

# DST LEADERSHIP TEAM



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### RESEARCH DIVISIONS



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Dr David Kershaw



#### CHIEF LAND

Dr Peter Shoubridge



#### ACTING CHIEF AEROSPACE

Mr Khan Sharp



#### CHIEF JOINT AND OPERATIONS ANALYSIS

Dr Lynn Booth



#### CHIEF CYBER AND ELECTRONIC WARFARE

Dr Dale Lambert



#### CHIEF WEAPONS AND COMBAT SYSTEMS

Dr John Riley



#### CHIEF INTELLIGENCE, SURVEILLANCE AND SPACE

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#### CHIEF SCIENCE AND TECHNOLOGY PROGRAM

Dr Mike Davies



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# DOING BUSINESS WITH DST

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### For further information

visit [www.dst.defence.gov.au](http://www.dst.defence.gov.au) or  
download the free DST App



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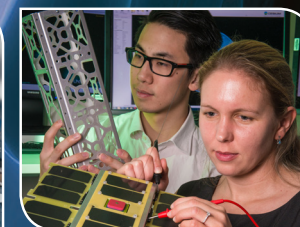


Australian Government

Department of Defence  
Science and Technology

# Science and Technology Capabilities

Defence Science and Technology is a national leader in safeguarding Australia by delivering valued scientific advice and innovative technology solutions supporting Australia's defence and national security.



DST Science and Technology for Safeguarding Australia



## MAJOR SCIENCE AND TECHNOLOGY CAPABILITIES (MSTC)

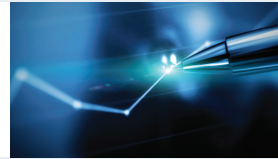
Each MSTC comprises people, infrastructure, S&T know-how and partner relationships in a combination of a science and defence domain. The science component comprises the specialist knowledge, skills and experience of staff in the domain, as well as infrastructure and partnering. The defence component is the context in which our specialist knowledge, skills and experience have impact, including the particular physical aspect or operational context.

### Corporate Divisions

Responsible for corporate duties in order to shape strategic direction and enhance engagement with Defence and external partners.

### Science Strategy and Program Division

Develops science policy, formulates Defence S&T and strategic research programs, and oversees resource investment into S&T capabilities.



### Science Partnerships and Engagement Division

Coordinates and develops interactions with industry, academia, overseas agencies and other Australian government agencies. Promotes defence science in the education and wider Australian communities.



**Research Services Division** Delivers enabling services including science information management and technology, research infrastructure, scientific engineering and support, laboratory emergency management, safety and security.



### Maritime Division (MD)

Provides support and solutions to enhance the operational performance and survivability of defence platforms in the maritime domain.

### Sonar Technology and Systems

Conducts leading research and development in undersea acoustic sensors and systems to grow the ADF's undersea warfare capability.

### Acoustic Signature Management

Delivers S&T solutions to manage the acoustic signature of defence platforms; and the hydrodynamic and manoeuvring performance of ships and submarines.

### Non Acoustic Signature Management

Undertake research in materials science and technology to enhance the survivability, operational capability, seakeeping and cost of ownership of ADF platforms.

### Maritime Autonomy

Leads research into autonomous and unmanned systems to enhance ADF capability in maritime surveillance, mine countermeasures and rapid environmental assessment.

### Undersea Command and Control

Provides the ADO with scientific and technical expertise to enhance the RAN's undersea warfare capability and decision making.

### Maritime Platform Performance

Undertakes research in platform performance of materials, structures and systems to enhance the capability, survivability and safety of RAN vessels.

### Land Division (LD)

Provides support and solutions for ADF personnel by applying expertise in human sciences, personnel protection, vehicle and systems sciences, and chemical, biological and radiological warfare.

### Land Human Systems

Develops, sustains and applies the broad cross-section of human science skills in support of ADF land operations.

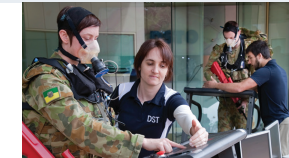
### Land Vehicles and Systems

Conducts research in vehicle systems management, armour and protection, logistics and integrated support systems.



### Chemical and Biological Defence

Research and development of defence against chemical, biological and radiation (CBR) threats.



### Land Personnel Protection

Supports soldier combat system development, and analysis of threats affecting the soldier.

### Aerospace Division (AD)

Provides support and solutions to enhance the operational effectiveness, performance, survivability, availability and safety of ADF aerospace capabilities.

### Aerospace Systems Effectiveness

Supports Defence outcomes in capability, efficiency and safety by providing advice and solutions where humans and air platforms or systems interact.

### Aircraft Performance and Survivability

Conducts performance and survivability modelling and experimentation for flight, propulsion, signatures and stores carriage and clearances.

### Aircraft Health and Sustainment

Supports aircraft health analysis systems and technologies, engine and fuel integrity, and aerospace systems sustainment analysis.

### Airframe Technology and Safety

Works to ensure aircraft safety and availability, reduce fleet cost of ownership and advises on acquisition projects.

### Aircraft Structures

Provides safety-critical aircraft structural integrity and airworthiness advice and solutions to the ADO.



### Joint and Operations Analysis Division (JOAD)

Analyses Defence operations and capability to provide independent, impartial and timely advice.

Three JOAD MSTCs develop and apply analytical methods, techniques and tools to inform decisions impacting: **1. Aerospace Capability, 2. Land Capability and 3. Maritime Capability.** This encompasses specification, procurement, command and control, underpinning technologies, force structure and training, and their contribution to operational effectiveness.

### Joint Capability Analysis

Supports joint capability issues, including through the DST operations support centre by immersion and experimentation with warfighters.



### Decision Sciences

Enhances military decision-making at individual, team and organisational levels in terms of intent, capabilities, awareness and control including human and machine perspectives, and their integration.

### Strategic Capability Analysis

Informs strategic policy and capability decisions by applying analysis, concept development, risk assessment and technology forecasting.

### Cyber and Electronic Warfare Division (CEWD)

Provides expert advice and technology solutions in the cyber domain and electronic warfare environment.

### Electronic Warfare Operations

Conceives, develops and validates EW technologies and techniques to support the ADF.

### Cyber Warfare Operations

Researches and develops new and novel concepts, technologies and techniques to enable autonomous, resilient and effective cyber capabilities.



### Contested Communications

Provides advice and solutions for robust communications in contested, complex and dynamic environments.

### Electronic Surveillance and Coordination

Provides expertise in radio frequency phenomenology and systems, subsystems and devices and the associated digital signal processing and computing technologies and architectures.

### Cyber Sensing and Shaping

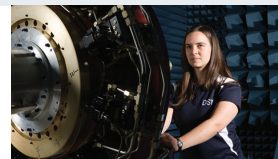
Develops concepts, technologies and techniques for assessing, characterising and shaping communication networks to enable cyber operations.

### Weapons and Combat Systems Division (WCSD)

Applies science and technology to the development and operation of highly effective weapon and combat systems for Defence.

### Tactical Systems Integration

Conducts research into tactical information: architectures; integration and interoperability; automation; and processing, to achieve distributed tactical decision superiority for the ADF.



### Tactical Systems Performance Assessment

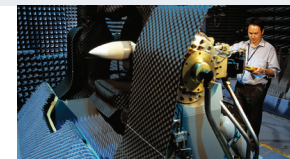
Conducts analysis of weapon system performance and end-to-end tactical system effectiveness.

### Weapon Systems Technologies

Applies S&T of sensors, processing and electromagnetic interactions to weapons and tactical systems to enhance the ADF's warfighting capability.

### Energetic Systems and Effects

Enhances Defence and national security capabilities, and the safety of ADF assets through research into energetic materials, explosive ordnance, propulsion technologies and high speed systems.



### Intelligence, Surveillance and SPACE (ISSD)

Enhances the national capability for accurate, relevant and timely actionable intelligence for Defence and Government decision makers.

### Intelligence Analytics

Develops situational awareness capabilities for intelligence analysts and conducts domain-specific research into human, open-source and all-source analysis techniques.

### Information Integration

Supports the integration and application of intelligence, surveillance and reconnaissance systems.

### Intelligence Systems

Develops intelligence systems for geospatial intelligence and measurement and signature intelligence, and imagery-based capabilities.

### Surveillance and Reconnaissance Systems

Conducts research into surveillance and reconnaissance systems and assesses their application to defence and national security needs.

### High Frequency Radar

Enhances long-range over-the-horizon radar as part of the national intelligence, surveillance and reconnaissance system.

### National Security

Provides a whole-of-government coordination program for science and technology needs relating to national security.