RFEYE ECOSYSTEM

RF TECHNOLOGY FOR SYSTEMS INTEGRATORS

CRFS

EXTRAORDINARY
RF TECHNOLOGY

INTRODUCTION

IF A SIGNAL IS TRANSMITTED, WE WILL FIND IT

In today's complex operational environments, staying ahead requires tools that deliver near real-time, highly trusted intelligence, not just data. CRFS RF technology enhances multi-sensor data fusion with early warning signal detection and precise geolocation capabilities, empowering integrators to create smarter, more responsive systems.

CRFS' TRL-9 technology is deployed globally, delivering proven performance in challenging operating environments. Our hardware is designed for simple, modular integration, and our open APIs ensure seamless integration of RFeye software into the system of systems—saving time and reducing complexity.

With vast experience partnering with systems integrators of all sizes, CRFS brings a consultative, co-engineering approach to every project. From concept to design, manufacture, and delivery, every step is carried out in Cambridge, UK, ensuring quality and agility. As a non-ITAR supplier, we eliminate export restrictions, making the whole process faster and simpler. And post-delivery, CRFS provides support packages to ensure a smooth integration process.

Low risk proven COTS technology | TRL-9 | Rapid prototyping

Non-ITAR | Reduced time to market | Sensor Open Systems Architecture

CORE CAPABILITIES OF CRFS TECHNOLOGY

ENHANCED SITUATIONAL AWARENESS

Real-time spectrum monitoring provides systems with the capability to identify potential threats based on their RF emissions and frequency ranges.

INTELLIGENCE GATHERING & EMSO

Collect critical signals intelligence (SIGINT) to support electromagnetic spectrum operations.

DIRECTION FINDING (DF)

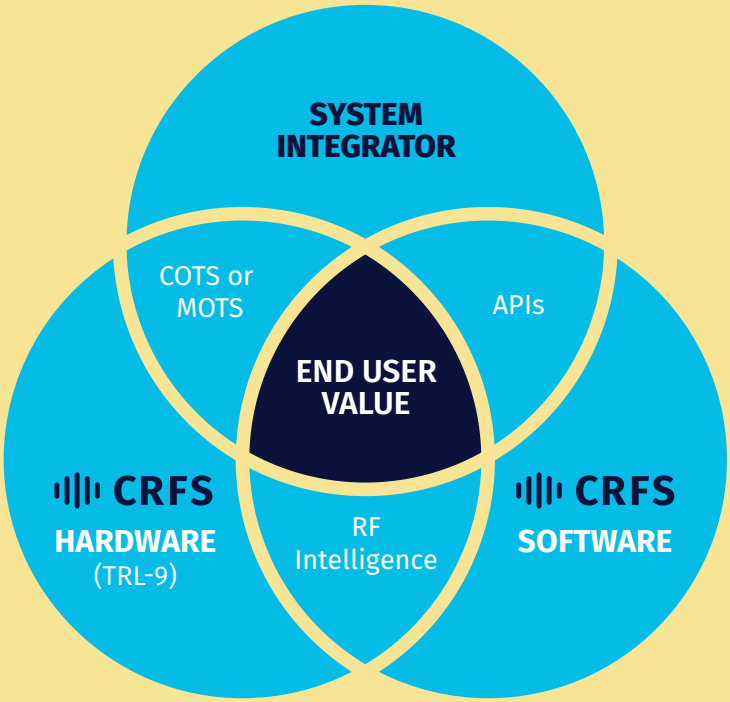
RF sensors use advanced algorithms and antenna systems to provide high-accuracy line of bearings, even in complex environments when there is a high noise floor.

POST-PROCESSING & FORENSIC ANALYSIS

Captured RF data can be processed for strategic intelligence gathering, such as signal patterns of life and frequency usage.

TIME DIFFERENCE OF ARRIVAL (TDOA)

Intelligent RF sensors enable precise geolocation of RF emitters in 2D (latitude and longitude) or 3D (latitude, longitude, and altitude), providing real-time intelligence.



INTEGRATING RFEYE TECHNOLOGY INTO SYSTEMS

RFeye technology is designed for easy integration, combining open APIs with SWaP-optimized modular hardware.

OPEN APIS ENABLE THE SEAMLESS INTEGRATION AND INTEROPERABILITY OF CRFS SOFTWARE INTO SYSTEMS

CRFS' RF sensors (RFeye Nodes) receive and process electromagnetic signals, while spectrum monitoring and geolocation software help users gain actionable intelligence from this RF data.

Integrating RFeye Site into a larger C2 system gives those systems critical early warning RF detection and geolocation capabilities.

RFeye Nodes are supported by common open and published application programming interfaces (APIs), allowing third-party systems to access and exploit processed data or stream I/Q data in a commonly used standard, such as VITA-49.

Geolocation streaming uses the Asterix and protocol buffer formats, ensuring efficient, compatible data delivery. This allows RFeye software to do the complex processing and provide actionable results into existing platforms.

Integrators have full access to GMP and EMP APIs at a system and individual sensor level, for synchronous and non-synchronous tasks, respectively. These allow the systems to execute high-level commands and instruct specific sensors to execute specific tasks.

BENEFITS OF CRFS' APIs

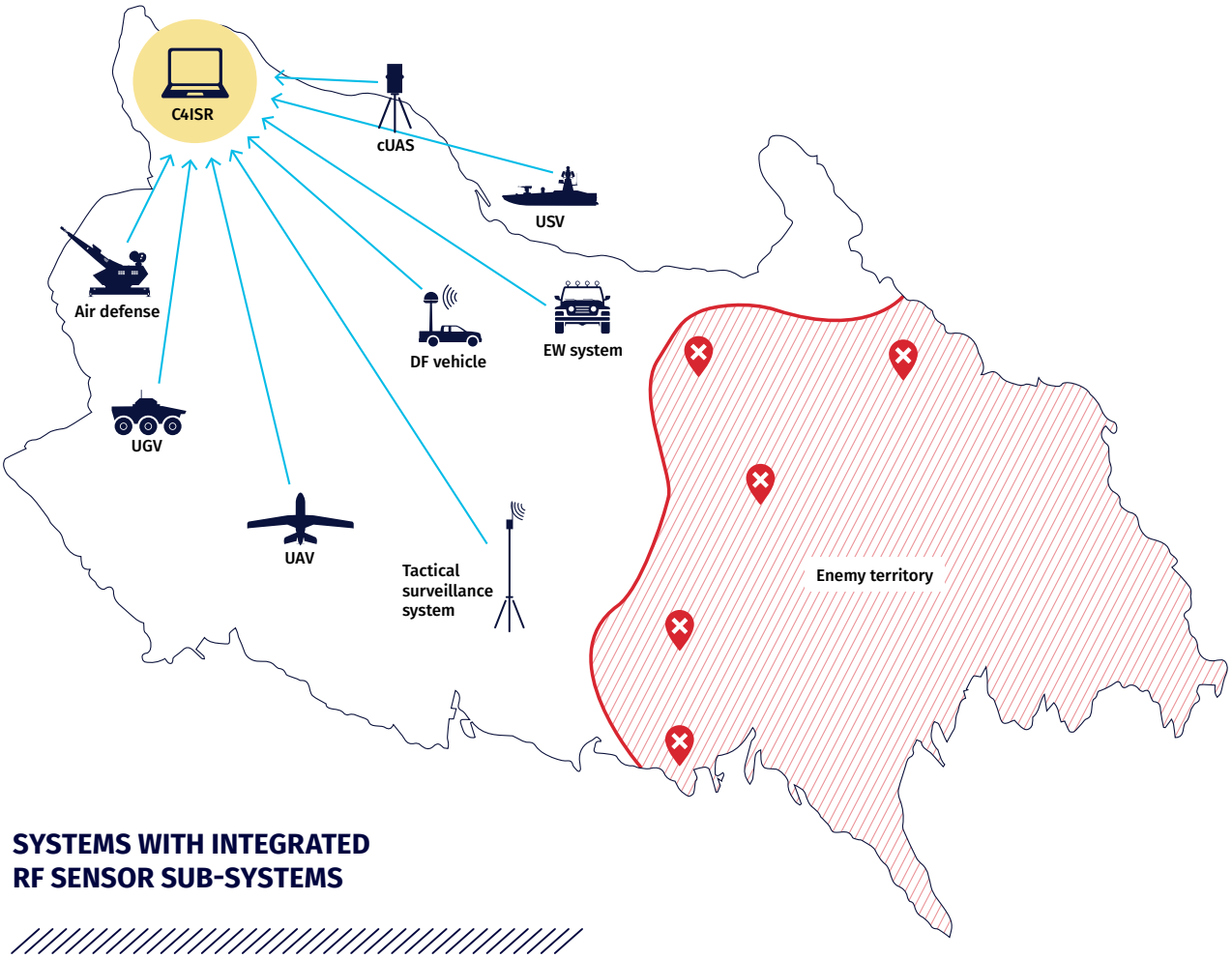
Time-to-deployment: CRFS' RESTful APIs simplify integration into larger systems, reducing time-to-deployment.

Fast development: CRFS uses well-documented APIs, reducing integration time and the likelihood of errors.

Universal interoperability: Using the JSON open data format ensures seamless data exchange between different systems and platforms.

Real-time insights: Event streams enable real-time data processing and notifications.

Operational flexibility: Multi-functional APIs mean systems can request multiple tasks simultaneously.



SYSTEMS WITH INTEGRATED RF SENSOR SUB-SYSTEMS

HARDWARE DESIGNED FOR SIMPLE, MODULAR INTEGRATION

RFeye Nodes are designed for easy, modular integration, reducing the workload for systems integrators and enhancing the functionality of the larger systems.

Integrating COTS technology often leads to a fast innovation cycle, allowing integrators to focus on adding value at the system level while benefiting from the agility and cost-efficiency of COTS solutions.

Edge processing allows users to make faster decisions as it reduces delays in delivering actionable intelligence through reduced backhaul. It eliminates the need for integrators to offload sensor data to central systems for processing, simplifying integration and reducing bandwidth requirements.

Rugged, SWaP-optimized designs enable deployment in challenging environments and extend operational endurance. These sensors can be integrated into space-constrained systems, and low power requirements reduce the need for extensive power systems.

Regular remote software and firmware updates enhance system security and enable the rapid deployment of new features. Eliminating the need for physical access to the system saves time and minimizes operational disruptions.

PERATON LEVERAGES CRFS SENSORS FOR DYNAMIC SPECTRUM MANAGEMENT

As the spectrum environment becomes increasingly cluttered and contested, real-time situational awareness and dynamic deconfliction is increasingly critical to effective operations.

Peraton integrated CRFS sensors into the distributed sensor network of its OSCAR Spectrum Management System for reliable detection and geolocation of signals of interest across multiple domains.

Integrating CRFS sensors into OSCAR provided access to state-of-the-art sensing capabilities, enhancing analytics used for signature management, emissions control, and identification of interference or unauthorized spectrum usage. This bolstered capabilities for providing intuitive comprehension of the spectrum environment, delivering actionable information for effective real-time response.

"LEVERAGING THE ADVANCED CAPABILITIES PROVIDED BY CRFS HAS PROVIDED US WITH THE DATA NECESSARY FOR OUR SPECTRUM ANALYTICS, IMPROVING THE VALUE WE PROVIDE TO OUR END USERS AND EXTENDING THE BREADTH OF MISSION SCENARIOS WE CAN SUPPORT."

Scott Ostrowski, Peraton,
VP for Mission Solutions

OSCAR screenshot of CRFS data being collected during an exercise

CRFS sensor deployed in the field during an exercise

READ THE DEPLOYMENT STORY

Tekever AR-5 with RFeye Node 100-18 LW Integration

TEKEVER & CRFS LAUNCH UAS WITH AN ULTRA-SENSITIVE RF RECEIVER AS A PAYLOAD

A NATO member requested a lightweight version of the TRL-9 RFeye Node 100-18 to be integrated into a TEKEVER MALE UAV for signals intelligence operations in a conflict zone.

CRFS rapidly designed the same capability into a much-reduced form factor with no performance loss. The teams for CRFS and TEKEVER worked closely on co-engineering.

From concept to development, this new product weighing less than 2kg was ready within three months.

"THE GROUNDBREAKING PARTNERSHIP BETWEEN TEKEVER AND CRFS IS A TESTAMENT TO THE POWER OF COLLABORATION. IT'S A GAME-CHANGER, OFFERING END-USERS AN INCREDIBLY VERSATILE ASSET THAT CAN COVER VAST LAND AND SEA AREAS."

Tiago Nunes, Product Director at TEKEVER

RFeye Node 100-18 LW: Lightweight RF sensor for integration into autonomous systems and wideband spectrum monitoring and geolocation of transmitters up to 18 GHz.

RAFAEL INTEGRATES RFEYE ECOSYSTEM INTO DRONE DOME™

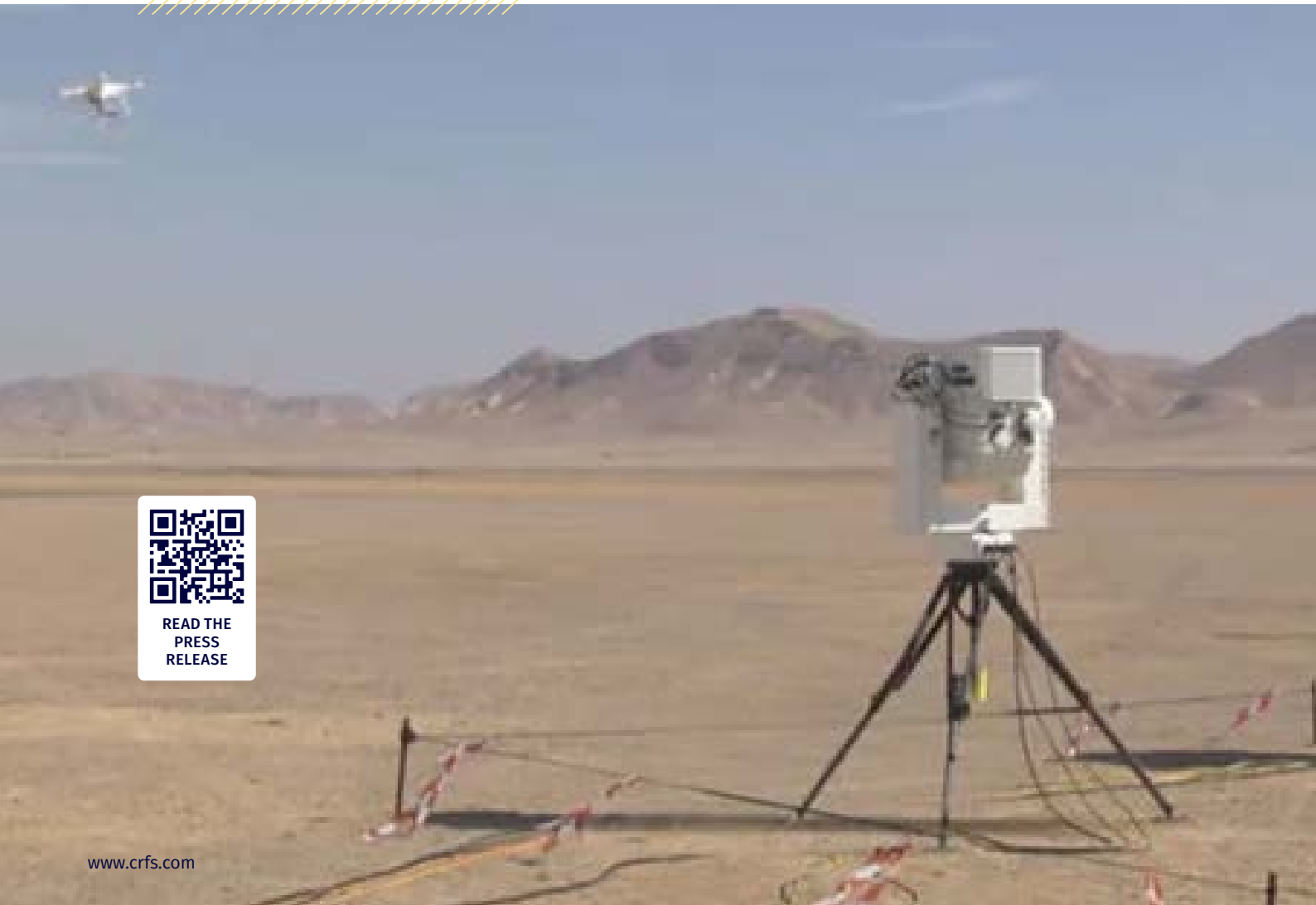
With hostile drones escalating security challenges, integrating an early warning RF system into c-UAS technology is beneficial to extend detection and geolocation capabilities.

On behalf of a European NATO member, RAFAEL partnered with CRFS to integrate RF sensors into Drone Dome™, its powerful counter drone solution.

The partnership provides accurate coverage across a wide range of threat vectors and operational environments. This integration significantly improves the system's ability to identify and respond to evolving drone threats in complex RF conditions.

"CRFS IS A RECOGNIZED LEADER IN THEIR DOMAIN OF RF-BASED DETECTION AND GEOLOCATION, AND WE ARE DELIGHTED WITH THE CAPABILITY ENHANCEMENT WE HAVE BEEN ABLE TO OFFER OUR CUSTOMERS."

Rafi Amir, Business Development lead at RAFAEL



READ THE PRESS RELEASE

TYPES OF INTEGRATION

USV

UGV

UAV

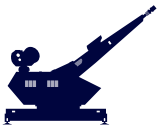
ELECTRONIC WARFARE SYSTEMS

AIRBORNE ISR

C-UAS

MARITIME

C4ISR SYSTEMS



AIR DEFENSE SYSTEMS

SIMPLIFYING INTEGRATION FROM DESIGN TO DEPLOYMENT

NON-ITAR

Reduced delays, administrative overheads, costs, and risk

FAST TIME TO MARKET

Existing technology delivered within 12 weeks

AGILE

Concept to design, manufacture, and delivery from Cambridge, UK

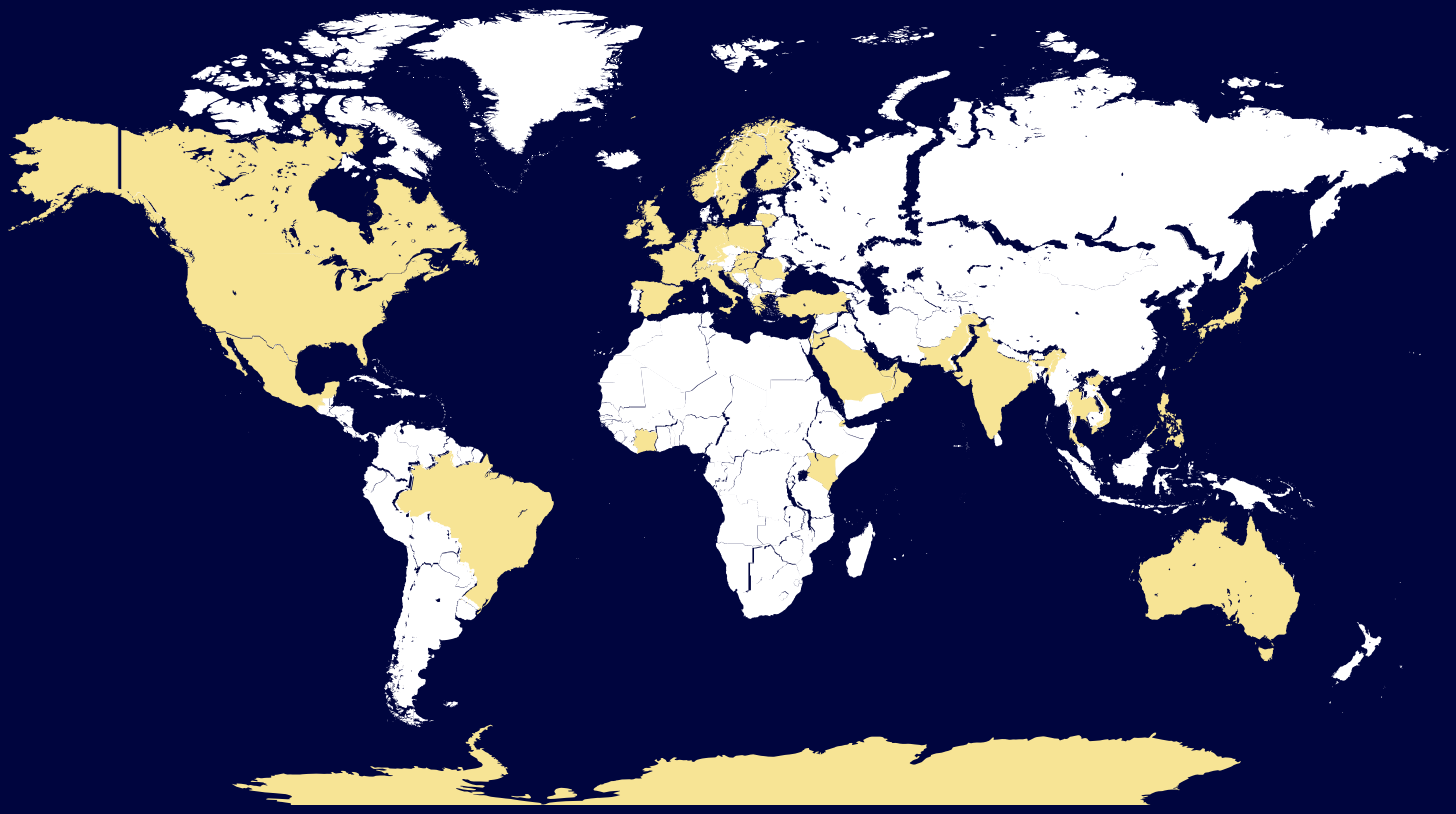
- **Flexible:** Co-engineering, consultative approach, and customizable design
- **Ownership:** Complete control of product & development strategy
- **Interoperability:** Open APIs work seamlessly within diverse system architectures
- **Affordable:** COTS / MOTS
- **Training & support:** Continuous technical support and advanced training
- **Technology innovation:** AI/ML to reduce complexity and enhance performance
- **Quality assurance:** ISO:9001, Quality Management System (QMS), and Quality Policy
- **Secure supply chain:** Dynamic and strategically accessible supply chain

CONTINUED INTEGRATION SUPPORT

- **Dedicated integration support**
  During the integration process, we provide 12-month support packages and can supply temporary support licenses and access to the support team and engineers.
- **Post-integration support**
  After integration is complete, we provide ongoing support through a dedicated support line, tickets, software updates, regression testing, and backwards compatibility.

PROVEN TRACK RECORD

CRFS hardware and software is deployed and operational in over 48 countries



200+ customers: defense contractors & systems integrators

Established 2007

4,861+ RF sensors built & deployed

Combat-proven technology

9 patents

640k+ hours invested in software development

TALK TO A SYSTEMS INTEGRATOR ADVISOR TO DISCUSS A PROGRAM OR INTEGRATION REQUIREMENT

CRFS

EXTRAORDINARY
RF TECHNOLOGY

CRFS creates deployable technology to detect, identify and geolocate signals in complex RF environments. With a leading position in the US, Europe and a global reach, our systems are used worldwide by regulatory, military, system integrators, government security agencies and corporates. They require actionable spectrum intelligence across the widest possible frequency range, in both congested and contested environments. They rely on our highly sensitive RF sensors, accurate transmitter geolocation, signal captures, classification and real-time RF intelligence to fulfil EMSO and electronic warfare support missions.

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