Background on 5 proposed technologies (CTD Round 15)

PROJECT	COMPANY	CITY
1. Nanoparticle-Hydrophone Development This proposal has the potential to improve underwater sonar sensing for ships, submarines and unmanned underwater vehicles (UUV). The small pad-like devices could be installed in large numbers on the hulls of vessels, reducing the overall size of the vessel by eliminating the need for bulky sonar structures and taking the place of sonar array cables.	**Phoenix Engineering Systems Pty Ltd** (Engineering and business consulting company offering practical solutions for the Defence industry) **With Thales Australia** (A prime Australian Defence contractor)	Sydney (NSW)
2. Active Pulse Analysis System (APAS) This proposal aims to develop an advanced underwater detection and analysis system as well as innovative displays to enhance a vessel's sonar sensing capability. The APAS would allow automatic scans of the large amounts of information collected by a ship's sonar to detect targets and to asses the type of detection, allowing the operator to decide which signals need further attention.	**Sonartech Atlas** (Leading submarine sonar house specialising in design, manufacture and support of underwater sonars)	Sydney (NSW)
3. Integrated Power System for Dismounted Combat This technology seeks to reduce the weight of batteries a soldier needs to carry to power equipment such as GPS systems and radios for communication. It also aims to reduce the complexity of the power system. Foot soldiers are increasingly reliant on electronic devices which require battery power but they increase the weight a soldier has to carry. The proposal would integrate flexible lightweight power generating solar cells, more efficient power storage technology and power generating electronic textiles, and apply smarter techniques for managing the power requirement.	**Tectonica Australia Pty Ltd** (Defence and security systems integrator specialising in developing fully integrated systems for soldiers, armoured vehicles and related capabilities). **With Australian National University and CSIRO.**	Melbourne (VIC) & Canberra (ACT)

4. Pegasus Aircraft Buoyancy System This proposal will demonstrate a lightweight, detachable emergency floating device for the Australian Army's fleet of helicopters. With the introduction of new LHD (Landing Helicopter Dock) ships, Army will operate helicopters from naval platforms. Therefore a capability to enable a helicopter to remain afloat after ditching in the sea is vital for the survival of the crew. The Pegasus concept aims to keep an aircraft up to 10 tonnes in weight afloat. The system will weigh less than 50 kg and provide quick and easy attachment. It will have the capability to lift the aircraft to the sea's surface from a depth of up to 10 metres and will operate automatically or under pilot control with no wired connection to the aircraft.	**L-3 Nautronix** (specialist provider of maritime systems and solutions for surface and undersea defence applications, including acoustic and through-water communications) **With AADI Defence Pty Ltd** (Consortium of experts providing strategic, technical and commercial advice, facilitation and advocacy for defence companies)	Perth (WA) and Melbourne (VIC)
5. Integration of EO/Laser Space Object Tracking Capability In this concept it is proposed to develop a system that can significantly improve the ability to track objects in space. It would provide considerable improvements to existing and planned space surveillance systems. Better accuracy and reliability will mean greater protection of operational satellites from colliding in space.	**EOS Space Systems Pty Ltd** (Specialises in the design, development and production of electro-optic technology systems for the space and defence sector). **With Northrop Grumman International.**	Canberra (ACT)