

# PARTNERING WITH MARITIME DIVISION

Maritime Division engages with Australia's industry and science and technology community through a range of innovative and mutually beneficial arrangements, and actively seeks opportunities to work with industry to commercialise DST technology and transition our innovative concepts into Defence capability.

### For further information

Email: [partnerwithdst@dst.defence.gov.au](mailto:partnerwithdst@dst.defence.gov.au)

[www.dst.defence.gov.au](http://www.dst.defence.gov.au)



# OUR VISION

Enabling the Maritime Warfighter to fight and win at sea, today and tomorrow, through the application of innovative science and technology.

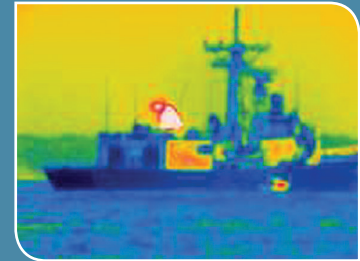
# OUR MISSION

The Maritime Division leads the development and delivery of the Australian Defence Organisation's Maritime Warfare S&T program – providing the Australian Defence Force with a capability edge through scientific innovation, strategic shaping of technology, collaborative research with national and international partners and an in-depth understanding of the Australian Maritime Defence context.



Australian Government  
Department of Defence  
Science and Technology

# MARITIME DIVISION PARTNER WITH DST

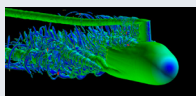


# Major Science and Technology Capabilities (MSTCs)

Maritime Division provides support and solutions to enhance the operational performance and survivability of defence platforms in the maritime domain. Areas of major science and technology capability are:

**Acoustic Signature Management.** Australia's primary source for concepts, evaluation, technologies and technology solutions for the management and control of acoustic signatures of Defence platforms, especially submarines.

**Acoustic Signature Control** provides a capability for the development and application of science and technology to the reduction, control and management of radiated noise from on-board machinery and platform target echo strength, providing increased operational effectiveness and survivability.



**Hydroacoustics** provides a capability for the modelling and measurement of flow noise, propeller performance and platform manoeuvring and control.

**Acoustic Material Systems** provides a capability for the modelling and development of material systems for the reduction of passive and active acoustic signatures of maritime platforms leading to a technology edge in operational effectiveness.

**Sonar Technology & Systems.** Analyses and understands the detection, classification, localisation and tracking of undersea warfare threats to provide the ADO with impartial advice on improving and, in conjunction with industry, develops undersea acoustic sensors and systems.



**Passive Sonar** is fundamental to the safe operation of Australian submarines and crucial for the ADFs current and future undersea warfare capability edge.

**Active Sonar** is core to ensuring the survival and freedom of manoeuvre of Australian maritime forces in an era of rapidly increasing and evolving threats against submarine capability.



**Sonar Processing and Performance Analysis** encapsulates a deep understanding of the engineering and science of sonar signal processing, including detection, classification, localisation and tracking and the underlying performance analysis of these systems.

**Maritime Platform performance.** Systems analysis to develop, validate and apply quantitative analyses, modelling and simulation underpinned by experimentation to examine the endurance, integrity, performance, capability and safety of naval ships and submarines and provide technology solutions for current and future maritime operations.

**Power and Energy Systems** enables Navy with safe, available and capable maritime power and energy technologies to ensure that the present and future fleet is operational and with a sustained presence.



**Naval Architecture & Maritime Platform Systems Analysis** provides Defence with objective evidence to support critical whole-of-vessel decisions related to the safety, availability and performance of the present fleet, and for the informed selection of future capabilities.

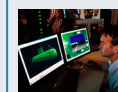
**Materials Performance & Structural Integrity** is the application of materials knowledge as an enabler of the structural safety, survivability and increased availability for current and future maritime defence systems.



**Undersea Command & Control.** Analyses, develops and applies concepts, technologies and techniques to improve the collection, processing and exploitation of sensor and tactical information by undersea platform and weapon systems.

**Combat Systems Architecture** encompasses the development, analysis and testing of combat system architectures, techniques for the integration of sensors, algorithms and concepts into combat systems and the assessment of the operational capability of combat systems.

**Human Systems and Information Integration** combines the human and analytical sciences to maximise command team capability by improving both human and algorithm exploitation of information in the undersea environment.



**Undersea Weapon Systems** contributes to the development, simulation, analysis and assessment of undersea weapon systems through a detailed understanding of weapon capabilities, tactical analysis and emerging technologies for improving and countering undersea weapons.

**Platform Survivability.** A key enabler to ensure Maritime War Fighting capability through reduced risk, improved safety, increased platform performance and capability trade-offs in the susceptibility, vulnerability and recoverability support for Maritime Operations.



**Dynamic Military Loads** determines the immediate structural, equipment and systems damage from weapon attack that enables a higher level of confidence in the survivability of a platform.

**Vulnerability, Damage Control and Recoverability** undertakes analysis of damage consequences and optimisation of recoverability processes to enhance the safety and survivability of personnel and the platform.



**Susceptibility & Signature Threat Analysis** informs platform signature reduction and management requirements and operating tactics to reduce the likelihood of being detected and engaged by threat sensors, platforms, and weapons.



**Non-Acoustic Signature Management.** Generates, sustains and applies Australia's core signature management expertise to modify, control and reduce the radar, infrared, visible, electrochemical and environmental signatures of current and future defence platforms in operations.

**Electromagnetic Signature Control** group enhances the operational effectiveness of current and future platforms through the control of radar, infrared and visible signatures using specialised treatments, computer modelling and measurement techniques.

**Specialised Coatings Technology** reduces the cost of ownership and enhances operational capability of ADF platforms through the development of high performance Defence coatings and specialised indigenous signature management.

**Environmental Signature Control** enhances operational availability and reduces cost of ownership by providing capability in emerging environmental signatures and environmental aspects of seaworthiness relevant to Australian conditions.

**Corrosion Science** enhances the operational effectiveness, safety and availability, and reduces the cost of ownership, of ADF platforms through optimum application of corrosion prevention technologies to minimise platform signatures and structural degradation.

**Maritime Autonomy.** Develops and enables systems to operate independently in unknown environments, and intelligent sensor payloads to direct and control specialised vehicle missions.

**Unmanned Systems & Autonomy** develops and evolves unmanned systems to operate in complex maritime environments and achieve battlespace preparation and characterisation with greater speed, safety and economy.

**Magnetics & Payload Sensors** increases platform survivability through advanced management of the underwater magnetic signature and the employment of multiple sensor systems providing a unique capability for specialised maritime missions.