MESSAGE FROM THE MINISTER FOR DEFENCE INDUSTRY

The Next Generation Technologies Fund is a cornerstone of the Turnbull Government’s $1.6 billion investment in defence industry innovation to build a technologically-advanced Australian Defence Force of the future. The Next Generation Technologies Fund and the Defence Innovation Hub form the core of a new integrated defence innovation system. The new Centre for Defence Industry Capability is the front door and primary access point to the defence innovation system. Together these initiatives will contribute to Australia’s economic prosperity and jobs growth.

At $730 million over ten years, the Next Generation Technologies Fund is the largest ever investment dedicated exclusively to the development of future, game-changing Defence capabilities. This calls for the combined intellectual talent and scientific ingenuity in our nation’s universities, research agencies and industry to deliver innovative solutions that will defeat emerging and future threats, many of which have not yet been envisaged.

The opportunities offered under the Next Generation Technologies Fund are varied and challenging. They demand smart thinking, intensive research and sustained collaboration to succeed.

The Australian Government looks forward to these opportunities being transformed into effective capabilities for the Australian Defence Force.

Christopher Pyne
Minister for Defence Industry
The Next Generation Technologies Fund focuses on fundamental research and the development of future game-changing concepts that can be further matured and realised into military capability through the Defence Innovation Hub. This forward-looking program with an investment of $730 million over the decade to 2026, is managed by Defence Science and Technology with the support of industry and academia.

**TECHNOLOGY PRIORITY AREAS**

The Defence Industry Policy Statement has identified nine priority areas for development under the Next Generation Technologies Fund:

- **Cyber**
- **Space**
- **Advanced sensors, hyperionics and directed energy capabilities**
- **Quantum technologies**
- **Integrated intelligence surveillance and reconnaissance**
- **Trusted autonomous systems**
- **Enhanced human performance**
- **Medical countermeasure products**
- **Multidisciplinary material sciences**

**PROGRAMS UNDER THE NEXT GENERATION TECHNOLOGIES FUND**

The Next Generation Technologies Fund supports a diverse range of multi-year, large-scale collaborative projects (in the tens of millions of dollars) and medium scale projects (in the low millions of dollars) to small scale projects (in the hundreds of thousands of dollars). These projects are delivered under different initiatives. Some of these initiatives are mentioned here while others will be announced in due course.

**DEFENCE COOPERATIVE RESEARCH CENTRES**

Defence will co-invest in Cooperative Research Centres with a focus on high priority defence-relevant next generation technologies. The centres will link defence industry and academia to create a vibrant collaborative research and innovation network focussed on driving defence capability outcomes. The aim is to enhance defence capability and strengthen the academic community. The first Defence Cooperative Research Centre is focussed on the development of Trusted Autonomous Systems.

**UNIVERSITY RESEARCH NETWORKS**

For medium scale activities, the Next Generation Technologies Fund supports University Networks to help expedite cross-disciplinary research and build academic communities across Australia and around the world. Built on open partnerships and mutual investment in the academic domain, these networks provide a robust mechanism for bringing together leading research teams to address defence priorities, with a strategic focus led by Defence Science and Technology (DST), universities get access to Defence scientists and specialist facilities while contributing directly to ADF capability. Defence benefits from enhanced access to Australia’s brains trust.

**STRATEGIC RESEARCH PROGRAM**

DST undertakes an ongoing program of strategic research initiatives aligned with Defence priorities. Where a specific new concept or technology domain shows potential to be developed into game-changing capabilities, further research may be undertaken under the auspices of the Next Generation Technologies Fund, using partners from across the innovation enterprise. An example is the cyber research program which is run in collaboration with CSIRO’s Data 61.

**SMALL BUSINESS INNOVATION RESEARCH FOR DEFENCE**

This program is modelled on the successful US program (Small Business Innovation Research) which encourages small businesses to engage in Federal research and development that has the potential for commercialisation. Small investments in agile, innovative companies can deliver exceptionally positive outcomes. The Small Business Innovation Research for Defence program supports research undertaken by small and medium enterprises. It enables them to explore their technological potential through research projects aligned with Defence strategic priorities.

**DEFENCE RESEARCH ACCELERATOR**

A new generation of innovators is developing breakthrough products without the huge capital costs traditionally required for cutting-edge research and development. This agile approach leads to technology disruption, where inventions of new processes, products or systems are rapidly developed and applied to known problems in unexpected ways. Bringing this innovative approach to the market for Defence and national security products improves capability outcomes. This program seeks to work with existing accelerators within the national innovation system, such as CSIRO’s On Prime program, to support the start-up community with an interest in Defence.

**TECHNOLOGY FORESIGHTING**

To prevent strategic surprise DST monitors global trends and undertakes technology foresighting. This activity is highly relevant for the development of future capabilities under the Next Generation Technologies Fund. This foresighting program brings together internationally recognised leaders and academic partners to consider the current defence environment, forecast future challenges and shape long term defence vision in a multidisciplinary workshop environment. Universities have the opportunity to participate in the workshop series focusing on science and technology topics which are likely to have a major impact on defence and national security domains, including digital disruption.

**BALANCED SCIENCE AND TECHNOLOGY INVESTMENT PORTFOLIO**