



Australian Government  
Department of Defence



# SOVEREIGN INDUSTRIAL CAPABILITY PRIORITY IMPLEMENTATION PLAN

Enhanced active phased array and  
passive radar capability

November 2020





## Enhanced active phased array and passive radar capability



## Minister's foreword

With the release on 1 July of the *Defence Strategic Update* and *Force Structure Plan 2020*, the Morrison Government announced the biggest investment in new and upgraded military capabilities in decades. This \$270 billion commitment brings with it unprecedented opportunities for Australian defence industry to contribute to Australian Defence Force (ADF) capability projects.

Active phased array and passive radars are key tactical sensors used by the ADF to achieve its mission of defending Australia and its national interests. Radar systems provide situational awareness, and threat detection, tracking and identification, both as part of individual platforms and as an element of broader and integrated networks, including with allied partners.

Australia is a world leader in the design and development of radar technologies, and this reputation has been built through a close partnership between Defence and Australian defence industry spanning decades. We need to maintain and enhance the capability advantage offered by advanced radar systems to shape, deter, and respond within our strategic environment. This objective requires innovation and cooperation across the industry value chain, and locally designed and developed radar technologies.

### A plan to enhance home-grown radar capability and associated technologies

This Implementation Plan details the critical industrial capabilities that underpin the enhanced active phased array and passive radar capability Priority. It is supported by the companion Department of Defence Industry Plan, which provides more detail on the industrial base and Government actions listed in this Implementation Plan.

The Industry Plan can be found at <https://www1.defence.gov.au/business-industry/programs/implementation-industry-plans>

For the purposes of this Implementation Plan, enhanced active phased array and passive radar capability includes:

- Active phased array radars – an advanced next generation system comprising of digitally programmable multi-function radars that can simultaneously transmit over a wide band of frequencies, making it more difficult for adversaries to detect, identify or jam transmissions or signals.
- Passive radars – do not require their own transmitter source, but detect and track by leveraging existing third-party transmissions. Passive systems provide anti-stealth defence capability and the ability to sense without disclosing our own force's position.

I encourage Australian businesses, particularly small business, to make the most of these opportunities and strengthen our sovereign defence industrial base with respect to active phased array and passive radar capability.



**The Hon Melissa Price MP**  
Minister for Defence Industry





## Four industrial capabilities are critical

Within this environment, Australia seeks to have a level of access to, or control over four critical industrial capabilities. Developing these capabilities in Australian industry will ensure the most crucial elements are available to the ADF as needed.



### ACTIVE AND PASSIVE RADAR DESIGN AND PRODUCTION

Research, design, assembly, integration and upgrade of advanced radar technologies that offer scalable and capable radars for use in the maritime, land and air environments.



### ADAPTIVE METHODS

Research and development of adaptive methods to enable superior performance in contested and degraded environments.



### SYSTEMS DESIGN AND INTEGRATION SKILLS

Development of complex radar systems engineering, hardware and real-time software engineering skills to design and integrate technologies within the radar, including improved data and sensor fusion.



### SUSTAINMENT OF ADVANCED RADAR SYSTEMS

Skills, equipment and facilities necessary to maintain and provide ongoing assurance of leading radar systems.

To ensure Australia retains the identified critical industrial capabilities, the Government seeks to build the following enabling capabilities in partnership with industry over the next decade, starting with the government actions listed in this Plan:

- **Modelling and simulation** – Access to the skills, tools and facilities. Understanding threat profiles and environmental factors to be able to design, develop and test in a classified environment.
- **Test facilities** – Access to large and secure anechoic chambers for testing. Access or control of secure, radio frequency quiet field testing sites.

Defence met with entities representing key parts of the value chain and the full suite of critical industrial capabilities, including academia, industry representatives and research institutes.



**25** ORGANISATIONS ENGAGED

#### ORGANISATION FOCUS

**5**

PRIMES  
MANUFACTURE  
/ ASSEMBLY  
INTEGRATOR

**9**

R&D /  
ACADEMIA  
/ ASSEMBLY  
INTEGRATOR

**4**

IMPORTER  
AGENT /  
RESELLER  
TYPING

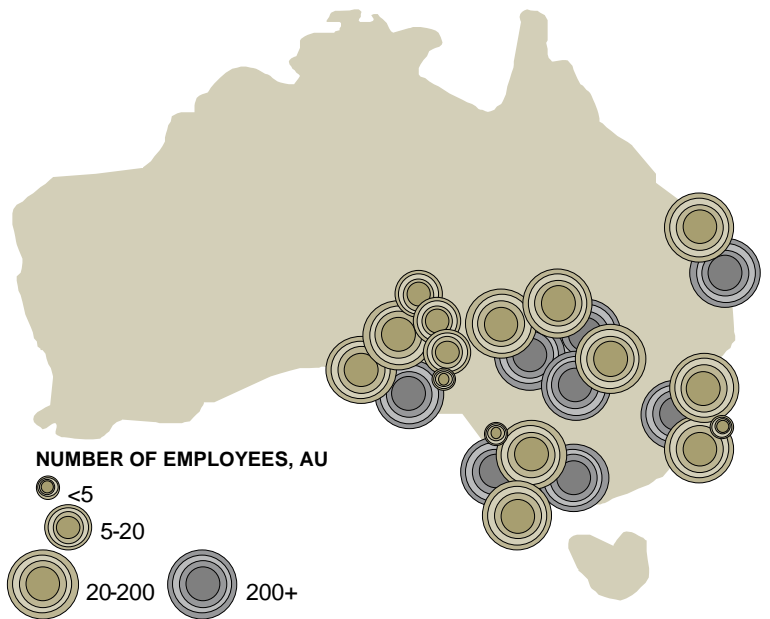
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DESIGN /  
PROTO-  
RESELLER  
TYPING

**4**

SUPPORT:  
TRAINING /  
DISPOSAL /  
T&E

**3**



## The segment at a glance

The Australian active phased array and passive radar industrial base is a small but competitive sector, driven by innovation and a high-technology tempo with Defence as the primary end-user. The sector has a large proportion of small-to-medium enterprises as well as a selection of prime vendors. Organisations participate heavily in the research and development and design and integration phases, with many organisations funneling new ideas through the universities, Defence Innovation Hub and Defence Science and Technology Group. Decades of investment and ingenuity have generated sovereign industrial capabilities for the defence of Australia and our allies.

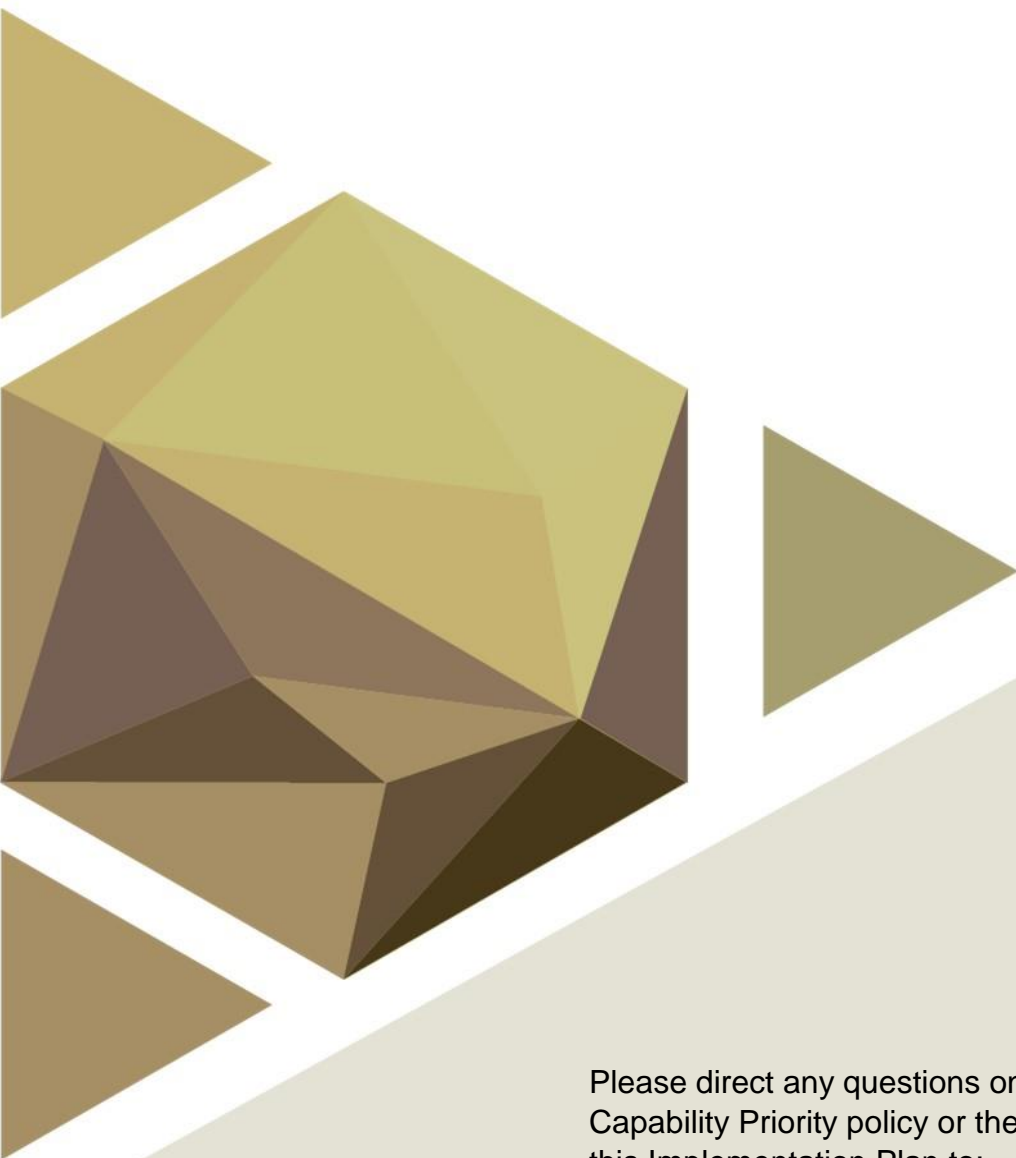


## Government actions

This Implementation Plan includes the following actions to be taken by Defence and/or other government agencies to support this Priority. Although responsibility has been attributed to a particular branch, group or agency, it is expected that a broader group of government stakeholders will participate in, or contribute to, an action. Funding of the government actions will be taken from existing departmental funding.

Topic	Action	Responsible	Timeframe	Key Performance Indicators
<b>Feasibility study of a domestic advanced semiconductor capability</b>	Defence will undertake an exploratory study on advanced semiconductor technology design and manufacture to assess the viability of establishing an in-country semiconductor production capability. The study will include input from other relevant government departments and agencies to develop a holistic understanding of Australia's aggregate demand for these products, and export potential, given Defence's relatively low demand.	Department of Defence with input from the Department of Industry, Science, Energy and Resources.	Late-2021	Feasibility study completed.
<b>Radar and information warfare collaboration forum</b>	Defence will continue to engage with industry on its proposal to develop a secure collaborative forum and bring together Defence, industry and academic participants to facilitate innovation and information dissemination across the supply chain.	Joint Capabilities Group Vice Chief of the Defence Force – Future Force Design Capability Acquisition and Sustainment Group	Ongoing	Industry engaged on proposed collaboration forum.  Options explored to enhance innovation, information sharing and collaboration outcomes between Defence and industry, and across industry.
<b>Radar capability strategic plan and technology roadmap</b>	Defence will develop a strategic plan and associated technology roadmap of the capability expectations and technology evolution projection over the next 15 years. This plan and roadmap is intended to provide visibility of acquisition and support programs, which will guide industry investments, innovation, collaboration, and research and development efforts. Furthermore, this will enable industry and Defence to forecast workforce, skilling needs, facilities and infrastructure requirements.	Vice Chief of the Defence Force – Future Force Design Capability Acquisition and Sustainment Group	Late-2021	Strategic plan and technology roadmap completed.





Please direct any questions on the Sovereign Industrial Capability Priority policy or the information contained in this Implementation Plan to:

[defence.icp@defence.gov.au](mailto:defence.icp@defence.gov.au)