ICS MONITORING

MULTI-TASK SPECTRUM MONITORING SOFTWARE BASED ON A SERVICE ORIENTED PLATFORM

ICS Monitoring is a flexible and scalable solution that enables users to perform spectrum monitoring and spectrum control tasks in full integration with spectrum management. It is compatible with leading spectrum monitoring equipment suppliers and allows users to work in a centralised way with multiple measurement devices and different models simultaneously.

Mass data processing is driven by an AI engine at both ends of the system — the sensor terminal and the central server.

24/7 SPECTRUM MONITORING

The growing use of unmanned systems, communication systems, and IoT devices requires government and defence authorities to monitor the radio-frequency spectrum across a wide range, 24/7/365. The sheer volume of spectrum events calls for automated analysis capable of flagging only those that warrant attention.

ICS Monitoring RT delivers this level of situational awareness through behavioural analysis tools.

ICS Monitoring RT manages a variety of measurement data and features an automatic post-processing function for real-time data streams. It forms part of our spectrum management solution and is fully compatible with HTZ Warfare and ICS Manager.

PROCESSING AT SCALE

STATISTICS, BIG DATA AND AI

- Real-time system e.g.: 150+ DFs, 5M+ interceptions per minute
- Automated observation system e.g.: 700+ sensors connected 24/7

CAPABILITIES

Real-time & post-measurement spectrum analysis

Measurement devices performing multiple tasks simultaneously

Massive target localisation using AoA / TDoA / hybrid techniques

Assessment of spectrum occupancy and activity

EMS anomaly detection with early warning alerts

Signal detection and real-time alarming

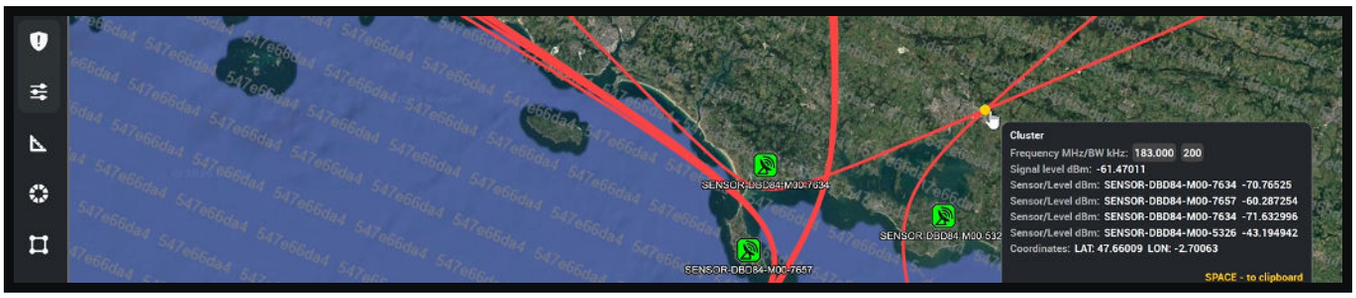
Holistic EMS situational awareness via Electronic Warfare Map

AI-powered mass data processing and target clustering

Three-dimensional EMS analysis with historical data processing

Scalable architecture and flexible deployment

Both centralised and decentralised operation possible

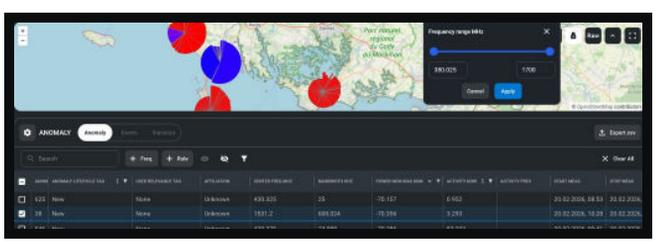


ELECTRONIC WARFARE MAP: TDOA LOCALISATION HYPERBOLAS AND CLUSTERISED TARGETS

REAL-TIME MEASUREMENT AND CONTROL

Real-time measurements provide a direct interface to the device. The real-time mode allows you to perform instant tasks, which are executed and analysed by a user.

- Observing the spectrum and performing measurements
- Recording spectrum traces, including waterfall displays, and IQ streams
- Setting alarms and observing alarming results
- Managing white- and blacklists of signals
- Localising selected signals using AoA, TDoA and hybrid methods
- Clustering localisation data using AI-based methods
- Classifying signals and targets, including UAVs
- Managing EM battlefield order
- Adding targets and sending jamming orders
- Continuously monitoring the radio frequency spectrum
- Automatically detecting the appearance of new signals
- Monitoring changes in existing radiation parameters
- Identifying abnormal or suspicious spectral events
- Accumulating spectrum usage statistics
- Logging changes in the radio environment
- Automatically classifying spectrum events
- Automated detection of abnormal behaviour and changes in the electromagnetic environment (EME)



ANOMALY DETECTION ACROSS THE MONITORED BAND

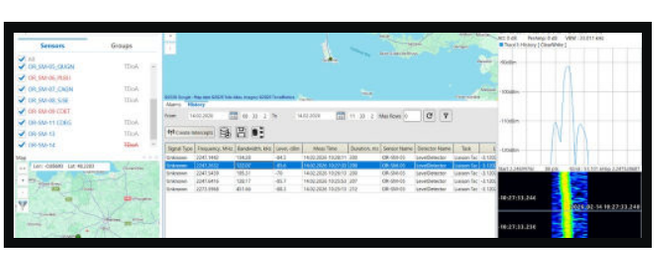
BUILT FOR ATTENTION FOCUS AND FAST DECISIONS

ICS Monitoring RT is optimised for fast detection, selection and decision-making on the detected target in real time. It is designed to standardise processes to operate heterogeneous EMS measurements and EW networks from various suppliers.

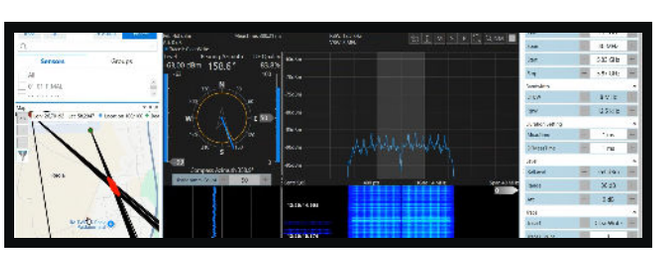
It is intended for assessing the EMS environment over a specified period of time, analysing the behaviour of radio emission sources, and detecting and identifying changes and a typical behaviour of radio emission sources.

A COMPLETE VERTICAL INTEGRATED SOLUTION

- Battlefield level: spectrum analysis and signal localisation
- Tactical level: signal detection and alarms
- Tactical-operative level: Electronic Battle Management System — Electronic Warfare Map



ALARM VIEWER: DETECTION OF BLACKLISTED SIGNALS



REAL-TIME TDOS DIRECTION FINDING

BUILT FOR THE EVOLVING ELECTROMAGNETIC ENVIRONMENT

For over three decades, ATDI has supported defence and security organisations worldwide with advanced spectrum engineering software and expertise. Our proven technology, RF engineering knowledge and flexible architecture support evolving mission requirements and emerging technologies.

SCAN FOR MORE