

Electronic Warfare Training Services

Smarter Crow EW mission system



The Australian Defence Force has contracted Raytheon Australia to provide Electronic Warfare Training Services (EWTS).

The Requirement for EWTS

Since the introduction of radar into the battlefield in the late 1930s, constant advances have been made in the fields of electronic warfare (EW), airborne radar, and missile systems.

Australian Defence Forces today are more reliant than ever on the electromagnetic spectrum to conduct military operations. They operate in an environment where enemy forces will try to interfere with, or deceive their electronic sensors and the communications needed to command their weapons systems.

Today, EW techniques include everything from the basic techniques such as chaff and noise jamming, through to complex Electronic Attack (EA) techniques that employ the latest Digital Radio Frequency Memory (DRFM) technology.

To effectively counter these techniques, ADF crews need to experience them in an operational environment, hence the need for Electronic Warfare Training Services (EWTS).

EWTS Capability

Raytheon Australia, with support from numerous subcontractors, has developed a highly effective Electronic Warfare Training Service solution that helps prepare Australia's war fighters for conflict. While the primary customer is the Royal Australian Navy, services are also provided to the Royal Australian Air Force.

The EWTS Solution

The EWTS solution (referred to as Smarter Crow) is a highly modified Lear 35 aircraft crewed by two pilots and one or two Tactical Coordinators operating a suite of highly-complex mission equipment.

To meet the Australian Defence Force's current and future EW training requirements, the Raytheon Australia team invested heavily in EW systems design and development. The final Smarter Crow EW mission system architecture provides an innovative solution to a complex task, based around:

- An Electronic Warfare Simulation Technologies Ltd (EWsT) Chameleon IIIB dual-channel, DRFM-based Radar EA signal generator that can be automatically connected to any two of four high powered Travelling Wave Tube Amplifiers (TWTAs);
 - Fore and aft broad-band horn antennas housed under low loss radomes which, when coupled to the TWTAs give continuous Radar EA coverage from 0.8 to 18GHz;
 - An EWsT RSS-8000/P radar threat simulator system
- connected to a high powered pulsed TWTA providing TWTA-based radar threat simulation;
 - An ArgonST AN/DPT-2B magnetron-based high power radar threat simulator system;
 - A Rockwell-Collins AN/UST-106 communications jamming system;
 - An internal AN/ALE-43 chaff dispensing system;
 - An 0.5 to 18 GHz Electronic Support (ES) Receiver; and
 - A CSC Australia developed Mission Management and Recording System (MMRS).

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