



Australian Government

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# SDIP 1 - Maintenance, repair, overhaul and upgrade (MRO&U) of Australian Defence Force aircraft

Annex B1

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*Defence acknowledges the Traditional Custodians of Country throughout Australia. Defence recognises their continuing connection to traditional lands and waters and would like to pay respect to their Elders both past and present.*

*Defence would also like to pay respect to the Aboriginal and Torres Strait Islander peoples who have contributed to the defence of Australia in times of peace and war.*

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# Overview of Annex B

This Annex contains the Detailed Sovereign Defence Industrial Priorities (Detailed SDIPs) for SDIP 1, in accordance with Chapter 3.

The SDIPs are:

**SDIP 1.** Maintenance, repair, overhaul and upgrade (MRO&U) of Australian Defence Force aircraft

**SDIP 2.** Continuous naval shipbuilding and sustainment

**SDIP 3.** Sustainment and enhancement of the combined-arms land system

**SDIP 4.** Domestic manufacture of guided weapons, explosive ordnance and munitions

**SDIP 5.** Development and integration of autonomous systems

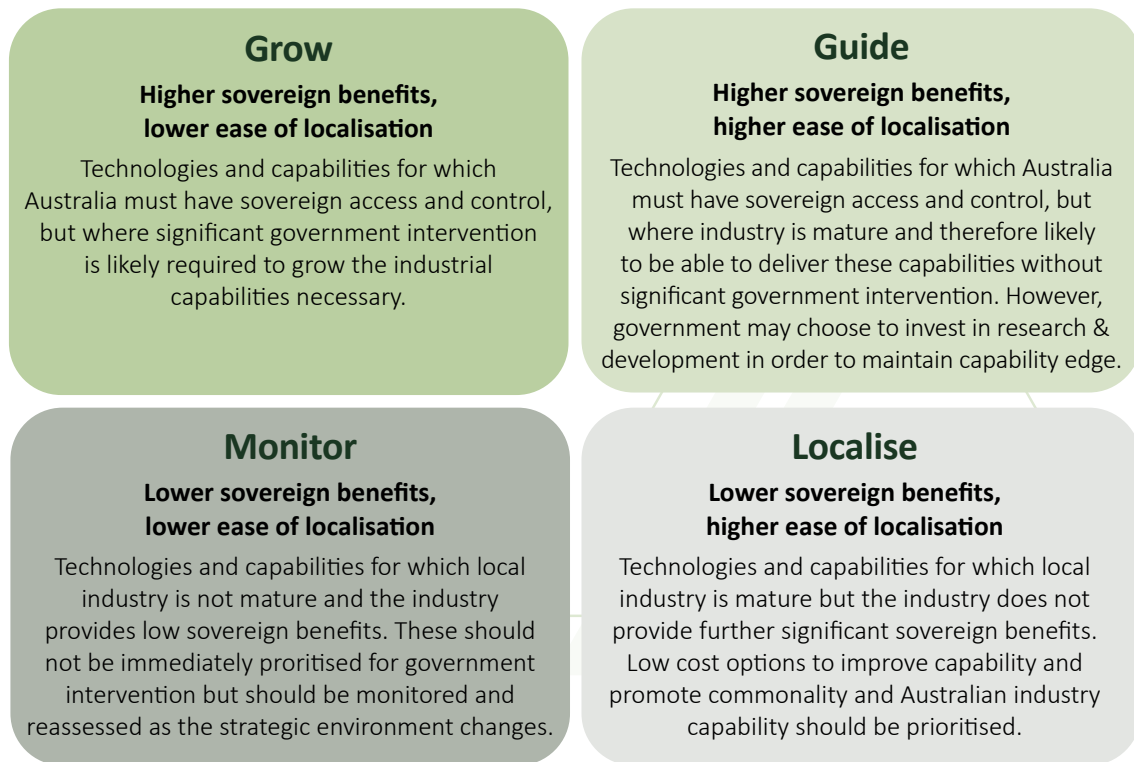
**SDIP 6.** Integration and enhancement of battlespace awareness and management systems

**SDIP 7.** Test and evaluation, certification and systems assurance

There are many areas where defence industry is already providing a service or capability to Defence; for example, the provision of enabling information and communication technology support including data centres, cyber and health services. Defence will continue to work with industry to ensure we have the level of industrial capability required in Australia to deliver defence outcomes.

Defence will refine the information in these Annexes through consultation with industry, and in line with the biennially-updated National Defence Strategy. Defence will work with industry to identify shortfalls, critical paths and areas for growth, using the approach described in Chapter 3 (Figure 4). The aim is to consistently and continuously guide and grow the defence industrial base, aligned to Defence's needs.

**Figure 1 - Approach to industrial prioritisation**



## Capability and Delivery Managers

The Vice Chief of the Defence Force is responsible for defining and communicating the capabilities Defence requires of Capability Managers. Capability Managers and Delivery Managers are responsible for the growth and health of the industrial capabilities required to deliver and sustain the directed defence capabilities.

## Industrial capability lifecycle

The information provided for each Detailed SDIP contains Defence's requirements against the industrial capability lifecycle.

### The industrial capability lifecycle consists of:

Innovation, Science & Technology	Design & Development	Integration & Adaptation	Manufacture & Assembly	Sustainment & Support
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- ▶ **Innovation, Science & Technology** – innovative technology solutions that have been identified as meeting a defence capability need and providing an asymmetric advantage for Defence to develop, explore and mature to pull through to capability. These would be candidates for consideration under the Advanced Strategic Capabilities Accelerator (ASCA).
- ▶ **Design & Development** – areas that require further maturation and development beyond the prototype phase to meet a defence capability need.
- ▶ **Integration & Adaptation** – mature industry solutions or systems that need to be integrated with other defence systems and/or adapted to meet a defence capability need.
- ▶ **Manufacture & Assembly** – industry solutions, systems or components that Defence has determined must be manufactured and/or assembled in Australia, to ensure sovereignty and/or supply chain security and resilience.
- ▶ **Sustainment & Support** – industrial capabilities and services that Defence has determined must be delivered by industry in Australia to sustain and support defence capability.

# SDIP 1 - Maintenance, repair, overhaul and upgrade (MRO&U) of Australian Defence Force aircraft

## Capability and Delivery Manager

The Capability Manager for the MRO&U of Australian Defence Force (ADF) aircraft SDIP is the Chief of Air Force. The Delivery Manager is the Deputy Secretary Capability Acquisition and Sustainment.

## Background

The Defence Strategic Review highlighted the criticality of “a networked expeditionary air operations capability”.<sup>1</sup> A sovereign industrial aircraft MRO&U capability is critical to optimising aircraft availability and ensuring it is not compromised, especially during times of conflict. It is essential that we grow and guide Australia’s MRO&U capability in order to increase supply chain security and resilience to provide the increase in capacity needed to support Australia and our trusted partners during times of conflict.

MRO&U includes:

- ▶ Deeper maintenance of aircraft (including crewed, remotely crewed, and autonomous).
- ▶ Incorporation of modifications, upgrades, and non-standard repairs.
- ▶ Deeper maintenance of components and repairable items, propulsion systems and training systems.
- ▶ Aircraft Structural Integrity (ASI) and Propulsion System Integrity (PSI) management.
- ▶ Application and maintenance of aircraft paint and low observable coatings.
- ▶ Corrosion prevention and repair.
- ▶ Maintenance program optimisation.

Through Life Support (TLS) contracts with prime contractors generally define the scope and level of MRO&U, with Australian Industry Capability (AIC) Plans forming part of the contract. Sub-system and specialist support is often sub-contracted to small and medium enterprises (SMEs). As described in Chapter 5, Defence aims to treat its TLS prime contractors as strategic partners, and expects similar relationships between primes and SMEs.

An effective aircraft MRO&U capability requires the following:

- ▶ A skilled sustainment, project management, engineering, maintenance and logistics workforce.
- ▶ Appropriate facilities and infrastructure in the form of aircraft hangars, workshops, test facilities and laboratories.
- ▶ Access to the intellectual property necessary for the conduct of maintenance and development of repairs and modifications.
- ▶ Specialist tooling and support equipment.
- ▶ Supply, maintenance and engineering support networks, processes and information systems.
- ▶ Relationships with aircraft and system Original Equipment Manufacturers (OEMs), and United States Government agencies for Cooperative Programs and Foreign Military Sales.
- ▶ Logistics Support Analysis skills to maximise aircraft availability and depot throughput.

<sup>1</sup> DSR page 54

## Prioritisation approach

Growing a skilled workforce will be critical to ensuring that future MRO&U demand can be satisfied. Defence will work with industry, academia and state governments to ensure that professional, vocational and tertiary training is available, and that meaningful and effective incentives are in place to attract young people to pursue careers in relevant science, technology, engineering and mathematics fields. These incentives will be focused on both ADF and defence industry.

In support of this Defence will:

- ▶ Continue to prioritise industrial MRO&U capabilities through our TLS contracts, treating our prime contractors as strategic partners, and working with them to flow work to their support networks.
- ▶ Prioritise MRO&U of aircraft and repairable items where there is a clear economic and strategic benefit for conducting the work in Australia. Defence will prioritise the on-shore conduct of deeper maintenance, such as where it is inefficient to transit aircraft to overseas MRO&U depots, or where access to overseas depots cannot be guaranteed in times of crisis. Similarly, we will prioritise component MRO&U for repairable items that are high mission degraders and relatively low complexity to repair, or where their supply lines for repair at overseas depots are long.
- ▶ Locate aircraft MRO&U depots in close geographic proximity to our major bases for efficiency. Conversely, we will be less constrained in the location of component MRO&U depots, and will look to consolidate these facilities for maximum horizontal integration across industry and Defence more broadly.
- ▶ Identify opportunities to work with our trusted partners for alignment on Australian-based MRO&U of mutual capabilities.
- ▶ Build latent capacity in the system while also appropriately planning throughput of our MRO&U depots to ensure resilience against peaks and troughs of demand, including in times of crisis or conflict.
- ▶ Facilitate the provision of latent capacity in MRO&U services to our trusted partners, including through government-to-government arrangements, and advocate to reduce barriers and improve access to global supply chains and export markets.
- ▶ Encourage partnerships between Defence and industry with integrated workforces that can meet operational and deeper maintenance needs as well as supporting deployed operations where appropriate.
- ▶ Maximise horizontal integration to optimise industrial capability across multiple platforms and domains, accounting for the limitations imposed by special access programs. This will include identifying opportunities for cross-platform, multi-purpose infrastructure.
- ▶ Encourage innovation through the use of advanced technologies to increase our effectiveness, including the exploitation of data, the use of Artificial Intelligence (AI) and digital twins, and advanced/additive manufacturing.

## Epoch 1 outcomes

During Epoch 1, Defence will:

- ▶ Continue to grow and guide Australia's MRO&U network through identifying opportunities for strategic alignment and horizontal integration of MRO&U capabilities with our trusted partners.
- ▶ Establish programs with industry, academia and state governments to support and enable the growth of Australia's technical workforce.
- ▶ Further identify discrete MRO&U depots established around Australia, initially focusing on servicing Australia's domestic needs.
- ▶ Grow Australia's capacity to incorporate major aircraft upgrades and perform propulsion system repair and overhaul.
- ▶ Review Australia's approach to structural integrity management to determine scope and depth of the sovereign industrial capability required, and the extent to which these activities can be done in partnership with overseas OEMs.
- ▶ Further analyse the strategic business case for conducting MRO&U of specific aircraft and components in Australia, focusing on enhancing supply chain resilience, security and cyber-worthiness, to identify target growth areas for Epoch 2.

## Epoch 2 outcomes

During Epoch 2, Defence will:

- ▶ Establish a network of regional MRO&U depots capable of performing relevant services, ranging from component overhaul to aircraft deeper maintenance and major fleet upgrade incorporation, providing strategic resilience for key capabilities in partnership with our trusted partners.
- ▶ Form a mature MRO&U network that is assured and has sufficient capacity not only for Australia's domestic needs, but is also ready for use by our trusted partners with compatible aviation capabilities.
- ▶ Establish a sustainable technical workforce with sufficient capacity to serve Australia's domestic needs as well as those of our regional partners in support of combined MRO&U for key mutual capabilities.
- ▶ Develop innovative solutions to surface finishing with a specific focus on low observable coatings, corrosion prevention and repair in the context of Australia's unique environmental circumstances, and repair of advanced composite materials.
- ▶ Introduce innovative approaches to maintenance program optimisation, making use of digital engineering techniques, including data analysis, digital twins, AI and Machine Learning (ML), to more efficiently utilise our limited technical workforce and maximise availability for Australian and allied aircraft.

## Detailed Sovereign Defence Industrial Priorities

The Detailed SDIPs identified for MRO&U of ADF aircraft are:

- ▶ **Aircraft deeper maintenance** – heavy aircraft maintenance or major checks, designed to maintain airworthiness and preserve capability.
- ▶ **Aircraft major upgrade incorporation** – modifications to enhance capability or to improve safety, reliability, availability and maintainability, through new or upgraded systems or components, typically as part of a block or spiral upgrade program.
- ▶ **Repairable item repair and overhaul** – component maintenance, including fault diagnosis and repair of electrical, avionics, communications, self-protection, mechanical, fuel, pneumatic and hydraulic systems.
- ▶ **Propulsion system repair and overhaul** – off-aircraft, deeper maintenance of propulsion systems, including tear-down, build-up and test.
- ▶ **Aircraft Structural Integrity and Propulsion System Integrity management** – Aircraft Structural Integrity Programs and Propulsion System Integrity Programs to ensure that the desired level of integrity is maintained throughout the life of an aircraft or system to maximise capability outcomes. This also includes the ability to develop non-standard repairs for metallic and advanced composite structures.
- ▶ **Surface finishing** – application and maintenance of aircraft paint and low observable (stealth) coatings.
- ▶ **Corrosion prevention and repair** – prevention and repair of aircraft corrosion; closely linked to structural integrity management and surface finishing, but separately identified due to Australia's particularly corrosive environment.
- ▶ **Maintenance program optimisation** – Logistics Support Analysis, Maintenance Requirements Determination, Reliability Availability Maintainability and supply chain analysis, and maintenance cycle/fleet planning to optimise the conduct of maintenance within the constraints of technical workforce capacity, and to inform Defence decisions.

**Table 1 - Detailed SDIPs for SDIP 1, Epoch 1 (2023-25)**

Description	Innovation, Science & Technology	Design & Development	Integration & Adaptation	Manufacture & Assembly	Sustainment & Support
Aircraft deeper maintenance					✓
Aircraft major upgrade incorporation			✓		✓
Repairable item repair & overhaul		✓			✓
Propulsion system repair & overhaul					✓
Aircraft structural integrity & propulsion system integrity management					✓
Surface finishing					✓
Corrosion prevention & repair					✓
Maintenance program optimisation					✓



**Table 2 - Detailed SDIPs for SDIP 1, Epoch 2 (2026-30)**

Description	Innovation, Science & Technology	Design & Development	Integration & Adaptation	Manufacture & Assembly	Sustainment & Support
Aircraft deeper maintenance					✓*
Aircraft major upgrade incorporation			✓		✓*
Repairable item repair & overhaul		✓			✓*
Propulsion system repair & overhaul					✓*
Aircraft structural integrity & propulsion system integrity management	✓				✓
Surface finishing	✓	✓	✓		✓
Corrosion prevention & repair	✓	✓	✓		✓
Maintenance program optimisation	✓	✓	✓		✓

\* denotes an increase in scope and capacity.

✓ - Continuation from Epoch 1  
 ✓ - New in Epoch 2