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DEPLOYMENT

BORDER SURVEILLANCE IN THE MIDDLE EAST

Securing borders in a volatile region.

Domain: Land

Application: Border security monitoring

Customer: Military end-user

SITUATION: OPERATIONS IN A VOLATILE REGION

Frequent upheavals on an international, regional, and political level make borders in the Middle East highly contentious. The many threat vectors—both sophisticated and crude—put countries at a high state of alert.

Advanced spectrum monitoring systems that provide actionable RF intelligence and enable multi-mission, multidomain deployments are vitally important.

Knowing who is exploiting the EMS (voice, data, sensors including radar), what they are transmitting, and where they are located are extremely valuable data points—coupled with advanced and integrated border sensors and intelligence systems.

This Middle Eastern end-user wanted to add electronic surveillance across long, remote, and inhospitable border regions to combat a wide range of threat vectors (civilian groups, organized insurgents, and foreign military sources). It required a high-performance, rugged, and remotely controlled solution to fulfil multi-user, multi-mission requirements and improve workflows.

SOLUTION: SMART & INTEGRATED BORDER MONITORING

The end-user chose an RF hardware and software ecosystem capable of delivering enhanced RF intelligence derived from spectrum data, 24/7/365 automated monitoring, and EW mission management.

It first installed a series of RFeye Nodes in Outdoor System Kits, deployed in strategic positions along the border, and remotely monitored and accessed them. These assets were designed to deliver exceptional RF performance, operating continually in extremely harsh conditions with high reliability and no need for recalibration.

In the frequency domain, the end-user wished to monitor and manage a wide range with incredible resolution to ensure no signal was missed. They wanted to capture signals in high fidelity (requiring I/Q data) to drive their classification and demodulation capability. Thanks to the industry-leading sensitivity, they can capture signals from an enhanced coverage range and measure signals very close to the noise floor.

The end-user also chose to extend its capabilities with several RFeye Stormcases and vehicle-mounted RFeye Array systems— products designed for tactical and mobile deployments for agile spectrum monitoring and ISR. This provided the flexibility the end-user required for intelligence units to combine tactical and fixed assets seamlessly.

Every system required 18 GHz full-width frequency capability, meaning it needed to be able to monitor everything from hand-held communications to vehicle and airborne emitters. The equipment also needed to identify radar systems and rapidly geolocate jamming sources.

Dominating EW operations – detect, capture, & geolocate

The end-user's overarching goal was to increase its signal intelligence from spectrum data by understanding the when, what, who, and where.

It wanted to know when a signal went on air, what that signal was (by classifying it), who sent the signal (by capturing, demodulating, and decrypting it), and where it was (by geolocating it). By detecting, capturing, and geolocating using the CRFS RFeye ecosystem, the end-user wanted to achieve full EW operations.

RESULTS: TEN YEARS OF MULTI-MISSION DEPLOYMENTS & EW SUPPORT

The end-user has carried out multi-mission deployments in a turbulent region for over a decade and is content with the quality of spectrum intelligence it can gather. Although no one knows when a threat may appear, the fixed and remote receivers' capabilities offer 24/7/365 ISR and security.

The MoD is now:

- Detect and react to different threat vectors in real-time
- Managing the spectrum
- Ensuring spectrum cleanliness for its own operations
- Working closely with regulators to ensure civilian applications remain uncompromised

A key system feature – automation

The end-user selected RFeye Mission Manager—a toolset for automated spectrum management and operators who lack people or sensors (or both) and need to perform 24/7/365 monitoring. It provides clear views of the RF environment with visualizations of authorized transmitters, operating zones, geofencing, incidents, and alarms in near-time.

EQUIPMENT USED



RFeye® Array

Direction finding from 20MHz to 40GHz



RFeye® Receiver (Node)

High-performance spectrum sensor (receive / record) to 40GHz



RFeye® Site

Real-time spectrum monitoring & geolocation toolkit



RFeye® Mission Manager

Automated spectrum monitoring & mission management

Want to discuss your deployment needs?

Contact us to talk to an expert

Talk to us

SILVUS TECHNOLOGIES a Motorola Solutions Company

RFeye®

Silvus Technologies, a Motorola Solutions company, builds mission-critical capabilities that enable defense and security organizations to understand the electromagnetic environment, maneuver through the spectrum, and maintain an operational advantage in contested conditions. Through an interoperable ecosystem of industry-leading RFeye™ sensors, resilient tactical communications, and advanced electronic warfare capabilities, Silvus extends SIGINT to dismounted operators and uncrewed platforms—empowering forces to sense threats, connect forces, and command the spectrum. Together, these capabilities deliver the situational awareness and decision advantage needed to achieve spectrum superiority.

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