



ASIST-AIRBORNE

DETECT, IDENTIFY & CONTROL

making a difference

Ultra
ELECTRONICS

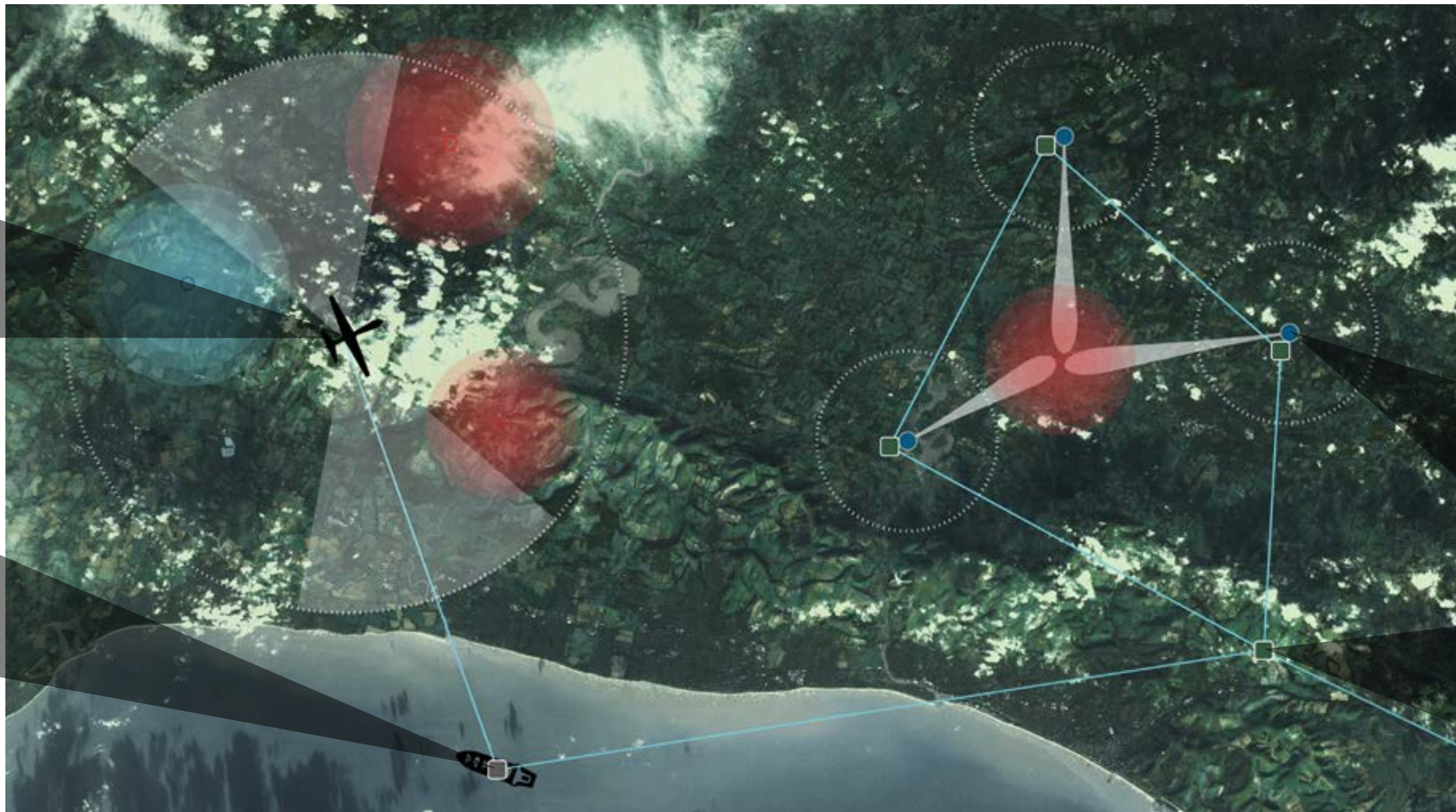
ADVANCED SURVEILLANCE INTELLIGENCE SUPPORT TECHNOLOGY (ASIST)

Integrated airborne surveillance solution for unmanned aircraft

Ultra Electronics, TCS specializes in the design, development and manufacture of integrated Intelligence, Surveillance and Reconnaissance (ISR), and countermeasure systems and suites for operational support in the international market. The company has developed a worldwide reputation for supplying vertically integrated advanced Electronic Warfare (EW) systems from its full breadth EW discipline capability and EW technology base.

MULTIPLE APPLICATIONS

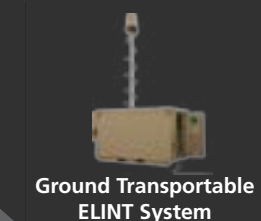
- > Long range high sensitivity surveillance
- > Highly accurate direction finding
- > Threat identification
- > Stand-off and stand-in ELINT missions
- > Online and offline analysis



ELINT System for UAV



Radio for Medium & Large Ships



Ground Transportable ELINT System



High-Capacity Multi-Mission Radio

THE SOLUTION

SYSTEM

The UAV ELINT system provides a high sensitivity linear phase interferometry system for extremely accurate DF measurements. Ultra's ELINT systems provide the ability to collect and record the interpulse and intrapulse data of detected emitters. The communications products enable high-capacity data exchange between platforms and ground units (such as command and control centers). They support live streaming of EW data to increase situational awareness and enable warfighters in the air and on the ground to make better real-time decisions.

Key features & benefits:

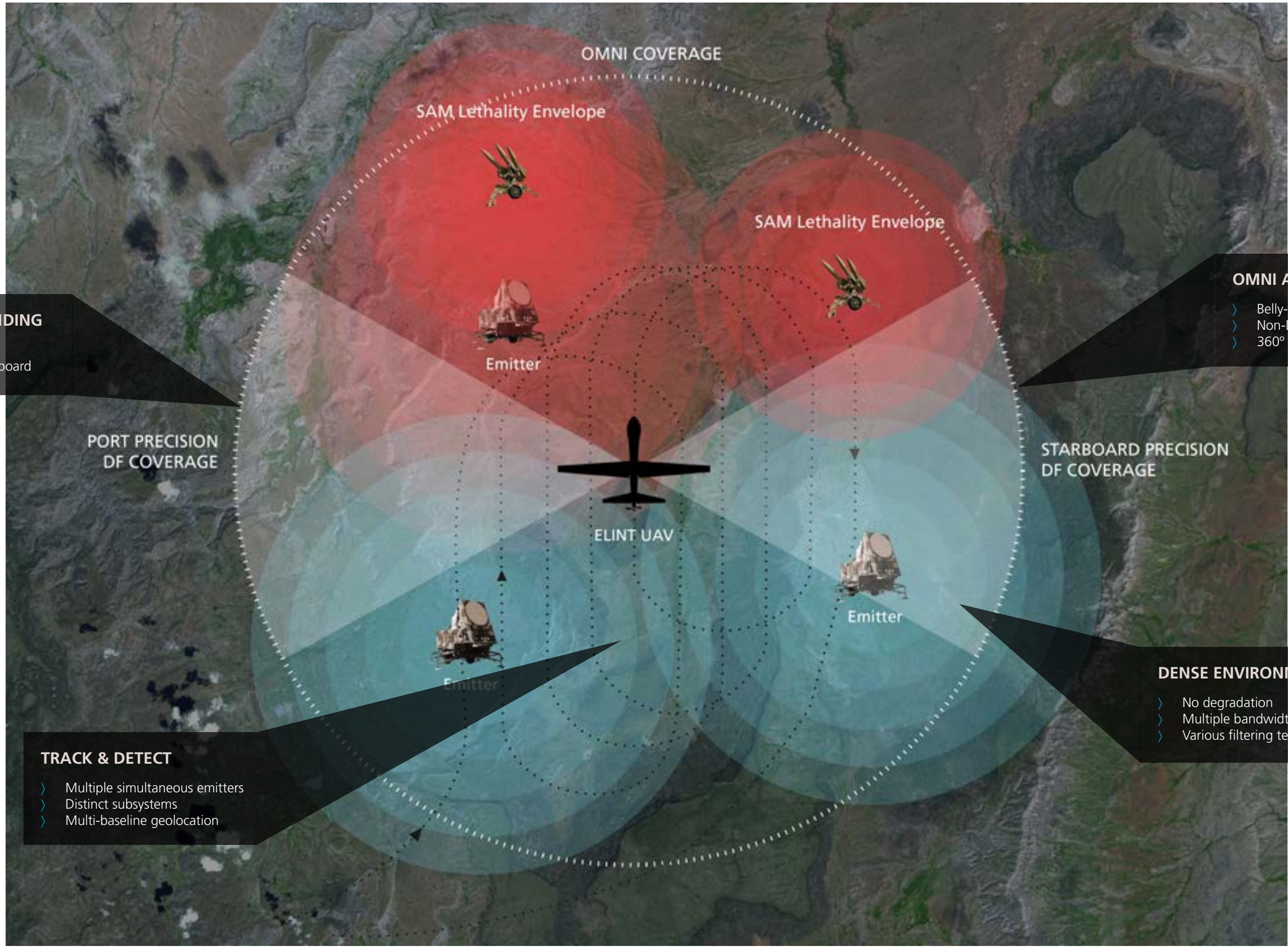
- > Small size, weight and power
- > Fitted on several medium-sized UAVs
- > Precision DF capability
- > High precision emitter parameter measurements
- > Geolocation capability
- > High-capacity data link

TECHNOLOGY

Ultra TCS' UltraEAGLE (Electronic Acquisition Gathering Locating Equipment) is a family of Electronic Support (ES) systems designed to meet a wide array of Electronic Intelligence (ELINT) missions and are able to cover A through K band. The UltraEAGLE represents a modern integrated digital ELINT receiver system for Intelligence, Surveillance and Reconnaissance (ISR) applications; it exploits the benefits of an open architecture with net-centric control and operation.

The UltraEAGLE sensor data is aggregated and transmitted via Ultra ORION radios, which consists of multichannel, multiband, point-to-point (PTP), point-to-multipoint (PMP) and mesh radio systems. Providing at-the-quick-halt (ATQH) and on-the-move (OTM) communications across multiple echelons, this family of radios offers operational flexibility within small form factors. A compact remote station is also available to extend the network to the tactical edge. These software-defined radios (SDR) are designed to enable reliable high-capacity communications for land, sea and air operations with over 50 different tactical modes including interoperability with thousands of previously fielded high-capacity line-of-sight radios around the world.





DIRECTION FINDING

- > High precision
- > On port & starboard

OMNI ANTENNA

- > Belly-mounted
- > Non-DF coverage
- > 360°

TRACK & DETECT

- > Multiple simultaneous emitters
- > Distinct subsystems
- > Multi-baseline geolocation

DENSE ENVIRONMENT

- > No degradation
- > Multiple bandwidths
- > Various filtering techniques

STARBOARD PRECISION DF COVERAGE

PORT PRECISION DF COVERAGE



ELINT UAV

Emitter

SAM Lethality Envelope

SAM Lethality Envelope

OMNI COVERAGE

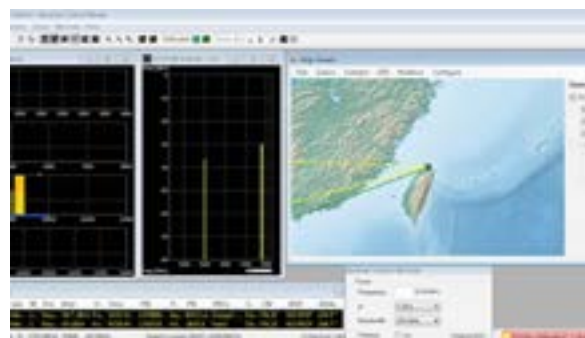
Emitter

Emitter

TALON SOFTWARE SUITE

TALON is an inherently strong firmware and software based signal processing capability that enables the UltraEAGLE system to sort, identify and collect the latest threat emitters, including those using low probability of intercept techniques such as spread spectrum.

- > Interfaces to Ultra TCS' or third party mapping applications
- > Can be used with a variety of map formats
- > Supports geolocation via triangulation and multilateration
- > Supports EOB development
- > Enables platform/emitter location & tracking



The multi-function software suite consists of:

TALON GUI

- > Hardware Controls
- > ELINT/ESM Analysis Tools

TALON MAP VIEWER

- > Interactive mapping tools
- > Integrated sensor data (EO/IR feeds, ELINT/ESM data, DF/LOB/Geolocation results, EOB)
- > Mission Replay
- > EO/IR cueing

TALON CHAT

- > Operator messaging

FEATURES



OPERATES IN DENSE & COMPLEX EMITTER ENVIRONMENT

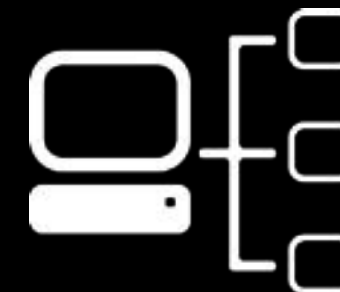
High selectivity and immunity to interference enables operation in dense environments.

Selectable hardware and software filters support improved matched receiver conditions in the presence of interference over the entire operating frequency range.

LONG RANGE DETECTION WITH PRECISION DIRECTION FINDING

Linear phase interferometry based ELINT/ESM systems with high sensitivity, precision direction finding and accurate emitter parameter measurement in a dense emitter environment, including the ability to measure polarization type and the intrapulse characteristics of detected emitters.

DF accuracy is better than 1° rms on a pulse to pulse basis in an instantaneous field of view of 120° port and starboard.



COMPACT, MOBILE & NETWORKABLE

Small size, weight & power system configuration options. Optimized system architecture for multi-mission solutions. Open standard networking protocols enable support of a full network of ELINT sensors.

WIDEBAND ELINT COLLECTION

Standard frequency coverage is 2-18 GHz or 0.5 to 18.0 GHz.



COMPONENTS

Airborne Electronic Support

ELINT system specifically designed for small airborne platforms. It is suited for installation in a variety of UAVs. The system is fully integrated and provides wideband microwave search and intercept, interferometry based Angle of Arrival (AOA) determination, providing instantaneous and accurate emitter direction. It can be controlled via low or high capacity data links.



ELINT System for UAV

Ground-Based Electronic Support

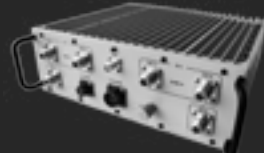
Fully integrated Electronic Support (ES) system for ground-based Intelligence, Surveillance and Reconnaissance (ISR) applications. It provides high sensitivity microwave search & intercept capability. The system can be controlled locally by an operator laptop using TCS' TALON software or remotely via a datalink such as the Ultra ORION.



Ground-based ELINT System

Ultra High-Capacity Multichannel, Multiband Comms

The Ultra ORION is a multiband, point-to-point, point-to-multipoint and mesh radio system. It provides at-the-quick-halt communications and on-the-move access capability. The system offer up to 1 Gbps throughput and operational flexibility within a small mast-mount form factor.



Mast-Mounted Ultra ORION

Satellite Comms Reachback

The FA-series systems provide reliable military and government communications. Their quick configuration allows for operation in multiple frequency bands such as C, X, Ku, DBS and Ka bands. This family of flyaway antennas also offer automatic satellite acquisition and tracking system.



FA-Series

SYSTEM INTEGRATION

EXPERTISE

Ultra TCS offers tailored system solutions matched to the application by providing:

- > Customized & turnkey solutions design
- > Interoperability solutions
- > Network modernization solutions
- > Software & network management solutions
- > Research, development, testing and evaluation excellence
- > Operational and logistic support

EXPERIENCE

Ultra TCS has over 30 years of experience in the development of ELINT, ESM and Radar ECM systems as well as EW systems integration to support multipurpose platforms. Some of the programs that Ultra TCS has successfully delivered include:

- > Ground Mobile ELINT/ESM systems to Middle East and Pacific Rim customers
- > EW Range Test and Training systems to South Asian and Pacific Rim customers
- > Airborne Stand off Jammer systems to Pacific Rim customers
- > UAV based ELINT/ESM systems to Pacific Rim and European customers
- > ECM systems for North American customer
- > Ground ELINT Systems to European customer
- > EW Software for EW Reprogramming Centre for European customer



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Information When and Where You Need It



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