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electronic warfare manpack



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DELIVERING MILITARY AD

The demands placed on communications surveillance and attack systems have never been so complex. Electronic Warfare (EW) operations in today's battlespace require intuitive, lightweight and rapidly deployable systems to monitor the constantly changing communications environment. In today's contemporary operating environment there is a need to understand a potential threat and get inside the adversary's Observe, Orientate, Decide, Action (OODA) loop. RESOLVE is a force multiplier that delivers tangible tactical effect by enabling the operator to balance communications exploitation and denial underpinned by accurate geolocation information.

Acting as a trigger in the 'Sensor to Decider to Response' chain, RESOLVE's highly accurate position fix capability enables commanders to cue other ISTAR sensors maximising the utility of these low density, high demand assets.

ADVANTAGE

Geolocation, exploitation and denial of tactical communications

The RESOLVE EW Manpack is a 100% UK state-of-the-art field proven Electronic Surveillance and Attack system. It benefits from having both the software and hardware developed in conjunction with Roke's operational experts.

RESOLVE is designed for the intercept, geolocation, exploitation and denial of tactical communications in the HF to UHF frequency bands, including 'modern waveforms'. A single RESOLVE EW Manpack can be used in isolation to provide both full spectrum surveillance and Direction Finding (DF) capabilities. When networked with other RESOLVE systems it is then possible to position fix targets using Angle of Arrival (AOA) techniques.

Networking and data fusion

With fully integrated wireless network connectivity, the RESOLVE EW Manpack enables target data-fusion across the deployed baseline. This provides rapid target resolution, correlation and geolocation, through the use of the dedicated Management Information System (MIS) and Geospatial Information System (GIS) applications.

The RESOLVE EW Manpack can be deployed in a number of configurations including:

- On-the-March / Short Halt
- On-the-Move
- Static

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Electronic overwatch

Static configuration

Understanding an adversary's intent coupled with accurate geolocation information can only be achieved by network enabled sensors providing position fix solutions.

In the Static configuration the RESOLVE EW Manpack is used to provide networked EW capability at forward operating positions. Networking with other deployed RESOLVE systems provides enhanced EW capability such as automatic geolocation of signals of interest. In this configuration the full-suite of software applications can be utilised from the ruggedised laptop enabling rapid interpretation of hostile activity that provides threat warning, targeting and terminal guidance.

The Static configuration can be deployed such that the operator is co-located with the sensor element or remotely up to 50 metres from the antenna for covert operations.

Features

- Networking and target data fusion across the RESOLVE deployed baseline
- Rapid target resolution, correlation, and geolocation
- Manpack for deployment in complex terrain, covert operations, and early entry
- Intimate support to the tactical war fighter
- Offline analysis and playback facility
- Backhaul enabled – delivers accurate operational picture to decision makers

ONE SYSTEM

ANY MISS



Immediate threat warning for the dismounted soldier

On-the-march configuration

The on-the-march configuration provides the dismounted operator with an unrivalled threat warning and direction finding capability. RESOLVE EW Manpack in this configuration is unique in that it operates while on the march, stationary or prone. Key to this is the QuadTac antenna which can be operated with the array elements extended for maximum sensitivity, or closed to reduce the visual signature. A ruggedised PDA allows the operator to view the DF plot, waterfall or spectral displays and input additional target information while maintaining tactical awareness.

The antenna and other components are all contained in a lightweight purpose made backpack to allow ease of carriage and operation. It has been designed to afford the operator immediate access, at a short halt, to the ruggedised laptop for full system functionality.

Features

- Lightweight
- Real-time Full Spectrum Surveillance and Direction Finding
- Ruggedised PDA with user selected displays
- Low Visual Signature
- Custom backpack
- High probability of intercept

Single sensor geolocation

On-the-move configuration

The on-the-move configuration uses the same RESOLVE EW Manpack to provide a threat warning and running fix capability on vehicles of opportunity. Utilising the RESOLVE Universal Adaptor the QuadTac antenna element can be quickly mounted onto any vehicle. Operators then have the choice of using the PDA or ruggedised laptop which gives access to the full suite of EW functions.

Features

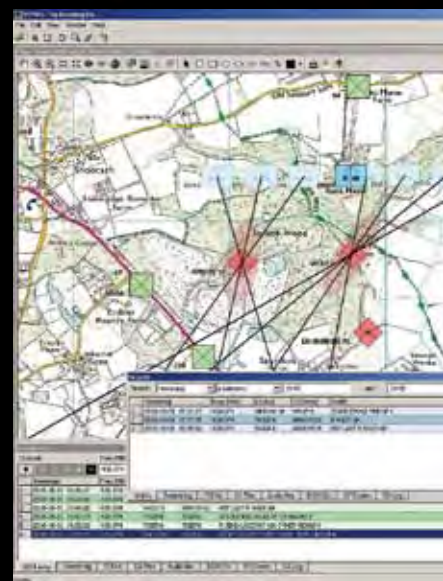
- Running Fix - while on the move multiple lines of bearing can be aggregated to establish a position fix.
- Extended Operations - RESOLVE EW Manpack is able to harvest power from the vehicle of opportunity.



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REAL TIME EXPLOITATION



The RESOLVE signals control and analysis software package.

Converting collection to intelligence

The Graphical User Interface (GUI) provides operators with intercept data in real-time.

The RESOLVE EW Manpack is controlled using the ruggedised laptop running a suite of intuitive, integrated applications which enables the operator to execute complex tasks. The Mission Information System provides a dynamic and immediate operating picture presenting the intelligence in a format that is easily interpreted.

Features

- Intuitive interface
- Powerful MIS
- Wide and narrow band survey
- Recording for offline analysis and playback
- Networked Ops (chat, file transfer, event sharing)
- Position fix of intercepted signals
- Running fix
- Civil waveform capable



The RESOLVE mission information system displaying running fix solutions.



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Non-kinetic strike

The Electronic Attack manpack sub-system provides a software integrated, hostile communications denial capability. Using powerful software applications the operator is able to balance exploitation and denial ensuring that disruption to hostile C2 is optimised.

This optional capability is based around SELEX commercial off the shelf EA equipment and is controlled from the ruggedised laptop using a dedicated EA application.

Features

- Integrated EA software
- Modular sub system enables missions to be task equipped
- Pre-emptive and responsive techniques
- Omni directional or directional antennas

Training and support

We have operational staff that are familiar with the contemporary operating environment and will help tailor a system to meet your needs. We will analyse your mission requirements in a strategic context, consider through life support and recommend the optimal and most cost-effective package to meet your needs, including logistics, training and maintenance.

The RESOLVE training course covers all aspects of the system including:

- Basic and Advanced EW Techniques
- System Setup and Configuration
- Development of Tactics, Techniques and Procedures
- Support and Maintenance

Training courses are delivered by Roke 's operational experts at our dedicated RESOLVE Operations Centre in the UK or on request at your preferred location.



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COMMUNICATIONS DENIAL



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System overview

Core to the RESOLVE EW Manpack system is the QuadTac antenna and the Acquisition & Geolocation Sensor (AGS). These elements combine to intercept, demodulate, and DF signals of interest. Performance is enhanced with the addition of the MicroQuad antenna which seamlessly integrates with the QuadTac. Mission and information management are delivered using the ruggedised laptop and/or the PDA. All this is integrated with power supply into a bespoke backpack.

Operating parameters

Weight	16 kg [†]
Battery Life	8 – 15 hrs (with a standard 2590 battery)
Intercept	1MHz – 3GHz
DF	2MHz – 3GHz
DF Accuracy	5 deg (RMS) typical
Wideband Stare	40MHz
Scan Rate	1.5GHz/s
Demodulation	AM, FM, SSB, CW
Enhanced capabilities	Civilian waveforms
Operating Temperature	-20 to +50 deg C

[†]On-the-march



On-the-march HMI

Acquisition & Geolocation
Sensor (AGS)



TriQuad antenna
subsystem –
integration of QuadTac
and MicroQuad
antenna.





SYSTEM COMPONENTS

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More information

For more information or to speak with one of our operational experts regarding the enhanced capabilities of RESOLVE please contact us at resolve@roke.co.uk



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