INFORMATION AND CYBER

Technologies in secure and resilient information systems, offensive and defensive electronic warfare capabilities and technologies that enhance joint command and control capabilities.

- Enhance joint intelligence, surveillance and reconnaissance (ISR) capabilities.
- Enhance joint command, control, communications and computing (C4) capabilities to provide more secure connectivity and better synchronise forces.
- Enhance situational awareness through improved intelligence, analysis, communications, navigation, targeting and surveillance.
- Enhance joint integration, analysis and interpretation of large amounts of data across all operating domains, including capabilities that reduce human involvement in these processes.
- Enhance understanding of the online, digital, social media and cyber environments to identify, predict and respond to risks to strategic assets.
- Enhance understanding and management of the electromagnetic environment to facilitate greater mobility and information sharing, reducing interference while improving access to bandwidth, and supporting enhanced decision-making.
- Reduce the reliance on human intervention in spectrum management, monitoring and switching.
- Strengthen Defence's cyber defence systems to build resilience and robustness.
- Harmonise data and technology architectures, including electronic warfare open architectures, to support scalable and expandable capabilities.

MARITIME

Technologies that increase survivability and effectiveness of all maritime platforms, including signature management, autonomous and remotely piloted platforms, advanced environmental sensing systems and processes for crewing, and human-machine integration.

- Enhance maritime intelligence, surveillance, reconnaissance and electronic warfare (ISREW) capabilities.
- Enhance long range strike capabilities, their components and supporting technologies.
- Enhance anti-submarine and undersea warfare operations including in persistent surveillance, combat, C4, support and sustainment sub-systems.
- Enhance mine warfare capabilities, including mine countermeasures.
- Enhance the survivability of ships in combat.
- Increase the number and capacity of at-sea weapons available in naval task groups.

AIR

Technologies that enhance situational awareness capabilities, including air defence and airborne weapons systems, electronic warfare, early warning and control capabilities, and technologies that can sense and better understand operating environments.

- Enhance integrated air and missile defence systems (IAMD).
- Enhance long range strike capabilities, including hypersonic missiles and their components, materials and processes necessary for the manufacture, maintenance, use and storage of long-range strike capabilities.
- Enhance technology or equipment used for in-air operations, including air-to-air refuelling and airborne weapons systems.
- Enhance technology or equipment that improve the survivability of aircraft and crew against modern threats.
- Reduce the cost-per-shot, and/or increase magazine depth and/or sustainable readiness of any of the above.

SPACE

Technologies in space domain awareness, management and access to space capabilities.

- Enhance space services, including satellite communications, positioning, navigation and timing and Earth observation services.
- Develop digital modelling and software architecture that allows classified, collaborative sovereign development between Five Eyes partner nations.
- Develop highly automated 'human-in-the-loop' systems that can provide a common space operating picture for Five Eyes partner nations; and
- Enhance space control, including ground-based and space-based situational awareness capabilities that can identify, track and respond to threats.

LAND

Technologies that enhance human performance, amphibious warfare capabilities, robotics and autonomous systems, and future special operations capabilities.

- Develop advanced protection systems for vehicles and individual soldiers that do not impact mobility.
- Develop technology underpinned by autonomous systems, including dismounted systems that can reduce human intervention without impacting mobility, situational awareness, accuracy or lethality.
- Enhance efficiency and effectiveness of combatants in hostile environments, including enhancements to small arms and munitions.
- Deliver improved signature management and signal disruption technologies.
- Provide cheap, reliable, effective and easy-to-use deception measures such as decoys and signal emulators for hiding land capabilities at multiple levels.

DEFENCE ENTERPRISE

Technologies to support the resilience and effective management of critical infrastructure, information and communications technology, logistics, science and technology and health services to ensure longer-term operations and operational ability during times where supply chains may be strained.

- Develop and explore quantum computing to meet current and future Defence needs for enterprise and military applications;
- Leverage emerging opportunities in artificial intelligence and machine learning to support complex decision making and reduce potential delays caused by human intervention;
- Develop and leverage enterprise-wide cloud capabilities, with consideration to applicability in operational contexts, to deliver enhanced data management outcomes;
- Enhance future energy management and resilience in the deployed and barracks environments;
- Explore opportunities to provide enhancements to the physical and cognitive capability and capacity of ADF personnel and ongoing health management;
- Develop and enhance Defence training and simulation systems for operational and logistical scenarios across all domains;
- Enhance joint logistics capabilities, including fuel resilience, fuel and explosive ordinance storage and the modularisation and digitisation of supply systems; and
- Enhance self-reliant geospatial information and intelligence systems, including hydrographic capabilities and technology that supports precision-guided weaponry.

Key focus areas are designed to help industry understand in more detail, the capabilities of immediate strategic importance to Defence.

The key focus areas will be a high priority for investment.

UNDERSEA WARFARE CAPABILITY

- Low-cost, persistent and easily deployable undersea sensor systems; and
- Deployable and persistent sea-denial systems such as mines, dormant torpedoes or dormant underwater unmanned vehicles that can stay on station for long periods, selectively target and can be activated, deactivated or re-tasked following deployment.

INTEGRATED AIR AND MISSILE DEFENCE

- Technologies or equipment that will enhance the survivability of IAMD capabilities through deception, countering intelligence, surveillance and reconnaissance, decoys, emulators and similar technologies;
- Technologies or equipment that can enhance the resilience and resistance of Defence assets, including bases, weapons storage and other infrastructure, against guided weapons and explosive ordnance; and
- Systems and enabling technologies for data fusion, multi-sensor integration and track management, automation and decision support including machine learning and artificial intelligence, and decider collaboration.

GUIDED WEAPONS AND EXPLOSIVE ORDNANCE

Technologies that are simple, inexpensive and attritable or recoverable, including:

- Passive and active seeker technologies which are compact, reconfigurable and suitable for use in various weapons from small autonomous swarming munitions through to hypersonic weapons;
- Components, materials and manufacturing processes critical to the manufacture and deployment of guided missiles and explosive ordnance, including advanced propulsion materials that offer advantages of reduced mass, higher thermal resilience or reduced cost; and
- Technologies or equipment that can speed up and simplify storage and distribution of guided weapons and explosive ordnance in both ideal and field/ad hoc environments e.g. novel storage techniques that allow for greater storage capacity within a given volume, or improved safe loading of weapons into Mark 41 Vertical Launch Systems (ship-board and canisters) in a wider array of conditions.

Further detail on the key focus areas will be provided before 1 July 2022.