HON RON MARK, MINISTER OF DEFENCE

Defence Force: Operational and Regulatory Aviation Compliance Sustainment – Release of Cabinet Documents

July 2019

This publication provides documents supporting Cabinet’s April 2019 decision to approve up to $56.832 million to invest in the ORACS Phase One project. This will update systems for identification and air traffic management for New Zealand Defence Force aircraft.

The pack comprises the following documents:

- The associated Cabinet paper Defence Force: Operational and Regulatory Aviation Compliance Sustainment [GOV-19-SUB-0014].

This pack has been released on the Ministry of Defence website, available at: www.defence.govt.nz/publications.

The attachment to the Cabinet paper includes errors in the page numbering. The included pack includes all pages as provided to Cabinet.

It has been necessary to withhold certain information in accordance with the following provisions of the Official Information Act 1982. Where information is withheld, the relevant sections of the Act are indicated in the body of the document. Where information has been withheld in accordance with section 9(2) of the Act, no public interest has been identified that would outweigh the reasons for withholding it.

In addition, the business case for this project is withheld in full in accordance with the following provisions of the Act. Recognising the public interest in information on the investment decision, the Cabinet paper provides a summary of the key information that formed the basis of Cabinet’s decision to invest this funding.

Information is withheld where making it available would be likely to prejudice:

- the security or defence of New Zealand or the international relations of the Government of New Zealand [section 6(a)]
- the entrusting of information to the Government of New Zealand on the basis of confidence by the Government of any other country [section 6(b)(i)].

Information is also withheld in order to:

- protect information where the making available of the information would be likely unreasonably to prejudice the commercial position of the person who supplied the information [section 9(2)(b)(ii)]
- maintain the constitutional conventions for the timing being which protect the confidentiality of advice tendered by Ministers of the Crown and officials [section 9(2)(f)(iv)]
- enable a Minister of the Crown or any department or organisation holding the information to carry out, without prejudice or disadvantage, negotiations [section 9(2)(j)].
Defence Force: Operational and Regulatory Aviation Compliance Sustainment

Portfolio Defence

On 11 April 2019, the Cabinet Government Administration and Expenditure Review Committee:

1. noted that due to a changing technological and regulatory aviation environment, platform-based capabilities cannot sustain effective, safe and secure air operations without upgrading current systems;

2. noted that the Defence Capability Plan Review 2019, considered under GOV-19-SUB-0011, provides in capital for the Operational and Regulatory Aviation Compliance Sustainment (ORACS) project, over two phases;

3. noted that the initial capital cost of the proposed solution for Phase One of the ORACS Project (Phase One), as outlined in the paper under GOV-19-SUB-0014, is affordable within the Defence Capability Plan Review 2019 provision in paragraph 2 above, as it will not exceed $56.832 million, and will be funded out of depreciation reserve which will result in no additional capital charge;

4. noted that Phase One annual operating costs (excluding depreciation and capital charge) are estimated to be $0.049 million and will be managed within current New Zealand Defence Force (NZDF) baselines;

5. approved the following changes to appropriation for the Ministry of Defence to commit to the acquisition process association with Phase One:

<table>
<thead>
<tr>
<th>Vote Defence Minister of Defence</th>
<th>$million – increase/(decrease)</th>
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<tbody>
<tr>
<td></td>
<td>2018/19</td>
</tr>
<tr>
<td>Defence Equipment</td>
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</table>
authorised the Secretary of Defence to commit and approve expenditure of public money up to the amount of $56.832 million for Phase One systems;

noted that the expenditure in paragraphs 6 and 7 above are offset by a capital receipt from the NZDF;

noted that the NZDF is forecasting to incur initial capital expenditure totalling $56.832 million in the establishment of the ORACS Phase One systems;

noted the following changes to appropriations in accordance with the NZDF – Capital Expenditure PLA authorised by section 24(1) of the Public Finance Act 1989:

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<tr>
<th>Vote Defence Force Minister of Defence</th>
<th>$million – increase/(decrease)</th>
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</thead>
<tbody>
<tr>
<td>Departmental Capital Expenditure</td>
<td></td>
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</table>

agreed that the changes to appropriations for 2018/19 in paragraph 6 and 10 above be included in the 2018/19 Supplementary Estimates and that, in the interim, the increases be met from Imprest Supply;

noted the Single Stage Business Case for the ORACS Project, attached to the paper under GOV-19-SUB-0014;

invited the Minister of Defence to submit a Single Stage Business Case for ORACS Phase Two commitment of expenditure to Cabinet in s6(a), s9(2)(f)(iv);

Rachel Clarke
Committee Secretary

Secretary’s note: This minute has been reissued to correct the reference in paragraph 11 above.

Present:
Rt Hon Winston Peters
Hon Phil Twyford
Hon Chris Hipkins (Chair)
Hon David Parker
Hon Stuart Nash
Hon Ron Mark
Hon Shane Jones

Hard-copy distribution:
Minister of Defence

Officials present from:
Department of the Prime Minister and Cabinet
Officials Committee for GOV
DEFENCE FORCE: OPERATIONAL AND REGULATORY AVIATION COMPLIANCE SUSTAINMENT

Proposal

1. This paper and accompanying business case invite Cabinet to approve the expenditure of public money up to the amount of $56.832 million to invest in Operational and Regulatory Aviation Compliance Sustainment (ORACS) Phase One systems (Automatic Dependant Surveillance - Broadcast and ) for . The capital figure consists of: acquisition plus contingency and $4.183 million project management costs.

2. The capital expenditure will be funded out of depreciation reserve that will result in no additional capital charge over current baselines. Annual operating cost for repairs and maintenance is forecast to be $0.049 million at steady state and would be managed within current operating baselines.

Executive summary

3. The ORACS Project is equipping New Zealand Defence Force (NZDF) aircraft fleets with updated communication, navigation, air traffic management and identification systems. These systems must be updated due to a changing aviation environment, driven by new regulations and technological upgrades that improve safety and security. Without them, NZDF aircraft will be unable to sustain effective, safe and secure air operations.

4. The systems include: ; civil air traffic management (Automatic Dependant Surveillance - Broadcast); Performance Based Navigation (PBN); and Secure Communications.

5. This project will be carried out in two phases. This is to ensure that investment decisions are fully informed and best placed to meet compliance requirements. Phase One will include systems for and civil air traffic management (Automatic Dependant Surveillance - Broadcast). The remaining systems will be covered in Phase Two.

6. This Cabinet paper and business case seeks the approval for the Secretary of Defence to commit and approve expenditure up to the amount of $56.832 million (including contingency) to acquire Phase One systems (Automatic Dependant Surveillance - Broadcast and ) for .
The ORACS Project delivers Government policy priorities

7. On 14 May 2018, Cabinet approved the Strategic Defence Policy Statement 2018 ([ERA-18-MIN-008]). The Policy Statement sets out the Government’s policy objectives for Defence and provides the policy basis for further work to identify and determine the Defence capabilities required to give effect to the Government’s intentions.

8. The principal roles of the Defence Force are outlined in the Strategic Defence Policy Statement 2018. These include defending New Zealand’s sovereignty and territory, meeting New Zealand’s commitments to its allies and partners, contributing to the support of peace and security in the Asia-Pacific region, contributing to and leading operations in the South Pacific, and contributing to New Zealand’s security partnerships. Aircraft are vital to the fulfilment of these roles, and in turn to Defence’s contribution to the Community, Nation and World.

9. The NZDF currently own seven aircraft fleets, and each plays a crucial part in contributing to the fulfilment of these principal roles, and to the make-up of overall Defence Force capability. The seven fleets are: the P-3K2 Orion maritime patrol aircraft; the C-130H Hercules heavy military airlifter; the Boeing 757 strategic transport aircraft; the SH-2G(I) Seasprite naval helicopter; the NH90 medium utility helicopter; the A109 light utility helicopter; and the T-6C Texan training fixed wing aircraft. The eighth fleet, KA350 Aircrew Training Capability, is leased.

10. The Policy Statement notes that “the core task of the Defence Force is to conduct military operations”. Both the P-3K2 Orion maritime patrol aircraft (soon to be replaced by the P-8A Poseidon) and the SH-2G(I) Seasprite naval helicopter are noted as key capabilities in this area.

11. The Policy Statement also acknowledges the importance of both the Defence Force’s ability to “conduct independent operations in and around New Zealand, from Antarctica to the South Pacific”, and “to operate and deliver a range of effects far from New Zealand’s shores”. The Statement further acknowledges the importance of various RNZAF fleets in achieving these operations, including the tactical and strategic airlift capabilities of the C-130H Hercules and the Boeing 757, and the medium and light utility helicopter capabilities of the NH90 and the A109 respectively.

12. In addition to implementing the Policy Statement objectives, the ORACS Project supports both the reset of New Zealand’s foreign policy direction in the Pacific ([CAB-18-MIN-0054] refers) and the findings of the Climate Change Assessment given the important role that RNZAF aircraft play both in the Pacific and in response to climate-related disasters.

13. To be effective, NZDF aircraft must be equipped with the appropriate communication, navigation, air traffic management and identification systems. This allows for compliance with regulatory requirements, as well as safe and efficient performance. The ORACS Project is delivering the systems that will ensure the NZDF can sustain its aircraft capabilities to be able to meet the principal roles of the Defence Force and capability expectations contained in the Policy Statement.

14. By equipping NZDF aircraft with appropriate systems, the ORACS project is aligned with the Civil Aviation Authority-directed New Southern Sky programme. This programme seeks to realise the safety, environmental, social and economic potential of new airspace management and air navigation technologies by introducing new standards throughout New Zealand.

What is the problem?

Civil context

15. NZDF aircraft require updates to their air traffic management and navigation systems.
16. Civil air traffic management (ATM):

16.1. 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. Automatic Dependant Surveillance - Broadcast Out therefore results in more efficient air traffic management which means better flight times, lower fuel usage and less environmental impact.

16.2. For Automatic Dependant Surveillance - Broadcast 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 Automatic Dependant Surveillance - Broadcast Out capability to fly in their controlled airspace. The Civil Aviation Authority is introducing these requirements in New Zealand.

16.3. After December 2018, all aircraft in New Zealand were required to be equipped with Automatic Dependant Surveillance - Broadcast Out capability in high altitude airspace. After December 2021, all aircraft must be equipped with Automatic Dependant Surveillance - Broadcast Out capability in order to fly in all controlled airspace which is designated around most airports.

16.4. This system will be implemented in Phase One of the project.

16.5. Navigation using Performance Based Navigation (PBN) systems:

17.1. NZDF aircraft are currently fitted with systems enabling them to safely and efficiently navigate all airspace using ground-based navigation aids. Performance Based Navigation moves from reliance on these ground-based aids to reliance on satellites and in-aircraft systems. This provides aircraft the ability to operate with a higher degree of safety and efficiency, including more direct routes between two given points, and more efficient timing of take-offs and landings in high traffic areas.

17.2. The reduced reliance on ground-based aids reduces their use within New Zealand, an initiative driven by the New Southern Sky programme to modernise New Zealand’s airspace and air navigation system, allowing safer, more efficient and more reliable flight. This programme is led by the Civil Aviation Authority who are introducing Performance Based Navigation requirements.

17.3. This system will be implemented in Phase Two of the project.

Military context

18. Identification technologies:

19.1. This system will be implemented in Phase Two of the project.
19.2. This system will be implemented in **Phase One** of the project.

20. Secure communications:

20.1. The ability of the NZDF to communicate securely is an essential requirement, 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, so too must our communications be.

20.2. This system will be implemented in **Phase Two** of the project.

**What is the solution?**

21. The project is split into two phases:

- **Phase One.** This phase is deemed to be the immediate priority. It encompasses the **Automatic Dependant Surveillance - Broadcast** for **Phase One**.

- **Phase Two.** This phase is less time-constrained, and can therefore be implemented after Phase One. It will encompass **Performance Based Navigation** and secure communications. Phase Two work will not begin prior to **Phase Two**.
Acquisition details and implications

24. There are three somewhat distinct elements when considering updates to Phase One systems:

a) Selecting and acquiring the hardware

b) Design, integration and installation onto the first of each aircraft type and support of the airworthiness certification of the capability

c) Subsequent remaining fleet installation
28. once design, integration and initial aircraft installation is complete, remaining fleet installation is a straightforward process that is likely to occur during a scheduled routine maintenance period using current support contractors. In each case, the most efficient and cost-effective location will be used.

Consultation

30. This paper has been consulted with Treasury. The Department of Prime Minister and Cabinet, the State Services Commission, the Ministry for Business, Innovation and Employment, and the Civil Aviation Authority have been informed.

Financial Implications

31. The 2016 Defence White Paper ([CAB-16-MIN-0220 refers]) indicated capital cost of across the 2018/19FY to the for this project. The capital cost to implement Phase One of this project is calculated at $56.832 million. The estimated capital cost to implement Phase Two of this project is calculated at between million. This brings the total capital cost of both Phase One and Phase Two to , and is therefore both within the 2016 Defence Capital Plan estimates and also within the capital plan estimates that underpin the draft 2019 Defence Capability Plan currently under Cabinet consideration.

32. No expenditure for Phase Two, is requested here, and will be addressed in subsequent business cases.

33. The annual capital expenditure of is set out in the table below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Phase One NZD Million</th>
<th>Phase Two NZD Million</th>
<th>Total NZD Million</th>
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<tbody>
<tr>
<td>2018/19</td>
<td>$5.8</td>
<td></td>
<td></td>
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<tr>
<td>2019/20</td>
<td>$19.3</td>
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<tr>
<td>2020/21</td>
<td>$20.7</td>
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<tr>
<td>2021/22</td>
<td>$9.2</td>
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<tr>
<td>2022/23</td>
<td>$1.9</td>
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<td>2023/24</td>
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<td>2025/26</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$56.8</td>
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Capital Cost

34. The capital cost of the project will be funded from accumulated depreciation with no new capital injection required.

35. This Cabinet Paper is seeking approval for the capital expenditure of Phase One systems. This amounts to a capital cost of $56.832 million, including contingency.

Contingency

36. Total contingency for Phase One of the project is.

Operating expenditure

37. Annual operating costs for Phase One of the project are $0.049 million at steady-state starting from . This is a $0.013 million increase from current average annual operating costs of $0.036 million. Any increase in annual operating costs will be managed within current NZDF baselines.

38. There is no additional capital charge as the project is funded out of depreciation reserve and is thus within existing baselines.

Human rights, gender and legislative implications, disability perspective, regulatory impact and compliance cost statement

40. There are no implications.

Publicity

41. I recommend the issuing of a press release following Cabinet approval.

Proactive Release

42. I propose to release this paper proactively, subject to redaction as appropriate under the Official Information Act 1982.
Recommendations

43. I recommend that the Committee:

1. **note** that due to a changing technological and regulatory aviation environment, platform-based capabilities cannot sustain effective, safe and secure air operations without upgrading current systems;

2. **note** the Defence Capability Plan Review 2019 provisioned in capital for this project, over two phases;

3. **note** that the initial capital cost of the proposed solution for Phase One is affordable within the provision of Defence Capability Plan Review 2019, as it will not exceed $56.832 million and that it will be funded out of depreciation reserve that will result in no additional capital charge;

4. **note** that Phase One annual operating costs (excluding depreciation and capital charge) are estimated to be $0.049 million and will be managed within current NZDF baselines;

5. **approve** the following changes to appropriation for the Ministry of Defence to commit to the acquisition process association with Phase One of this project:

6. **authorise** the Secretary of Defence to commit and approve expenditure of public money up to the amount of $56.832 million for Phase One systems;

7. **note** that the expenditure in recommendations 6 and 7 above are offset by a capital receipt from the New Zealand Defence Force;

8. **note** that the New Zealand Defence Force is forecasting to incur initial capital expenditure totalling $56.832 million in the establishment of Phase One systems;

9. **note** the following changes to appropriations in accordance with the New Zealand Defence Force – Capital Expenditure PLA authorised by section 24(1) of the Public Finance Act 1989:

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<tr>
<th>Vote Defence Force Minister of Defence</th>
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</table>
11. **agree** that the proposed changes to appropriations for Vote Defence and Vote Defence Force for the 2018/19 above be included in the 2018/19 Supplementary Estimates and that, in the interim, the increases be met from Imprest Supply;

12. **invite** the Minister of Defence to return to Cabinet Single Stage Business Case for ORACS Phase Two commitment of expenditure.

Authorised for lodgement

Hon Ron Mark  
**MINISTER OF DEFENCE**

/ / 2019
**Operational and Regulatory Aviation Compliance Sustainment Project**

**PROBLEMS**

- Due to a changing technological and regulatory aviation environment, systems on NZDF aircraft must be updated to sustain effective, safe and secure air operations.
- To remain compliant with mandates and in-step with modern technologies, systems on board these aircraft must be updated.

**SOLUTION**

- To deliver platform-based capabilities that sustain effective, safe and secure air operations.
- Civil systems include Automatic Dependent Surveillance – Broadcast Out and Performance Based Navigation.

**BENEFITS**

- Maintain ability to conduct military air operations.
- Maintain ability to effectively conduct air operations in civilian airspace in order to continue contributing to Community, Nation and World.

**COSTS**

**PHASE 1**

- $6.83M

**PHASE 2**

- $56.83M

**Automatic Dependent Surveillance – Broadcast Out**

**Civil**

Automatic Dependent Surveillance – Broadcast Out allows aircraft to send precise GPS position to Air Traffic Control, resulting in safer and more efficient air traffic management. The driver for this change is regulatory.

**Performance Based Navigation**

**Civil**

Performance Based Navigation is used for safe and efficient navigation. It provides a higher degree or safety and efficiency than current systems. The driver for this change is regulatory.

**Secure Communications**

**Military**

Secure communications allows NZDF to communicate securely both internally and with military partners. It is crucial to ensuring sensitive information is secure.

**Community**

Defence supports New Zealand’s community and environmental wellbeing and resilience.

**Nation**

Defence promotes a safe, secure and resilient New Zealand, including on its borders and approaches. Defence contributes to maintaining New Zealand’s prosperity via secure air, sea and electronic lines of communication, and secure access to space-based services.

**World**

Defence contributes to the maintenance of the international rules-based order. Defence contributes to New Zealand’s network of strong international relationships.
Operational and Regulatory Aviation Compliance Sustainment Project

ORACCS Project Investment Decision
April 2019
Defence Policy

The Strategic Defence Policy Statement 2018 outlines NZDF’s principal roles:

• Defend New Zealand’s sovereignty and territory
• Meet New Zealand’s commitment to its allies and partners
• Contribute to the support of peace and security in the Asia-Pacific region
• Contribute to and lead operations in the South Pacific
• Contribute to New Zealand’s security partnerships
• Contribute to international peace, security, and the international rules-based order
The NZDF currently has eight aircraft fleets which are crucial in contributing to the fulfilment of NZDF’s principal roles outlined in the Strategic Defence Policy Statement:

- Five C-130H Hercules
- Two Boeing B757
- Eleven T-6C Texan
- Eight SH-2G(I) Seasprite Helicopter
- Eight NH90 Helicopter
- Five A109 Light Utility Helicopter
- Six P-3K2 Orion
  (to be replaced by four P-8A Poseidon in 2023)
- Four KA350
Why is NZDF air capability important?

- NZDF aircraft allow for independent operations in and around NZ, and to operate and deliver a range of effects far from NZ shores.
- Of particular value is the key role that NZDF aircraft play in the Pacific and in response to climate-related disasters.

Recent examples of NZDF aircraft activities:

**Community**
- Search and rescue in our region, including in support of our Pacific community.
- Response to Kaikoura and Christchurch earthquakes.
- Monitoring marine resources and responding to illegal activity e.g. fishing.

**Nation**
- Supporting humanitarian assistance and disaster relief operations in the South Pacific.
- Environmental monitoring and response to extreme weather events resulting from climate change.

**World**
- Providing credible support to joint operations with the international community in the Middle East.
- Assisting with counter-drug and counter-terrorism operations.
- Conducting ice flights to Antarctica in support of New Zealand’s presence in the Antarctic.
What is the problem?

- NZDF aircraft must be compliant and equipped with appropriate communication, navigation, and identification systems

- However, NZDF fleets require updating due to:
  1. Changes to aviation regulations in New Zealand (driven by the Civil Aviation Authority (CAA)) and internationally
  2. The need to remain interoperable with military partners

- Upgrades will improve safety and security of air operations

- They will also align the NZDF with the CAA-directed New Southern Sky programme to realise the safety, environmental, social and economic potential of new airspace management
What are the changes?

Civil context

- **Automatic Dependent Surveillance – Broadcast (ADS-B Out) Out:** broadcasting GPS position, identity, and status to ground controllers more precisely than current RADAR systems.

- **Performance Based Navigation (PBN):** navigation moving from reliance on ground-based beacons to more accurate satellites and in-aircraft systems.
What are the changes?

Military context
What is the solution?

The project is divided into two phases:

- **Phase One** – Immediate priority systems due to compliance dates: ADS-B Out and

- **Phase Two** – Less time-constrained systems: Performance Based Navigation and Secure Communications. An investment decision is not required until a later date
What is the solution?
What is the solution?

- **Phase One** systems (ADS-B Out and X Out) capital costs:
  - Acquisition
  - Project management $4.2M
  - Contingency
  - **Phase One Total** $56.8M

- **Phase Two** systems estimated capital cost between
  - Phase One $56.8M
  - Phase Two
  - **Total**

- **The Defence Capital Plan** provisioned across 2018/19FY to $ for ORACS Project