establishes key supplier relationships.

C4 Funding

While the project was underway using funding provided under Tranche One, the NEA Programme commenced the definition phase for Tranche Two. The approval of this second set of funding is enabling continued delivery of Tranche One capability, including purchasing of more of the equipment delivered under the project.[21]

C4 ACQUISITION PHASE

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

Five related capability sets are being delivered (summarised below, under *Description of Acquisition Work*).

In September 2017 the date for the Final Operating Capability for Tranche One was revised from June 2018 to 29 June 2020. This milestone was re-baselined within the updated NEA Programme Business Case approved by the Defence Capability Management Group in September 2017.

In 2019 the Tranche One timeline was re-baselined to deliver its combined capability in

[21] The second tranche of funding also expanded the programme's focus to identifying and delivering Intelligence, Surveillance and Reconnaissance (ISR) capabilities. See next section.

the fourth quarter of 2021. By the end of the 2020/2021 year, Interim Operational Release was expected to be achieved by the end of 2021, with Operational Release forecast for the second quarter of 2022. This timeline has since been adjusted to reflect the revised structure of the Programme that was approved in 2021.[22]

How Defence decided to acquire the Capability Solution

Five inter-linked capability sets (described below) are being delivered through a series of acquisitions, developed through the overarching NEA Programme Business Case. This was referred to the Minister of Defence and provided the basis for Tranche One approval by Cabinet in 2015.

Description of acquisition work

Integration, Testing, Training, Evaluation and Experimentation: This includes most of the programme services that support the overall development of NEA, such as testing and evaluation of potential hardware and software, integration between capability sets, training for the operation and support to NEA, configuration management for the overall system and related services. It includes a physical test, reference and evaluation centre, based initially at Linton Camp (the main operational unit base) and with staff at Devonport and Papakura providing training, capability systems support, and transition services.

An Engineering Centre has been established at Trentham Camp (the site for the broader support elements for the Army) to provide deeper support to acquisition, integration and test and evaluation activities; including research and integration of NEA capabilities with Land, Air, Maritime, and Special Forces. A new Engineering Centre – the Test, Reference and Evaluation Capability (TREC) Centre – was built at Trentham and opened in September 2018. In April 2021 the new Capability Integration Centre – Te Pokapū Whakauru Māia – was opened. Its primary purpose is to prepare communications networks for rapid deployment.

Common Universal Bearer System (CUBS): The CUBS system essentially combines strategic and tactical communications systems with computer infrastructure to provide the means of transmitting and receiving voice and data communications between command posts, command teams and liaison teams within the land force Task Groups and deployed SOF elements. It interconnects force elements through terrestrial and/or satellite bearer systems and provides the necessary infrastructure to host collaboration and information services. The infrastructure will be a deployable node of the Defence Information Environment.

In February 2019 a Framework Agreement was signed with GATR Technologies Inc for this work stream, with statements of work used to define specific deliverables and/or services to be provided. Following this, a Statement of Work (SOW) was established for delivery of the Tranche One Tactical Network (TNet).

Common Command Post Operating Environment (CCPOE): The CCPOE project establishes a set of standard operating procedures, equipment, and service applications suitable for land forces and SOF and that are interoperable with the NZDF and other allied systems. These will be underpinned by an information infrastructure that hosts a set of information services over a number of different networks. The key components of CCPOE are:

- IT systems (e.g. computers, displays and software required to access, manage and display the information carried across the CUBS).
- Operational and tactical core services that will provide a battle management system for use at the Task Group and Sub Unit Headquarters layer.
- The command post infrastructure, including shelters, lighting, generators, environmental

[22] The timeline at 30 June 2024 is outlined under the Schedule/Timeframe Progress heading in this NEA section (page 88).

management and furniture and trailers to move them. The CCPOE is designed to support and enable Commanders and Staff to plan and manage operations.

- A training environment that will enable skill levels across the Army. This includes establishing a training centre of excellence, the delivery of training to Headquarters staff and providing access to battle management systems to officers and soldiers when they are in garrison and during field training.

Mobile Tactical Command Systems (MTCS): The MTCS capability consists of enhanced network-capable digital combat radios and their peripherals, combined with a battlefield management system, to allow secure mobile communications networks in support of high tempo, dispersed operations. The digital combat radio environment includes line of sight and beyond line of sight technology to connect soldiers, platforms and command post at all levels of a Task Group/Battalion Group. MTCS will deliver a mobile tactical internet providing voice, data and position location indication. Interoperability with the NZ Army's Command Post level C4 systems, and joint partners is of particular importance.

In February 2019 a contract was signed with Harris Defence Australia for a new tactical communications network. Under the $40 million contract a network has been designed and delivered software, systems and a connecting 'family' of equipment (radios, viewing devices) will include new portable radios for soldiers.

Special Forces Electronic Warfare Refresh: This Electronic Warfare refresh was handled as an Urgent Operational Requirement, with the NZDF Defence Capital Acquisitions staff undertaking acquisitions. This work has now been completed.

All Tranche One NEA capabilities are being delivered concurrently to the Special Forces. This ensures functional interoperability whilst allowing the specific Special Forces requirements to be met. It also ensures that the experience and learnings from Special Forces operations feed back through NEA to support the wider Army.

NEA C4 Integration into the Bushmaster (PV-M):

The Bushmaster vehicles arrived in New Zealand in 2023. This Project will integrate contemporary radio systems and equipment to enable secure communications and battlefield position reporting[23]. This will enable Army to interoperate in a secure fashion with our partners, increasing the operational utility of the PV-M platform and reducing risk to deployed New Zealand personnel. There are two phases to the project. The first involves initial installation of radios for training, exercises and potential deployments. The second phase will deliver the full C4I capability, including radios and devices that provide access to the Battle Management System that displays friendly force locations and reported threats.

In summary

Each of the above capability sets are in turn broken down into smaller projects, to ensure that a functional capability that meets user requirements is delivered, that risk is mitigated, advantage can be taken of ongoing technical developments, and to ensure that capability development occurs at a rate that the users can absorb. Where relevant, NEA builds on extensive work and experience already resident within the NZDF, including the Army's experimental networking system (TANE), operational experience, and the experiences of New Zealand's key partners. The broad breakdown by Capability Set of the $106 million is shown below.

These ratios may change as the Tranche evolves.

[23] Commonly referred to as Blue Force Tracking (BFT). This gives positions of friendly units on a digital map. Providing vastly superior situational awareness over traditional methods.

Tranche One Capability Sets	NEA Reference	Capital Cost (NZ$M)
Integration, testing, training, and evaluation	Programme Services	17.4
Mobile satellite terminals, routers, and servers	CUBS	26.5
Headquarters equipment and full network software	CCPOE	5.0
Mobile Tactical Radios	MTCS	46.8
Special Forces electronic warfare refresh	NZSOF EW	3.5
Contingency	Contingency	6.8
Total		106.0

Note: contingency is held within the appropriation baseline and not subject to drawdown approvals.

CAPABILITY INTEGRATION

Schedule of Capability Integration

By early 2017 Special Forces Electronic Warfare capabilities had completed introduction into service and achieved directed operating capability.

	Initial Forecast	Actual Completion	Variance (months)
Special Forces Electronic Warfare Introduction into Service complete	June 2015	May 2016	11
Special Forces Electronic Warfare achieve directed operating capability	September 2015	February 2017	17
The delay in achieving the Special Forces Electronic Warfare capability related to a delay in the delivery of two sub-capabilities, however this was reported as having limited impact. The introduction into service was reported as delivering a significant enhancement to the Special Forces' capability.			

Description of Capability Integration Phase

With the complexity of workstreams and multiple elements being acquired in NEA Tranche One alone, and this tranche being part of an incrementally introduced programme, an overarching Capability Integration Approach had been developed for the NEA Programme.

In July 2021 NEA transitioned to a Defence led programme under the Ministry of Defence and the remaining C4 Project workstreams – CUBS, CCPOE and MTCS – established as three separate projects.

They remain funded under the appropriations approved by Government under the Tranche One and Two funding decisions in 2015 and 2019.

Updated forecast capability delivery dates have been proposed but at 30 June were yet to be approved by the appropriate governance group.

The equipment and systems being acquired need to be integrated within the Programme to deliver specific capabilities as well as new capability from other projects; and legacy systems and platforms. So capability integration for NEA will not be a single one off process.

Status of the Capability Integration Plan

Within the Capability Integration Approach, plans have been developed for integrating the new capability into service, with a range of acceptance testing and evaluation activities having been completed (eg Exercise FOXHOUND in the second half of 2021) and plans for the operational testing and evaluation to be developed across the work streams.

OPERATIONAL CAPABILITY

Progress towards Delivery of Capability and Operational Requirements

Operational Requirements	Requirement likely to be met	Explanation
Common Universal Bearer Systems wide-band satellite communications Interim Operational Capability	Yes	Delivery of strategic and ruggedised communication access nodes
Common Universal Bearer Systems wide-band satellite communications Final Operational Capability	Yes	
Mobile Tactical Command Systems Interim Operational Capability	Yes	Includes delivery of core radios, peripherals and ancillaries, developments of their network and physical integration (mounted and dismounted), including other niche radio systems.
Benefits realisation is tracked at Programme level, with 50% of benefits forecast to be achieved in 2026 when C4 is expected to achieve OR.		

DURING THE 2023/24 YEAR

Work has been continuing across the workstreams to deliver the capability.

The Army continued operational testing and evaluation phase activities for C4 projects.

One area of the Mobile Tactical Command System (MTCS) Project worked with suppliers

on baseline designs for equipment that will be used by dismounted soldiers. Acceptance Testing and Evaluation took place and the project delivered to 2/1 RNZIR in 2024.

The Common Command Post Operating Environment (CCPOE) completed IOR on the CCPOE components being delivered and distributed the capability.

The next phase was a period of in service training and standard operating procedure development. This included Army Exercise, including Red Kukri, with the United Kingdom Army's Gurkha Regiment.

Bushmaster C4I

In 2022 a Request for Information had been released to the market seeking information on the potential supply and integration of C4 suites of capability into the Bushmaster fleet.

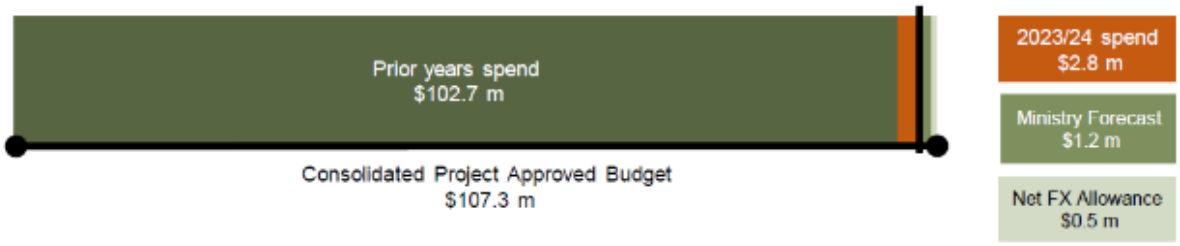
This helped to inform the Project Implementation Business Case (approved in August 2023). In September 2023 the NEA Bushmaster C4 Integration project issued a Request for Proposals (RFP) for the role of Prime System Integrator. Following the closure of the RFP in December 2023, the project commenced reviewing and evaluating the responses.

DEVELOPMENTS POST 30 JUNE 2024

The start of Interim Operational Release had been achieved by all C4 Projects by the milestone date of 30 September 2024.

NEA C4 PROJECT BUDGET AND EXPENDITURE

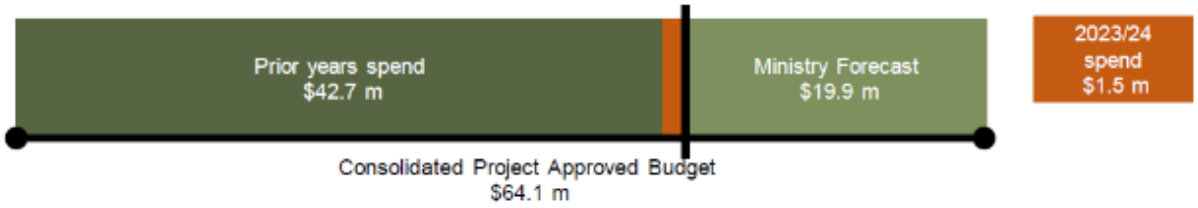
NEA C4, tranche 1



At 30 June 2024 project costs for NEA C4, tranche 1 were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	107,253	-	107,253
	Allowance for foreign exchange movements	1,253	-	1,253
	Original approved project budget	106,000	-	106,000
Forecast	Forecast total project cost	106,641	-	106,641
	Effect of foreign exchange movements	724	-	724
	Forecast cost using hedged rates	105,917	-	105,917
	Forecast project variance	83	-	83

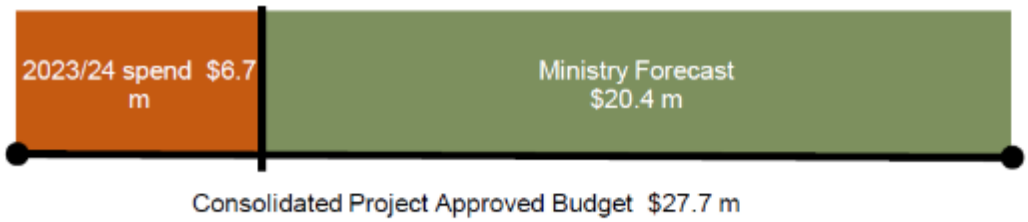
NEA C4, tranche 2



At 30 June 2024 project costs for NEA C4, tranche 2 were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	64,091	-	64,091
	Allowance for foreign exchange movements	2,069	-	2,069
	Original approved project budget	62,022	-	62,022
Forecast	Forecast total project cost	64,107	-	64,107
	Effect of foreign exchange movements	2,440	-	2,440
	Forecast cost using hedged rates	61,667	-	61,667
	Forecast project variance	355	-	355

NEA BUSHMASTER C4 INTEGRATION PROJECT



At 30 June 2024 project costs were:

		Ministry $000	NZDF $000	Consolidated project $000
Budget	Current approved project budget	27,700	-	27,700
	Allowance for foreign exchange movements	-	-	-
	Original approved project budget	27,700	-	27,700
Forecast	Forecast total project cost	27,104	-	27,104
	Effect of foreign exchange movements	-	-	-
	Forecast cost using hedged rates	27,104	-	27,104
	Forecast project variance	596	-	596

NETWORK ENABLED ARMY ISR – RECONNAISSANCE AND SURVEILLANCE

Following the approval of the Reconnaissance and Surveillance Systems business case, Defence went to the market in 2022 seeking capabilities as part of the NEA Programme's ISR[24] project.

The Purpose of this Project

Reconnaissance and surveillance capabilities enable the collection of information that can be processed into intelligence and used to support decision-making by the New Zealand Army.

This project is delivering reconnaissance and surveillance (R&S) collection capabilities; unmanned aircraft and remotely piloted systems, along with remote ground sensors and associated through-life support, including maintenance, technical and operational support, upgrades and training.

The NEA Programme's Tranche Two Single Stage Business Case in 2019 included the case for investment in R&S capability, with the decision to release funding to be made by the Minister of Defence. Following approval of the subsequent Project Implementation Business Case in 2021, the project was able to proceed to the delivery phase.

Capability Requirements

Tranche One funding has been laying the foundations for the Network Enabled Army, through investment in such systems as the communications network that is supporting the Army's operational capability.

Under Tranche Two, available networked capability is being extended with the addition of complementary sensor systems, and intelligence gathering and processing capabilities. Under the R&S project, unmanned aerial and remotely piloted systems are being acquired, along with ground sensors.

Aerial systems are in use already within the NZDF, and this project is delivering new equipment to a range of force elements (ie company, platoon, regiment). In May 2022 the project sought proposals from industry in relation to a range of systems:

- Fixed wing (or hybrid) unmanned aircraft system (UAS)
- Nano remotely piloted aircraft system (RPAS)
- Micro RPAS, and
- Remote ground sensors.

These types of systems improve the ability to undertake reconnaissance and obtain timely and accurate information on local conditions when they are not otherwise available. The ability to see what is happening on the ground is an important tool to ensure accurate assessment of the risks of a situation, particularly useful in humanitarian and disaster relief response and search and rescue situations.

Capability Definition Phase

Capability and operational requirements

Prior to seeking release of the funding for this project in 2021, the investment rationale defined under the wider NEA Programme was revisited and reaffirmed.

User requirements for R&S capability were identified and refined as part of the definition phase.

Users would need to have the ability to operate effectively, competently and legally in an authorised environment. Along with this, users would need the ability to collect information,

[24] Intelligence, Surveillance and Reconnaissance

supported by both infrastructure and logistical support, and to analyse, manage and use the information. A combination of equipment and personnel is key to ensuring these high level requirements could be achieved.

R&S capabilities are fast moving and dynamic areas of technology with new equipment and systems being introduced continuously. The aim of the procurement process is to identify proven systems, that have demonstrated effectiveness with partner nations, and that demonstrate they are likely to deliver solutions.

With the need to identify providers who could back up any claims for what they and their systems could deliver, information was developed for the market as part of the Request for Proposal documentation, saying suppliers would:

- have to demonstrate that both the capacity and capability to deliver and provide support, from design through to disposal
- have proven experience of delivering to military customers
- have the ability to deliver the equipment and associated training, and deliver ongoing maintenance and support
- where required, integrate the equipment they supply into the NEA C4 environment
- where conducting integration activities – including hardware, software and data – potentially need to be able to access, and handle and operate, items governed by the United States International Traffic in Arms Regulations (ITAR), and specifically United States Controlled Cryptographic Items (US CCIs), or equivalent. Proposals should demonstrate the Respondent's ability to be granted all authorisations, permissions or certifications to allow access to ITAR controlled and US CCI items, or equivalent.

With the large volume of options available through the market, Ministry of Defence criteria for preferred solutions were applied to help ensure any capability meets user requirements, and reduce and manage project risk. These include:

- Any capability should be non-development; existing and proven technology. New/leading edge systems may be unproven and come with associated costs for development, testing and certification.
- Interoperability of the new capabilities with other Government agencies and security partners is a key consideration, and solutions that are in service with partners and allies would ensure commonality of systems, training and support. As with other projects – such as the delivery of the P-8A Poseidon fleet – an established user community is recognised as providing opportunities to leverage industry support and technological upgrade programmes. Interoperability would include the ability of any providers and maintainers of these capabilities to work with ITAR and USCCI requirements.
- Any solution should be able to be integrated with the systems being delivered by the NEA Programme, and should have broad utility; designed to be quickly and easily reconfigured to meet a number of roles. A proven track record, over an extended period of time, and guaranteed supply lines and logistical support also form part of the key criteria.

There are general military requirements, such as the need for equipment to be rugged and versatile as R&S systems will function in multiple conditions, be transported to wherever they are needed, and will be required to function on the move in both tactical and operational vehicles. All components need to be easily transited through both commercial and military air movements.

Appropriate technology is needed to address military environmental requirements (eg heat, dust, shocks, etc.). This includes appropriate "life of type" – how long the equipment is expected to operate before it should be replaced – and replacement periods, along with maintenance and support plans.

Equipment and systems need to be “power-agnostic” as well; able to operate on DC and AC

power sources and optimised for efficient power consumption.

Military equipment like this may also need to comply with standards, rules and requirements while in use, these include Civil Aviation Rules, the New Zealand Information Security Manual published by the GCSB, and NATO standards relating to imagery format and standards.

Alongside this, any capability needs to be acceptable to coalition partners, multi-nation civilian personnel from host nations and other government agencies, and be able to be operated by users across a range of security classifications.

How Defence considered through-life costs

Assumptions in relation to whole of life costs were made using costing models that considered elements from acquisition to through-life support. Information was sought from respondents to the Request for Proposals in relation to options and costs for through-life support of capability. At the time of writing, the procurement process is still underway.

History of Cost Estimates in the Capability Definition phase

Costs for the R&S component of the NEA Programme were considered under the Tranche Two Single Stage Business Case.

Indicative costs for R&S were determined through a process of selecting 'reference systems' – ones that have been used by the NZ Army, and ones raised in responses to an open market Request for Information conducted in September 2019. Several sets of systems (ie UAS and/or RPAS and ground sensors and associated equipment) were selected and costed to assess and provide an indicated of how much capability could be delivered within the available funding.

Acquisition phase

In November 2021 the Project Implementation Business Case (PIBC) was approved by the Minister of Defence. This enabled the draw down of capital funding[25] to introduce new deployable capability to the Army and its specialist training schools.

Schedule/Timeframe Progress

Reconnaissance and Surveillance	Initial Forecast (November 2021)	At 30 June 2024 (Forecast/Actual)	Variance (months)
Interim Operational Release	Q4 2023	TBC	TBC
Operational Release[26]	Q4 2025	TBC	TBC

[25] Cabinet approved the Tranche Two Single Stage Business Case for the NEA Programme in July 2019. This included funds to deliver the Reconnaissance and Surveillance capability once the PIBC was approved.
[26] The high level initial IOR and OR dates for Reconnaissance and Surveillance capability shown were released during the tender process. Respondents were advised dates were subject to change depending on information received from providers under the Request for Proposal process. Baseline dates will be added in future editions and as decisions are made in relation to the Programme as a whole.

NEA ISR R&S Capability Integration

As part of the RFP process, respondents were asked to provide details on how they would conduct the integration process in relation to the capabilities they were proposing. It was not a pre-condition or requirement for a proposal to be considered, with the intention of workshops being held for shortlisted respondents.

It was intended to help identify an effective solution for the new R&S capabilities, including who would be responsible for conducting the integration process with the NEA communication network and Battle Management System.

Integrated Logistics Support Plans are being developed for each capability. These are the basis for implementing the support system for the R&S capability through its operational life. They are a living document and are updated as delivery and release of capability progresses, and more information becomes available.

During the 2023/24 Year

The Reconnaissance and Surveillance Projects conducted a series of acceptance testing events on their capabilities. This work is part of an agreed plan to confirm and achieve Interim Operational Release.

The majority of these were completed successfully, with only the Nano test event outstanding (scheduled for October 2024).

Developments post 30 June 2024

Acceptance Testing and Evaluation was completed for all capabilities.

NEA ISR Project Budget and Expenditure

At 30 June 2024 project costs for NEA ISR, tranche 2 were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	44,718	-	44,718
	Allowance for foreign exchange movements	259	-	259
	Original approved project budget	44,459	-	44,459
Forecast	Forecast total project cost	44,324	-	44,324
	Effect of foreign exchange movements	204	-	204
	Forecast cost using hedged rates	44,120	-	44,120
	Forecast project variance	339	-	339

PROTECTED VEHICLE - MEDIUM

A fleet of 43 Bushmaster NZ5.5 vehicles was delivered in 2023 to replace the armoured Pinzgauer fleet, which has reached its end of life.

New Zealand's service men and women undertake a range of missions, from population protection and support, through to pro-active peacekeeping, and they do so in a range of environments.

It is a priority that people can be transported quickly and safely using vehicles that provide appropriate protection. A range of vehicles are used to provide this protected mobility that is essential to operational capability. The range varies from lightweight and highly mobile vehicles, to the armoured LAV combat vehicles.

The need for these vehicles is demonstrated through their use over the past two decades, from providing support following earthquakes and other natural events in New Zealand and our region of the Pacific, to providing backup to the New Zealand Police in high risk situations, through to population protection and peacekeeping missions around the world.

The Protected Mobility Capability Project (PMCP) is replacing Defence's main operational land vehicle fleets – both armoured and non-armoured.

PMCP is split into two phases. The first phase is focused on the highest priorities; procurement of the Protected Vehicle - Medium (PV-M), and the High Mobility Vehicle - Light (HMV-L)[27] and was the focus of the Detailed Business Case (DBC) approved by Cabinet in April 2019.

That DBC focused on phase one of the Project – replacing the Pinzgauer and operational Unimog vehicles. Phase two is the upgrade or replacement of the LAV and was not included in the scope of the DBC for Phase One.

THE PURPOSE OF THE PV-M PROJECT

PV-M is replacing the armoured Pinzgauers with the Australian manufactured Bushmaster, which has seen extensive operational service with the Australian Defence Force (ADF) and other militaries, including New Zealand. The Ministry of Defence had previously acquired an earlier variant of the Bushmaster, under the Special Operations Vehicles Project[28], for use by our own Special Operations Forces.

A contract was signed on 4 September 2020 by the Secretary of Defence with Thales Australia Limited to deliver 43 Bushmaster NZ5.5 (PV-Medium) vehicles, along with spares, ancillaries, and a training package. The NZ5.5 configuration is an improved build specification for New Zealand, incorporating improvements based on experience and to meet future requirements of the ADF and others.

Five variants of the Bushmaster NZ5.5 have been delivered in 2023: Troop Carrier, Command and Control, Ambulance, Logistic Support and Maintenance Support.

Overview of PMCP

The first phase of PMCP is expected to run until the second half of the 2020s, with fleets being

[27] This workstream of the PMCP project has delivered highly mobile, lightweight vehicles that can be easily deployed and operated in rugged terrain. Assessed as a low risk project, it is not included in detail within the *Major Projects Report*.

[28] The Special Operations Vehicles project was included in *Major Projects Report* editions for the years ended 30 June 2017 and 2018.

introduced using a staggered delivery model. The timeframe will allow for refinement and balancing of numbers of vehicles across the categories based on experience.

The second phase will make recommendations on whether to upgrade or replace the LAV as the Army's primary combat vehicle, and is expected to run from 2024/25.

The five investment objectives for PMCP overall (of which PV-M procurement is a subset) are summarised below:

- The Defence Force has a strategically mobile and tactically agile Protected Mobility Capability
- The Defence Force has a Protected Mobility Capability with survivability relevant to contemporary and emerging threats
- The Defence Force has a Protected Mobility Capability that enables the ability to defeat adversaries
- The Defence Force's Protected Mobility Capability enables interoperability with partner nations
- Risks posed by the age and technical obsolescence in the existing Protected Mobility Capability are mitigated.

CAPABILITY REQUIREMENTS

A number of requirements were identified as necessary to support the policy objectives of the PMCP. These include:

Strategically mobile and tactically agile capability: able to operate in a range of environments, improving the ability to offer the range of military response options required by Government.

Enables the ability to defeat adversaries: through the vehicles themselves and their ability to position and support soldiers.

Interoperability: ensuring common platforms and parts are used by at least one of our major partners.

Improved survivability: with survivability relevant to contemporary and emerging threats, the ability to defeat adversaries.

Improved reliability: with contemporary levels of maintenance, support and operational capability, thereby improving overall reliability.

BETTER BUSINESS CASE MILESTONES

2015	
8 December	**Project Charter** approved by the Secretary of Defence and Chief of Defence Force
2017	
20 March	**Indicative Business Case** was considered and Cabinet agreed that replacement with new vehicles and a range of vehicles for a flexible capability would best deliver the required benefits. CAB-17-MIN-0098
2019	
15 April	**Detailed Business Case (Phase 1)**: Cabinet authorised the Secretary of Defence to acquire High Mobility Utility Light vehicles[29] and negotiate for up to 43 Protected Vehicle Mediums. CAB-19-MIN-0171
2020	
22 June	**Project Implementation Business Case (PV-M):** Cabinet approved the procurement of PV-M and authorised the Secretary of Defence to sign a contract with Thales Australia for the procurement of 43 Bushmaster armoured vehicles.[30] CAB-20-MIN-0296

[29] In addition to trials and risk reduction work to support future Protected Mobility procurements.
[30] In addition to training systems, other support equipment, infrastructure and other components.

CAPABILITY DEFINITION PHASE

How Defence identified and assessed operational requirements

In addition to the capability requirements, the following general key user requirements were developed for PMCP. Each category of vehicle will have its own set of specific high level user requirements that is relevant to the vehicle type. For the PV-M:

Communicate with Defined Force Elements: the user shall be able to communicate with NZDF tactical and operational networks.

Defined levels of Situational Awareness: visual, aural, electro-optic and infrared sensors to be considered.

Defined Standards of Protection: will have defined standards of protection based on the North Atlantic Treaty Organization Standardised Agreements 4569.

Fully Compliant: must be fully compliant with legislation, regulations and standards, and be able to be designated "NZDF Armoured Vehicle" if appropriate.

Safe: the Protected Mobility vehicle must be as safe as far as is reasonably practicable, ensuring it is both safe to drive and operate.

Strategic Mobility: the Protected Mobility Vehicle must be able to achieve defined operational strategic mobility, and consideration must be given to interoperability with Royal New Zealand Navy and Royal New Zealand Air Force movement/transport elements. Amphibious employment factors will also be considered.

Operational Mobility: the Protected Mobility Vehicle must be able to achieve defined operational mobility.

Tactical Mobility: The Protected Mobility Vehicle must be able to achieve defined tactical mobility in the medium – high range. In-service military bridging and tactical and operational recovery are also essential.

Integrated Training Solution: trades affected by Protected Mobility Vehicle will be identified to analyse, design and develop fit for purpose, best

practice-blended learning systems for each trade and vehicle type.

Defined Tasks: the Protected Mobility Vehicle must be able to deliver defined tasks eg across command and control, personnel and stores transport, logistic, engineering and evacuation roles.

Firepower: the Protected Mobility Vehicle must be able to deliver defined and scalable levels of firepower.

Interoperability: the Protected Mobility Vehicle must be able to achieve defined levels of interoperability.

Sub-System Integration: the Protected Mobility Vehicle must be able to achieve defined standards of sub-system integration.

Integrated Logistic Support: a costed integrated logistic support solution must be delivered to ensure minimal additional burden will be placed on current NZDF Integrated Logistic Support resources.

How Defence analysed the requirements options in the Capability Definition phase

Specific high level user requirements for the PV-M were considered including requirements for both weight and volume.

Following a Request for Information process, Defence had briefings and presentations from suppliers. A wide variety of PV–M vehicles is offered by different manufacturers, however many of these vehicles were not considered suitable for New Zealand as they were unproven, built to different standards, and did not meet our basic requirements for capacity, protection and performance. Candidate vehicles were assessed against the approved high level user requirements (which set out functional standards) and the project principles that were set out in earlier business cases and are summarised below:

- Non developmental
- Interoperable
- Broad utility
- Proven track record
- Maintenance and support arrangements.

The PV-M vehicles that met the criteria were:

- Thales Bushmaster
- KMW Dingo 2HD
- General Dynamics European Land Systems (GDLS) Eagle 6x6.

These vehicles had similar technical specification and performance, but when assessed against the project's Critical Success Factors of strategic fit, market capability, affordability, efficiency, and achievability, the Thales Bushmaster emerged as the most suitable PV–M for New Zealand.

The Bushmaster had been in widespread service with Australia for many years, and a small fleet had entered service in New Zealand with the Special Operations Forces (NZSOF). At the time, it has been exposed to well over 50 blast events – without a fatality. It was a very successful vehicle in service and had saved lives.

By contrast, neither the Dingo nor Eagle 6x6 had seen operational service. Their actual state of development, technology maturity and performance was not as well understood as Bushmaster. This added a small risk element, although both manufacturers have good reputations.

Using the same vehicle as Australia means that personnel from both countries know how each other's vehicles operate and what their advantages and limitations are. Support can potentially be shared. Australian experience can be leveraged, and the work Australia is doing on the integration of ancillaries and future potential upgrades (which are an inevitable feature of modern equipment) can be utilised. The vehicle manufacturer is regionally close to New Zealand.

How Defence considered interoperability

Interoperability is a major consideration for PMCP and a critical factor in considering options for the PV-M procurement. While New Zealand does have the capacity to operate alone, in general we operate alongside partners on

operational deployments. Vehicles – as with other capability – that are the same or similar to those used by our partners ensures that supply and support chains can be leveraged, and support personnel can more easily work on different partners' equipment. In the case of vehicles, it also means that the characteristics and capabilities of the vehicles are better understood, personnel will have a more in-depth understanding of how to use them, and basic tasks can be simplified.

How Defence considered through-life costs and issues

In order to maintain the PV-M throughout its life, planning is in place to manage obsolescence and required upgrades. A through-life support contract will ensure support for the management of obsolescence.

Schedule of Capability Definition Phase

Dates	Duration	Note
8 December 2015 to 22 June 2020	55 months	Approval of Project Charter to approval of PV-M Implementation Business Case by Cabinet.

ACQUISITION PHASE

How Defence decided to acquire the Capability Solution

Under the Government's procurement rules at the time (specifically Rule 12.3m), military and essential security interests can be considered for an 'opt-out procurement', and therefore Defence could proceed with a preferred vehicle solution. In practice, there was a contestable supply for Bushmaster:

- new build direct from Thales
- refurbished, from Thales
- used refurbished, with vehicles purchased from the Australian Defence Force.

These options were tested against the Critical Success Factors of strategic fit, market capability, affordability, efficiency and achievability.

Critical Success Factor	New build	Refurbished
Strategic fit	Meets	Meets with risk
Market capacity and capability	Meets	Meets with risk
Affordability	Meets	Partially meets
Efficiency	Meets	Meets with risk
Achievability	Meets	Partially meets

Whole of life costs were calculated for both new and refurbished vehicles, with a 30 year future life comparison used for both options. Acquiring new vehicles incurs a high initial cost, but the need to refurbish, alter and upgrade the used vehicles meant the whole of life cost of new vehicles would be lower.

Along with this, the new build has improved features that were considered a better fit for New Zealand's current and future needs, there was less risk with the new build, and overall awareness of the work required was known in advance. The new vehicle option was considered to be more efficient in both operation and support.

It was determined that procuring newly built Bushmasters was the best option. Thales proposed a variation (NZ5.5) of the earlier configuration of the vehicle, which would include a range of new specifications:

- up to 2.5 tonne additional payload
- anti-lock braking system
- no spare wheel, which improves the shape of the armoured hull (the use of run-flat tyres means a spare is not needed on the vehicle
- side doors in the front of the vehicles, which improves flexibility for interior layout and improves escape paths
- larger rear door allowing faster access and egress, and the ability to carry bulkier cargo

- the ability to incorporate new technology electronic wiring/computing systems, to better support equipment, such as that being delivered by the Network Enabled Army Programme
- and minor difference between each of the five variants of the NZ5.5 Bushmaster that are being delivered to New Zealand, and which can be incorporated on the production line.

On 22 June 2020, Cabinet authorised the Secretary of Defence to sign a contract with Thales Australia for the procurement of 43 Bushmaster armoured vehicles, training systems, other support equipment, and goods and services as required. The contract was entered into on 4 September 2020.

Contract Status (as at 30 June 2024):

Prime contractor	Thales (Australia)

SCHEDULE/TIMEFRAME PROGRESS

	Estimate at Approval to Commit	Actual	Variation (months)
Vehicle delivery commences	November 2022	28 April 2023	5

History of variations to schedule at 30 June 2024

Date of variation	Variation (months)	Explanation
28 March 2023	5	Initial delivery of vehicles was affected by a range of factors, including the effect of the COVID-19 pandemic on international supply chains and some technical issues that had been.

PV-M CAPABILITY INTEGRATION PHASE

Description of Capability Integration Phase

The Capability Integration Plan (CIP) for the PV-M was approved in December 2019. The plan was developed as a living document to ensure the full benefits of the vehicle's capabilities are realised by the NZDF.

The plan identifies the major areas of planning and coordination that are required to deliver all elements of the capability, such as the Operational Test and Evaluation process, ensuring operational release takes place as needed and appropriate. Examples of areas of focus within the CIP include:

Infrastructure: use of existing infrastructure and construction of new facilities are considered in infrastructure planning.

Training: ensuring that initial individual training can begin once the first vehicles are accepted and the project has a clear directive to plan any collective training activities to align with existing scheduled exercises as much as possible. The plan includes the design of vehicle operator, instructor and maintainer modules.

Landworthiness: PV-M will be introduced using the NZDF's landworthiness process which ensures vehicles are safe to operate and capable of delivering the defined effects.

Schedule of Capability Integration

	Estimate at Approval to Commit	At 30 June 2024 (Forecast/Actual)	Variance (months)
Interim Operational Release commences	July 2023	July 2024	12
Operational Release commences	September 2024	TBC	TBC

An updated Operational Release date for the PV-M capability is to be confirmed taking into account milestones being developed for the NEA Bushmaster C4 Integration project. The Ministry of Defence released a Request for Proposal to the Government Electronic Tender Service in September 2023 asking industry for proposals for the design, build and installation into the new Bushmaster fleet of state-of-the-art communications and digital systems. This project is managed under the Network Enabled Army Programme.

Benefits for the PV-M projects are assessed as part of the whole PMCP project, which includes delivery of the PV-M Bushmaster fleet. At 30 June the PMCP project was forecasting full delivery of benefits to occur in 2029.

DURING THE 2023/24 YEAR

By August 2023, all 43 vehicles had been delivered, slightly ahead of the revised schedule date of September.

Over the course of the year all seven batches were formally accepted and road certification commenced with vehicles being readied for training. Radios were also installed in preparation for the start of training.

All training delivered by the manufacturer was completed and three operator courses were delivered.

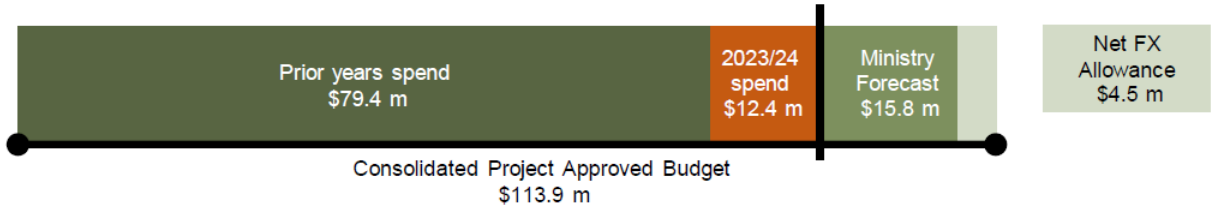
Facilities for simulator-based training were being finalised. This was part of a wider training capability that included training for instructors and maintainers of the vehicles, as well as operator and crew procedural training. During the year the Crew Procedural Simulator was accepted and in use.

DEVELOPMENTS POST 30 JUNE 2024

No substantial updates to report.

PV-M PROJECT BUDGET AND EXPENDITURE

PMCP-Medium – the Bushmaster NZ5.5 vehicles



At 30 June 2024 project costs were:

		Ministry	NZDF	Consolidated project
		$000	$000	$000
Budget	Current approved project budget	113,868	-	113,868
	Allowance for foreign exchange movements	6,995	-	6,995
	Original approved project budget	106,873	-	106,873
Forecast	Forecast total project cost	107,650	-	107,650
	Effect of foreign exchange movements	2,487	-	2,487
	Forecast cost using hedged rates	105,163	-	105,163
	Forecast project variance	1,710	-	1,710

EXPLANATION OF TERMS

BETTER BUSINESS CASES:

Project Charter: Defence project initiation is guided by the Defence White Paper 2010 and the 2011 Defence Capability Plan. Projects commence following notification to the Minister of Defence and approval of a project charter by the Capability Management Board.

Approval of Indicative Business Case (IBC): Attained when Cabinet agrees to the strategic context for an investment and agrees to progress a short list of capability options to the Detailed Business Case stage.

Approval of Detailed Business Case (DBC): Attained when Cabinet agrees to a refined capability requirement and authorises Defence to commence formal engagement with industry (through a request for proposal or request for tender) on a preferred capability option.

Approval of Project implementation Business Case (PIBC): Attained when Cabinet agrees that Defence can conclude a contract based on the preferred supplier, the negotiated services, the maximum funding level and the arrangement to manage the project and the ongoing delivery of services.

GOVERNMENT APPROVAL MILESTONES

Project Initiation: Occurs once a capability requirement has been identified by Defence and a broad assessment of the options for meeting the capability requirement has been authorised by the Chief Executives and noted by the Minister of Defence.

Approval to Initiate: Attained when Cabinet agrees to the project's inclusion on the capital acquisition plan and authorise Defence to engage with industry to refine its initial assessment with more accurate information.

Approval to Commence: Attained when Cabinet agrees to the refined capability requirement and authorises the Ministry of Defence to commence a formal tender and tender evaluation process.

Approval to Negotiate: Attained when Cabinet agrees to the selection of a preferred tender, specifies funding limits, and authorises the Ministry of Defence to enter into contract negotiations.

Approval to Commit: Attained when Cabinet agrees to the final contract and authorises the Ministry of Defence to sign the contract and commit funding.

PROJECT PHASES

The capability definition phase: During the capability definition phase, capability and operational requirements are assessed and refined. Stakeholder needs are considered. Scenarios may be used to identify requirements. Hypothetical options which include a rough order of costs are used to analyse affordability and evaluate requirements. A capability requirement is a description of the ability needed to achieve the policy objective. An operational requirement is a description of a component of what is required to complete a task. Options analysis in the capability definition phase is used as a tool to compare, assess, and evaluate capability and operational requirements. Options analysis in the acquisition stage identifies the best procurement solution to deliver the capabilities required.

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 what will be delivered.

The capability integration 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.

COMMONLY USED TERMS

- **Capability:** in the Defence Capability Management System this refers to not only equipment, but also the people who operate it, their training, technical systems, and management and support structures. These components make up the PRICIE construct which is used by Defence to determine the fundamental inputs to capability. (See below.)
- **Capability Integration Plans:** Capability Integration Plans (CIP) are single cohesive plans that pull together all of the planning and activities that need to be undertaken by the project, the owners of the capability and those who are working with Defence to ensure the capability is integrated. These groups work from and contribute to this plan and each CIP is a living document that is updated regularly.
- **Integrated Project Team:** A team comprised of personnel from both the Ministry of Defence and NZDF, with professional project specialists and subject matter experts. It is led by a dedicated resource (IPT leader). The team is based on the project's requirements at any given point in the life cycle to define, develop and deliver a supportable capability, and is closely aligned to the requirements of the project life cycle.
- **Interim Operational Release/Initial Operational Capability:** the point at which the inherent capability is understood so that it can be most effectively employed on operations.
- **Interoperable:** the ability of military forces to work alongside civil agencies and other nations' militaries through having compatible doctrine, equipment and training, as well as the compatibility of communications and command and control systems.
- **Multi-Criteria Decision Analysis (MCDA):** an analytical method that compares options using weighted benefit, risk and cost criteria. It is used for prioritisation and options analysis, particularly in support of business cases.
- **Operational Release/Full Operational Capability:** the point at which the capability system has proven to be effective, safe and suitable for its intended roles and, in all respects, is ready for operational service.
- **PRICIE:** an acronym for the elements used to determine the fundamental inputs to capability: Personnel; Research and Development; Infrastructure and Organisation; Concepts and Collective Training; Information Technology; Equipment, Logistics and Resources.
- **Request for Information (RFI):** this is a market research tool and does not initiate a procurement process. RFIs are used solicit feedback from industry with respect to subject matter described in an RFI and are not used to select or shortlist suppliers. Respondents' information is used to inform Defence of current market information and to help in the continued development of user requirements in respect of Defence's general procurement needs.

OTHER TERMS

- Design life: an indicative date at which time significant investment would be expected if the service life of a capability is to be extended. Even with additional investment operational availability will likely reduce to account for higher maintenance and repair needs.
- Rotables: aircraft parts or components that are able to be rebuilt of overhauled (in-house or by a vendor) and put back in stock to use again. Rotables are basically the opposite of expendable or throw-away parts.