Successful Proposals – Round 19 CTD Program, 2015

Amor Composite Engineering Pty Ltd (NSW) is developing *Low Profile Body Armour*. They have developed new bonding, coating and laminating techniques and composite materials and intend to apply these techniques in the development of thin, curved, stand-alone body armour plates that offer survivable performance during high powered rifle attacks. This technology addresses the capability need for enhanced individual soldier survivability.

CSIRO (NSW) is developing a *New Concept Miniature Radio Frequency Receiver*. They propose to deliver a highly compact, low-radar cross-section, direction finding antenna that is deployable on multiple platforms, including mobile Unmanned Aerial Vehicles and Navy vessels. The project will develop a single stealth antenna with ten times size reduction, increased sensitivity and usable bandwidth in the High Frequency-Ultra High Frequency range. This technology provides a possible solution to the capability requirement to bridge the current bandwidth gaps in conventional antennas. It will reduce the number of antennae on fitted platforms.

Micro-X Ltd (VIC) is developing a *Lightweight Mobile X-ray unit*. They have proposed developing a lightweight, small, energy efficient diagnostic medical x-ray unit suitable for use in military and disaster relief operations. The proposal aims to provide a flexible and mobile instantaneous digital image capture and transmission capability, providing the full range of medical radiology procedures. The technology can also be applied to explosive ordnance and improvised explosive device detection. The backscatter imager will provide improved counter IED capabilities with reduced risk to the operator.

Ocius Technology Ltd (NSW) is developing an *Anti-Submarine Warfare Unmanned Surface Vessel*. They are proposing to demonstrate an Unmanned Surface Vessel, coupled with a thinline towed array system uniquely suited for anti-submarine warfare surveillance. The system aims to be acoustically covert, able to operate autonomously and be on-station indefinitely. It will enable tactical situational awareness and will complement Navy Anti Submarine Warfare sensor suites. This technology will provide the RAN with long-range, persistent detection capability to detect and track modern submarines and torpedoes.

The **University of Canberra** (ACT) is developing a *Tactile Cueing System for Degraded Visual and Threat Environments*. This technology aims to increase the survivability of ADF helicopters, aircraft and soldiers in both degraded visual and threat environments. It will develop and demonstrate a flight information display that uses the sense of touch to provide threat awareness information. In addition, it will provide awareness of hover dirt in degraded visual environments.

The **Australian Bureau of Meteorology** (VIC) is developing *Data Deconstruction for Low Bandwidth Transmission of Large Volume Geophysical Spatial Data*. This proposal is designed to reduce the transmission of gigabyte gridded geospatial model data to kilobytes and to be intrinsically secure to third party detection. It aims to revolutionise the transmission of geospatial information to vessels at sea, providing enhanced and real-time tactical support. The technology addresses a capability need for improved transmission of geospatial data to the warfighter, thus improving battlespace awareness during operations.

Deakin University (VIC) is developing a *Low Cost High-G Centrifuge for Pilot Training*. The proposal is to demonstrate a next-generation centrifuge for high-G inoculation. The system allows fast jet pilots to train under realistic conditions, including continuous roll, pitch and yaw and sustained positive and negative g-forces over 7g. This technology will increase the efficiency and effectiveness of the ADF's fixed win Pilot Training System.