
Australian Government
Department of Defence
2018
DEFENCE
INDUSTRIAL
CAPABILITY
PLAN

ISBN: 978-0-6480977-5-4 (Print)

ISBN: 978-0-6480977-6-1 (Online)

DEFENCE INDUSTRIAL CAPABILITY PLAN

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Ministers' Foreword

We are pleased to release the *2018 Defence Industrial Capability Plan*.

Australia's first defence industry plan provides the Government's long-term vision and roadmap for Australian defence industry, along with the information, resources and support needed to grow our sovereign defence industry base.

The need for a Defence Industrial Capability Plan was recognised in the Government's *2016 Defence White Paper* and *2016 Defence Industry Policy Statement*, and builds on the Naval Shipbuilding Plan the Government released on 16 May 2017, and the Defence Export Strategy on 29 January 2018. These documents made clear that a strong, sustainable and secure Australian defence industry is fundamental to achieving Defence's mission today, and to support a future force that is positioned, resourced and structured to defend our nation and advance our regional and global Strategic Defence Interests. Our defence industry is a critical national strategic asset for Australia. We must build a strong, sovereign naval shipbuilding and broader defence industry to manage strategic risk, defend our nation and grow our economy.

The Government is committed to providing the best capability possible to the men and women who serve our nation. Our more than $200 billion investment in defence capability over the next decade under the Integrated Investment Program will deliver a more potent, integrated and agile Australian Defence Force. This also brings new opportunities and challenges for our defence industry. Australian industry will need to grow and upskill to be more internationally competitive and help meet our defence capability needs.

The Government is focused on ensuring that Australia's industry is positioned to meet Defence's future requirements and to maximise economic growth and high-tech jobs in the sector. As demonstrated in the significant level of Australian industry involvement in the Combat Reconnaissance Vehicle program announced on 14 March 2018, the Government will continue to maximise Australian industry involvement in our defence capability planning, acquisition

and sustainment, building the defence industrial base we need to achieve our strategy and capability goals. It will take time and sustained commitment – as well as industry reform – to put the fundamentals in place. This Plan provides a critical step and highlights the further work required.

Realising our strategy requires us to achieve over time the three complementary objectives of providing the best capability to the Australian Defence Force; maximising Australian industry involvement; and optimising innovation, competitiveness and cost effectiveness within our industrial base. While our defence industry is positioned to help meet our defence capability needs, realising the opportunities available will require a step change in industry capacity and capability over the next decade.

In this Plan, we have announced a list of ten initial Sovereign Industrial Capability Priorities. These Priorities are operationally critical to the Defence mission; are priorities within the Integrated Investment Program over the next three to five years; or need more dedicated monitoring, management and support due to their industrial complexity, Government priority or requirements across multiple capability programs. These Priorities will be managed strategically across our Defence planning and decision-making from force design and Integrated Investment Program scheduling, to the Australian Industry Capability Program, and through a dedicated annual grants program of up to $17 million to support the capacity and resilience of companies that contribute to a Sovereign Industrial Capability Priority.

Our level of long-term defence industry involvement will differ across the six Integrated Investment Program capability streams. As part of the implementation of this initial Plan, the Government will release Australian industrial strategies for each of these six streams from mid-2019. The strategies will take into account the Government's major capability decisions over 2018, the initial delivery of the Sovereign Industrial Capability Priorities and other defence industry initiatives highlighted in this Plan.

Underpinning this Plan will be strong industry security, which is essential for delivering uncompromised capability to the Australian Defence Force and ensuring Australian industry access to foreign defence technologies and

markets. Reforms to the Defence Industry Security Program will strengthen partnerships between defence and industry, and extend security support to more of Australian industry.

This Defence Industrial Capability Plan provides a unified approach to achieving the long-term sovereign defence industry we need, focusing all of our defence industry and innovation programs on delivering a strong, internationally competitive and sustainable sector. This will involve using all the available levers in a more coordinated way, working closely with states and territories.

This Plan builds upon the Defence Export Strategy the Government released on 29 January 2018. This Strategy provides a systematic approach to expanding our defence exports over the next decade to strengthen the resilience and sustainability of Australia's defence industry.

In this first Defence Industrial Capability Plan, we have set out our long-term strategic vision for Australia's defence industry. There is much to do to realise that vision and this is just the beginning. The decisions we make today will be given effect by current and future Australians who can make a very valuable contribution to our nation's defence as part of our defence industry.

We wish to thank all those in industry, academia and government who have contributed to the development of this Plan. Collaboration is a key theme and is vital to realising our vision for Australia's defence industry capability. We continue to be encouraged by the enthusiasm and generosity we have received in approaching this critical national endeavour.

The Hon Christopher Pyne MP
Minister for Defence Industry

Senator the Hon Marise Payne
Minister for Defence

1

Chapter 1: Overview

1.1 Australia's defence industry plays a vital role in the defence of our nation and its national interests. The capability and capacity within industry supports the Australian Defence Force to deter threats to our security, positively shape our regional security environment, and make a significant contribution to global security. The services provided by our defence industry enhance Defence's efficiency and effectiveness, and enable more capability to be delivered to our warfighters cost effectively.

1.2 Our defence industry is a national strategic asset that relies on companies all over the country to deliver the capability our defence force needs today, and to provide the national support base necessary to respond to changes in our strategic environment. We start from a position of strength in further developing our defence industrial base to meet Australia's future defence needs. Across the Australian economy, our defence industry is diversifying and expanding to match Defence's requirements, leveraging decades of investment and ingenuity. An overview of Australian defence industry development over the last 30 years and its key characteristics today is at Annex A.

Australian defence industry consists of businesses with an Australian Business Number and Australian-based industrial capability (such as Australian company and board presence, skills base, value-add work in Australia, infrastructure) that are providing or have the capacity to provide defence specific or dual-use goods or services in a supply chain that leads to the Australian Department of Defence or an international defence force.

1.3 As the *2016 Defence White Paper* states, Australia faces a more contested security environment over the next decade where our interests and national sovereignty will be tested more frequently. The Government is investing in an Australian Defence Force that is more agile, capable and potent, with a broader range of capabilities; a Defence Force that can achieve the Government's Strategic Defence Objectives (Table 1.1):

- positively shaping and advancing Australia's Strategic Defence Interests

- deterring efforts to coerce or undermine our independent decision-making
- undertaking independent and coalition military operations where required.

1.4 As we grow our defence capability we must also grow our industrial capability. We will need a larger, more capable and prepared Australian defence industry that has the resident skills, expertise, technology, intellectual property and infrastructure to:

- support Australian Defence Force operations today
- support the acquisition, operation and sustainment of future defence capability
- provide the national support base for Defence to meet current needs and to surge if Australia's strategic circumstances require it.

Table 1.1: Australia's strategic defence framework

Strategic Defence Interests		
A secure, resilient Australia with secure northern approaches and proximate sea lines of communication.	A secure nearer region encompassing maritime South East Asia and the South Pacific.	A stable Indo-Pacific region and a rules-based global order.
Strategic Defence Objectives		
Deter, deny and defeat attacks on or threats to Australia and its national interests and northern approaches.	Make effective military contributions to support the security of maritime South East Asia and support the governments of Papua New Guinea, Timor–Leste and Pacific Island Countries to build and strengthen their security.	Contribute military capabilities to coalition operations that support Australia's interest in a rules-based global order.

1.5 The Defence Industrial Capability Plan (the Plan) outlines the Government's vision to build a robust, resilient and internationally competitive Australian defence industry base that is better able to help meet defence capability requirements, advance Australia's economy and create and sustain Australian jobs. The Plan takes forward the work of the *2016 Defence Industry Policy Statement* to transform the Defence-industry relationship. It highlights existing and new initiatives and support available to Australia's defence industry sector.

1.6 The Plan also brings together in one place a description of recent Government policies and programs available to enhance local industry's capacity to deliver defence capability. It identifies entry points for businesses looking to join Australia's defence industry, as well as programs available for businesses already supplying goods and services to Defence. The Plan introduces a new Sovereign Industrial Capability Assessment Framework and an initial list of Sovereign Industrial Capability Priorities. It also summarises the Integrated Investment Program and signals future investment opportunities.

1.7 The Plan updates the definition of Australian defence industry[1] to emphasise that having a domestic capability and investment is important to be considered part of our defence industry. The Plan sends a clear message to international companies and partners wanting to do business with Defence that we expect them to invest in our country and our industrial capability. It recognises that transforming Australia's defence industry requires sustained effort and further work from both Government and industry, and that this Plan is part of a long-term goal to build an industrial base that is resilient, internationally competitive, innovative and high-tech to meet Australia's defence capability needs and national economic goals.

[1] Australian defence industry includes New Zealand entities consistent with the Australia–New Zealand Closer Economic Relations Trade Agreement.

The Defence Industrial Capability Plan

1.8 This Plan connects the policy framework established in the *2016 Defence Industry Policy Statement* with the strategies and plans established to achieve the defence industry we need. The hierarchy of our major defence industry policy guidance follows in Figure 1.1.

Figure 1.1: Defence Industry Policy Agenda

1.9 The Government's goal by 2028 is to **achieve an Australian defence industry that has the capability, posture and resilience to help meet Australia's defence needs**. We envisage a more internationally competitive and innovative defence industry that can provide the best capability to the Australian Defence Force. Realising this goal will require us to achieve three complementary elements:

- provide the best capability to the Australian Defence Force
- maximise Australian industry involvement in the acquisition, operation and sustainment of our defence capability
- optimise innovation, international competitiveness and cost effectiveness within our industrial base.

1.10 This will be met by achieving the five strategic objectives listed below:

- **A broader and deeper defence industrial base** where agile small to medium enterprises (SMEs) are better placed to interact with Defence and global defence companies, and are not solely reliant on the Australian Defence Force for their success.
- **A strategic approach to defence industry investment** to ensure Australian Government investment in critical defence capabilities is prioritised and Australian businesses are provided the maximum opportunity to be involved.
- **An innovative and competitive defence industry** with world-leading defence capabilities developed through increased collaboration between defence, businesses, universities and the research sector.
- **A robust defence industry export capability** where Australia's defence industry is a key player in international defence capabilities, providing greater stability for businesses across peaks and troughs in domestic demand and increasing their capability to support Defence.
- **A Defence and industry partnership that enables Australia to pre-position for the future**. This can be achieved by having the right people with the right skills in the right places at the right time to respond to change in our strategic environment, seize opportunities, and manage increasing strategic and technological complexity.

1.11 Australia's defence industrial base today is the product of decades of investment. Achieving the goals and strategic objectives set out in this Plan requires a more coordinated approach to developing our defence industry than in the past. We are not going to develop an industrial base with the capability, posture and resilience to meet our future defence capability needs overnight. We need a concerted approach that focuses on using all the levers to develop our defence industry with the long-term goal and strategic objectives in mind.

1.12 Ultimately, we seek the ability to operate, sustain and upgrade our defence capabilities with the maximum degree of defence and industrial sovereignty. This provides the basis for greater capability to design, integrate, update and achieve higher levels of Australian industry involvement. Over the next decade, we will acquire a range of new and enhanced capabilities that will change the capability and complexity level within our force. Our approach must be based on the following key elements:

- maintain and strengthen the industrial capabilities that underpin our warfighting advantage and ability to achieve the Defence mission with the maximum independence.
- grow the level of Australian industry involvement and technology transfer over the life of each major capital equipment acquisition project to support sovereign sustainment and maximise the industrial capability available to meet Australia's broader defence capability needs.
- implement a more mature approach to defence exports that seeks to leverage exports to deliver a more resilient industrial capability to the Australian Defence Force with maximum value for money
- effectively plan, guide and support Australia's defence industry to achieve our defence capability and industry objectives, including through sustained industry reform.

1.13 The Government's investment in Australia's defence capability comes with an expectation that international companies wishing to work with Defence will invest in Australian defence industry and establish Australian subsidiaries. The Government has an expectation that those companies wishing to work with Defence will have an Australian presence and Australian leadership influence, including at the senior leadership and board level.

1.14 By taking advantage of the available opportunities, Australian industry in 2028 will be larger, more capable and more internationally competitive than it is today. There will be more medium-sized Australian defence businesses pulling through SME-enabled supply chains across a geographically dispersed national industrial base. Our defence industry will be offering well paid, long-term career paths and investing heavily in science, technology, engineering and mathematics (STEM) skills. This will support the needs of a more complex Australian Defence Force and build greater capacity and capability in areas requiring greater sovereignty. The technology cycle will be very fast in many areas of the sector, requiring high degrees of innovation. Our export-oriented defence industry will be more internationally competitive and resilient, offering cost effective solutions to meet Defence's needs.

Sovereign Industrial Capability Priorities

1.15 Australian sovereignty and sovereign industrial capability are fundamental underpinnings of this Plan and its implementation. For Defence, **sovereignty is about the independent ability to employ Defence capability or force when and where required to produce the desired military effect**. Australia seeks the ability to maintain, employ, sustain and upgrade our Defence capabilities with the maximum level of Australian access to, or control over, the essential skills, technology, intellectual property, financial resources and infrastructure so that the Australian Defence Force is positioned to achieve the Strategic Defence Objectives.

Defence sovereignty is the ability to independently employ Defence capability or force when and where required to produce the desired military effect. It does not automatically mean a defence capability has to be designed, developed or maintained in Australia, but it does mean Defence has to have access to a functioning defence capability (whether radars or tanks) as and when required.

Australian defence industrial capability is the capability provided by Australian industry that contributes directly to the delivery of a defence capability. It becomes a **sovereign industrial capability** when Australia assesses it is strategically critical and must therefore have access to, or control over, the essential skills, technology, intellectual property, financial resources and infrastructure as and when required.

1.16 Australia must prioritise our resources towards Australian industrial capabilities that contribute to the most critical Australian Defence Force requirements, while also seeking to maximise Australian industry involvement in a way that builds greater sovereign industrial capability and provides value for money and efficiency in delivering defence capability. Sovereign Industrial Capability Priorities are intended to be a subset of broader defence industry policy. Companies delivering other goods and services to Defence will continue to have access to the other funding opportunities available to defence industry.

1.17 Australia's defence sovereignty is supported by many elements, including:

- possessing the resident technical capability to design, test and assure that equipment is operationally ready for service or to be returned to service
- accessing or controlling the technology and intellectual property that underpins our defence capability within Defence and Australian industry
- preparing an appropriately trained and equipped mission-ready defence capability
- ensuring an appropriately skilled Australian-based workforce and the infrastructure to maintain, sustain, repair, upgrade and upkeep defence capability
- access to allied capability that supports our warfighting advantage
- the ability to protect foreign sourced controlled technology employed by the Australian Defence Force
- Australian industry capability with the right workforce, skills, technical knowledge, preparedness and infrastructure to support independent Australian Defence Force operations.

1.18 These elements guide Defence's approach to capability development and rely on a combination of national, defence and industry capabilities sourced from Australia and overseas. Australia makes choices about the areas of priority for sovereign industrial capability based on the resources available, as well as the cost and time it would take to reach a required level of sovereignty versus the risk of not maintaining that capability in Australia.

1.19 To identify the initial Sovereign Industrial Capability Priorities, a Sovereign Industrial Capability Assessment Framework (the Framework) was developed to provide a systematic, repeatable process. This strategy-led Framework is designed to be responsive to changes in technology and our strategic environment, and to support the continuous review of Sovereign Industrial Capability Priorities as opportunities and challenges arise.

1.20 The Framework focuses on factors that influence Australia's ability to operate and sustain our defence capabilities independently, such as assuring the availability of operationally time-sensitive capabilities. As part of the Framework, a detailed analysis was also undertaken of Integrated Investment Program priorities for the next three to five years, current Defence requirements, and the industrial capabilities previously identified by the Government and Defence as requiring greater Australian input or oversight.

1.21 In this context, the initial Sovereign Industrial Capability Priorities identified in this Plan are focused on areas that:

- are operationally critical to the Defence mission,
- are priorities within the Integrated Investment Program over the next three to five years, or
- need more dedicated monitoring, management and support due to their industrial complexity, Government priority or requirements across multiple capability programs.

1.22 The initial Sovereign Industrial Capability Priorities are (in no particular order):

- *Collins* Class submarine maintenance and technology upgrade.
- Continuous shipbuilding program (including rolling submarine acquisition).
- Land combat vehicle and technology upgrade.
- Enhanced active and passive phased array radar capability.
- Combat clothing survivability and signature reduction technologies.
- Advanced signal processing capability in electronic warfare, cyber and information security, and signature management technologies and operations.
- Surveillance and intelligence data collection, analysis, dissemination and complex systems integration.
- Test, evaluation, certification and systems assurance.
- Munitions and small arms research, design, development and manufacture.
- Aerospace platform deep maintenance.

1.23 As part of Defence's strategic planning, the Sovereign Industrial Capability Priorities will be reviewed annually to assess their status and whether further focus on the delivery of these capabilities is required. The review will consider strategic, technological and industrial developments, acknowledging that we must be future-oriented when considering how defence industry sovereignty will meet future challenges as they arise. This periodic review process will ensure the priorities are aligned with technological developments as well as the critical requirements of the Australian Defence Force, both today and in the future.

1.24 The list of Sovereign Industrial Capability Priorities will be updated in future iterations of the Defence Industrial Capability Plan, which will be aligned with Defence's strategy cycle, including priorities within the Integrated Investment Program. Implementation details on how the Priorities will be guided, managed and supported across our defence planning are outlined in Chapter Two. We will consider them at every stage as part of our broader assessment of defence capability needs, rather than in isolation or solely at the industry support level. At the same time, decisions about industrial sovereignty will always be considered in the wider context of Australia's national interest, capability needs and funding parameters.

The Integrated Investment Program Capability Streams

1.25 The Government's investment in Australia's defence capability over the next decade will lead to a significant enhancement of our industrial base across all six Integrated Investment Program capability streams, from developing our naval shipbuilding industry and infrastructure to delivering our future combat and protected mobility vehicles, and meeting our explosive ordnance, combat clothing, and aerospace integration and sustainment needs.

1.26 In developing this Plan, an initial strategic assessment was undertaken across the capability streams to highlight where Australian industry will be best placed or needed to support defence capability needs over the next decade. Further details on future opportunities in each stream are included at Chapter Three and Annex B.

1.27 The long-term development path of Australia's industrial base will differ across each Integrated Investment Program capability stream and will engage differently with the set of levers available to Government (as discussed in Chapter Four). To support implementation of this first Defence Industrial Capability Plan, the Government will release Australian industrial strategies for each of the six Integrated Investment Program capability streams from mid-2019. This schedule takes into account the extensive consultation that will be required to ensure the analysis underpinning these industrial strategies is robust. The strategies will take into account the Government's major capability decisions over 2018, the initial implementation of the Sovereign Industrial Capability Priorities and the defence industry initiatives addressed in this Plan.

1.28 There are many examples of world-leading Australian innovations that have been recognised as providing a warfighting advantage to Australia and have been protected accordingly. The Government's commitments in the Integrated Investment Program – including to build a sovereign shipbuilding industry and to maximise Australian industry involvement in our combat vehicle program – will increase the advanced manufacturing base in Australia and create unprecedented opportunities for industry to contribute skills and innovation.

Other Defence industry initiatives

1.29 Defence is taking a strategic and coordinated approach to developing our defence industry to achieve the strategic objectives set out in this Plan. Some of the existing measures to support Australian industry and Defence to work towards these outcomes include:

- The reformed **Capability Life Cycle** in Defence to ensure Australian industry contributes more directly, earlier and throughout decision-making about defence capability.

- A strengthened **Australian Industry Capability Program** to maximise Australian industry involvement in major capital equipment procurements of $20 million and above.
- The **Centre for Defence Industry Capability** ($230 million) launched by the Minister for Defence Industry in December 2016 to bring together the private sector, Defence and AusIndustry to transform the relationship between Defence and industry and help deliver cutting-edge capability to Defence.
- The **Defence Innovation Hub** ($640 million) launched by the Minister for Defence Industry in December 2016 to build the supply chains to grow Australian innovation into defence capability through an agile and transparent approach to innovation investment.
- The **Next Generation Technologies Fund** ($730 million) launched by the Minister for Defence Industry in March 2017 to focus research and investment in leading-edge technologies that will provide future warfighting advantage to the Australian Defence Force.
- The **Defence Export Strategy** released on 29 January 2018 to deliver a comprehensive system to plan and guide defence export outcomes. The Strategy brings together the levers available to industry to provide end-to-end support for defence exports with much stronger linkages between building the Australian industrial capability required to help meet the Australian Defence Force's needs and increasing the resilience and sustainability of Australia's defence industry.
- **Defence Industry Security Program** reforms in 2016 expanded industry access to personnel security clearances and increased outreach to SME, ensuring they are informed about security requirements and threats; can attain necessary classified facilities and cleared personnel; and are able to effectively manage security risks and incidents.

1.30 Other important Government defence industry policy initiatives to be released in 2018 are:

- A **Defence Industry Skilling and STEM Strategy** to provide a comprehensive and enduring plan for growing our defence industry workforce and skills base to meet Defence's capability needs over the next decade.
- The **Defence Industry Participation Policy** to provide a more consistent approach to engagement of Australian industry at the national and/or local level in Defence procurements valued at $4 million and above.
- A refreshed **Defence Industry Security Program** to expand access and services for companies that are seeking work with Defence, or want to become 'Defence-Ready' for opportunities in Australia or overseas. Companies in the Defence Industry Security Program will see stronger engagement with Defence, focused on jointly managing and mitigating security risks to deliver uncompromised Defence capability.

1.31 The *2018 Defence Industrial Capability Plan* introduces additional initiatives to identify, manage and assure the industrial capabilities Australia wishes to retain or develop into a sovereign capability including:

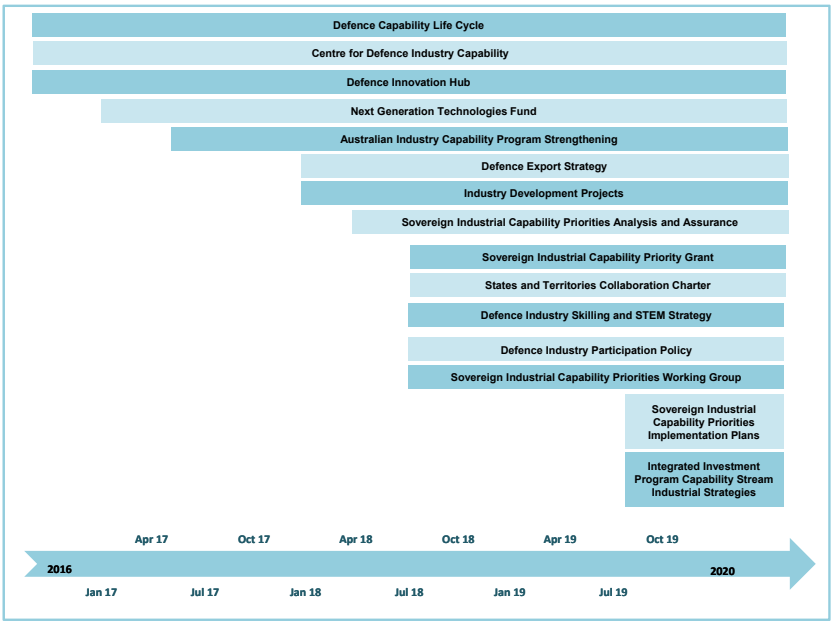
- **Sovereign Industrial Capability Priority Grants** to ensure Australian SMEs have the capacity to support Defence's most critical capabilities (see Chapter Two and Annex C).
- **Implementation Plans** for each of the Sovereign Industrial Capability Priorities – similar to the approach used for the Naval Shipbuilding Plan – that outline the level of sovereignty we seek to achieve for each of the Priorities and how they will be developed and supported across Defence planning (see Chapter Two and Annex C).

- **Industrial strategies for each Integrated Investment Program capability stream** to provide short, medium and long-term objectives for our Australian defence industry in each stream, and to outline how all of the available levers will be used systematically to achieve those objectives.
- **Industry Development Projects** to support the development of a sector-wide need that has been identified from within industry, the Centre for Defence Industry Capability, Defence Industry Policy Division or a capability or program area within Defence (see Chapter Four and Annex C).

1.32 The Government's goals for Australia's defence industry are complementary and mutually reinforcing. They focus on meeting Australia's defence capability needs through a comprehensive industrial strategy in a coordinated and coherent way. No single initiative can achieve this ambitious transformation of our defence industry – it will be the range of Defence planning measures and industry support mechanisms managed as a system that will, in aggregate, build an industrial base that is resilient and fit for purpose over the long-term.

1.33 Defence must strategically manage the defence industry and innovation system so that all elements are in place to develop our defence industry – from early identification of promising solutions in our innovation and capability programs through to industry capability development to meet domestic and international needs. That is the task of Defence Industry Policy Division, supported by the Centre for Defence Industry Capability and Defence capability managers and delivery groups. Industry must work with Defence to develop cost effective capability solutions that can meet the Australian Defence Force's needs. It must also reform in order to be positioned to realise the opportunities on offer over the next decade.

Figure 1.2: Defence Industry and Innovation Initiative timeline



CASE STUDY: Realising Opportunities

Heat Treatment Australia (HTA) is the largest commercial and aerospace heat treater in Australia, offering a range of thermal heat treatment services using innovative techniques and modern technology.

Founded in Queensland in 1979, the family business started its roots in the heat treatment of standard industrial, automotive and agricultural products. Pressure from globalisation meant that the company needed to change its business model to remain competitive.

HTA saw the Joint Strike Fighter (JSF) program as an opportunity to build its capabilities and enter the defence sector. The company understood that to participate would require a significant investment in time, effort and capital to achieve the appropriate certifications and qualifications. With the support of the CDIC (then the Defence Industry Innovation Centre) and Defence, HTA was able to leverage Australia's participation in the JSF program and enter the defence market.

The company is now building on this success and has facilities in Brisbane, Sydney and Melbourne, and has recently expanded into the United States with a facility in Los Angeles. HTA has been awarded a contract by BAE Systems' Commercial Aircraft Solutions to supply pressure manifolds for the LEAP family of jet engine controls. The controls are used in some of the biggest commercial aircraft jet fleets in the world, and will be assembled in the company's recently opened state-of-the-art Brisbane thermal processing facility.

HTA offers its solutions to a global market by partnering with companies such as RUAG Australia and Ferra to market Australian advanced manufacturing overseas.

HTA's success is a further demonstration of how competitive, innovative Australian companies can compete on a world stage and become part of global defence and aerospace supply chains.


2

Chapter 2: Building a Sovereign Industrial Base

2.1 Chapter One provided a definition of Defence sovereignty and addressed its important elements, noting that Defence sovereignty relies on a combination of Australian and overseas sourced components. This chapter focuses on the Sovereign Industrial Capability Assessment Framework and the initial Sovereign Industrial Capability Priorities, and how they will be managed and supported in defence planning.

Sovereign Industrial Capability Assessment Framework

2.2 The *2016 Defence Industry Policy Statement* announced the Government's commitment to develop a Framework to replace the Priority Industry Capabilities. The intent was to establish a repeatable methodology to identify and manage the industrial capabilities that are critical to Australian Defence missions. These industrial capabilities have been identified as those that must be developed and supported by Australian industry because overseas sources do not provide the required security or assurances. It is important that these capabilities are developed in a way that allows Australia to maintain a degree of access to, or control over them.

2.3 As part of the *2009 Defence White Paper* process, twelve Priority Industry Capabilities were identified as providing a strategic advantage by being resident in Australia, including in intelligence, surveillance and reconnaissance, electronic warfare, sustainment and repair, and combat clothing. The Priority Industry Capabilities Framework enabled these capabilities to be better supported to meet Australia's defence requirements. The Framework acknowledged that the priorities would change over time as the requirements and priorities of the Australian Defence Force changed. In the *2016 Defence White Paper*, the Government recognised that the Priority Industry Capabilities Framework needed to be replaced with a clearer and simpler way to prioritise and direct Defence's support to Australian defence industry across defence planning, and key areas of defence procurement and sustainment.

2.4 This Plan is underpinned by the concept of sovereignty and sovereign industrial capability. Australia seeks the ability to maintain, employ, sustain and upgrade our defence capabilities with the maximum level of Australian access to, or control over, the essential skills, technology, intellectual property, financial resources and infrastructure, so that the Australian Defence Force is positioned to achieve the Strategic Defence Objectives.

2.5 Of course, there are times when developing a capability here would take too long, cost too much, or break an existing agreement with a foreign government.

2.6 To provide a systematic, repeatable identification of these Sovereign Industrial Capability Priorities, a Sovereign Industrial Capability Assessment Framework was developed. The Framework is designed to be responsive to changes in technology and our strategic environment, and support the continuous review of Sovereign Industrial Capability Priorities as opportunities and challenges arise (Figure 2.1).

2.7 The Framework builds on the *2016 Defence Industry Policy Statement's* six assessment criteria as a starting point to identify sovereign industrial capabilities:

- **Protection of intent:** in employing military capability without divulging military intent
- **Independence of action:** in unimpeded use of military capability for the purpose of achieving a strategic objective
- **Interoperability limits and benefits:** in the conduct of missions with and alongside allies and coalition forces
- **Assurance of supply:** in access to industrial capability without unacceptable risks to security or guarantees of supply
- **Essential skills retention**: in terms of skills that are core to delivering industrial capability and that must be resident in-country for reasons of security and supply assurance
- **Leveraging competitive advantage:** acknowledging that while Defence is the priority customer, a company with a competitive advantage offers scales in production that can be leveraged locally and globally, and potentially for both defence and civil application.

2.8 The *2016 Defence White Paper* provided a strategic framework from which to judge industrial capabilities in the context of achieving the Australian Defence Force's mission today, and assessing requirements within Integrated Investment Program capability programs. Four areas were assessed as key to understanding the Australian Defence Force's requirements for a sovereign industrial capability, which was reinforced through analysis of international approaches to defining and developing sovereign industrial capabilities. The four key areas are:

- **High readiness/no discretion:** Australian-based capabilities that allow us to deter, deny and defeat attacks on, or threats to, Australia and its national interests and northern approaches, and our other equally weighted Strategic Defence Objectives.
- **Australian control:** capabilities for which Australian control is essential to provide assurance of availability, meet our Alliance obligations, or where an Australian solution is required due to the lack of viable international alternatives.
- **Sustaining current capability:** capabilities that allow us to operate, sustain, update and repair the joint force to enable the conduct of Australian Defence Force operations in line with our defence posture.
- **Lead time indicators:** longer lead-time capabilities that add resilience to our defence through a high level of Australian control where it is economically viable to maintain them here or where the cost of re-establishing them if forsaken would be cost prohibitive, and capabilities that provide a base for mobilisation should our strategic circumstances change.

2.9 To narrow down the list of industrial capabilities, the Framework also assessed:

- the capabilities needed to support Defence preparedness and operational requirements
- whether the capability was only available from Australian industry
- our alliance obligations
- time required to establish a capability within Australia where relevant
- the difficulty associated with re-establishing an industrial capability once lost

- the level of risk we are willing to accept against the absolute certainty of guaranteed access to an industrial capability, and
- the immediate or long-term value for money options associated with building, retaining or increasing access to industrial capabilities within Australia.

2.10 Strategic and capability-based assessments were then periodically tested with expert Defence force designers, capability managers and delivery groups, and the Defence Science and Technology Group. This multi-stage review sought to clarify the nature and level of sovereign industrial capabilities relevant to Defence needs, and to continually refine and adjust the Priorities down to the most specific industrial capability level possible. Guidance was also periodically sought from the Defence Investment Committee and further refinement was undertaken as a result of whole-of-government consultation.

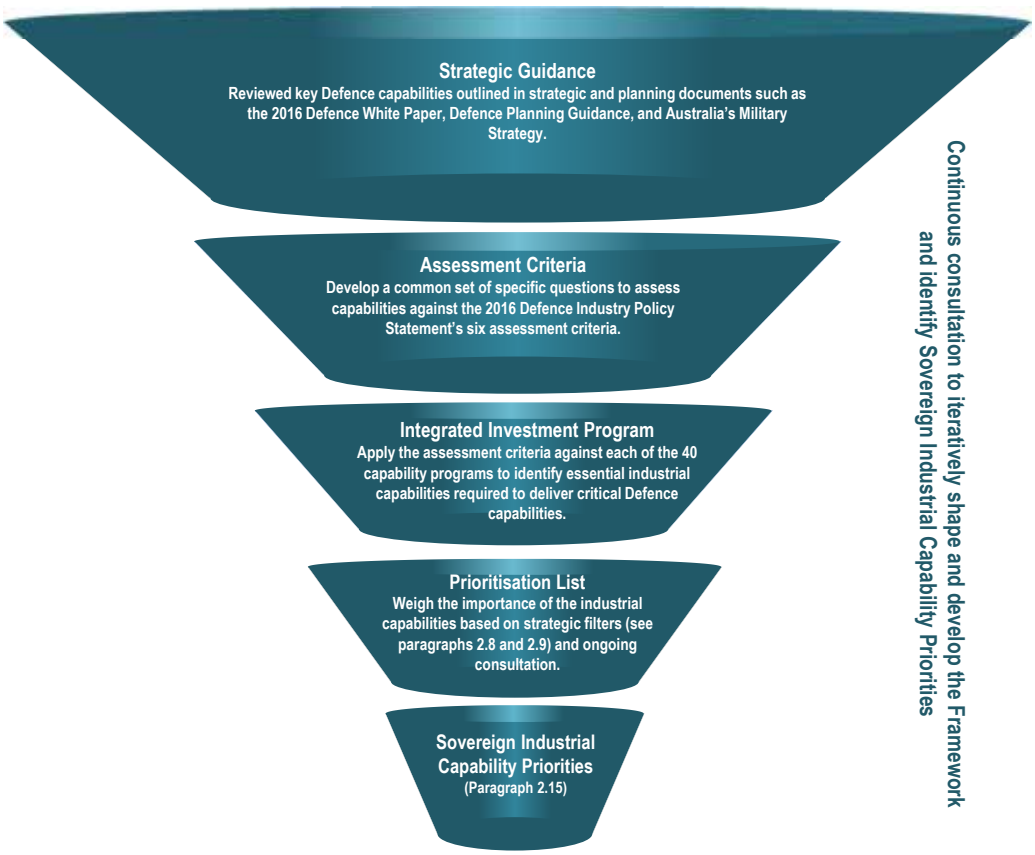
2.11 In making these judgments, the Framework did not seek to address whole-of-nation level issues and dependencies, such as national fuel infrastructure, noting that Defence represents only around one per cent of national annual fuel consumption and can draw on a range of contingency arrangements and emergency legislation if required.

2.12 Based on the application of the assessment criteria and following an extensive consultation process with Defence experts, ten initial Sovereign Industrial Capability Priorities were identified that:

- are operationally critical to the Defence mission,
- are priorities within the Integrated Investment Program over the next three to five years to maintain their ability to meet Defence needs, or
- due to their industrial complexity, Government priority or requirements across multiple capability programs, need more dedicated monitoring, management and support to meet Australia's defence needs.

2.13 In identifying this initial list, it is acknowledged that there are other industrial capabilities that warrant continued review and further consideration as part of the annual review cycle. It is also acknowledged that some of our priorities will shift over time as a result of changes in our strategic environment and technological developments. Moreover, as we implement the Integrated Investment Program and grow Australian defence industry capability, this will bring new and enhanced sovereign industrial capability. As part of our review processes, we will be looking to areas where technology will drive requirements and opportunities for sovereign industrial capability ahead of new capabilities being introduced into our force. These considerations will complement our already significant investment in harnessing next generation technologies through the Next Generation Technologies Fund.

Figure 2.1: Sovereign Industrial Capability Assessment Framework



Sovereign Industrial Capability Priorities

2.14 Applying the Framework's multiple filters enabled Sovereign Industrial Capability Priorities to be identified that span across capability streams, programs and projects, including some already embodied in a number of our current capabilities. In some instances, new priorities reflect continuity with the Priority Industry Capabilities, which may not be a surprise given the critical role these capabilities play in achieving our Strategic Defence Objectives. The Sovereign Industrial Capability Priorities are described at an industrial capability level to allow technologies – rather than companies or products – to be the focus with the aim of encouraging innovation and new developments in existing technologies.

2.15 Implicit in all Sovereign Industrial Capability Priorities is the expectation that capabilities will be resident in Australia over time. This includes in areas such as Australian-owned and accessed intellectual property, system design, integration and sustainment, complex engineering capabilities, operational testing and evaluation, and Australian infrastructure, workforce and technical skills. The Priorities are expressed at different levels, reflecting the nature and level of industrial sovereignty that we seek differs across different components of our defence capability. The Government has agreed the following initial Sovereign Industrial Capability Priorities (in no particular order):

- ***Collins* Class submarine maintenance and technology upgrade** – our submarine capability is integral to our conception of national sovereignty, supporting deterrence, freedom of action and surprise. Australian industry must have an ability to enhance, sustain, repair, operate and upgrade our submarine capability with particular importance being placed on the sonar sub-system, tactical and weapons control system, signature management and endurance. Endurance includes batteries for energy storage and propulsion systems.

- **Continuous shipbuilding program (including rolling submarine acquisition)** – Australian industry must have the technical, managerial, heavy engineering and advanced manufacturing capabilities required to build an innovative, cost-competitive, sustainable and continuous program that delivers Australia's future submarines, major surface combatants and minor war vessels. Australian industry will need to be integrated into global supply chains, have modern, productive and secure shipyards, and employ a highly skilled workforce both for shipbuilding and sustainment. Establishing 21st century shipyards for design, construction and optimal production efficiency of our future submarines, frigates and minor war vessels is critical to achieve the capability, reform and efficiency dividends required, as is having a workforce in place with the right skills when needed.

- **Land combat vehicle and technology upgrade** – our land combat vehicle capabilities are being revolutionised through a number of major procurements and upgrades to deliver advanced next generation combat vehicles. The level of technology associated with these will be far more advanced than previous generations. Australian industry, including members of vehicle supply chains, must have the capability and capacity to design, develop, manufacture and integrate new systems and equipment, as well as the ability to update and upgrade them to enable the Australian Defence Force's land combat vehicles to meet the challenges of the day. Broad Australian industry involvement in the delivery of the new Combat Reconnaissance Vehicle program for example will ensure Australia develops the sovereign capability to maintain a lethal, relevant and effective capability into the future.

- **Enhanced active and passive phased array radar capability** – phased array radar capability is only one element of a broader system, but it is a critical one where Australia has a world leading capability and advantage. The ability to detect adversary forces – actively or passively – seeking to operate with similar discretion will be critical to offensive and defensive operations in all environments. Australian industry must possess the ability to design, develop, manufacture, maintain and upgrade passive and active electronically-scanned array radar systems.
- **Combat clothing survivability and signature reduction technologies** – Australian industry must possess the ability to provide significant operational advantages through signature reducing characteristics and enhanced blast protection incorporated into the soldier combat ensemble. Australian industry must be positioned to refine, enhance and upgrade stealth and survivability technologies to provide a level of force protection that gives our soldiers a warfighting edge. Only the specific technologies relevant to signature reduction and ballistic protection that are considered part of this Sovereign Industrial Capability Priority. As such, general combat clothing is not an element of this Priority.
- **Advanced signal processing capability in electronic warfare, cyber and information security, and signature management technologies and operations** – Australian industry must understand, design, develop and use technology applications to maintain an advanced signal processing capability in the area of cyber and information security, radar, sonar and acoustic technologies, electronic warfare operational support (including threat recognition, targeting and planning), and signature management.

- **Surveillance and intelligence data collection, analysis, dissemination and complex systems integration** – Australian industry must possess an ability to design, develop, maintain, and upgrade persistent surveillance capability so that large amounts of data can be collected, analysed and disseminated across the joint force. This includes developing and upgrading sensors and software, over-the-horizon radar systems, space situational awareness systems, the integration of intelligence and information systems into Command and Control (C2), Communications, Computers and Intelligence (C4) networks, high-end integration across platforms, trusted autonomous systems, cryptographic equipment, and weapon systems that provide Defence with improved situational awareness.
- **Test, evaluation, certification and systems assurance** – providing the initial and in-service test, evaluation, certification and systems assurance of Defence platforms and systems is a shared Defence and industry role. This ensures that our equipment is fit and safe for purpose for the Australian operating environment, operationally ready and secure, and able to be sustained for maximum benefit over its service life. Australian industry must have a suitably skilled workforce and the equipment needed to ensure the safety, accessibility and usability of Defence platforms and systems, both for peacetime and operations. These capabilities must support Australia's unique requirements, and allow indigenous design, development and implementation of modifications and upgrades.
- **Munitions and small arms research, design, development and manufacture** – kinetic weapons and payloads will continue to underpin the Australian Defence Force's military capabilities over the next decade. These will continue to be delivered primarily by industry through a number of major acquisition and sustainment projects. Australian industry must be able to manufacture propellants, munitions, ammunition and small arms that provide our soldiers with a warfighting advantage.

- **Aerospace platform deep maintenance** – complex or specialised maintenance of the Australian Defence Force's rotary and fixed wing aircraft such as our F-35A Joint Strike Fighters and large remotely-piloted aerial vehicles in Australia in the required timeframes is critical to both deterrence and the effective conduct of operations. Defence and Australian industry provide different levels of repair and maintenance at different points in the operating cycle. Australian industry must possess the industrial skills and technology for the conduct of deeper level maintenance of our rotary and fixed wing aircraft and large remotely-piloted aerial vehicles to enable Defence to reduce strategic and operational risk.

2.16 These Sovereign Industrial Capability Priorities have been selected because they are important to the defence capability we need today for deterrence, to operate and sustain the Australian Defence Force in operations, and to maintain our warfighting advantage. Of course, a much wider range of Australian industrial capabilities are required to meet our defence capability needs.

2.17 In the long-term, the Government intends for Australian industry to provide Defence the maximum amount of cutting-edge capability, at the best value for money. To achieve this, Australia must build on our existing defence industry by broadening and deepening the industrial capabilities in Australia, and increasing the level of Australian-based ownership and control over industrial capabilities and supply chains. A range of new and existing initiatives that show how Government is supporting, and will continue to support, Australian industry to take advantage of these opportunities in defence industry over the next decade are explained in Chapter Four.

Sovereign Industrial Capability Priorities and the Integrated Investment Program

2.18 The Government's investment in Australia's defence capability over the next decade will transform Australia's industrial base across all of the six Integrated Investment Program capability streams. This includes from developing our naval shipbuilding industry and infrastructure, to delivering our future combat and protected mobility vehicles, and meeting our explosive ordnance, combat clothing, and aerospace integration and sustainment needs.

2.19 This industrial capability will be supported through the Australian Industry Capability Program that applies to every major capital equipment project of $20 million and above, and the suite of industry and innovation programs already established to develop the Australian defence industry we need to support our defence capability.

2.20 Given the scale of Government investment over the next decade and the need to strengthen Australia's broad-based defence industry, there will be significant opportunities for Australia's defence industry across the Integrated Investment Program capability streams as outlined in Chapter Three, including in each of the Sovereign Industrial Capability Priority areas.

Support for Australia's Sovereign Industrial Capability Priorities

2.21 Building Australia's sovereign defence industrial base is a long-term body of work, and will require a coordinated effort. Management and support for Sovereign Industrial Capability Priorities will start at the very beginning of defence planning, continuing throughout the Force Design Cycle and Capability Life Cycle, including the Australian Industry Capability Program, all the way to grants and initiatives to support industry capability development.

2.22 Defence will carefully consider the requirements to support the Sovereign Industrial Capability Priorities in planning the future force and programming the Integrated Investment Program. Defence will incorporate advice on managing the Priorities in guidance to Government on the development of our future force and broader defence capability. Importantly, these decisions will be made within the wider context of Australia's defence capability needs, funding priorities, and options to deliver the level of sovereignty required. It is not about a predetermined set of decisions. The options and means to assure each Sovereign Industrial Capability Priority will be different according to the size, scale and nature of the industrial base within it.

Figure 2.2: Primary levers to manage and support Sovereign Industrial Capability Priorities

2.23 Defence and the Centre for Defence Industry Capability will progressively map and gather detailed information for each Sovereign Industrial Capability Priority. Using the initial list of Priorities as a starting point, Defence and the Centre for Defence Industry Capability will identify the various inputs, knowledge and organisations that contribute to each, and will strengthen their **industrial analysis capability** to develop and maintain an understanding of the sectors and businesses which are directly supporting these capability priorities. Defence will release an **implementation plan** for each Sovereign Industrial Capability Priority from mid-2019. The Plan will outline the level of sovereignty we seek to achieve and how each capability will be developed and supported across Defence planning to maintain capacity and resilience, including workforce and skilling considerations. Where appropriate, a forecast of technological developments in the field will be provided to highlight potential impacts on future defence capabilities.

2.24 The **Australian Industry Capability program** is the single most important and impactful lever we have to drive Australian defence industry development, and will also play a critical role in supporting our Sovereign Industrial Capability Priorities. Changes will be made to the Australian Industry Capability Plan template to extend requirements on tenderers and to provide additional guidance on Sovereign Industrial Capability Priorities as required.

2.25 The Sovereign Industrial Capability Priorities will be incorporated in the **Force Design and Capability Life Cycles** alongside consideration of Australian industry as a fundamental input to capability and innovation opportunities. The Force Design Cycle allows Defence to continuously assess current and planned defence capabilities to identify gaps and opportunities in the development of our future force. This ensures decisions are based on joint capability priorities and a balance of investment considerations to achieve the Strategic Defence Objectives. The Capability Life Cycle ensures industry engagement is undertaken before a major capability project or program is approved. Integrating Sovereign Industrial Capability Priorities as a consideration in the planning of the future force and programming of the Integrated Investment Program will ensure that our Priorities are addressed seriously and consistently.

2.26 A **Sovereign Industrial Capability Priority Grant** will be established in 2018-19 and administered through the Centre for Defence Industry Capability. This grant system will help to ensure that Australian SMEs have the capacity and resilience to support Defence's Sovereign Industrial Capability Priorities. Investment decisions will be based on clear alignment with Defence's requirements. See Annex C for more information.

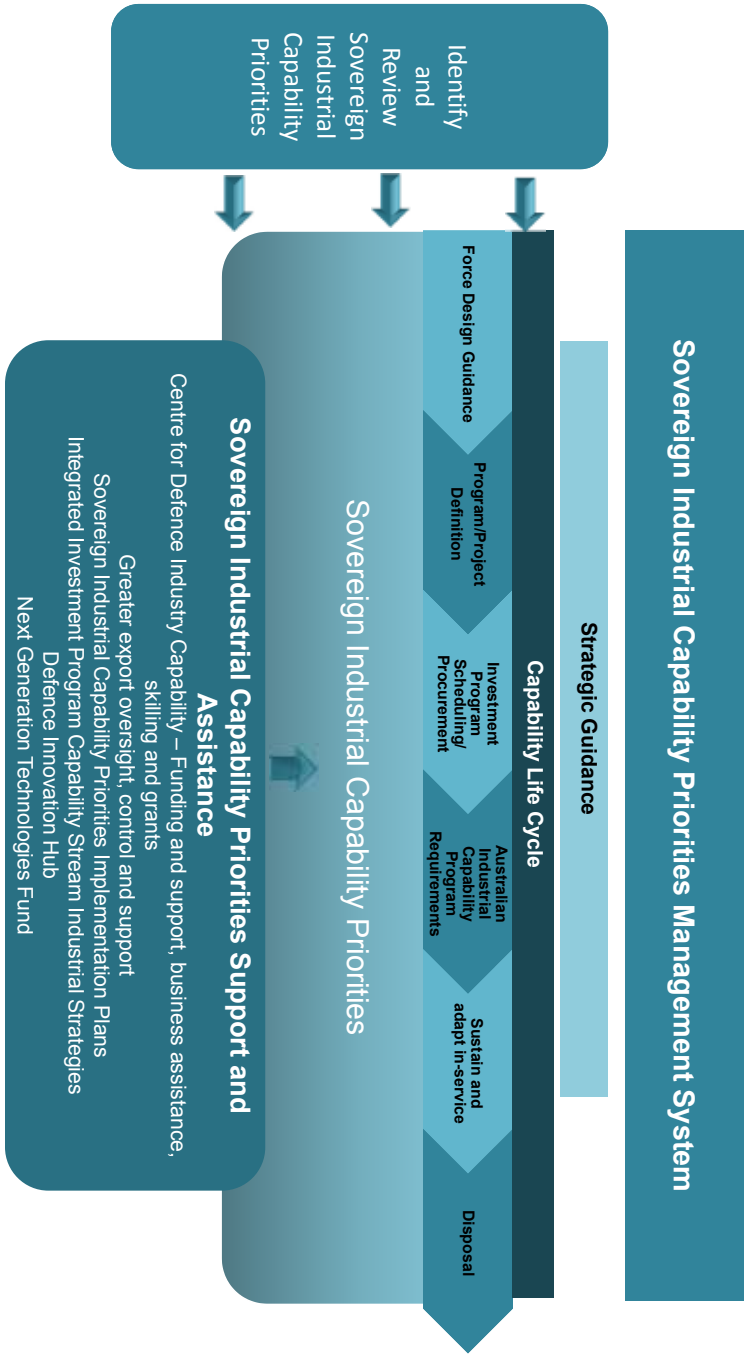
2.27 The Government also has a responsibility to work with industry to ensure that our Priorities are secured and protected. This includes protecting sensitive information and technologies that provide our warfighters with a capability edge. We must also take steps to ensure that our allies and close partners continue to have confidence in our ability to protect these technologies. The Defence Security and Vetting Service develops security policy, provides security support services, and grants personnel and facility clearances. It also provides risk advice and conducts security investigations. The Defence Security and Vetting Service will provide businesses involved in supporting a Sovereign Industrial Capability Priority with vital security support through the **Defence Industry Security Program**, including advice and industry vetting on a fee-for-service basis.

2.28 The Australian Government welcomes foreign investment. It represents confidence in Australian industry to deliver world-class products and services, signals growth prospects for the economy, and provides Australian industry with access to more resources and technical expertise. The establishment of business operations in Australia or capability transfer, such as the transfer of skills and knowledge or technical data from a foreign entity, is a key tenet of the Australian Industry Capability program.

2.29 The importance of an assured supply of industrial capabilities means we cannot allow organisations that provide industrial inputs to a Sovereign Industrial Capability Priority to be acquired by foreign entities without considering the impacts for Defence and its Sovereign Industrial Capability Priorities in a broader context. To ensure foreign investment proposals are consistent with Australia's national interest, the Government will review major foreign investment proposals through the Foreign Investment Review Board.

2.30 A **strong partnership** must be established between Defence and industry to maintain a coordinated and focused approach to managing and supporting our sovereign defence industry. Defence will establish a **Sovereign Industrial Capability Priorities Working Group** to understand the issues impacting the Sovereign Industrial Capability Priorities and to ensure appropriate action is taken by Government to ensure these capabilities continue to be managed. Membership of this group, led by Defence Industry Policy Division, will include representatives from Defence and the Centre for Defence Industry Capability. It will also draw on industry expertise as required.

Figure 2.3: Support system for Sovereign Industrial Capability Priorities



2.31 The Sovereign Industrial Capability Priorities Working Group will:

- **Provide direction to industry** to ensure efforts to develop new technologies and their applications are focused on the needs and requirements of the Australian Defence Force.
- **Inform Defence representatives of issues impacting industry** that, if left unchecked, could threaten the viability of the Sovereign Industrial Capability Priorities.
- **Assist industry to understand Defence requirements** for Sovereign Industrial Capability Priorities and how and when they are expected to be used in Defence.

2.32 These initiatives represent only a small subset of the levers available to Government and industry to ensure that Australia's defence industry is best placed to support the Australian Defence Force. Industry will be able to access a number of support mechanisms to help it improve the viability of an organisation that delivers Australia's Sovereign Industrial Capability Priorities. This may include access to existing industry programs across Defence and the Department of Industry, Innovation and Science, or grants and direct investment mechanisms. More detail on the levers underpinning the implementation of this Plan is at Chapter Four.

Obligations on Australian industry within Sovereign Industrial Capabilities

2.33 In identifying Sovereign Industrial Capability Priorities, the Government is highlighting capabilities within Australian industry that are critical to Defence, and which Defence will manage across its planning, and its defence and industry capability development.

2.34 Being part of a Sovereign Industrial Capability Priority brings responsibilities and should not come with an expectation of assured work from Defence. It requires companies to carefully manage and build their Australian-based workforce, skills and capability to meet Australia's defence needs, and work closely with Defence in assuring their security – including cyber security – resilience and sustainability domestically and in respect to exports.

2.35 Strong Australian-based decision-making and structures are required. Defence also expects to be consulted on proposed changes in ownership structures and for companies to consider carefully any decisions that impact Australian access and control.

2.36 Defence will carefully monitor Sovereign Industrial Capability Priorities and expects companies to act responsibly, consistent with Australia's national interests. Defence will take account of this in decision-making on Australian industry involvement in meeting capability needs.

2.37 Similarly, the Government expects international companies wanting to work with Defence to consider the Sovereign Industrial Capability Priorities and how their capability proposal can best contribute to Australia's objectives in these areas.

Transitioning from priority and strategic industrial capabilities

2.38 The Sovereign Industrial Capability Assessment Framework and Priorities replace the Priority Industry Capability (PIC) policy. Reference to PICs will cease in future Defence procurements, however existing contracts or other commitments will be honoured where PICs have been identified and implemented, for example in Australian Industry Capability Plans. The scope of some PICs has also been integrated into the new framework.

2.39 It is critical that the new Sovereign Industrial Capability Priorities are implemented and managed effectively across Defence strategy, capability and industry planning. A summary of the suite of initiatives, plans and actions to be implemented is shown in Figures 4.1 and 4.2.

More information on Sovereign Industrial Capability Priorities

2.40 A range of materials, including fact sheets, are available to support the introduction of the new Sovereign Industrial Capability Priority approach. These are available at www.defence.gov.au/SPI/Industry/CapabilityPlan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Chapter 3: Integrated Investment Program

3.1 In developing the *2016 Defence White Paper*, Defence introduced the Integrated Investment Program to better link defence capability to defence strategy. The breadth, complexity and interrelated nature of all Defence capabilities and enablers are captured in six capability streams to better represent the key force elements – decision-making superiority; enabled, mobile and sustainable forces; and potent and agile offensive response. The Integrated Investment Program highlights proposed future expenditure on capital equipment, infrastructure, information and communications technology, and the workforce that is required to meet the capability goals of the *2016 Defence White Paper*.

3.2 The Government will capitalise on its more than $200 billion investment in Australia's defence capability over the next decade to grow Australia's defence industrial base as a source of advanced manufacturing, high technology and innovative capabilities, and one which delivers globally competitive products and services to Defence and our international partners.

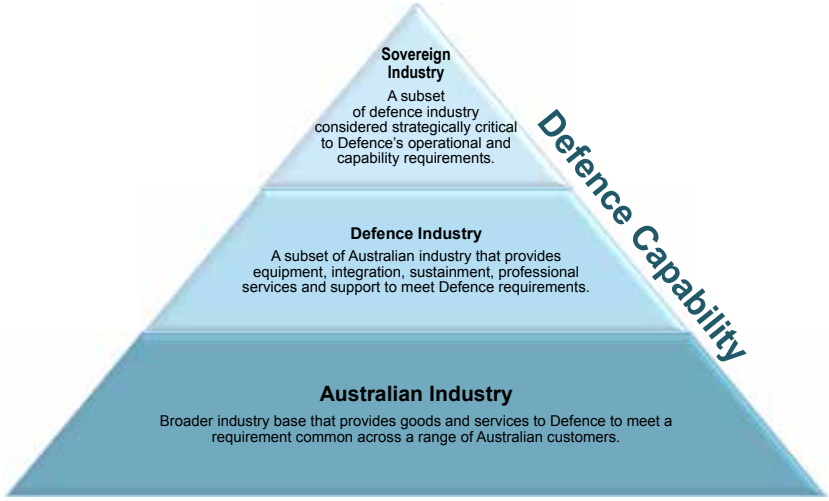
3.3 The capability within Australian industry provides a solid foundation from which to meet Australia's defence capability needs and challenges over the next decade. However, it will take a systematic approach – ranging from defence planning measures through to industry support mechanisms – to build an industrial base that is resilient and fit for purpose over the long-term. Defence's recent analysis of Australia's defence industry shows that it incorporates a group of diverse and responsive organisations, servicing both defence and non-defence customers across a variety of industry sectors. Current and aspiring defence industry organisations employ a multi-skilled workforce, capable of generating many industrial capabilities, and delivering a range of products and services to defence and non-defence customers in Australia and overseas. New and active market participants, as well as aspiring market entrants, are emerging in greater numbers seeking to make the most of current and future opportunities. Figure 3.1 shows the critical role of Australia's broader industry in providing a solid base for defence industry and Sovereign Industrial Capability Priorities.

3.4 While Australia's defence industry has evolved and matured significantly in response to a range of political, economic, technological, environmental and social forces, global defence industry supply chains are now also more connected than ever before. This presents opportunities for companies generating products and services ready to export, but it also increases competition and risk. Geopolitical instability and rapidly evolving military threats places additional pressures on the Australian Defence Force and defence industry by increasing demand for superior defence technologies. Australia's defence industry must be ready to compete in this rapidly changing, high-tech environment.

3.5 This chapter provides an analysis of the more than $200 billion Integrated Investment Program by capability stream to provide insights into where industry will likely be best placed or most required to support defence capability over the next decade. It aims to guide industry planning for future opportunities and activities. This guidance is framed within the context that the Integrated Investment Program is constantly evolving in line with Government decision-making that is informed by emerging threats, rapid technology change, the rate of new capability acquisition and budget priorities.

3.6 Further detail on each capability stream is provided in Annex B. More detailed project and program information will be available through the Integrated Investment Program web page to be launched in 2018.

Figure 3.1: Industry levels building Defence Capability



Stream One: Intelligence, Surveillance, Reconnaissance, Electronic Warfare, Space and Cyber

3.7 Evolving threats and changes in technology require further investment to develop and maintain Australia's capability edge, including strengthening decision-making superiority. Over the next decade, the Government plans to invest approximately $35 billion of the Integrated Investment Program in this stream. This will improve Australia's intelligence capabilities, maintain surveillance, enhance imagery capacity and strengthen analytical capability for the Australian Defence Force and other national security agencies.

3.8 Defence is interested in strengthening technologies, systems and processes that improve intelligence collection, analysis and dissemination across all capabilities and in all domains as security threats become more complex. This includes the advanced use of biometric data, as well as innovation in cyber capabilities to support every facet of capability development.

Overview of expected Australian industry engagement

3.9 Success in all military operations is dependent on providing tailored and near real-time situational awareness, and effective electronic and cyber response to commanders. Defence will acquire these capabilities through a mix of global defence primes, Australian industry providers and in-house development. Australia has world-leading skills and capabilities in this stream and can provide locally sourced solutions where access to the required technology is not available through the international market.

3.10 Enhancements in this stream will require a large expansion in the Defence industry workforce over the next decade. People with suitable skills in this area will be in high demand across the broader economy. In particular, we already know a key risk to delivering an enhanced cyber capability will be the ability to recruit and retain a highly skilled workforce. The particular knowledge and skills required in this stream are currently in short supply. Growth will be supported by targeted recruitment and a joint approach to training and retention programs.

3.11 By 2028, Australian industry will be half way through a multi-billion dollar enhancement of the Jindalee Operational Radar Network (JORN), and will be supporting a range of new enhanced capabilities in this stream, including increased cyber and space capability. Industrial capabilities in this stream will be operating at high rates of technological change and readiness in line with changes in Australia's strategic environment.

3.12 Another project providing opportunity to Australian industry is the Collins Sonar Capability Assurance Program that will upgrade Collins' sonar sensors and processing to improve reliability and performance. This project will provide opportunities for Australian-based companies to maintain and grow their expertise in the latest developments in underwater sensing technology. Other opportunities will evolve to support the acquisition and sustainment of new and enhanced capabilities being introduced into service, such as the MQ-4C Triton, both at their home and forward basing location.

3.13 Defence's nascent space programs will be developed into national capabilities over the next 10 to 15 years, and opportunities exist in the design, delivery and operation of space situational awareness, satellite imagery, space operations and big data management and analytics capabilities.

Export and global market opportunities

3.14 An important factor in successfully supporting this global market for Australian industry will be obtaining and maintaining suitable security credentials and export permits to support customers within the Five Eyes Community.

3.15 Sensitive Australian-developed technologies in this stream are likely to be tightly controlled and exports potentially facilitated through government-to-government arrangements. Industry will also need to be well-attuned and capable of responding to rapid evolutions in technology that can disrupt military capabilities in this field and make planned acquisitions obsolete.

Stream Two: Key Enablers

3.16 The most capable and technologically advanced military platforms and systems are ineffective without the enabling capabilities that underpin their operation and sustainment. These enablers include Defence's human resources; infrastructure such as bases, training ranges, wharves and airfields; information and communications technology; logistics; fuel; science and technology; and health services. The Government is investing approximately $44 billion of total Integrated Investment Program expenditure over the next decade on key enablers to meet defence capability requirements.

Overview of expected Australian industry engagement

3.17 Australian industry will continue to play a critical role in delivering asset enhancements, particularly for those based domestically. This will include prime contractors or supply chain members in Australia's communications and information and communications technology (ICT), engineering and construction sectors. The latter will be necessary to support the construction, repair, and upgrade of existing Australian Defence Force assets and estates, as well as facilitating significant upgrades to critical national assets, such as the Woomera Range Complex in South Australia.

3.18 This stream provides an array of potential opportunities for industry to support defence capabilities. Key will be the provision of ongoing support for Defence's ICT requirements through the Single Information Environment, construction of infrastructure to meet Defence's needs, hosting United States Forces in the Northern Territory, and industry's involvement in emerging and future technologies in the health services sector.

3.19 Over the next decade, ICT systems will be upgraded and streamlined to ensure they provide optimal support, from everyday defence business through to military operations. This is a significant undertaking as Defence has one of the largest technological environments in Australia which supports more than 100,000 workstations domestically and internationally, and manages more than 800 networks, over 200 processing locations and more than 3,000 applications. The short life cycles associated with this type of technology means that Australian industry, whether as a direct supplier to Defence or through sub-contracting arrangements, will need to be highly responsive to risks of obsolescence or incompatibility, and be able to respond in an increasingly agile and flexible way.

3.20 The development of upgraded and enhanced information and communications systems will require Australian industry capability in software development and computer system design. Enhancements to weapons training facilities will continue to take advantage of advances in simulation and demonstration technologies, providing opportunities for Australian industry in the provision of hardware and software solutions to support the Australian Defence Force's newly acquired platforms and equipment.

3.21 There will be opportunities to contribute to Defence's infrastructure and estate operations that support over 90,000 personnel across Australia. This will draw upon Australia's heavy and civil engineering and construction capabilities, as well as architectural, surveying and mapping services. These opportunities include the construction of residential and non-residential infrastructure on Defence bases, support bases and airfields such as:

- The Explosive Ordnance Logistics Reform Program, a $230 million project to upgrade existing storage infrastructure and increase storage capacity across the explosive supply chain network around Australia.
- The $24.1 million Townsville Field Training Area Mid-Term Refresh project, First Pass approved in August 2017; the $66.6 million Royal Australian Air Force (RAAF) Base Townsville Mid-Term Refresh project, First Pass approved in December 2016; and the $22 million HMAS Cairns Mid-Term Refresh, First Pass approval in September 2017, will draw upon Australia's heavy and civil engineering and construction capabilities as well as its architectural, surveying and mapping services.

3.22 The Government is continuing to prioritise investment in major capital facilities across Australia, including airfields, wharves, bases, training areas and other facilities. Defence will need the support of local businesses to sustain such a large and geographically dispersed asset base. Defence maintenance and support locations across Australia include:

- Oakey and Townsville in Queensland, Darwin in the Northern Territory, and Nowra in New South Wales for helicopters.
- Bandiana and Bendigo in Victoria and Darwin in the Northern Territory for military fighting vehicles.

- Lithgow in New South Wales for weapons manufacture and maintenance.
- Mulwala in New South Wales and Benalla in Victoria for ammunitions and explosive ordnance manufacture.

3.23 The domestic industrial base will continue to be relied upon for logistical, health, education and other support services across Australia. The demands upon Defence to manage a larger, heavier, and more complex force operating at a higher tempo will place additional demands on Australian industry to meet Defence's needs across the country. This includes supporting the US Force Posture Initiatives in Northern Australia and our broader international training, exercise and engagement activities.

Export and global supply chains opportunities

3.24 Given the substantial security and accreditation requirements for military ICT and infrastructure worldwide, there is an opportunity for Australian industry to provide its services overseas, particularly within the Five Eyes Community.

3.25 The Australian Defence Force's adoption of digital training and simulation systems has led to an enhanced domestic capability being developed in this field. Australian industry is well positioned to pursue opportunities overseas as an experienced and mature supplier of these capabilities.

3.26 The capabilities developed within the Australian industrial base to support the management, repair and sustainment of Defence capabilities and logistical, health and other professional services offer great potential to be expanded into our region as regional militaries develop their capabilities. This was highlighted as part of the Defence Export Strategy.

Stream Three: Air and Sea Lift

3.27 Australia's geostrategic position requires the Australian Defence Force to operate over vast distances to support and protect our Strategic Defence Interests. As a result, the Australian Defence Force needs a more capable, flexible and high endurance air and sea lift capability over the next decade. This is critical to enable the lift, movement and sustainment of the Australian Defence Force both at home and overseas. The Government is investing approximately $13 billion of total Integrated Investment Program expenditure over the next decade to achieve this enhanced capability.

3.28 The Air and Sea Lift stream focus is on enhancements and acquisitions of large-hulled, multi-purpose vessels, strategic sea lift vessels, air-to-air refueling aircraft, transport and utility aircraft, and related supporting infrastructure works.

Overview of expected Australian industry engagement

3.29 By 2028, Australian industry will be providing through life support for a range of aircraft and ships, and will have participated in ship maintenance and upgrades to RAAF bases Amberley, Learmonth and Tindal. Australian industry will have opportunities to integrate key communications and data link requirements that are interoperable with other government agencies and all air and amphibious systems. Our air and sealift capabilities will be supported by systems and software engineering upgrades and air-to-air refueling technologies.

3.30 Within the next decade, Australian industry's contribution to this stream is expected to be as a component or system service provider in the supply chains of global defence primes, or as a provider of systems integration and maintenance, repair and overhaul services, for example in the F-35A Joint Strike Fighter program. Industry will be expected to provide defence systems architecture, and design and integration services to support the integration of aerospace and marine platforms. The acquisition of new CH-47F Chinooks will offer Australian defence industry the opportunity to provide deep maintenance support, aero-medical evacuation and reconnaissance capabilities.

3.31 Local industry will be expected to provide defence systems architecture, design and integration services to support the integration of aerospace and marine platforms acquired through this stream into a networked system that enables modern and agile command and control. For Australian industry, this may require growth in systems engineering expertise, with a focus towards complex battlespace systems integration.

3.32 Bases, airfields and ports infrastructure, as well as services and amenities, will need to be upgraded to support these acquisitions. These upgrades will maximise opportunities for Australia's civil and heavy construction, engineering, security and building installation services industry over the next decade. Significant infrastructure and base facility upgrades will be required, in particular, to support the fleet of 10 C-27J Spartan aircraft at their home base at RAAF Amberley. This will provide opportunities for Australia's heavy and specialised engineering and construction industries.

Export and global market opportunities

3.33 Australian defence industry contributors to this stream will be exposed to a number of international aerospace and naval defence primes. This will provide opportunities for globally competitive and accredited Australian companies to become a member of one or more global supply chains to our allied and international partner navies and air forces.

Stream Four: Maritime and Anti-Submarine Warfare

3.34 Australia's strategic outlook requires an expanded naval force that is capable of conducting increasingly challenging maritime warfare operations in our region. To facilitate this expansion, the Government released its Naval Shipbuilding Plan in May 2017, which details an $89 billion investment in a rolling acquisition of submarines and continuous build programs for major surface combatants and minor war vessels. Within the next decade, a portion of this commitment is included in the approximately $59 billion expenditure in this stream.

Overview of expected Australian industry engagement

3.35 The *2017 Naval Shipbuilding Plan* provides significant opportunities in naval design, manufacturing, construction and maintenance activities. This work, which includes the domestic manufacture of future frigates, offshore patrol vessels, Pacific patrol boats and submarines, is estimated to create 5,000 additional shipbuilding jobs in Australia as well as thousands more jobs within associated supply chains for decades to come. By 2026, more than 20,000 personnel will be directly or indirectly employed in the naval shipbuilding enterprise.

3.36 Delivering the capabilities in this stream will be predicated on four key enablers:

- modern, innovative and secure naval shipbuilding and sustainment infrastructure
- a highly capable, productive and skilled naval shipbuilding and sustainment workforce
- a motivated, innovative, cost-competitive and sustainable Australian industrial base, underpinned by experienced ship designers and builders who translate these attributes to Australian industry
- a national approach to the delivery of the Naval Shipbuilding Plan.

3.37 A critical factor in Australian defence industry realising these opportunities will be ensuring that the appropriate level of planning, management and workforce skills are in place. Given the unprecedented scale of this acquisition program, Government and industry will need to carefully manage the successful transition between current and future assets. This includes managing the transition to new submarine destroyers, frigates, replenishment ships and offshore patrol vessel fleets to ensure the continued availability of required industrial capabilities to meet the Government's naval construction schedule. Strategic planning across programs of work over several decades – as opposed to the past project-by-project approach – will be essential in meeting this challenge.

3.38 Alongside continuing opportunities to support our current fleet, a competitive Australian industry will have significant opportunities across the supply chain, including Australian steel development and qualification, to support the acquisition, testing, integration and sustainment as part of this national endeavour. The Naval Shipbuilding Plan will drive a growth in advanced manufacturing and heavy engineering capability in Australia.

3.39 A wide range of technical trades, engineering and management skills will be required within Australian industry to deliver the Naval Shipbuilding Plan, drawn from both existing defence industry and adjacent sectors. Australian research, development and innovation will be critical to maintain Australia's capability advantage over the life of the programs.

3.40 The Government will invest around $1.3 billion in modern shipyard infrastructure at Osborne in South Australia and Henderson in Western Australia, providing a wide range of opportunities for Australian industry to contribute to the planning and implementation of these major infrastructure investments. Work at the Osborne naval shipyard commenced in the second half of 2017. Development of the shipyard to support construction of the future submarines from 2022–23 will be undertaken. Over $350 million is being invested in the redevelopment of HMAS Stirling (Fleet Base West) in Western Australia. This project will upgrade and replace ageing and outdated infrastructure and improve the functionality and capability of existing facilities to support current and ongoing naval operations. Construction is currently underway with completion expected in 2020.

3.41 The Government has committed $62 million over the next three years to establish and operate the Naval Shipbuilding College to support workforce growth and skilling. This initiative will provide a range of opportunities for Australian education providers to help skill our future naval shipbuilding workforce.

3.42 Defence will continue to acquire both fixed and rotary large-scale aerospace platforms from overseas. Australian industry's contribution to these acquisitions will likely be as a component provider in the supply chains of the original equipment manufacturers delivering these platforms, as well as to provide maintenance, repair and overhaul services to the Australian Defence Force, original equipment manufacturers, or as a standalone service provider.

3.43 Further detail on the implementation of the Naval Shipbuilding Plan, including opportunities for Australian industry and the major capital equipment projects, will be published in the first annual update of the Naval Shipbuilding Plan to be released in mid-2018.

Export and global supply chains opportunities

3.44 Australian defence industry will continue to collaborate with global defence primes as part of the shipbuilding, maritime aviation and infrastructure activities of this stream. This exposure, combined with the expertise that Australian shipbuilders and naval component and systems providers have developed over a number of years, means Australian industry is well placed to expand export and global supply participation activities. Companies such as Moonraker Australia and Austal are already participating in these activities and have supplied world-class antenna arrays and combat vessels to partner navies.

Stream Five: Strike and Air Combat

3.45 An increasingly potent strike and air combat capability is necessary for the Australian Defence Force to respond rapidly to threats against Australia and to support regional security and coalition operations globally. The Government is investing approximately $27 billion of total Integrated Investment Program expenditure over the next decade to maintain and acquire a range of aerospace platforms and systems to ensure that the Australian Defence Force has the capability to conduct theatre-level integrated air and missile activities, including to support deployed forces.

Overview of expected Australian industry engagement

3.46 The majority of the Australian Defence Force's aerospace platforms will continue to be sourced from the United States which has the economies of scale necessary to design and manufacture military aircraft and associated systems. Australian industry's contribution to the capabilities acquired through this stream is likely to be as a component or service provider in the supply chains of global defence primes, integration activities, as well as maintenance, repair and overhaul services for aircraft and selected components.

3.47 Beyond supporting weapon system acquisition and infrastructure upgrades, by 2028 Australian industry will be continuing or expanding its reach as a member of global supply chains for key air combat capabilities, and will be delivering ground-based electronically scanned array radars and a Vigilaire upgrade or replacement. Australian industry will have the heavy engineering, aircraft maintenance, and artillery and munitions capabilities that can sustain and support specific upgrades to our air combat fleet, weapons and countermeasures, with the possibility of providing in-country structural airframe testing and minor repairs.

3.48 Australian industry will continue to play a role in the Joint Strike Fighter program as a member of global supply chains for production and subsequently sustainment. This is already underway with companies such as Queensland-based gas-turbine engine maintenance and engineering specialist, TAE Australia – which was appointed as the Asia-Pacific region's F-35A Joint Strike Fighter engine sustainment service provider – and BAE Systems Australia, which was appointed as the region's F-35A Joint Strike Fighter airframe sustainment provider. These roles provide Australian industry further opportunities to expand involvement in the Joint Strike Fighter program. They build on Australia's airframe maintenance depot responsibilities for the South Asia-Pacific region, and engine maintenance depot responsibilities and component maintenance depot responsibility for the first 64 of 65 air vehicles' components in the Asia-Pacific.

3.49 Australian industry will also have an important role in delivering and sustaining the enhanced Integrated Air and Missile defence capability to be implemented over the decade, including in integration and sustainment.

3.50 Australian industry will also continue to provide maintenance and support services to the RAAF and original equipment manufacturers, or as a standalone service provider for other strike and air combat platforms and weapon systems such the current fleet of 24 F/A-18F Super Hornets, 71 F/A-18A/B Classic Hornets, and six E-7A Wedgetail airborne early warning and control aircraft. This will be extended to acquisitions such as the 12 E/A-18G Growler electronic attack aircraft which entered service in 2017 and will remain in service for the next 20 to 30 years.

3.51 Australian industry will be required to support the strengthening of the Australian Defence Force's platforms', command, control, communications, computing and intelligence (C4I) systems, sensors and advanced weapons to ensure interoperability between the Australian Defence Force and coalition partners. Australian industry will also be expected to support the Australian Defence Force's investment in new infrastructure and facilities – such as at RAAF Base Tindal in the Northern Territory and RAAF Base Williamtown in New South Wales – that support the Australian Defence Force's new strike and air combat capabilities.

Export and global supply chain opportunities

3.52 Australian industry will continue to play a role in the F-35A Joint Strike Fighter program as a member of global supply chains. There will also be opportunities to supply maintenance, repair and overhaul services to support the operation of partner air force platforms, such as the F/A-18 Hornets, which are operated by both the Australian Defence Force and the Royal Malaysian Air Force.

Stream Six: Land Combat and Amphibious Warfare

3.53 The Australian Army is modernising and enhancing its force structure and capability to meet the challenges of contemporary warfare. The Government is investing approximately $28 billion in Integrated Investment Program expenditure over the next decade to develop the Army's combat elements of infantry, armour, artillery, engineers, aviation and Special Forces.

3.54 Underpinning this operational effectiveness will be expanded communications, and command and control systems, intelligence, surveillance and reconnaissance and electronic warfare capabilities, deployable battlefield logistics, and the amphibious assault ships and associated amphibious support capabilities. In addition, it is expected that over the next decade the Army will make increased use of robotics and autonomous systems to augment soldiers performing 'dirty, dangerous and dull' roles and to improve decision-making.

Overview of expected Australian industry engagement

3.55 Australian defence industry is expected to make a significant contribution to Australia's land combat, amphibious warfare and special operations capability through the direct supply of equipment, maintenance and repair services, as well as the design and manufacture of components, systems and complete units as part of a prime contractor's supply chain.

3.56 The Australian Defence Force's ongoing acquisition of new land vehicles will continue to require significant support from Australian industry in the form of manufacturing, design, repair and maintenance of land platforms and systems. Industry has proven its capability to support these major land acquisitions which include armoured, mounted combat, protected and combat support vehicles, and will have a critical role in the delivery and sustainment of the next generation of land combat vehicles. This includes, for example, the Hawkei and Land 400 Combat Reconnaissance Vehicles and Infantry Fighting Vehicles. While many critical items in armoured vehicles – such as weapon and protection systems, integration electronics and targeting systems – are highly specialised and require extensive military manufacturing expertise, some componentry can be built and maintained with generic automotive manufacturing capabilities and skills. The significant Australian industry involvement in the new Combat Reconnaissance Vehicle program will have clear benefits for delivering a sustainable sovereign capability in Australia.

3.57 Another opportunity for Australian industry exists in the ongoing development of soldier survivability equipment, including night vision equipment upgrades, EF88 updates and continuous improvements to personal equipment and force protection. These will draw upon a range of diverse industrial capabilities such as the manufacture of blast protection, specialised health and safety equipment, firearms and dismounted communications.

3.58 The Government will invest more than $500 million in amphibious ships between 2018 and 2027 which will improve self defence systems in response to evolving threats, modernise and enhance communication systems that are compatible with all amphibious force elements, and increase platform resilience through modernising ship sub-systems progressively as technology develops. The integration of combat and communication systems across the broad spectrum of military platforms required to enable interoperability with amphibious ships is critical to Defence realising optimal capability performance. Other immediate requirements for communications systems exist in the Battlespace Communications System project – valued at $1.2 billion and continuing through to 2025 – as well as the upgrade or replacement of deployable land networks and communications which is due to commence in 2025 and is valued at $4 billion.

3.59 Plan BEERSHEBA achieved Final Operating Capability in 2017 with the creation of three like combat brigades based on 1st, 3rd and 7th Brigades. These brigades operate on a 36-month force regeneration cycle of readying, ready and rest. This force generation model has a number of benefits for Australian industry including a forecast delivery of services to repair and sustain operational equipment, and a regular cadence of training activities.

Export and global supply chains opportunities

3.60 Australian defence industry will continue to be exposed to some of the world's leading land platforms, systems and equipment designers and manufacturers. The Combat Reconnaissance Vehicle and Infantry Fighting Vehicle program offers unique opportunities for competitive and accredited Australian companies to become members of the supply chains of global defence primes.

3.61 Through the Australian Military Sales Office, Australian-developed military systems and platforms will be offered for sale overseas. These systems and platforms will be promoted through the Australian Military Sales Catalogue, which includes products and services from a range of Australian-based defence companies. Thales' Bushmaster vehicles have been successfully exported to a number of countries, and the Hawkei is similarly being offered for sale overseas.

Sustainment

3.62 When discussing opportunities for Australia's defence industry, there has been a tendency to focus on acquisition rather than sustainment activities. However, the importance and value – both in operational contribution and dollar terms – of industry activities supporting sustainment is significant. In 2016–17, Defence spent more than $8 billion on sustainment activities.

3.63 Defence's investment in sustainment in areas such as fuel, maintenance and support costs will increase to over $19 billion in 2025–26. The combined value of sustainment activities in this period is more than $145 billion, or 32 per cent of the total Defence budget.

3.64 A proportion of Defence's materiel needs will continue to be sourced from overseas, particularly the United States. However given cost, time and capability factors, it is expected that the maintenance and sustainment of much of Australia's defence capability will occur in Australia.

3.65 Australia's maintenance, repair and overhaul capabilities in a number of sectors, such as Boeing Defence Australia's maintenance of the F/A-18A/B Classic Hornet and sustainment of the F/A-18F Super Hornet, are well recognised and likely to be leveraged and built upon over the next decade.

3.66 Information on Defence's sustainment activities is contained in the Integrated Investment Program as well as in the additional sources of information outlined in the next section.

Additional Sources of Defence Acquisition and Sustainment Information

3.67 As noted earlier in this chapter, further detail in each capability stream is provided in Annex B, with more detailed project and program information provided through the Integrated Investment Program web page to be launched in 2018.

3.68 The Integrated Investment Program is one of many industry resources available which inform future opportunities and planning activities. There are several additional sources for Australian industry to obtain more information and advice. These include:

- Registering on AusTender (www.tenders.gov.au) to receive information on Defence procurement opportunities.
- Attending Defence industry briefing events (promoted on the AusTender website and Centre for Defence Industry Capability (CDIC) events page).
- Attending global defence prime briefings.
- Participating in Defence Environmental Working Group briefing sessions.
- Attending the annual Defence and Industry Conference.

- Attending Defence Trade shows such as Avalon, Pacific, Land Forces, and the Military Communication and Information Systems Conference (MilCIS).
- Participating in opportunities as part of the Defence Innovation Hub and Next Generation Technologies Fund.
- Participating in national and state and territory based industry representative body activities.
- Subscribing to updates from, and joining defence industry groups such as the Australian Industry Group, the Australian Industry Defence Network and the Defence Teaming Centre.

3.69 The Defence Industrial Capability Plan, in conjunction with the Integrated Investment Program, can be used by industry to inform future company investment and workforce strategies. Important considerations when scoping future business or investment opportunities include timing, size and value of projects, what capability is being introduced or replaced, the acquisition strategy, industry capability and the industry engagement strategy.

3.70 Industry, in reading the Integrated Investment Program, should seek to identify the following to plan for future opportunities:

- **Timing:** When a major proposal including equipment, infrastructure, information and communication technology is planned to be acquired or built. Industry can use the indicative acquisition schedules for programs and projects to identify the skills needed to support development of the new capability, and assess opportunities within their own business for upskilling and technology transfer. Identifying a company's gaps will allow potential access to Government support programs such as Capability Improvement Grants delivered through the CDIC. There are two key timings for Defence acquisitions before the release of a Request for Tender (RFT) or other approaches to market:

- **Prior to the release of a RFT:** This is when Defence and potential tenderers have the greatest capacity to review and incorporate innovative ideas. This is also the ideal time to understand the opportunities for industry from potential suppliers, as well as to form strategic partnerships (to reduce risk) and to approach defence primes for potential inclusion in their technical and Australian Industry Capability (AIC) Plan proposals.
- **During RFT or other approach to Market:** This is a period to formalise strategic partnerships, understand the key needs and drivers of Defence capabilities, look for similar overseas export opportunities. It is also the time to lock down inclusion in tenderers' AIC plans and subsequently confirm inclusion in the successful tenderer's contracted AIC plan.
- **Value and size:** The investment value of major proposals and number of capabilities being acquired. Additional factors to note include whether Defence's acquisition is part of a global capability manufacturing or sustainment opportunity (e.g. the F-35A Joint Strike Fighter Program) and the phases of its investment and acquisition cycle.
- **What capability is being replaced:** Identify if the capability is new or if it is replacing an existing capability. Determine the legacy supply chains and industry support that can be transitioned to provide capability and new technology and support. Additionally, identify if there are any integration and sustainment opportunities associated with the platform or system in Australia and in the global market when Australia disposes of equipment.

- **Acquisition strategy:** Identify how a capability is to be acquired in the Smart Buyer process, whether that is through a Foreign Military Sale (FMS), a Competitive Evaluation Process (CEP), an open tender or other process. Each acquisition method provides different prospects for Australian defence industry to access commercial opportunities. For instance, for major capital equipment projects of $20 million or more, local industry activities will be identified within a tenderer's AIC plan. It is important that SMEs have a clear understanding of who their customer is: Defence, a local or global based prime or another SME. In the vast majority of instances, a SME will be contracted through a prime or other SME rather than directly to Defence.
- **Industry capability:** Identify what is required from industry to support the program and platform acquisition. This benchmark can be used to ascertain if a company needs to upskill its staff, innovate or invest in research and development to address a technical gap. This can also help to assess if a company's business model, capabilities and resources allow it to supply or service a capability for that acquisition. A company can also identify the potential to leverage opportunities in adjacent industry sectors domestically and globally.
- **Industry engagement strategy:** Businesses can use this information to identify a strategy for engaging with other businesses to provide capability to Defence. This could be as a direct product or service provided to Defence, to a global prime or as part of a joint venture with other local companies. Local and global-based primes can use this information to develop strategies to best engage with Australian SMEs to strengthen their offering.

3.71 Australian companies are strongly encouraged to engage with Defence, through the CDIC, to discuss potential areas where they believe they can make a contribution to Defence procurement.

CASE STUDY: Diversifying into defence industry

The diversity of skills, materiel and services required to support the Australian Defence Force continues to offer new market opportunities for Australian businesses from outside the defence industry sector.

Established Australian business, Western Australia based Camco Engineering – a traditional provider of mechanical engineering solutions for the mining, resources and energy sector – is an example of how this diversification can begin to take place.

Camco Business Development Manager, Greg Carson, believes the company's reputation for reliability has influenced its success. "We've been servicing the mining sector by repairing critical path assets to keep their operations running reliably, which has reduced the need for capital expenditure. Our success has been about improving the product, working very closely with the end users, and coming up with a way to make operations more predictable," he said.

Camco Engineering is now managing its entry into the Australian defence industry using its experience and capability. "We have the skill sets and equipment that are directly transferrable to Defence. We are used to working to exacting standards because of the risk to human life in the mining and oil and gas sectors.

"Through the Centre for Defence Industry Capability we connected with a defence business adviser who viewed our facilities and business processes. The Centre for Defence Industry Capability facilitated our attendance at multiple events and we have been able to network with primes," Mr Carson said.

"There's now some traction starting to happen. Our facility can meet the demand, but it's not something we can turn on overnight. This will develop over the short term. With continued engagement with the Centre for Defence Industry Capability, we are very confident that we can meet the demands of Defence and join Australia's defence industry."

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Chapter 4: Delivering Australia's Future Defence Industry

4.1 The Government's goal and strategic objectives for Australia's defence industry, as set out in Chapters One and Two, are focused on a defence industry that can effectively support Defence preparedness and operations today, contribute to the acquisition, operation, and sustainment of our future force, and provide a foundation to mobilise quickly during times of crisis.

4.2 We are at the beginning of a major repositioning of our defence industry to help meet our long-term defence capability needs. No single initiative is going to meet the full range of requirements and opportunities available and there is a substantial body of work still ahead. The Government, Defence, industry and the research and education sectors all have a key role in working together to build an industrial base that is resilient and fit for purpose over the long term.

4.3 Defence is already implementing the Naval Shipbuilding Plan. The Defence Industry Policy Division will lead the integration of the initiatives listed in this chapter and support for the Sovereign Industrial Capability Priorities. Defence Industry Policy Division will be responsible for ensuring that the initiatives are focused on developing the defence industry sector to meet Defence's needs and achieve the strategic objectives.

4.4 A summary of the strategic objectives and suite of initiatives, plans and actions to be implemented is shown in Figure 4.1.

Strategic Growth of Defence Industry Capability

4.5 Figure 4.2 lists the primary initiatives to support achievement of each strategic objective for Australia's defence industry to 2028. Each initiative is aligned with a primary strategic objective, but in many cases the initiatives also support the achievement of other strategic objectives. The overall strategy builds upon our short-term objectives to deliver stronger medium and long-term outcomes for our defence industry.

4.6 Developing our defence industry will require a nuanced approach that recognises the different stages of development and success of Australian defence sector companies. Many new companies will enter the sector over the next decade with limited knowledge of Defence, but with capability to offer. Many others will be positioning their businesses, workforces and infrastructure to continue and expand participation in supply chains, supporting Defence as demand increases as part of the $200 billion investment in defence capability and national security customers. A range of companies will be moving into or expanding into export in defence and broader security markets. Over the next decade, companies will move through this development cycle at different rates and informed by the quality and cost competitiveness of their products and services.

Figure 4.1: Strategic objectives and supporting initiatives

Strategic objectives	Initiatives to achieve objectives	Indicators of success
A broader and deeper defence industrial base where agile SMEs are better placed to interact with Defence and global defence companies, and are not solely reliant on the Australian Defence Force for their success.	• Grow the level of Australian industry involvement and technology transfer over the life of each major capital equipment project to support sovereign sustainment and maximise industrial capability available to meet Australia's broader defence capability needs – leveraging the AIC program. • Incorporate the Sovereign Industry Capability Priorities into AIC plan requirements to ensure these capabilities are addressed strategically in the development of defence capability. • Strengthen assurance that prime contractors are meeting their obligations to Australian industry as part of contracted AIC plans. • Invest in cyber and information security measures for defence industry SMEs participating in supply chains. • Enhance the Global Supply Chain program.	• Gain maximum leverage from the AIC program to develop Australian industry capability. • Update AIC plan requirements to incorporate Sovereign Industrial Capability Priorities in 2018. • Update AIC plan metrics and reporting requirements to provide assurance in 2018. • Increased number of Australian businesses exporting and integrating into global supply chains through the Team Defence Australia and Global Supply Chain programs. • Regularly update Defence security strategies to mitigate cyber intrusions and to address security gaps in Defence systems.

Strategic objectives	Initiatives to achieve objectives	Indicators of success
A strategic approach to defence industry investment to ensure investment in critical defence capabilities is prioritised and Australian businesses are provided the maximum opportunity to be involved.	• Plan, guide and support Australia's defence industry to achieve our defence capability and industry objectives. • Provide CDIC support to Australian industry. • Develop implementation plans for each Sovereign Industrial Capability Priority. • Develop Australian industrial strategies for each of the six Integrated Investment Program capability streams. • Undertake Sovereign Industrial Capability Priorities assurance activities. • Develop and implement Sovereign Industrial Capability Priority Grants. • Establish a Sovereign Industrial Capability Priorities Working Group to prioritise and support decision-making.	• CDIC help to link innovation outcomes to capability needs and acquisition (Defence and primes). • CDIC facilitates access and knowledge exchange with the Defence Innovation Hub. • CDIC Advisory Board to recommend strategic industry capability and development projects, which build the capability and capacity of Australian industry to support Defence requirements. • Sovereign Industrial Capability Priorities implementation plans to be released from mid-2019. • Australian industrial strategies for each of the Integrated Investment Program capability streams released from mid-2019. • Sovereign Industrial Capability Priorities analysis and assurance activities underway from mid-2018 to identify industry gaps that will enable Defence and the CDIC to target support programs to industry. • Sovereign Industrial Capability Priority Grant program to be established by the CDIC in the second half of 2018. • Sovereign Industrial Capability Priorities Working Group to be established by mid-2018.

Strategic objectives	Initiatives to achieve objectives	Indicators of success
An innovative and competitive defence industry with world-leading defence capabilities developed through increased collaboration between defence, businesses, universities and the research sector.	• The Defence Innovation Hub. • The Next Generation Technologies Fund including development of Small Business Innovation Research for Defence model for SMEs. • Strengthen collaboration with state and territory governments.	• Mature and streamline the Defence Innovation Hub's assessment proposal processes – ongoing. • Next Generation Technologies Fund commences first Defence Cooperative Research Centres for Trusted Autonomous Systems. • Collaboration Charter in place for Defence, CDIC and state and territory governments by mid-2018.
A robust defence industry export capability where Australia's defence industry is a key player in international defence capabilities, providing greater stability for businesses across peaks and troughs in domestic demand and increasing their capability to support Defence.	• Implement a more mature approach to defence exports through the Defence Export Strategy released on 29 January 2018. This should leverage exports to deliver better, internationally competitive, and more resilient industrial capability to the Australian Defence Force. • Establish the Australian Defence Export Office. • Create a Defence Exports Advocate position.	• Establish Australian Defence Export Office within Defence. • Implement phase one and phase two deliverables according to the timelines set out in the Defence Export Strategy. • Select Defence Export Advocate in April 2018.

Strategic objectives	Initiatives to achieve objectives	Indicators of success
A Defence and industry partnership that enables Australia to pre-position for the future by ensuring we have the right people with the right skills, in the right place, at the right time to respond to changing environments, to seize opportunities, and to manage increasing strategic, political and cultural and technological complexity.	• Develop the Defence Industry Participation Policy (DIPP). • Implement the Naval Shipbuilding Plan. • Establish the Naval Shipbuilding College model. • Work with states and territories, industry, and the research and education sectors to develop a Defence Industry Skilling and STEM Strategy. • Implement the Defence industry information campaign and supporting initiatives. • Develop and implement strategic industry development projects, commencing with the Business Maturity Framework.	• Consider Sovereign Industrial Capability Priorities in the Force Design process and Capability Life Cycle – ongoing. • Launch the DIPP in mid-2018. • Implement the Naval Shipbuilding Plan's initiatives. • Establish the Naval Shipbuilding College in April 2018. • Release the CDIC's Defence Business Maturity Framework by the end of 2018. • Release a Defence Industry Skilling and STEM Strategy in mid-2018. • Complete the Defence industry information campaign in mid-2018.

Figure 4.2: Primary initiatives to support achievement of the strategic objectives

4.7 For SMEs, it will be important to leverage the full range of support being made available by the Australian Government outlined in this chapter. Figure 4.3 details the initiatives available for businesses at different stages of that development cycle.

Figure 4.3: Defence and industry initiatives – stages of the development cycle

A broader and deeper defence industrial base

Australian Industry Capability Program

4.8 The Australian Industry Capability (AIC) Program is the most important initiative within Defence's Capability Life Cycle for developing Australia's defence industrial base and implementation of this Plan. The program supports our goals and strategic objectives by maximising Australian industry involvement in Defence major capital equipment projects of $20 million or more. It requires companies looking to supply capability to Defence to submit an AIC plan as part of the tender response.

4.9 In developing these plans, tenderers are required to conduct market engagement and testing activities to demonstrate how they propose to provide opportunities for Australian industry to supply goods and services. The plans detail the Australian contractors and sub-contractors that will be involved in delivery of the project through value-add work in Australia if the prime contractor is successful in its tender. Additional Australian industry involvement can be included after the contract has been signed, however a reduction cannot occur unless agreed by Government and only in exceptional circumstances. The AIC program aims to:

- influence foreign prime contractors and system integrators to include Australian industry to deliver cost-effective support
- facilitate access to appropriate intellectual property and technical data
- build enduring industrial capability to support Defence's broader needs
- promote greater levels of technology transfer to Australian industry, innovation, collaboration, and research and development with Australian industry, research institutions and academia

- create international supply chain opportunities to further leverage Defence's investment in Australian industry through project and sustainment work, and
- overcome barriers for SMEs, including Indigenous Business Enterprises (through the whole-of-government Indigenous Procurement Policy) to increase workforce skills and capacity, and the size and diversity of Australian industry participation.

4.10 The contracted AIC plans for our future submarine, frigate, combat vehicle, offshore patrol vessel, and other major platforms and systems will drive the manufacturing and broader capability within the Australian industry of the future. Importantly, AIC is not an offset initiative or based on mandating percentages of Australian industry involvement.

4.11 Defence has already introduced strengthened AIC requirements into projects associated with the continuous shipbuilding program. Strengthened AIC program requirements will be implemented on existing projects and on all new projects with a focus on achieving the long-term goal and strategic objectives set out in this plan.

4.12 Defence will also incorporate the Sovereign Industrial Capability Priorities into AIC plan requirements to ensure that these capabilities are addressed strategically in developing defence capability.

4.13 A further priority is enhancing Defence assurance that prime contractors are meeting their obligations to Australian industry as part of contracted AIC plans, managed by Capability Acquisition and Sustainment Group (CASG). Strengthened arrangements will be introduced in 2018.

4.14 In the majority of cases, SMEs will be part of a prime's supply chain within Defence major capital equipment projects, rather than be contracted directly with Defence. The Centre for Defence Industry Capability (CDIC) can help SMEs to make the right connections with primes and Defence.

4.15 More detailed information and contact details for the AIC program and Sovereign Industrial Capability Priorities are available at www.defence.gov.au/SPI/Industry/AIC.asp or www.defence.gov.au/SPI/Industry/CapabilityPlan.

4.16 **The Global Supply Chain** program funds defence primes to facilitate SMEs access into global supply chains. As part of this program, defence primes are contracted to identify bid opportunities across their business and to match these to capable Australian SMEs. The contract opportunities are then won on merit, requiring the SME to be globally competitive.

4.17 Changes made to the Global Supply Chain program in late 2014 included an enhanced focus on Australian SMEs, and awarding higher value, longer term and multiple contracts with greater recognition of industry support activities.

4.18 The Centre for Defence Industry Capability will continue as a central point of contact and entry for Australian industry into the Government's streamlined range of industry capability building activities and services.

A strategic approach to defence industry investment

The Centre for Defence Industry Capability (CDIC)

4.19 In December 2016, the Minister for Defence Industry launched the CDIC as an entry point for connecting Australia's defence industry with Defence. The CDIC works with industry and Defence to build a world class, globally competitive Australian industry.

4.20 The CDIC's primary focus is to build the Australian supply chains critical to transitioning work to Australia in our major capital equipment programs. This maximises Australian industry involvement and the benefits to Defence and industry in support of the goal and strategic objectives outlined in this Plan.

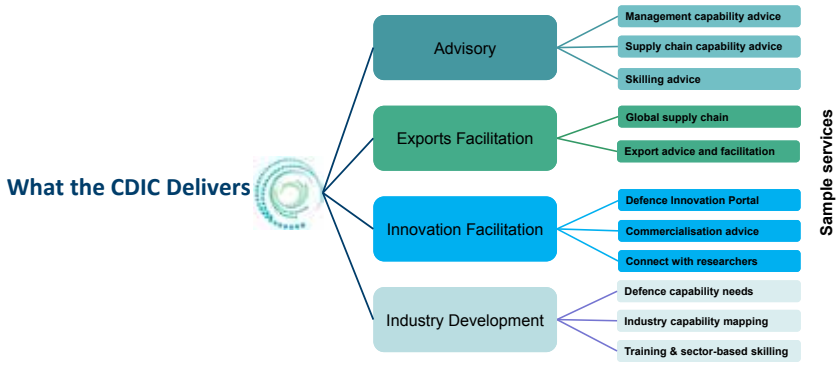
4.21 The CDIC provides a range of support to Australian businesses either working in or looking to enter the defence sector (Figure 4.4). It has specialised business advisers in every state and territory to ensure that Australia's defence industry can obtain the information and advice it needs. The service assists eligible defence organisations to improve their business, extend networks and take advantage of growth and collaboration opportunities within the sector. Advisory and facilitation services are typically targeted at SMEs with less than 200 employees, and with products or services that have a specific defence application.

4.22 CDIC business advisers and facilitators have extensive defence and private sector experience across business management, skills development, innovation collaboration, export activities and supply chain facilitation. They can provide advice on:

- **Business improvement** – to identify areas for businesses to become more competitive and to identify growth opportunities in defence and adjacent markets.
- **Skills development** – for businesses seeking to upskill their workforce aligned with defence capability requirements.
- **Export and supply chain support** – working with businesses to become export ready, and facilitating connections to new and existing defence supply chains domestically and globally.
- **The Supplier Continuous Improvement Program** – to benchmark performance, embed sustainable continuous improvement, and facilitate improved supply chain relationships.
- **Defence market preparedness** – to assist newcomers to the sector with guidance and advice on what it takes to supply Defence.

4.23 By engaging with the CDIC's defence advisers and facilitators, Australia's defence industry is able to obtain tailored recommendations to improve their business in line with Defence's needs.

Figure 4.4: CDIC Delivery Model



4.24 Businesses receiving an advisory or facilitation service can get tailored improvement recommendations with a direct link to Defence needs. For eligible businesses, Capability Improvement Grants are available to fund part of the cost to engage a consultant or expert to implement recommendations. Eligible capability improvements may cover a range of topics, including product and service development, strategic business issues, human resource issues and financial management systems. In addition to these services, the CDIC is expanding its activities and service offering to Australian industry. This includes delivery of initiatives such as a grant to support Sovereign Industrial Capability Priorities (see Annex C for more information) as well as support for the Australian Defence Export Office, which was announced as part of the Defence Export Strategy in January 2018.

4.25 For more information, visit the CDIC website www.business.gov.au/cdic.

Integrated Investment Program capability stream industrial strategies

4.26 Our level of long-term defence industry sovereignty will differ across different Integrated Investment Program capability streams, and will engage differently with the set of levers. The outcomes delivered through the AIC program will also be guided by Defence's capability requirements and dependence on overseas and Australian inputs.

4.27 To support implementation of this initial plan, the Government will release Australian industrial strategies for each of the six Integrated Investment Program capability streams from mid-2019. The strategies, to be led by Defence Industry Policy Division, will take into account the Government's major capability decisions over 2018, and the initial delivery of the Sovereign Industrial Capability Priorities and other defence industry initiatives.

4.28 These industrial strategies will complement the implementation plans to be released from mid-2019 for each Sovereign Industrial Capability Priority.

An innovative and competitive Defence industry

Harnessing Defence innovation

4.29 It is clear that Australia's strategic and technological environments are changing in ways that bring greater risks and challenges to our ability to maintain warfighting advantage and achieve Defence's mission. Technology is evolving at an unprecedented rate and new technologies from a range of sectors are impacting Defence. Information technologies and the ability to integrate complex capabilities for faster decision-making and warfighting impact are becoming far more important for our Australian Defence Force operations. Our ability to enhance our current and future capabilities – from our submarines to our combat aircraft and vehicles – will depend critically on the skills and ingenuity of Australians in industry and our research community.

4.30 Recognising the importance of staying ahead of the technology curve and harnessing the best ideas Australia has to offer, the Government has repositioned Defence's approach to innovation and research and development and provided significant additional funding for this purpose.

4.31 Investment through the Defence Innovation system is guided by the Innovation Steering Group to drive a coherent, integrated, strategy-led approach to investment across the Government's two signature Defence innovation programs: the Defence innovation Hub and the Next Generation Technologies Fund.

Defence Innovation Hub

4.32 The Defence Innovation Hub brings together Defence industry, academia and research institutions to collaborate on innovative technologies that can be developed into advanced capability for Defence. The Government is investing $640 million over the next decade through the Hub to support Australian industry and research organisations to mature and accelerate the development of defence technologies. To remove barriers to innovation and deliver a streamlined, agile, single innovation pipeline, the Defence Innovation Hub has adopted:

- agile business processes and calculated risk-taking to harness bright ideas
- new contracting frameworks
- new intellectual property policies
- new governance, assessment and funding models to allow quick decision-making.

4.33 The portfolio of investments under the Hub range from small concept exploration projects through to advanced prototypes, and integrated test and evaluation projects. With a fail-fast methodology and a clear focus on pathways to acquisition, the Hub will support the introduction of innovation solutions across the Defence enterprise, including information and communications technology and intelligence capabilities. Industry and research organisations can submit proposals through the Defence Innovation Portal at www.business.gov.au/cdic.

4.34 The Hub seeks proposals from industry and research organisations that align with the six Integrated Investment Program capability streams. Of these, the top three priorities for 2017-18 are Intelligence, Surveillance, Reconnaissance, Electronic Warfare (ISREW), and Space and Cyber, Key Enablers, and Land Combat and Amphibious Warfare. Investment priorities will be reviewed on an annual basis.

4.35 The Hub also considers proposals that do not neatly align with investment priorities, but offer an opportunity to explore unexpected or unforeseen technologies or ideas. It also enables Defence stakeholders to seek innovative solutions to a specific problem or challenge through a targeted solicitation, or Special Notice.

CASE STUDY: SME innovation

The complexities of Australia's strategic environment and pace of technological change means the Australian Defence Force is always seeking innovative solutions to remain vigilant against emerging threats. Many of these solutions arise from innovative Australian SMEs. One example is Daronmont Technologies, a wholly Australian owned company specialising in design, engineering, integration and support of complex high technology electronics and software-intensive systems.

Daronmont has successfully partnered with the Defence Science and Technology Group to research surveillance technology, and has received funding from the Defence Innovation Hub to transform its research into operational technology for the Australian Defence Force.

Daronmont attributes its success to the close partnerships it maintains with its customers. For an innovation to be successfully commercialised, it must be developed in consultation with the customer to ensure they understand the solution, and that it can achieve their objectives.

Using this approach Daronmont has contributed to several significant projects such as the refurbishment of the Royal Australian Air Force's deployable air defence system, as well as developing a situational awareness system for the *Collins* Class submarines, which has also been successfully exported to New Zealand and Canada.

Next Generation Technologies Fund

4.36 The Government's investment of $730 million over 10 years through the Next Generation Technologies Fund is an unprecedented opportunity to deliver high-impact future capabilities for Defence by tapping into the talent and innovation in Australia's industry and academic institutions. The Fund is Defence's new strategic research program. It will position Defence to retain a technology edge against adversaries and provide game-changing defence capabilities for the future. Defence Science and Technology (DST) Group will lead integration of next generation technologies into defence capability.

4.37 The Fund's outcomes will be realised through a range of collaborative projects with academia, industry (both small and large), publicly funded research agencies, DST Group scientists, other areas of Defence and our allies.

4.38 The Next Generation Technologies Fund will support a number of new approaches to partnering between Defence and Australian innovators including:

- **Grand Challenge Program** – which brings together Government, industry and academia to solve large-scale research problems of strategic importance to national security. The first Grand Challenge was launched on 26 April 2017 to address countering improvised threats, which today remain a worldwide threat to civilian and military personnel.
- **Defence Cooperative Research Centre Program** – which is driving research partnerships to address high priority defence technologies and to develop commercially viable products and solutions for future defence capabilities.
- **Small Business Exploratory Research Program** – which will accelerate promising science and technology of interest to Defence, from early-stage concept development to a point where the research and technology could transition to the Defence Innovation Hub.

- **US–Australia Multidisciplinary University Research Initiative (AUSMURI)** – a research network which is investing $25 million over nine years for grants to support Australian participation in the already established US MURI program. Multi-disciplinary teams of Australian university researches collaborate with US academic colleagues on high priority projects for future defence capabilities.

4.39 Projects under the Fund will be assessed against a set of criteria, consistent with the Defence Industry Policy Statement objectives and similar existing program guidelines, such as the Cooperative Research Centre Program.

4.40 In addition, Defence has been developing a partnership model specific to SMEs called the **Small Business Innovation Research** for Defence (SBIRD). This aims to redress specific SME concerns in the areas of agility and intellectual property. It is a two stage competitive program providing the opportunity for SMEs to engage with DST Group in research-intensive projects under a Next Generation Technologies Fund theme. The program supports SMEs through quick assessment of applications, SMEs owning the intellectual property they develop, and relatively simple and straightforward contracting arrangements.

A robust Defence industry export capability

Defence Export Strategy

4.41 Australia currently achieves in the order of $1.5 billion to $2.5 billion a year in defence exports. The Defence Export Strategy released on 29 January 2018 will enable defence export achievements to be more effectively measured, planned and guided to support the long-term resilience and international competitiveness of our defence industry in line with the strategic objectives of this Plan. The Strategy positions defence exports within Australia's broader national interests, including our strategic interests, Defence capability, foreign policy and economic prosperity.

4.42 Within this framework, the Defence Export Strategy balances the intent to increase defence export sales with the necessity that Australian Defence Force capability is not compromised. Defence is committed to ensuring that sensitive technologies and capabilities within the Australian industrial base remain protected. The Strategy reinforces robust defence export controls, strengthens our government-to-government arrangements, and enhances industry security, including cyber security.

4.43 The Strategy brings together all levers available to Government and industry to provide end-to-end support for defence exports, from building export readiness, to identifying export opportunities and realising export outcomes. The Defence Export Office also works closely with Austrade and Australia's Defence Attachés and other overseas representatives in pursuing stronger defence outcomes.

4.44 The Defence Export Strategy establishes the **Australian Defence Export Office** within the Department of Defence to provide a focal point for defence exports, and includes an additional $20 million a year to support defence export outcomes. The Office will oversee a more strategic, campaign-based approach to pursuing defence export opportunities, including expanded trade shows and targeted trade missions, with an additional $6.3 million a year.

4.45 The **Defence Export Advocate** supports the Australian Defence Export Office by providing enduring high-level advocacy for defence exports. The Advocate also undertakes domestic stakeholder engagement with industry and state and territory governments to ensure that efforts are coordinated.

4.46 A key responsibility of the Defence Export Office will be the delivery of the **Team Defence Australia** activities, which includes a rolling program of international trade events and advocacy for Australian companies looking to enter the export market or access new or expanded markets. These events include Australian pavilions at expositions overseas and trade missions to Asia, the Middle East, Europe and the United States. These events are supported and regularly attended by the Minister for Defence Industry, with strong representation from federal, state and territory government agencies. Established in 2012, the **Australian Military Sales Office** (AMSO) has been integrated into the Australian Defence Exports Office. AMSO facilitates sales on behalf of defence industry to foreign governments and disposals of surplus major capital equipment. Its strategic goals are to support Australian capability and military disposal programs through foreign engagement, export facilitation and disposals activity with foreign government customers through:

- International government-to-government sale, gifting or other transfer of surplus and obsolete Defence articles to foreign government partners under international arrangements.
- International government-to-government purchase of Australian origin, sensitive technology and defence articles.
- Supporting defence industry to export to foreign government customers.

4.47 The CDIC will have a key role in implementing the Defence Export Strategy, including by overseeing a new Exports Grant program of up to $4.1 million a year to be provided to SMEs to enhance their export competitiveness. The CDIC will also continue to be the front door to industry for advice and assistance in supporting Defence. More information on the Defence Export Strategy and its implementation is available at: www.defence.gov.au/SPI/Industry/ExportStrategy.

Enhancing Defence and industry partnerships

The Force Design Cycle

4.48 Defence has developed a Force Design Cycle to enable a joint force-by-design approach to capability development acquisition, integration and sustainment. It is a continuous cycle of baselining the force to assess gaps and opportunities, and develop force design options for consideration and approval in line with the Capability Life Cycle.

4.49 Recommendations from the Force Design Cycle are submitted to Government and those approved enter the Integrated Investment Program. Engagement with and consideration of Australian industry and innovation is embedded in this cycle and ensures the priorities highlighted in this Defence Industrial Capability Plan, including Sovereign Industrial Capability Priorities, are incorporated in strategic reviews, and in guidance for development of the force and its capability program outcomes.

4.50 The condition of Sovereign Industrial Capability Priorities and any supporting requirements will be considered at the 'Assess' and 'Understand' phase of the Force Design Cycle detailed at Figure 4.5. This will ensure that our objectives for growing our sovereign defence industry are considered much earlier in decisions about our current and future defence capability.

Figure 4.5: the Force Design Cycle

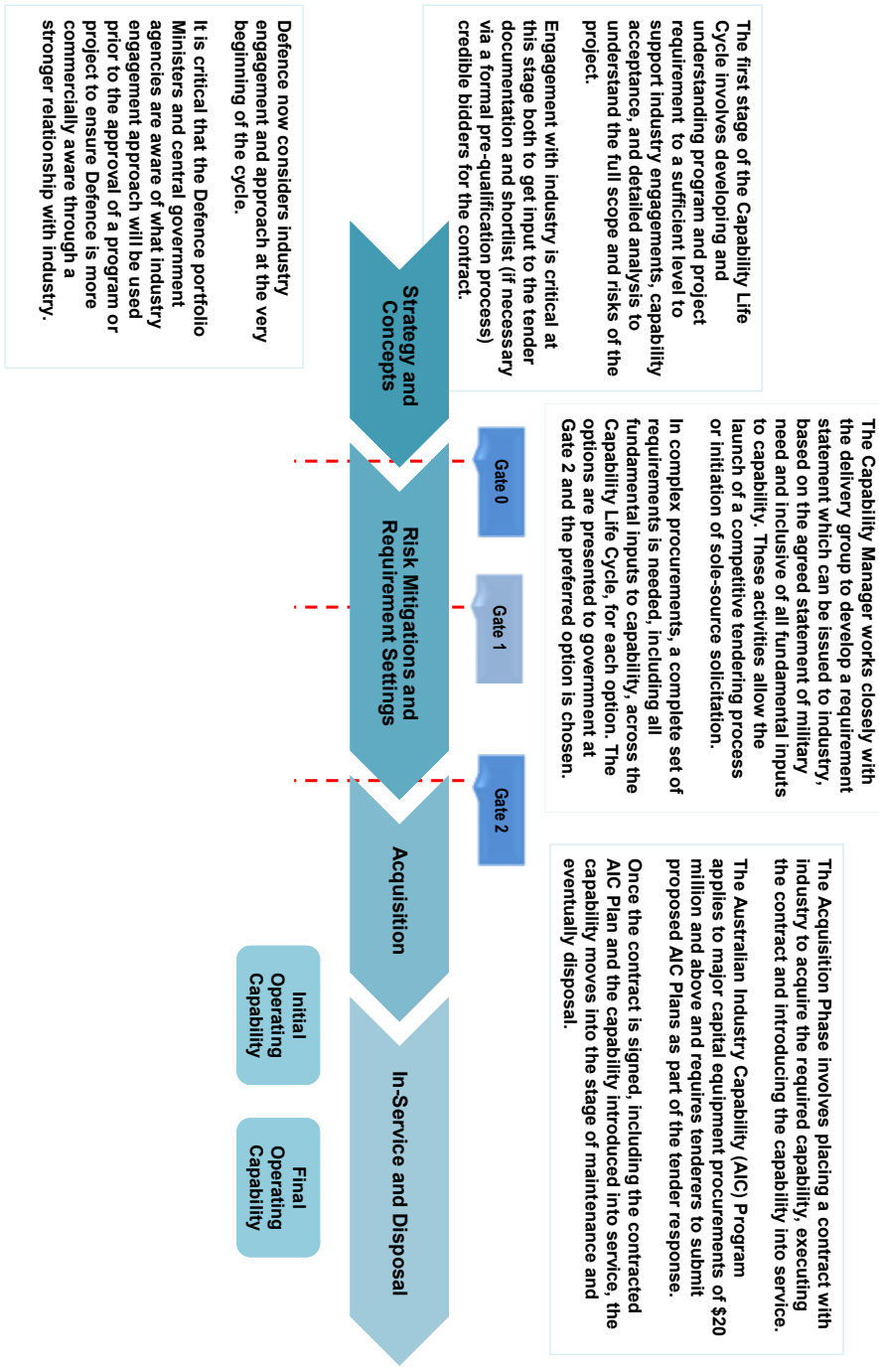
The Capability Life Cycle

4.51 The Capability Life Cycle (CLC) is a core business process enabling Defence to perform its primary role of defending Australia and contributing to the protection of its national interests. It applies to all major investment decisions taken by Defence including major equipment, information and communications technology, facilities and workforce. Defence now considers industry engagement and approach at the very beginning of the CLC. It is critical that Defence portfolio Ministers and central government agencies are aware of the industry engagement approach before approving a project or program, to ensure Defence is more commercially aware through a stronger relationship with industry. This is providing industry with increased opportunities for involvement in Defence's capability development, acquisition and sustainment processes (Figure 4.6).

4.52 The CLC operates within the Government's decision-making framework. It applies to all major Defence investment decisions that form the basis for the future force structure, including major equipment, information and communications technology, facilities and workforce. Reform of the Capability Life Cycle was a key outcome of the First Principles Review recommended as part of the move to a One Defence Business Model.

4.53 The CLC focuses on making faster and smarter decisions about defence capability to provide the best capability for Defence on time and budget, and with the appropriate acquisition strategy relative to the size, scale and complexity of the project. This in turn will save money for industry as a result of the lower cost of tendering and less wasted effort.

Figure 4.6: Stages of the Capability Life Cycle



Defence Industry Participation Policy

4.54 On 31 August 2017, the Minister for Defence announced a pilot program for local industry capability requirement as part of three major capital facilities projects, which has subsequently been extended to a further three projects. The pilot is focused on tenderers demonstrating engagement with local industry and outlining how they propose to involve local companies in delivering their work programs. This is fundamentally about ensuring that local companies in the vicinity of Defence bases, facilities and training areas are properly considered and are provided with the opportunity to compete for and win work.

4.55 Defence procures a range of platforms, equipment, services and support from Australian industry across many sectors of the Australian economy. Australian industry involvement in defence major capital equipment procurement of $20 million and above is captured by the AIC program. Defence non-materiel procurement of $20 million and above is undertaken in alignment with the whole-of-government Australian Industry Participation Policy administered by the Department of Industry, Innovation and Science.

4.56 The Defence Industry Participation Policy will be released in 2018. The Policy will provide a more consistent approach to Australian industry involvement in materiel and non-materiel procurement of $4 million and above. It will provide a clearer and stronger link between our defence industry policy and mechanisms for delivering capability to Defence, and build on mechanisms already in place to capture and assess the broader economic benefits on the Australian economy.

Defence Industry Skilling and Science, Technology, Engineering and Mathematics (STEM) Strategy

4.57 The Integrated Investment Program and Naval Shipbuilding Plan set out a very significant increased demand for Australian workers with a range of new and enhanced skills and knowledge over the next decade. This represents a step change in the size, scope and capability of our defence industry relative to today. The Government is establishing the Naval Shipbuilding College to provide a focal point for ensuring that the right workers with the right skills are in place when we need them to deliver the continuous shipbuilding program.

4.58 Similarly, workforce demand across our broader defence industry will expand and require new and stronger technological, trade and managerial skills. This will occur at a time of increased competition for workers with the skills our defence industry needs. However, defence industry is on the rise with opportunities for long-term, rewarding and highly paid careers at a time of transition in the Australian economy – we must raise awareness and inspire young Australians to see defence industry as a career path of choice. This will require a careful balance to ensure it is not at the expense of Defence Force Recruiting efforts.

4.59 While Defence, the broader Commonwealth, industry and states and territories all invest in skilling and STEM initiatives, it is critical to take a coordinated and targeted approach for defence industry to achieve the Government's objectives. Defence is leading the development of a Defence Industry Skilling and STEM Strategy for the Minister for Defence Industry's release in mid-2018. This will provide a comprehensive plan for growing our defence industry workforce and skills base to meet Defence's capability needs over the next decade. The Strategy is being developed in consultation with industry, states and territories and the Commonwealth, and will consider the pipeline from early engagement, attraction, upskilling, reskilling and retention to increase the skills available to deliver the Integrated Investment Program.

4.60 Critical for businesses in providing defence capability is the ability to attract and retain highly skilled, experienced labour. It will be up to industry to engage local workers and provide them with the skills and experience to perform at a high level. Defence will partner with industry to assist its programs to retain top talent in Australia.

4.61 The CDIC will also continue to facilitate greater Australian defence industry skills attainment. Through the CDIC, Defence SMEs can access advisory and facilitation services to analyse, identify and recommend opportunities for skills development. Grant funds are available to eligible SMEs. This new way of funding skilling support for individual companies will help ensure that training is better aligned to defence's capability needs and the activities of defence businesses.

Other industry programs and support

4.62 **Industry Development Projects** are administered and funded through the CDIC. They are designed to support development of a sector-wide need (rather than necessarily a Sovereign Industrial Capability Priority requirement) that has been identified from within industry, the CDIC, Defence Industry Policy Division or a capability or program area within Defence. Industry Development Projects will be delivered in consideration of existing measures and programs, and aligned with broader Government initiatives, such as the National Innovation and Science Agenda and the Indigenous Business Sector Strategy.

4.63 Five industry development projects have been approved since the launch of the CDIC and are currently under development. Table 4.1 provides an overview of these projects. More information on the Industry Development Projects is on the CDIC webpage www.business.gov.au/cdic.

Table 4.1: Industry Development Projects

Project	Description
Defence Business Maturity Framework	When released, the Defence Business Maturity Framework will provide a standardised framework and method for trained businesses advisers (within the CDIC, or approved Commonwealth or state and territory government organisations) to assess the readiness of a business to provide products and services directly to Defence or as a part of a defence supply chain.
Barriers to Indigenous Business Participation in Defence Industry	A report will be developed into the existing support, gaps in support and barriers faced by Indigenous businesses seeking to enter the defence market. Recommendations will be delivered on how the CDIC can support development of sustainable Indigenous defence industry capability to facilitate increased Indigenous participation in Defence procurement activities.
Implications of Digital Transformation for Australia's Defence Industry	New research will be conducted into the issues, challenges and opportunities relating to digital transformation and Industry 4.0 for Australia's defence industry. The research will leverage existing digital transformation and innovation thinking to provide recommendations on how Australian Defence SMEs may overcome challenges associated with this trend and realise opportunities.
Assessment of Defence Industry Certifications	A systemic issue for Australia's defence SMEs is understanding and accounting for the complex system of industry and government certifications that are necessary to operate or undertake certain activities within the industry. New analysis will be conducted with respect to global and domestic trends on industry standards, certifications and accreditations with advice provided on the value, necessity and costs of these for Australian defence industry.
CDIC Information Architecture and Systems Development	To enhance its capacity to store, assess and use large amounts of data to support Australia's defence sector, the CDIC will design a new information management framework and systems analysis capability.

4.64 **The National Defence Industry Skills and Jobs Information Campaign** (The Workforce Behind the Defence Force) aims to improve awareness of the jobs and opportunities in defence industry that are becoming available with the Government's more than $200 billion investment in defence capability over the next decade. The Campaign is running in two phases; phase one was implemented from November to February 2018 and focused on raising awareness of Australia's defence industry and opportunities. Phase two runs from February to June 2018 and is focusing on SMEs and young Australians.

4.65 A Campaign landing page has been established at www.defenceindustry.gov.au to provide information on defence industry, as well as career and study options, and business opportunities. Defence has also worked with the Department of Education and Training to establish a defence industry identifier for jobs on the jobactive website, and has provided information to update the MySkills home page to provide information on defence industry career study. Australian defence industry is encouraged to use the jobactive website to advertise defence industry opportunities. Australians looking for work in the industry are also encouraged to use the site as a resource. The Campaign is a tool that will complement and support the enduring activities being put in place to grow our defence industry.

A strengthened Defence industry partnership

4.66 Defence and the CDIC continue to work closely with state and territory governments to strengthen the Defence and industry partnership through a number of existing engagement initiatives.

4.67 The **CDIC Advisory Board** is co-chaired by Australian industry and Government and its membership contains a broad representation across industry and Defence. The CDIC will establish a **collaboration charter** with Defence and state and territory governments to provide a framework that promotes a shared approach to transforming defence industry. The arrangements will detail resource and information sharing measures, outline approaches to state and territory defence growth plans as well as the management of complementary industry support activities.

4.68 The Government and Defence encourage SMEs to engage with academia and think tanks to build capability and investigate partnerships opportunities. Recent collaborations, such as Deakin University's Institute for Intelligent Systems Research and Innovation (IISRI) and Australian engineering firm, RCR Tomlinson, have proven the benefits of such partnerships. The IISRI and RCR Tomlinson have worked closely with Defence to develop a world-first unmanned robotics-driven target system, dubbed the OzBot Raider. OzBot enables the Australian Defence Force to test the full capacity of its small-arms in a safe environment, while improving weapon handling, effectiveness and accuracy of weapons and users alike. RCR Tomlinson will continue to employ a local, highly skilled manufacturing workforce that has access to the knowledge and techniques needed to produce world-class products. Australian SMEs can obtain partnership recommendations with academia that could benefit their business by contacting the CDIC.

4.69 **DST Group** maintains strong strategic relationships with **publicly funded research agencies**, including the Australian Nuclear Science and Technology Organisation (ANSTO), the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology. Under these agreements, each party contributes resources, personnel and facilities to undertake collaborative projects in areas of mutual interest for the benefit of both the organisations and Australia. These relationships provide the basis for the successful collaboration that occurs between the organisations as they work together to deliver research effort, secondments and resources, and expertise sharing.

4.70 DST Group, the Australian Institute of Marine Science, CSIRO, the Bureau of Meteorology, and the ANSTO are exchanging detailed information on each other's capabilities to identify high-payoff areas for collaboration and resource sharing. Key collaboration areas identified between DST Group and ANSTO include data sciences, coastal and ocean modeling, energy efficiency, and material science. DST Group has secondment exchanges with ANSTO to promote collaboration and develop staff. DST Group is currently collaborating with the Bureau of Meteorology in seven technology areas – satellite systems, space weather, ocean modeling, particulate modeling, weather prediction, super computer use and radio links. DST Group is also supporting the CSIRO (Biosecurity Flagship) in its efforts to rapidly progress Medical Countermeasures and translate technologies across a non-clinical phase of development.

4.71 Defence Security and Vetting Service reform to the Defence Industry Security Program and industry outreach in partnership with the CDIC will ensure Australian industry has access to the security advice, support and services needed to work with Defence, and facilitate access to foreign defence markets and technologies. Strengthened partnerships between Defence and industry will also further enhance Defence's ability to monitor and mitigate security risks.

Delivering our Defence Industrial Strategy

4.72 Achieving the goals and strategic objectives outlined in this Plan requires much more than a series of individual initiatives. It requires a fundamental shift in the way we plan, guide and support our defence industry to deliver the defence capability we need and, through this, a greater capacity to manage the threats and challenges we will face over the coming decades.

4.73 It requires leadership, reform and a shared commitment from governments at all levels, Defence and industry to deliver this national endeavor, to normalise Australian industry at all levels of Defence planning, and to realise the intent of Australian industry as a fundamental input to capability.

4.74 While many of the ingredients for success have been put in place, sustained leadership, communication and coordination is required to bring all elements together as a single strategy and to maximise their combined benefit for Defence and industry. That is the challenge of today and the next decade. Defence, led by Defence Industry Policy Division, will take a more strategic and integrated approach to bring together the various initiatives outlined in this Plan, acknowledging that the AIC program will remain the largest and most important lever for developing our defence industry over the next decade.


5

Chapter 5: Reviewing and Updating the Defence Industrial Capability Plan

5.1 The Defence Industrial Capability Plan will be regularly reviewed to ensure it remains relevant and informative to Government and industry. A new edition of the Plan will be released to align with the defence strategy cycle and capability goals, and defence industry priorities.

5.2 These updates will enable Defence and CDIC to:

- **Strengthen the defence industry baseline** as a comprehensive picture of Australia's industrial capabilities.
- **Maintain alignment of the Defence Industrial Capability Plan** with Defence strategic guidance and the Integrated Investment Program.
- **Target industry support programs and measures** to best support Defence acquisition and sustainment requirements and Sovereign Industrial Capability Priorities.

5.3 The progress updates will be published periodically following annual Defence strategic, force design, and Integrated Investment Program reviews. These will be supported by an annual defence industry capability survey to be delivered by the CDIC.

5.4 Periodic updates will be published on the Defence Industry Program website www.defence.gov.au/SPI/Industry/CapabilityPlan and links made available on the CDIC website www.business.gov.au/cdic.

Governance

5.5 The Government, through the Minister for Defence Industry and Minister for Defence, will oversee the plan's implementation as well as annual updates.

5.6 Management and maintenance of Sovereign Industrial Capability Priorities and support measures will involve rigorous oversight of funding recommendations to ensure investments target the right industrial capabilities and clearly enhance defence capability.

5.7 The CDIC Advisory Board has a mandate to provide independent guidance and direction on industry support measures and priorities for the CDIC. This includes making recommendations to the CDIC and Defence on areas of focus for the Defence Industrial Capability Plan and investment.

Australian Defence Industry Input

5.8 Australian industry will be engaged, and provided opportunity to support the development of updates and the next Defence Industrial Capability Plan through:

- information published on the Defence Industry Policy Division website at www.defence.gov.au/SPI/Industry/CapabilityPlan
- engagement via the CDIC website (www.business.gov.au/cdic), and through the CDIC newsletter (subscribe at www.business.gov.au/Centre-for-Defence-Industry-Capability/News-events-and-resources/Defence-Industry-and-Innovation-newsletter)
- information on the industry baseline and Integrated Investment Program industry analysis through the Integrated Investment Program website to be published in 2018
- information made available through state and territory collaborations or ongoing project management engagements, briefings and engagement sessions provided through Defence's Environment Working Groups and major conferences such as Defence + Industry.

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Annex A: Australia's Defence Industry Today

Introduction

A1. This annex addresses how Australian defence industry has supported the Australian Defence Force in the past and the current defence industry sector.

A2. As Australia's defence capability and presence across Australia has grown and evolved, so has Australian industry expanded to a national presence in industrial centres and hubs, and around defence bases and facilities. The capability within Australian industry provides a solid foundation to build upon and to meet Australia's defence capability needs and challenges over the next decade. This includes achieving a substantial step change in the supply of Defence materiel and services to support major acquisitions and an enhanced Australian Defence Force operational tempo. It also includes the upgrade of industrial and Defence infrastructure in parallel with many of the projects they will support. Successive Government and industry investment decisions have built the capability of Australian industry, resulting in the delivery of some of the world's most innovative and technologically-advanced capability solutions.

A3. The skills and expertise that underpinned the construction of a generation of *Collins* Class Submarines, *ANZAC* Class Frigates, *Armidale* Class Patrol Boats, and *Hobart* Class Air Warfare Destroyers – and supported the broader development of our naval force – provide a strong base to meet the challenges of the continuous shipbuilding program: the largest, most complex and most ambitious project in our nation's history. This skilled workforce will need to grow exponentially in the future if we are to meet the needs of the continuous shipbuilding program.

A4. This program will be delivered by our sovereign naval shipbuilding industry, made up of Australian shipyards with Australian workers and Australian companies across the nation, and our naval capabilities will be sustained at dockyards and facilities in Australia. This is a truly national endeavor that will require a significant expansion of the national Australian industrial base to succeed.

A5. Likewise, our defence aerospace and land combat sectors are robust and innovative. They are underpinned by decades of effort supporting the construction and sustainment of the current generation of Australian Defence Force capabilities, from our airborne early warning and control aircraft and rotary wing aircraft, through to our tanks, G-wagon modules and protected maneuverability vehicles. These world leading capabilities are evidenced in the large number of innovative companies that have flourished as part of the F-35A Joint Strike Fighter Program, and that have brought new technology and intellectual property to enhance the capability of our platforms and systems once in service, and supported our Bushmaster and Hawkei protected mobility vehicles. Our sovereign land vehicle construction capability will be critical to the production of our combat vehicle fleet for decades to come. Australian industry will need to grow and innovate to provide the range of capabilities we need to support fifth generation capabilities, including new unmanned capabilities over the next decade.

A6. Australian industry has also developed considerable depth of capability in the intelligence, surveillance, reconnaissance, electronic warfare and cyber domains over the last 30 years. This capability is essential to meet Australia's unique national requirements for sovereignty in the ability to understand, preempt and respond to developments in our strategic environment, and to maximise the effectiveness of our forces. Critical Australian-based industrial capabilities such as the CEA Phased Array Radar and the Jindalee Operational Radar Network and their supply chains, are the product of decades of investment, ingenuity and dedication to support our warfighters. The depth of experience and knowledge in these areas will be essential for Australia's continuing strategic advantage in intelligence, surveillance and radar technologies, and to integrate a more complex, advanced force.

A7. Similarly, Australia's systems design engineering, software design and upgrade, and command and control and communications capabilities have made major advances over the last 30 years. These have been critical to integrating new and enhanced capabilities into the force, and their continual development to meet new and evolving threats. As with examples such as the Saab Australia 9LV combat management system to be employed on much of the future naval fleet, the knowledge, skills and intellectual property in Australia in areas such as system engineering, software, hardware, systems and cyber security engineers will be vital over the next decade to upgrade and adapt our capabilities.

A8. Continued development and evolution of Australian-based strategic explosive ordnance, expendable countermeasures, weapons, ammunition and logistics support and health capabilities over this period have also provided important capabilities to support the operation of the Australian Defence Force and its mobilisation base. The professional services and support sector within Australia's defence industry has also expanded over this period and provides advice, support and capability critical to the efficient and effective operation of the Australian Defence Force.

A9. While Australia's defence industry has evolved and matured significantly in response to a range of political, economic, technological, environmental and social forces, global defence industry supply chains are now also more connected than ever before. This presents opportunities for companies generating products and services ready to export, but it also increases competition and risk. Geopolitical instability and rapidly evolving military threats puts additional pressures on the Australian Defence Force and defence industry by increasing demand for superior defence technologies.

A10. Australia's defence industry has risen to these challenges. We now observe a more receptive and diversified industry than we did ten or even five years ago. Global participation is higher, innovation is more prevalent and collaboration between industry, academia and Defence is growing. Furthermore, the sector has returned to positive growth and is positioning to deliver an unprecedented volume of defence capability to the Australian Defence Force, with renewed focus and commitment to maximising domestic supply chains. With the Government's more than $200 billion investment in defence capability over the next decade, Australia's defence industry has unprecedented opportunity to contribute to our long-term defence capability.

A11. Recent defence operations and the constantly evolving threat profile has required Australian defence industry to innovate to stay relevant and deliver superior capability outcomes. Innovation is at the forefront of the Government's continuing effort to harness the new sources of growth necessary to deliver the next age of economic prosperity. The recently released Innovation and Science Australia report *Australia 2030*: *prosperity through innovation* highlights that Australia's SMEs are particularly well positioned to realise these benefits.

A12. Support from within industry through the establishment of Cooperative Research Centres with academia – and the activities of organisations such as the Defence Material Technology Centre – is strong. Government initiatives such as the Defence Innovation Hub and Next Generation Technologies Fund are already supporting innovative organisations to accelerate technological development.

A13. On 18 December 2017, the Minister for Defence Industry announced the formation of the first Defence CRC for Trusted Autonomous Systems. This $50 million investment under the Next Generation Technologies Fund will deliver trustworthy smart-machine technologies for new defence capabilities based on advanced human-machine teaming concepts. Defence expects more companies and universities to join as participating members and research partners as the Defence CRC grows and takes on more projects.

A14. Government and industry investment over the last few decades has encouraged the growth of Australian industry to deliver a number of innovative, world-leading Defence capabilities. Through serious and coordinated investment in defence industry and innovation, Australia is already home to some of the world's most innovative and technologically advanced capability solutions, including command and control systems, communications, multi-sensor data fusion, signal processing, underwater systems, phased array radars, navigation and position aids, logistics support systems, and self-monitoring propulsion systems. In addition, Australia's defence industry boasts numerous specialty skills ranging from complex systems integration, welding complex metal alloys, ship design, through to manufacturing and production of aircraft structures.

A15. Collaboration between Australia's defence industry and the research and development community has also been critical to the development of advanced technologies that are today competing successfully in domestic and global military markets, including:

- The *Jindalee Operational Radar Network* (JORN) – Defence Science and Technology (DST) Group in collaboration with BAE Systems Australia developed this critical sovereign surveillance capability to enhance surveillance proficiency for Australia's northern approaches.
- The *Nulka Rocket Propelled Anti-Ship Missile Decoy* (Nulka) – was devised by DST Group and developed in collaboration with BAE Systems Australia and United States industry. The Nulka is one of Australia's most successful defence exports generating around $50 million a year in export revenue.
- The CEA Technologies' *CEAFAR Active Phased Array Radar* is globally recognised cutting-edge radar technology that has been mandated into Defence acquisitions – such as our Future Frigate Program – and delivers the Australian Defence Force a clear warfighting edge.
- The continued enhancement of the *Bushmaster Protected Mobility Vehicle* directly supported our ability to overcome a rapidly evolving threat in Iraq and Afghanistan.
- The *REDWING suite of Force Protection Systems* was developed as a collaborative effort between Defence and a number of innovative Australian companies. In early 2018, Australian based company L-3 Micreo began developing state-of-the-art protection capability known as SILVERSHIELD. This protection capability will support our allies and international partners in combating improvised explosive devices.
- Saab Australia in collaboration with the Royal Australian Navy developed the *ANZAC Combat Management System* (CMS) which has evolved into a local Australian product that has been exported to New Zealand, Canada, Sweden, Finland, Thailand, India and the United Arab Emirates. Under the CMS enterprise, Saab CMS is also on the amphibious assault ships and on the future replenishment ships and the offshore patrol vessels. Saab will also provide the Australian tactical interface to the United States Aegis combat system and the Australian CEA radar equipped future frigate.

- The *Thales Australia partnership with Australian commercial explosives provider Orica* – which will produce five million explosive boosters each year for the next 10 years – has not only increased employment and production levels at munitions factories in Benalla in Victoria and Mulwala in New South Wales, it also provides Orica with the reassurance of a high quality supply chain based in Australia.
- Australian owned company *Craig International Ballistics* is manufacturing and supplying the Australian Defence Force with Soldier Combat Ensembles Protection Element components as well as supplying services for refurbishment, repair and disposal for the next four years. Opportunities for further Australian industry involvement support will revolve around the provision of materials and services currently sourced in Australia.

Defining and continuing to assess Australia's defence industry

A16. In Australia, the defence industry consists of large global Defence companies (primes), their major subcontractors (sub-primes), relatively few medium-sized businesses and a large and wide base of SMEs with fewer than 25 employees.

A17. This structure is uncommon in comparison to countries such as the United States, the United Kingdom and Canada, which tend to be more 'middle/top heavy'.

A18. The unique nature of this industrial structure means that Defence must as a priority continue to build an in-depth understanding of domestic defence capabilities and supply chains so future Defence Industrial Capability Plans are built upon our true sovereign industrial landscape.

A19. Work has already been undertaken on this endeavor with a Defence Industrial Capability Survey conducted between December 2016 and February 2017. The survey was completed by over 1,600 Australian businesses, academics and defence industry organisations. Defence capability managers were also surveyed to provide information on the industrial capabilities required to support Defence's military capability. The results of this survey, as well as information from the Australian Bureau of Statistics BLADE database, Capability Acquisition and Sustainment Group databases and a variety of other sources external to Defence, have provided an expanded picture of defence industry in Australia (more information on the results of this survey is in the next section).

A description of Australia's defence industry

A20. Defence's recent analysis of Australia's defence industry shows that it incorporates a large and growing group of diverse and responsive organisations, servicing both defence and non-defence customers across a variety of industry sectors. Current and aspiring defence industry organisations employ a multi-skilled workforce, capable of generating many industrial capabilities, and delivering a range of products and services to defence and non-defence customers in Australia and overseas.

A21. In addition to the manufacturing and sale of weapons and other military technology necessary to provide the Australian Defence Force with core warfighting capabilities, defence industry also consists of commercial industry that supports the day-to-day functioning of the Australian Defence Force. This includes the supply or manufacture of component materials used in military equipment, logistical support, information and communications technology, military and defence training, facilities and infrastructure construction, engineering and other specialist consulting services. Today, new and active market participants, as well as aspiring market entrants, are emerging in greater numbers. This includes foreign players (particularly in the maritime space) attracted by market conditions in Australia, and established domestic businesses from adjacent industries looking to leverage existing skills, assets and ways of working in a growing sector.

A22. As noted earlier, the structure of the Australian defence industry is unlike that of other countries. In Australia, the defence industrial base has a small number of global primes at the top, with a wider range of sub-primes (usually with a global parent) and medium-sized enterprises in the middle. However, the largest contingent of our defence industry is SMEs with less than 25 employees.

A23. Australia's sub-primes and medium-sized SMEs (employing between one and 199 employees) traditionally exhibit strong capabilities in system integration, software development, program management, and supporting specialist engineering and manufacturing skills. Several Australian sub-primes are suppliers and integrators of parent company equipment and some are subsidiaries of large service industries engaged in infrastructure design and construct, or consulting services.

A24. The industrial contribution of smaller SMEs to Defence are broad and varied, ranging from manufacturing precision sheet metal, developing anti-ballistic technologies for ships, and delivering specialised training, through to garrison support services. These businesses rarely contract directly to Defence. A key element of this Plan is to assist these SMEs through the CDIC's support programs to connect with Defence primes and seek opportunities to enter global markets. For example, the F-35A Joint Strike Fighter program has enabled a number of SMEs to establish a US-based footprint to expedite sales and improve contract efficiency.

Locations

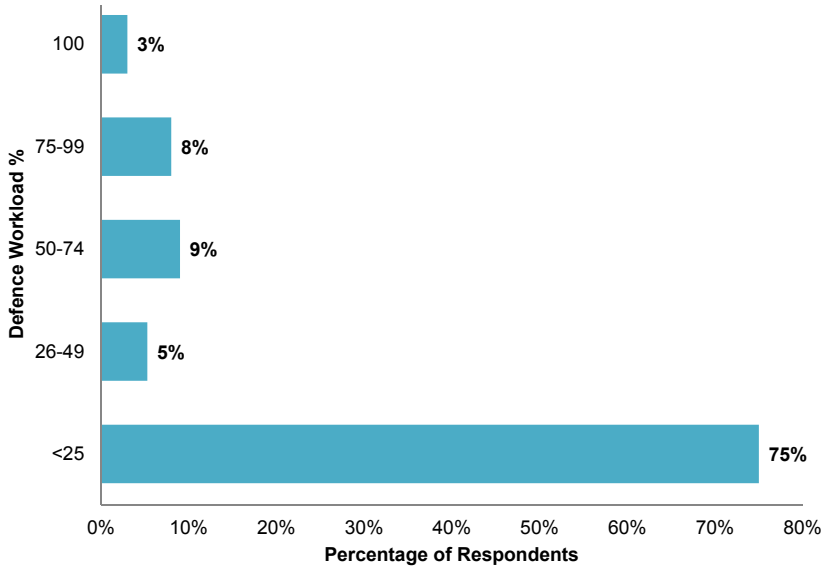
A25. An increasing number of defence industry companies of all sizes are operating in multiple states and territories and in the international market, reflecting the diversity of opportunities across Australia and recognising their success and competitiveness internationally. Around 40 per cent of the respondents to the Defence Industrial Capability Survey stated that they generate capability in their headquarters state alone, while almost half of the total capabilities were listed as being in two or more states or territories. Twenty-five per cent of the companies nominated at least one overseas location where they generate capability. These findings are consistent with characteristics of a national supply chain.

A26. The national disposition of Australian industry reflects the clustering of major manufacturing bases and SME capabilities around population centers, and the need to establish industry capabilities close to the Defence bases and infrastructure they support. Each state and territory has particular strengths in its industrial base and available capability. It will be critical to expand these strengths to achieve the national supply chains required to meet Defence's future capability needs. A key priority is to strengthen cooperation between industry, Defence and state and territory governments to provide the greatest opportunity for competitive SMEs to support Defence requirements across Australia.

Defence related workload

A27. Few defence industry companies in Australia are 100 per cent dependent on Defence sales. Those that are tend to be subsidiaries of multinationals with well-established capabilities and competencies to support acquisition and sustainment, or specialise in areas such as intelligence, surveillance, reconnaissance, electronic warfare or cyber. Less than five per cent of survey respondents stated their business was fully reliant on defence sales and less than nine per cent reported a defence workload above 75 per cent (Figure A1).

Figure A1: Percentage of Defence Workload



Source: 2016–17 Defence Industrial Capability Survey.

A28. Many defence sector SMEs have a broad customer base outside Defence, indicating an awareness of the need to diversify and an understanding of variable purchasing patterns within the sector. In addition to reducing dependence on Defence sales, servicing a broad range of customers has further benefits in that it enables transfer of knowledge, learning and intellectual property between sectors.

Barriers to Entry/Standards and Certification

A29. The high quality and safety standards that defence primes place on their supply chain members offer a formalised method for Australia's SME base to move up the value chain and obtain the accreditation that opens up new opportunities, including exports. However, certification and accreditation requirements have been cited as a barrier to entry, particularly for SMEs wanting to expand into the defence sector. Defence acknowledges these challenges and the CDIC is increasing its education activities to help businesses navigate their way through these requirements. This includes seminars around Australia for SMEs seeking to enter the defence sector.

A30. Almost 80 per cent of survey respondents identified holding five common certifications: ISO9001 Quality Management Systems, ISO14001 Environmental Management, ITAR, Defence Industry Security Program and AS9100 Quality Management System.

A31. Further analysis of companies which disclosed 'other' certifications revealed that 21 per cent held AS4801 OHS Management and six per cent held ISO18001 OHS Management. Two per cent of 'other' respondents had Contractor Accreditation Ltd (CAL), DNV GL Certification, and EASA Certification.

A32. The survey also found that companies with over 500 employees or annual revenue in excess of $100 million had a larger proportion of certifications compared to SMEs, which could indicate certification and accreditation costs are significant barriers for SMEs entering the defence sector. A prime may also need to invest parent company standards for policy or technical absorption reasons.

Trends

A33. Just like the structure, the conduct of an industry can have a significant impact on its overall performance and value-add. Australia's defence industry is more responsive and diverse as it transitions to high-tech manufacturing and embraces innovation. Global participation is higher, innovation is more prevalent and collaboration between industry, academia and across Defence is growing.

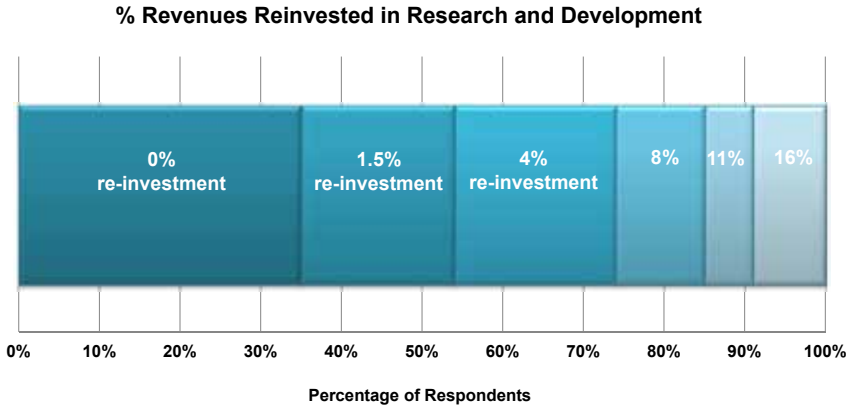
Research and development

A34. Australia's defence capability edge is based on Defence's ability to deploy, operate and sustain technologically superior capabilities. Defence achieves this by acquiring advanced technology from international partners and supporting innovation and local capability development. Supporting Australian defence industry innovation into defence capability is critical to our long-term capability advantage.

A35. The DST Group has built strong research and development relationships with key Australian companies through its strategic Alliance program. The Alliance agreements are long-term bilateral, technology-focused relationships that leverage each other's resources. The program aims to promote collaborative activities where Defence and industry both contribute resources to solve scientific and technological challenges of interest to Defence.

A36. Fifteen per cent of survey respondents reported investing more than 10 per cent of their revenue back into research and development, while almost 10 per cent of companies reported a research and development reinvestment of 16 per cent or more. Of interest (and for further investigation) was that almost 35 per cent of respondents indicated they did not invest in research and development (Figure A2).

Figure A2: Revenues Reinvested in Research and Development



Source: 2016–17 Defence Industrial Capability Survey.

A37. It is anticipated that global defence industry investment in research and development will increase over the next five years. Australian defence industry must ensure that it is positioned to identify, develop and adopt innovations and new technological developments to remain internationally competitive.

Collaboration

A38. Understanding the current state of the defence industry partnership will help ensure the necessary steps are taken to strengthen it into the future. The survey found both a strong appetite for greater collaboration and gaps in the level of collaborative maturity across the sector. The majority of Defence and industry respondents rated their counterpart's level of collaboration maturity as 'average', with many citing culture and leadership as the most significant barrier to establishing more collaborative partnerships. The results highlight the need to enhance the relationship between Defence, industry and academia to ensure a stronger and more strategic collaboration into the future.

A39. For the Australian defence industrial base to mature, prime contractors and immediate tiers below them need to collaborate to ensure there is adequate support provided to constantly improve lower industry tiers, without overloading their capacity to absorb new capability and process improvements.

Transitioning to the future

A40. Our defence industry's capability provides a strong foundation to meet the significant step change required to support the continuous shipbuilding program and deliver the Integrated Investment Program. With the Government's investment in the modernisation of defence capability over the next decade, industry now has the certainty to invest in growing its skills and infrastructure to contribute to our nation's future.

A41. At the same time, Australian industry has challenges. Industry must increase its capability to grow, collaborate and reform, as well as develop the skills to compete effectively in the domestic and international markets. Continuing industry and Defence engagement and adaptation is critical to deliver the future capability needed by Defence at the required standards.

CASE STUDY: Global partnerships delivering next generation land vehicle capability

Dynamic Engineering Solution Pty Ltd, which trades as Supashock, is an example of an innovative, highly skilled Australian company that has successfully collaborated with a global defence firm to connect to the global supply chain. With help from the Centre for Defence Industry Capability and a commercialisation grant from the Government's Entrepreneurs' Program, Supashock is developing dynamic suspension technology for armoured and protected defence vehicles produced by the major global defence prime Rheinmetall Defence.

Supashock and Rheinmetall were initially collaborating on innovative suspension and load-handling systems for 2,500 Australian Defence Force vehicles. Supashock has now signed a partnership agreement with Rheinmetall for Supashock to adapt a range of suspension products for installation on Rheinmetall Defence vehicles which are produced for the world market.

This collaboration has seen Supashock grow from a company with three employees five years ago to a company with more than 30 people today and growing.

Annex B: Australian Industry Opportunities in the Integrated Investment Program

B1. This annex provides more detail on Australian industry opportunities as part of each Integrated Investment Program capability stream.

Stream One: Intelligence, Surveillance, Reconnaissance, Electronic Warfare, Space and Cyber Program Analysis

Program	Potential opportunities
Intelligence	• New intelligence systems, tactical data link systems, geospatial support systems and surveillance systems will be acquired over the next two decades. Opportunities exist for suitably credentialed Australian businesses to provide products and services, in collaboration with primes, to help build the capabilities necessary to sustain Defence intelligence capabilities including the Defence Intelligence Organisation (DIO), Australian Geospatial-Intelligence Organisation (AGO) and the Australian Signals Directorate (ASD). • Defence's demands for geospatial data production and retention are substantial, covering a complete area of interest of over 28 million square kilometres. Defence will continue to leverage Australia's geospatial industry to support the management of the large volumes of geospatial data that are required by Defence's systems, platforms and capabilities. • Industry opportunities that can be announced publicly will be discussed through avenues such as the MilCIS Conference and the C4ISREW Environmental Working Group.

Program	Potential opportunities
Surveillance	• A multi-billion-dollar surveillance acquisition is taking place over the next two decades to develop the Enhanced Jindalee Operational Radar Network (JORN). Infrastructure opportunities will continue to arise for local defence industry in Longreach (QLD), Laverton (WA) and Alice Springs (NT) as the JORN network is upgraded in these regions. • Work has already begun to deliver the Enhanced JORN capability. BAE Systems will deliver this capability, and as an Australian developed initiative, the majority of the work will be done in Australia. Opportunities exist for Australian businesses to provide products and services to the primes as part of the skills needed to sustain this critical national capability.
Reconnaissance	• A High Altitude Unmanned Intelligence Surveillance and Reconnaissance System valued up to $4 billion has already been implemented, with its life-cycle spanning out to 2030. This capability will be delivered through the acquisition of a fleet of Northrop Grumman's MQ-4C Triton, which will be based at RAAF Base Edinburgh (SA) and be operational from the early 2020s. • It is intended that the through-life upgrade of these aircraft will occur as a part of the global support upgrade program. This will align upgrades with the United States, and reduce upgrade costs throughout the service life of the aircraft. Australian industry's primary opportunity to support these aircraft will be as a member of a supply chain to Northrop Grumman in delivering sustainment services. There may also be an opportunity for Australian industry to provide equipment into the mission systems used on Triton. Opportunities will also exist through Northrop Grumman's global supply chains to support the manufacture and sustainment of the Triton fleet globally. • Australian defence industry has opportunities associated with the construction of new base facilities and RAAF Bases Edinburgh (SA) and Tindal (NT), as well as opportunities with the establishment of a ground control station. • Australian industry will also have the opportunity to support the upgrade of ICT equipment and networks, as well as interfaces with Australian specific technology.

Program	Potential opportunities
Electronic Warfare	• Defence is acquiring force-level electronic warfare capability through a number of projects designed to achieve high levels of information fusion and enable comprehensive planning across the joint force and intelligence agencies. Central to this is a new long-range electronic warfare support aircraft based on a modified Gulfstream G550 airframe with additional systems. The aircraft are being acquired from the United States and will be upgraded incrementally to maintain commonality with US-developed systems. There is limited opportunity for Australian industry on this project, but there are likely to be platform sustainment and some mission system support requirements over the life of the capability. • Supplementing this acquisition is a Joint Electronic Warfare Integration program and an Enhanced Electronic Warfare Operational Support program, both ongoing and starting within the next five years, providing further opportunity for industry to assist in software customisation, supply equipment and support the growing capability. • There is significant opportunity for Australian industry to support existing and planned projects associated with electronic warfare survivability, tactical validation and countermeasure development programs. Industry opportunities will be announced though industry engagement channels such as the C4ISREW Environmental Working Group and the CDIC. One recent example is the Counter Improvised Threats Grand Challenge which was announced via the CDIC Innovation Portal.
Space	• Defence is bolstering its Space Situational Awareness capabilities, including by investing in the recent relocation of a Space Surveillance Telescope and C-Band Radar from the United States to Naval Communication Station Harold E. Holt in Western Australia. The C-Band Radar is being jointly operated by the US Air Force and RAAF and sustained by Raytheon Australia, while support arrangements for the Space Surveillance Telescope are still to be determined. Defence is also planning to acquire capabilities to exploit data from space surveillance sensors to generate a Space Operating Picture and to provide decision support tools for the conduct of future space operations. • Australia has a growing space industry, and opportunities in this domain will continue to grow over time. Additional investment is planned in Australian Defence Force space capability including space-based and ground-based intelligence, reconnaissance and surveillance systems. More industry opportunities will be announced in due course.

Program	Potential opportunities
Cyber	• Australian industry will be required to support the enhancement of Defence's offensive and defensive cyber warfare capabilities. The development of this capability is a critical priority for Defence as the cyber threat to Australia increases at a time when there is a shortage of available skills in Australia. • Highly capable and innovative Australian ICT equipment, systems and service provider SMEs are expected to have substantial opportunities in supporting Defence in achieving its capability growth in this area, in particular to support the requirement to deliver defensive cyber skills training to the Australian Defence Force.
C2 & Common Operating Picture	• Australian industry will have the opportunity to provide a range of specialised and commercial-off-the-shelf solutions to support the enhancement of Defence's command and control capabilities through this program. This will include the provision of componentry, and operation and maintenance support for global satellite communication terminals and other communications devices and infrastructure. • Through this program, Defence will also continue with functionality enhancements to relevant systems to integrate the common operating picture at all levels and provide enhanced situational awareness across the joint force. Australian industry will have opportunities to support the delivery of these upgrades as a member of a supply chain or as a direct provider to Defence. • Defence's command and control systems across fixed locations, such as Headquarters Joint Operations Command (NSW), and tactically deployed formations will also be modernised. Support will be required from suitably accredited Australian companies to provide platform and infrastructure delivery and installation services as well as componentry and equipment manufacture and supply. • The ASD provisions high-grade cryptographic key materiel. This equipment is used when there is a requirement to protect nationally classified information during electronic transmission. Suitably credentialed members of the Australian ICT industry will be required to support these activities in this program.

Stream Two: Key Enablers Program Analysis

Program	Potential opportunities
Base Support & Redevelopment	• Defence will undertake an extensive program to improve and upgrade its estate and infrastructure assets. Australia's engineering and, civil and heavy construction industry will be required to upgrade runways, airfield lighting and compliance works at RAAF Bases Williamtown (NSW), Tindal (NT), Townsville (Qld), Curtin (WA), Scherger (Qld), Learmonth (WA), Pearce (WA), Edinburgh (SA) and the airfield at the Cocos (Keeling) Islands. • With the acquisition of new naval platforms, the Australian Defence Force will be required to upgrade its operating bases at Garden Island (NSW), HMAS Stirling (WA), HMAS Coonawarra (NT) and HMAS Cairns (Qld). Australian industry will be required to support these upgrades including substantial wharf construction activities and upgrades to shore side training and support facilities. • Defence support bases, which house and train Australian Defence Force personnel, including Reserve and Cadet units, are a priority for upgrade with many in need of remediation. Australia's building and construction industry is required to support the installation of modern training and accommodation facilities at these bases across Australia. • Australia's commercial fuel suppliers will be required to collaborate with Defence to secure improved access to fuel for the Australian Defence Force. Industry will also be required to support upgrades to Defence's fuel infrastructure and deployable fuel supply equipment and assets. • Industrial capability in northern Australia will be needed as Defence evaluates the future of RAAF Darwin (NT). Planned works to enhance operational effectiveness in the short-to-medium term will continue ahead of the longer-term development of options for potentially establishing larger capacity bases in the Northern Territory. Industry will also be required to support the construction of a new explosive ordnance storage facility in the Northern Territory.

Program	Potential opportunities
ICT	• Defence is investing in the enhancement of its ICT support for Australian Defence Force operations. A key element is the implementation of a Single Information Environment to deliver a modern, secure, sustainable and scalable information environment to enable military and business operations across fixed, deployed and mobile environments. This will involve activities such as consolidation of data centres, infrastructure remediation and adoption of increased high-speed networking. Australian industry will be required to provide commercial platforms and sustainment service as well as a broad range of ICT and technical support services.
Science & Technology	• A number of future Defence technologies will be funded and delivered through initiatives such as DST Group's Next Generation Technologies Fund. Through this Fund, industry is supported to undertake research and develop technologies for the "future Defence force after next". Priority areas for investment will be published on the DST Group and CDIC websites. Current innovation priorities are Integrated intelligence, surveillance and reconnaissance; Space capabilities – de-risking Defence's dependence on space; Enhanced human performance; Medical countermeasure products; Multidisciplinary material sciences; Quantum technologies; Trusted autonomous systems; Cyber; and Advanced sensors, hypersonic and directed energy capabilities. • Australia's specialist engineering and construction industry will be required to support the upgrade of DST Group's Fisherman's Bend (VIC) facilities and laboratories.
Secure Defence ICT	• Australia's ICT equipment and services industry will be required to support the development of an enhanced secure information and communications technology environment. • Suitably credentialed Australian businesses will have the opportunity to contribute to the development and provision of specialised software and equipment to support ICT on military platforms and the delivery of commercially oriented systems that support effective business operations.

Program	Potential opportunities
Stable Defence ICT	• Defence will invest in the stabilisation of its core information and communication systems by acquiring and upgrading standardised, robust and reliable networks. This will be completed through projects to upgrade and improve terrestrial communications systems, to consolidate and update computing infrastructure and housing as well as acquiring a next generation end user computing environment that delivers Defence networks and applications through a single desktop. Industry will be required to support these programs through a range of specialised and commercial ICT products and services.
Testing & Training Ranges	• Defence is upgrading its testing and training ranges to sustain existing platforms and support the introduction of new Australian Defence Force weapon systems in coming decades. Australia's engineering, civil construction, ICT and systems design and production industries will be required to support these upgrades, including through complex enhancements to the infrastructure, communications and environmental controls of these facilities. • The Woomera Range Complex (SA) will be upgraded to accommodate F-35A Joint Strike Fighter performance tests and support increased cooperation, joint exercises and training with the United States and other security partners. There will be opportunity for Australian industry to support the upgrade of testing and training infrastructure, and the provision of some specialist equipment. Industry will also have the opportunity to directly support testing and training activities.
Training Platforms & Simulation	• Australia's ICT, technological systems design and componentry industry will have opportunities to support both the delivery of enhanced simulation capabilities to Defence. • This includes ensuring that acquired training platform simulators and systems are capable of linking multiple real-life training activities and simulators together. Australian industry, in collaboration with global original equipment manufacturers, will have the opportunity to support the delivery of a wide range of aerospace training and simulator products and services focused on the Australian Defence Force's next generation aircraft. Similarly, significant opportunities exist in Navy surface and sub-surface training through the use of simulation/emulation facilities to support the introduction of future submarines, frigates and offshore patrol vessels. Army's Land Simulation Core project will enable more efficient simulation usage and connectivity and will provide industry with opportunities to contribute to the data management and development of a linked simulation capability.

Program	Potential opportunities
US Force Posture Initiative	• There will be continued opportunities for Australian industry to support the ongoing rotations of US Marine Corps and US military aircraft through Northern Australia. • This includes the provision of infrastructure development activities and ongoing base and operational support activities. More than $1.2 billion is being invested over the next 10 years to upgrade bases at Larrakeyah Barracks and Robertson Barracks (NT). These upgrades will support joint training and operations with the US military, as well as Australia's growing amphibious capabilities. • Australian industry is well positioned to support the construction and engineering of this new infrastructure.
Air Traffic Management	• Australian specialist ICT and communications equipment and service providers will have opportunities to support the acquisition and sustainment of air traffic control systems. • The Civil Military Air Traffic Management System project to be led by Airservices Australia and Thales Australia is a $1.2 billion project that will support 450 specialist high-tech jobs in Melbourne, building Australian skills in complex project management, systems engineering and software development. • Australia's engineering and construction industry will also be required to support air traffic control infrastructure upgrades that will be conducted across the country in concert with upgrades to civil aviation systems.
Communication	• Defence will invest in infrastructure and facilities upgrades to enhance the Australian Defence Force's satellite and terrestrial communications capabilities. Australia's specialist engineering and communications industry will have the opportunity to support the upgrading of facilities at the Harold E. Holt Naval Communications Station in Exmouth (WA) as well as a range of mobile and deployable communications land terminals.

Stream Three: Air and Sea Lift Program Analysis

Program	Potential opportunities
Multi-Purpose Vessel	• Defence has recently acquired a new large hulled multi-purpose vessel to complement the Australian Defence vessel Ocean Protector. This will support border protection and maritime safety. There will be some opportunity for Australian industry to support the sustainment of this vessel.
Refuelling Aircraft	• The Australian Defence Force air-to-air refuelling fleet comprises seven KC-30A aircraft, including two new aircraft which are being converted for use by the Royal Australian Air Force (RAAF). A number of these aircraft were converted to a refuelling configuration in Australia. These air-to-air refuellers will play an expanded role in supporting the operation of the RAAF's fleet, including the F-35A Joint Strike Fighter. Northrop Grumman Integrated Defence Services is providing through-life support for the fleet. • There will be opportunity for Australian industry to support the upgrade of RAAF bases Amberley, Learmonth and Tindal, including fuel infrastructure and base facilities associated with these aircraft.
Sea Lift Vessel	• The Australian Defence Force's sea lift capacity will be enhanced through upgrade and extension of life activities for the sea lift ship, HMAS Choules. Planned investment includes updating the ship's battle management and C4I capabilities, and hull, mechanical and electrical systems to extend the operational life of the vessel out to the early 2030s. Both foreign and domestic industry will contribute to these activities. • The Royal Australian Navy (RAN) will replace HMAS Choules with a new class of sea lift vessel. The acquisition of the future sealift ship will be considered from the middle of the next decade, and possible industry opportunities will be identified closer to this time. Maintenance of these ships will be conducted at Australian ports and shipyards.
Search & Rescue	• From the middle of the next decade, Defence will acquire a new long-range combat search and rescue capability. The project is in its early stages, and industry opportunities will be announced in due course.

Program	Potential opportunities
Transport Aircraft	• The RAAF's fleets of Globemaster, Hercules and Spartan aircraft provide a comprehensive strategic, intra-theatre and battlefield airlift capability to the Australian Defence Force. These aircraft will be in service with the RAAF until 2030. It is intended that the through-life upgrade of these aircraft will occur as a part of the respective global support upgrade programs. This will align upgrades with other users, in particular the US Air Force, and reduce upgrade costs throughout the service life of the aircraft. Australian industry's primary opportunity to support these aircraft will be as a member of a supply chain to a prime contractor delivering sustainment services. • Significant infrastructure and base facility upgrades will be required, in particular, to support the fleet of 10 C-27J Spartan aircraft at their home base at RAAF Amberley. This will provide opportunities for Australia's heavy and specialised engineering and construction industries. • The acquisition of future heavy lift aircraft will be considered from the middle of the next decade, and industry opportunity will be identified closer to this time.
Utility Helicopters	• The acquisition of new CH-47F Chinook and MRH-90 rotary wing aircraft will provide the Australian Defence Force with increased logistics support, tactical mobility and limited fire support, aero-medical evacuation and reconnaissance capabilities. Australian industry has played a significant role in the manufacture and assembly of MRH-90 helicopters through Airbus Helicopters. Chinook Helicopters have been acquired from the United States under a Government-to-Government Foreign Military Sales arrangement, and Australian industry has provided some limited support through the customisation of the aircraft sub-systems for Australian operations. Sustainment of these aircraft will continue to be conducted in Australia.

Stream Four: Maritime and Anti-Submarine Warfare Program Analysis

Program	Potential opportunities
Maritime Support & Reconnaissance Aircraft	• Defence will enhance its maritime support, reconnaissance and anti-submarine capabilities through the acquisition of a range of new fixed wing and rotary aircraft. • This includes the acquisition of 15 P-8A Poseidon surveillance aircraft as well as upgrades to the Cocos (Keeling) Islands airfield to support their operation. It also includes 24 MH 60R Seahawk anti-ship and anti-submarine warfare helicopters, the acquisition of which is now complete. • The aircraft will be acquired from overseas and Australian industry's contribution is expected to be as a component provider in the supply chains of the original equipment manufacturers delivering these platforms. There are also opportunities for involvement in maintenance, repair and overhaul services to the Australian Defence Force, original equipment manufacturers or as a standalone service provider.
Destroyers	• Australia's naval shipbuilding and associated industries will continue to support the domestic construction of three Hobart class destroyers for the RAN. • This project is being delivered in Adelaide by the Air Warfare Destroyer Alliance, which comprises Defence, the lead shipbuilder ASC Pty Ltd, and mission systems integrator Raytheon Australia. High-end manufacturing, systems design, systems integration, componentry, engineering and a range of other specialised and general industrial capabilities are required of Australian industry to deliver this project which will draw to completion by 2020. • A targeted retention strategy has been agreed to create up to 200 positions for current shipbuilders working on the Air Warfare Destroyer program.

Program	Potential opportunities
Frigates	• Nine Anti-Submarine Warfare Frigates will be acquired to replace the *Anzac* Class Frigates with an enhanced anti-submarine warfare capability. • Following a competitive evaluation process, a continuous build of Australia's future frigates will begin in South Australia in 2020. There is expected to be significant Australian industry involvement over the life of the program, from the naval shipbuilding and repair sector to system providers, system integrators and SMEs, also leveraging capabilities established for the Air Warfare Destroyer Program. • Australian industry will be required to support upgrades and sustainment of the existing *Anzac* Class Frigates to ensure the platform can deliver the necessary capability until replacement. This includes the recent announcement to build a $5 million shipside support tower at BAE Systems' Henderson facility to support the *Anzac* Class Frigate upgrades. As well as conducting naval platform repair and maintenance, Australian industry will need to provide systems design, production and integration services to support the acquisition of enhanced communications, missile decoy and electronic systems.
Submarines	• Australian industry will support Naval Group in the construction of 12 new submarines for the Australian Defence Force and support the life extension of the boats it is scheduled to replace, the *Collins* Class submarines. • ASC Pty Ltd, and its extensive Australian SME supply chain, is providing extensive maintenance and repair activities on the *Collins* Class submarines and there will be further opportunities for industry to support a range of capability enhancements and obsolescence management activities to ensure their capabilities are retained until they are replaced. • The acquisition of the 12 future submarines commenced in 2016 and the first boats will likely enter service in the early 2030s. Construction of the 12 new submarines will extend out to the 2050s. Australian industry will have significant opportunities to compete for work on the construction and sustainment of these submarines. The Future Submarine is the largest defence procurement program in Australia's history. The industrial inputs required to achieve this program will be many and will involve platform design and construction, systems design and integration, specialised engineering and naval architecture as well as many more. Naval Group and Lockheed Martin Australia accreditation activities have already commenced with Australian companies. More information can be obtained through the CDIC website (www.business.gov.au./cdic).

Program	Potential opportunities
Minor War Vessels	• Austal at the Henderson Maritime Precinct is constructing up to 21 Pacific Patrol Boat replacements. Sustainment of these boats will occur in Cairns. Twelve offshore patrol vessels will also be acquired to replace the Australian Defence Force's existing *Armidale* Class patrol boats. The offshore patrol vessel project will provide substantial opportunities for Australia's shipbuilding industry as the first stage of the Government's continuous naval shipbuilding program. Following the competitive evaluation process, construction will commence in Australia in 2018 led by Lürssen, with all 12 offshore patrol vessels to be delivered by 2030. • The *2016 Defence White Paper* recognised that environmental data gathering requires significant investment and that there is a need to better understand our physical environment including the maritime domain. In recognising the need for change, an efficient, effective and sustainable hydrographic and oceanographic survey program will be delivered through project SEA 2400. A partnership between Defence and industry will deliver two capability elements: the HydroScheme Industry Partnership Program and the Strategic Military Survey Capability. • The HydroScheme Industry Partnership Program will deliver the national survey function that is currently being undertaken of military assets. This program will seek to partner with industry to deliver the surveys needed to support the national hydrographic service and meet Defence's legal obligations. It is an opportunity for Australian industry to invest in a substantial national initiative to deliver a strong survey program firmly entrenched in a broader nation building effort. The program has funding identified over the next 10 years of between $1 to 2 billion and will commence in 2019, ramp up to maturity around 2025 and then continue on an ongoing basis.
Maritime Logistic Vessels	• The RAN will require additional at-sea replenishment capabilities to support the acquisition of larger frigates and patrol vessels. Up to three replenishment ships will be acquired with the capacity to supply fuel, water, food and weapons to ships at sea to extend their range and endurance as well as transport stores into an operational theatre by helicopter or watercraft. Two vessels are being manufactured by Navantia in Spain and include the integration of the Australian Saab 9LV combat management system. The Government has stated that Australian steel will be used in this project. • The acquisition of future replenishment/supply ships will be considered from the middle of the next decade, and may be based on a similar class of ship as the replacement sea lift vessel. Possible industry opportunities will be identified closer to this time. Maintenance of these ships will be conducted at Australian ports and shipyards.

Stream Five: Strike and Air Combat Program Analysis

Program	Potential opportunities
Air and Missile Defence	• Air defence systems, including new air-to-surface, surface to air and air-to-air munitions as well as C4I systems and sensors are being acquired and upgraded. • Opportunities for Australian industry include supporting acquisition activities for new weapon systems through areas of comparative excellence, or through local and global supply chains arrangements. In April 2017, it was announced that Raytheon Australia would provide the National Advanced Surface to Air Missile System (NASAMS) for Defence's Short Range Ground Based Air Defence Capability. Raytheon will work with Thales Australia and CEA Technologies to maximise Australian industry opportunity on the program, and a final decision will be made on the capability by the Government in 2019. • Future opportunities for industry engagement include the acquisition of ground-based electronically scanned array radars from around 2020 (CEA Technologies is a potential Australian supplier). A deployable Joint Battle Management System will also be developed to better coordinate Australian Defence Force operations, and the existing Vigilaire system will also be upgraded or replaced. It is anticipated that prime contractors with a presence in Australia will tender for these projects and use existing Australian based industry capabilities – in primes or SMEs – to support the delivery of these projects.
Airbases	• Defence is investing in infrastructure and facilities to support all aspects of the RAAF's expanded strike and air combat capabilities. Defence's Estate and Infrastructure Group is responsible for constructing new base facilities and infrastructure with capability areas within Capability Acquisition and Sustainment Group. Information for industry seeking to engage with Estate and Infrastructure Group is at www.defence.gov.au/EIG.

Program	Potential opportunities
Airborne Early Warning & Control	• Upgrades to aircraft and infrastructure are being conducted to ensure the Australian Defence Force maintains a broad picture of the battle space. Australia's Airborne Early Warning and Control (AEW&C) fleet consists of six in-service Wedgetail aircraft. The capability will be upgraded ahead of a planned replacement or upgrade in the mid-2030s. Upgrades will be coordinated through Wedgetail Original Equipment Manufacturer providers (Boeing and Northrop Grumman), and it is expected that international businesses will engage local businesses to provide specialist support.
Electronic Warfare	• 12 new E/A-18G Growler electronic attack aircraft entered service in 2017. The capability was acquired from the United States under a Foreign Military Sales arrangement, which limits the opportunities to Australian industry. Many sub-systems on the aircraft are similar or identical to the RAAF's fleet of F/A-18 Super Hornet aircraft, indicating that businesses already supporting operation and sustainment of Super Hornets could also provide services to the Growler fleet. • New facilities will be built at RAAF Amberley (QLD) to support the Growler capability and will be supported by upgrades at RAAF Tindal (NT), Woomera (SA) and Delamere (NT) Range. Opportunities for Australian industry will be available in specialist services, facilities construction and engineering services.

Program	Potential opportunities
Fighter Aircraft	• Next generation aircraft and weapons are being acquired to enhance the strike capabilities of the Australian Defence Force. Australian industry will be required to continue supporting the construction of the RAAF's F-35A JSF capability. The JSF Program is the largest defence program in the world, with nine international partners participating in the US-led program. Thirty Australian companies directly contribute to the JSF international supply chains, with the current contracts to Australian industry exceeding $1 billion. An estimated 2,400 jobs have been added to the Australian economy through Australian defence industry's participation in the program and this figure is expected to grow as Australian industry's contribution to the program increases. JSF Division in Capability Acquisition and Sustainment Group will continue to lead industry engagement in the JSF Program with the support of the CDIC. • Australian industry will continue to provide maintenance and support services to RAAF and original equipment manufacturers or as standalone service providers for strike and air combat platforms and weapon systems. BAE Systems Australia is already preparing to provide this capability to Australia's JSF fleet, and has been named by the US Department of Defense as the main airframe maintenance provider in the Southern Pacific region. Maintenance and support opportunities will continue within the current fleet of 24 F/A-18F Super Hornets and 71 F/A-18A/B Classic Hornets. Select opportunities will be available to support original equipment manufacturers on this program through Defence's Global Supply Chain initiative.
Light Helicopters	• A new fleet of deployable assault helicopters is being acquired to support special operations missions. There is good support for helicopters and sub-systems within Australia's aerospace manufacturing and sustainment sector across Defence and civil domains to support a new rotary wing capability. There will likely be limited opportunity for Australian industry to support modification and introduction to service of new platforms, given the relatively small size of the acquisition. Sustainment of new assets will likely leverage existing or known rotary wing sustainment arrangements, with limited opportunity for wider industry.

Stream Six: Land Combat and Amphibious Warfare Program Analysis

Program	Potential opportunities
Amphibious Elements	• Investment is being made to maximise the capability outcomes from the acquisition of two *Canberra* Class amphibious assault ships. Integration activities for aviation and amphibious capabilities are core to this investment, as well as the integration of enabling sub-systems. Australian industry is being engaged to deliver services across a range of these integration projects, such as UGL in the sustainment of the *Canberra* Class landing craft. Most opportunities for Australian industry exist through prime contractors such as Navantia, BAE Systems, and Saab Systems. • Future investments will be made in replacement watercraft for the Army in the 2020s. In collaboration with prime contractors, Defence anticipates a complete solution to be offered incorporating Australian involvement. Defence anticipates solutions to be offered incorporating Australian involvement. Announcements regarding this project will be made in due course. • Army watercraft requirements have been prioritised over the Riverine Patrol Craft project and will now not be acquired until the completion of the watercraft replacement project. Similarly, potential exists for Australia's marine industry to provide other small platform types as Defence's amphibious capability grows. The *Canberra* Class Landing Craft will need to be upgraded in the early 2020s and will be replaced in the early 2030s. • There are significant opportunities for Australian industry to support the sustainment of amphibious elements in this stream.
Barracks & Training Ranges	• The improvement and upgrade of existing barracks and training ranges is underway. There are opportunities for Australian industry to support the design, construction and operation of upgraded Defence facilities such as Robertson and Larrakeyah Barracks (NT). Projects will be delivered through Defence's Estate and Infrastructure Group.

Program	Potential opportunities
Helicopters & Armed Aircraft	• Helicopters and unmanned aircraft are critical enablers for Australia's land warfare and emerging amphibious warfare capabilities. • Defence's investment in armed helicopters is focused on Army's existing armed reconnaissance capability, the Armed Reconnaissance Helicopter Tiger platform, through to its replacement from the middle of the next decade. Australian industry, through primes such as Airbus Australia Pacific and Safran are performing important work supporting the operation of this fleet today. • Australian industry holds a latent capability for limited component manufacture and the final assembly of rotary wing aircraft. There is opportunity for potential prime contractors to leverage this capability for strong Australian industry participation in the replacement of the Tiger platform. • Unmanned aircraft are increasingly important to the Australian Defence Force, providing improved situational awareness, force protection and firepower. Defence will make an investment in a new, fully integrated armed medium-altitude unmanned aircraft system. This is most likely to be a military off-the-shelf system, with Australian industry opportunity likely limited to engagement through prime suppliers for larger systems. Small UAV development and production will provide opportunities for Australian companies with the required capabilities. • Opportunity exists to support the enhancement of existing facilities and command and control capabilities such as those at RAAF Townsville (QLD) to support this new unmanned aircraft system. A sustainment capability will need to be established in Australia for this new weapon system.

Program	Potential opportunities
Ground Combat	• There are a large number of projects within this program that support new and emerging capabilities for Army, such as the Night Fighting Equipment Replacement Program and the Enhanced Gap Crossing Capability. A number of capabilities will be delivered as turn-key systems from suppliers abroad, where others will be wholly manufactured and supported in Australia, such as the new Enhanced EF88 weapon system which is being delivered to the Australian Defence Force by Thales Australia. • This is an area that is subject to new developments, and Defence will continuously monitor, adapt and improve the soldier combat ensemble and related equipment. Opportunity exists for innovative Australian businesses and research organisations to support this work, and deliver the best possible protection and systems for our soldiers, such as through the recent awarding of a $100 million contract to Queensland's NIOA to supply ammunition to the Army. • In addition, it is expected that over the next decade the Army will make increased use of robotics and autonomous systems to augment soldiers doing 'dirty, dangerous and dull' roles and to improve decision-making.
Land Communication	• Advanced secure and robust communications capabilities will give the Australian Defence Force a significant combat advantage in any conflict at the unit, brigade, division and joint force headquarter levels. • Due to the need for high grade US certified cryptographic equipment currently there is little opportunity for Australian companies to compete in the tactical communications market, except as part of a supply chain to major providers such as ELSA, Harris and Boeing. However, future manufacturing, assembly and repair opportunities for Australian companies will be sought. • Engineering and related support services will be required by prime contractors to support the integration between communication and command and control systems, and into Army and Joint platforms. • Defence will pursue opportunities for innovative solutions for advanced capabilities such as quantum communication technologies and, increasingly, more commercial off the shelf technologies.

Program	Potential opportunities
Special Operations, EW & Intelligence	• Special operations, electronic warfare and intelligence projects are all critical to the Australian Defence Force's ability to conduct operations and contribute to broader Defence missions. The rate of technological advancement provides a diverse range of opportunity for Australian industry, as suppliers to prime contractors or working directly with Defence or the Defence Science and Technology Group to develop solutions. • Much of the equipment procured and supported in this space is delivered as turn-key products from suppliers abroad, but some has been developed domestically. Examples of a domestically developed solution includes the GREYGUM and GREENGUM products developed under the REDWING program – five Australian SMEs were contracted to support the manufacture of these products. There will be continued opportunities to further enhance this technology throughout the next decade.
Armour & Vehicles	• Defence is making a large investment in Australia's armoured, protected and combat support vehicle fleets and is replacing a large range of legacy vehicles. Australian industry is already embedded in the delivery of new capabilities in the Land 121 programme in the delivery of Hawkei vehicles, as well as light Mercedes Benz G-Wagon vehicles, RMMV medium and heavy trucks, and associated trailers and modules through domestic and global supply chains. A new support network for sustainment and repair of these capabilities has been established and will require supporting infrastructure and appropriately skilled personnel. Opportunities will also exist as the platforms mature for block upgrades, and innovation. • Defence's single biggest investment in Army capability is occurring through the acquisition of armoured combat vehicles in the Land 400 program, which comprises Phases 2, 3 and 4 worth more than $15 billion over the life of the program. The new Combat Reconnaissance Vehicle program, under Land 400 Phase 2, will be delivered under contract by Rheinmetall. This $5 billion project will support up to 1,450 jobs nationally for Australian workers during the coming years.

Annex C: Key Initiatives

Sovereign Industrial Capability Priority Grants

Key milestone

Sovereign Industrial Capability Priority Grants will be funded by Defence and delivered through the Centre for Defence Industry Capability commencing in 2018-19.

Purpose

Sovereign Industrial Capability Priority Grants will help ensure the resilience of Australia's Sovereign Industrial Capability Priorities. They will provide funding to industry to ensure that Australian SMEs have the appropriate capacity and resilience to support Defence's most critical capabilities.

Features

- Grants of up to $1 million will be available to fund capital equipment purchases (including specialist software and security infrastructure) and non-recurring engineering costs for SMEs directly contributing to a Sovereign Industrial Capability Priority.
- A cap of $3 million on total funding applies for a business over a two to three year period and 50:50 matched funding is required.
- A Sovereign Industrial Capability Priority Grant list may be published from time to time indicating areas of industrial capability that the Government is seeking to secure.

Funding

Up to $17 million in a financial year.

Integrated Investment Program Capability Stream Industrial Strategies

Key milestone

Industrial Strategies for each Integrated Investment Program capability stream will be released from mid-2019.

Purpose

The Industrial Strategies will provide Australia's short, medium and long-term industrial objectives for each capability stream, and show how Australian industry development will be maximised to support Australia's defence capability and industry policy objectives.

Main Features

- A long-term strategy for Australian industry development against each capability stream taking account of Defence's differing requirements in each stream, Australian industry capability and opportunities over the next decade.
- The strategies will also take account of Government's major capital equipment decisions in 2018 that have an impact on Australian industry development, and the Sovereign Industrial Capability Priorities and their development within the relevant capability streams.
- The Strategies will indicate how the initiatives and levers outlined in the Defence Industrial Capability Plan will be applied to achieve the short, medium and long-term industry development objectives in each stream.

Funding

Funding will be allocated from the existing Defence budget.

Industry Development Projects

Key milestone

Industry Development Projects (IDPs) are administered and funded through the Centre for Defence Industry Capability and will commence delivery in 2018.

Purpose

IDPs fund measures to address a sector-wide need that has been identified from within industry, the CDIC, Defence Industry Policy Division or a capability or program area within Defence.

Main features

- An agile mechanism designed to rapidly introduce programs, studies, research, grants, procurements or other initiatives to support a sector wide requirement that has been identified by Defence, CDIC or external stakeholders.
- IDPs do not target specific businesses. IDPs and associated funding are available to an identified sector and any entity that may fall within it.
- IDPs are not intrinsically linked to Sovereign Industrial Capability Priorities; however, sectors that may be covered by a Sovereign Industrial Capability Priority will be eligible for funding within an IDP proposal.
- Funding of up to $500,000 for IDP procurements and grants will be provided within a single financial year. IDPs may be subject to milestone funding arrangements. This decision will be assessed on a case-by-case basis by the CDIC.
- IDPs will not be conducted in rounds, but rather as required. IDPs will be assessed individually.

Funding

$1 million each financial year from within the Defence Industry Policy Division budget allocated to the CDIC.

Sovereign Industrial Capability Priorities Implementation Plans

Key milestone

Implementation plans for each Sovereign Industrial Capability Priority will be released from mid-2019.

Purpose

The implementation plans will identify the level of access and control Australia requires for each of the Sovereign Industrial Capability Priorities and will identify long-term goals for the development of each Priority with specific solutions to help meet goals.

Main features

- The plans will outline the level of sovereignty we seek to achieve for each of the Priorities and how they will be developed and supported across Defence planning to maintain capacity and resilience. This includes workforce and skilling considerations, and where appropriate, a forecast of technological developments in the field that will impact on future defence capabilities.
- They will provide a framework to help plan and coordinate future Sovereign Industrial Capability Priorities' development and growth.
- The plans will be supported by a detailed examination of ways of securing Sovereign Industrial Capability Priorities.
- The plans will identify relevant Integrated Investment Program projects.
- The plans will also outline how the broader defence industry and innovation initiatives will be leveraged to support the individual requirements of each Priority.

Funding

Funding for the development of implementation plans will be allocated from the existing Defence budget.

DEFENCE INDUSTRIAL CAPABILITY PLAN

DPSMAR031-18