REAL-TIME I/Q DATA CAPTURE FOR ENHANCED INTELLIGENCE

How a national force secured its borders with reliable spectrum data

Domain:
Land

Application:
RF recording & signal capture

Customer:
Government agency

SITUATION: HOSTILE NEIGHBOR & LAND BORDER CROSSING

A national border force monitoring a potentially hostile border rife with people smuggling relied on dated and limited equipment—not good news for national security.

The force needed to modernize its capability to undertake spectrum monitoring. It needed to capture I/Q data for intelligence purposes. And, to add to the intelligence picture, it wanted to carry out TDoA to accurately determine the location of a source, even a mobile one moving quickly—beneficial for signals intelligence (SIGINT) and electronic warfare (EW).

The force had previously used CRFS' equipment and recognized its excellent capabilities. So, it contacted the RF spectrum monitoring specialists with a unique request—a product that did not exist.

SOLUTION: A BESPOKE I/Q RECORDER FOR ENHANCED INTELLIGENCE

The border force needed a bespoke solution. It was impressed with the capabilities of the RFeye Sens Portable and the RFeye Node 100-18 and wanted the best of both.

CRFS co-engineered new equipment to solve a specific need. Partnering with the end-user, CRFS' technical team developed a solution to meticulously fit the application—which proved to be far more capable than the existing off-the-shelf solution.

That solution was named the RFeye SenS Remote.

The equipment developed had a frequency range of up to 18 GHz—allowing the border force extensive signal coverage. Able to operate anywhere within this band, the user can detect a vast range of signals—from standard communications signals, up to radar signals and even some satellite communications. The user has the full flexibility to use the RFeye SenS Remote for COMINT or ELINT applications.

But the solution did not end there. Together with its new hardware, the border force required an adapted software solution to maximize its use of the RFeye SenS Remote.

Software engineers adjusted RFeye DeepView so the end-user could enter the data it collected into third-party software to decode and demodulate signals—further increasing their intelligence acquisition. This was only possible because RFeye DeepView uses open non-proprietary formats.

RESULTS: SPECTRUM DATA-DERIVED INTELLIGENCE TO BOOST SECURITY & EW OPERATIONS

By building full I/Q capability with the RFeye SenS Remote, the border force now has a more secure border.

After full training on how to use the hardware and software, the force is now capturing and identifying signals of interest and carrying out spectrum monitoring, situational awareness, and EW support.

The customer can reliably capture communication signals and radar signals, which are analyzed, put into detection systems, and, ultimately, passed on to tactical units.

The delivery and operation of the RFeye SenS Remote have been so effective that the national border force is planning to expand its TDoA network across its extensive and potentially hostile borders using RFeye Nodes 100-18 in both fixed and tactical and mobile deployment CRFS options.

Want to discuss border security & enhanced EW operations?

Talk to us

Deployment arranged by **Darren Nicholls**

EQUIPMENT USED

RFeye® DeepView (Software)

Forensic signal analysis with 100% probability of intercept

RFeye® Sens Remote

High fidelity RF Recording (I/Q data) for enhanced intelligence

ı፠|ıᆘ CRFS | EXTRAORDINARY RF TECHNOLOGY

CRFS is an RF technology specialist for defense, national security agencies and systems integration partners. We provide advanced capabilities for real-time spectrum monitoring, situational awareness and electronic warfare support to help our customers understand and exploit the electromagnetic environment.

bsi. ISO 9001:2015 Quality Management

UK Certificate number: FS576625