



Enabling Electromagnetic Dominance

// PLAN - MANAGE - OBSERVE - DEFEND

Integrated End-to-End Solutions for Electromagnetic Spectrum Operations (EMSO)

Modern military operations demand assured access to and control over the electromagnetic spectrum. LS telcom delivers an integrated, end-to-end portfolio for Electromagnetic Spectrum Operations (EMSO), enabling armed forces to plan, manage, observe, and defend spectrum usage across all operational levels.

Strategic Core: mySPECTRA for Defense and SPECTRAemo

At the strategic and operational core stands mySPECTRA for Defense, the military's automated spectrum management and electronic warfare system. As a multi-domain, data-centric platform, it supports structured frequency coordination, mission planning, and joint interoperability, ensuring spectrum superiority in complex national and coalition environments.

Complementing this capability, SPECTRAemo provides advanced tactical spectrum planning and management, enabling forces to analyze coverage, anticipate interference, and maintain resilient communications, even in disconnected or high-threat scenarios.

Full Visibility: LS OBSERVER & Drone Solutions

Effective spectrum operations require continuous visibility of the electromagnetic environment. With LS OBSERVER, LS telcom delivers a sensor-based monitoring system for interception, measurement, direction finding, geolocation, and structured data analysis.

Supporting real-time, near-real-time, and post-event evaluation, the system strengthens electromagnetic situational awareness and operational decision-making.

This capability is further enhanced by LS telcom drone solutions, providing rapid airborne spectrum intelligence for signal detection, drone identification, and threat assessment. Fully integrated into the LS telcom software suite, aerial monitoring transforms collected spectrum data into actionable insights for force protection and counter-UAS missions.

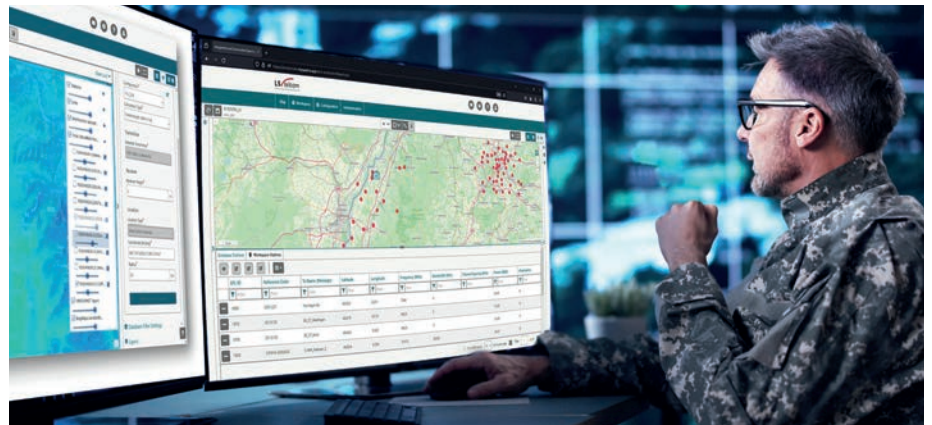
Mission-Ready: Integration, Systems & Expertise

Beyond individual systems, LS telcom ensures

mission-ready capability through comprehensive system integration & turnkey projects, delivering tailored EWOC, ESM, and ECM solutions.

From modular infrastructure to fully integrated electronic warfare architectures, solutions are designed to meet specific operational requirements. Complemented by expert spectrum consulting and training, LS telcom strengthens institutional knowledge in electronic warfare, spectrum management, and direction finding.

An integrated EMSO approach enables armed forces to achieve spectrum superiority across all operational levels, from strategic planning to tactical execution. ■



From data to decision: mastering the electromagnetic spectrum

SPECTRAemo: A New Tool for the Electromagnetic Battlespace

As modern military operations become increasingly digital and multi-domain, the electromagnetic spectrum has emerged as a decisive operational domain. Reliable communications, drone operations, sensor networks and command systems all depend on effective spectrum use. At the same

time, adversaries actively attempt to disrupt these capabilities through interference, jamming and broader electronic warfare (EW) activities.

To help defense organizations address these challenges, LS telcom has launched SPECTRAemo, a new software solution designed specifically for

tactical radio network planning, simulation and spectrum management operations. The tool enables planners and engineers to model communication scenarios, predict network performance, and identify and mitigate potential interference before systems are deployed in the field. Despite its advanced capabilities, SPECTRAemo is designed for ease of use ensuring that operational personnel can employ the system effectively under mission conditions.

SPECTRAemo combines realistic propagation modelling with powerful analysis tools, allowing users to evaluate coverage, verify radio links and optimize network configurations under real-world terrain and environmental conditions. Operational usability is critical in military environments, where tools must be quickly understood and applied by all relevant personnel. The system also supports frequency deconfliction and frequency assignment, helping ensure resilient and reliable communications even in congested or contested electromagnetic environments. In addition to communication planning, SPECTRAemo supports operational spectrum management tasks, including analyzing connectivity during manoeuvres, determining optimal antenna deployment locations, and ensuring resilient communications in infrastructure-limited environments. Its automation features also enable planners to run repeatable analyses and generate results efficiently, even across complex and dynamic operational scenarios.

Together, these capabilities help military organizations better understand and control the electromagnetic environment, an increasingly critical factor for mission success in modern operations. ■

Core Capabilities of SPECTRAemo



The diagram illustrates key functions of the launched SPECTRAemo software, including coverage prediction, spectrum deconfliction, communication checks, MANET support, frequency assignment and automation. Together, these capabilities enable defense planners to design resilient tactical radio networks, optimize spectrum usage and ensure reliable communications in complex operational environments.

Drone Mission Planning

Unmanned aerial systems (UAS) are key assets in electromagnetic operations, supporting RF emitter detection, electronic surveillance, and spectrum monitoring in contested environments. Their effectiveness depends on reliable command-and-control (C2) links, precise sensor coverage, and accurate geolocation during mission execution.

SPECTRAemo enables planners to design and optimize drone missions by modelling terrain, radio propagation, and spectrum usage. This allows operators to define flight paths that maintain connectivity, maximise coverage, and minimize the risk of interference.

By simulating mission scenarios in advance, SPECTRAemo provides accurate predictions of communication performance and sensor effectiveness under real-world conditions. During ma-

noeuvers, this ensures continuity of C2 links and mission-critical data transmission, even in dynamic and infrastructure-limited environments.

When deployed with airborne monitoring payloads, drones can execute planned missions with enhanced effectiveness, delivering real-time

detection, analysis, and geolocation of RF emitters.

By linking mission planning with operational execution, SPECTRAemo enhances UAS performance, reduces mission risk, and supports effective electromagnetic operations. ■



AMU-neo measurement drone

Managing the Spectrum Battlefield: LS telcom in the Software-Defined Defense Era

The electromagnetic spectrum has become a decisive operational domain. In contested environments, armed forces must be able to adapt rapidly to interference, electronic attack, and evolving threat scenarios. Static systems no longer suffice, agility and integration are essential.

LS telcom's Software-Defined Defense approach delivers modular, scalable, and interoperable architectures that connect spectrum planning, manage-

ment, monitoring, and electronic protection within one coherent operational framework. The solution is built on open architectures and standards-based interfaces (e.g., API-driven integration), ensuring interoperability with third-party, legacy, and coalition systems across multi-vendor environments.

Capabilities can be configured and expanded in line with mission requirements, ensuring flexibility from peacetime readiness to high-intensity operations.

By integrating data, systems, and decision support across all phases of Electromagnetic Spectrum Operations, LS telcom enables defense forces to secure operational freedom of action, where mission success depends on effective spectrum control, enabled by interoperable, standards-based integration with third-party and coalition systems. ■



Coherent operational framework

Monitoring and Direction Finding from the Air

LS telcom's Airborne Measurement Unit (AMU) extends spectrum monitoring and direction-finding (DF) capabilities into the air. Mounted on a UAV, the compact payload integrates receiver, processor, storage, and antenna systems, with the antenna mounted on a gimbal-stabilized platform for accurate measurements during flight.

Different payload variants cover multiple frequency ranges. Interchangeable antenna sets, including omnidirectional and directional antennas, allow the system to be configured for various monitoring and DF applications.

Airborne Advantage for Signal Detection

Operating above ground obstacles gives the AMU a key advantage: line-of-sight to the signal source. This significantly improves detection range and DF accuracy, particularly when locating weak emitters. This is especially relevant for counter-drone missions. Small drones may transmit extremely low power, for example, a DJI Mini class drone may emit signals of

only around 10 mW. Airborne spectrum monitoring increases coverage and the probability of detecting both the drone and the remote controller (RC) signal.

Geolocation and Spectrum Awareness

Once detected, the AMU performs direction finding from the air, generating lines of bearing displayed in a compass view and on a digital map. When multiple measurements are available, triangulation of several bearings enables accurate geolocation of the emitter, including the drone and potentially its operator.

Flexible Deployment Concepts

The AMU is available in wireless and tethered configurations.

- The wireless version enables flexible deployment with data transfer via Wi-Fi or cellular networks.
- A tethered version provides unlimited flight time and high-speed data transfer through a cable connection. To avoid interference with monitored signals, the AMU's own communication links can

be shifted to alternative transmission paths, including cellular networks, cable connections, or dedicated military frequencies.

Supporting Counter-Drone Operations

The system continuously scans the spectrum and can trigger an automatic alarm when drone signals are detected. Airborne DF measurements allow operators to locate interfering sources, triangulate drone positions, and identify the location of the pilot. While factors such as UAV rotation speed and simultaneous operation of multiple drones or controllers can influence DF performance, airborne monitoring significantly enhances spectrum awareness.

With the AMU, LS telcom adds an airborne dimension to RF monitoring and emitter geolocation, supporting military specialists in managing and securing the electromagnetic spectrum. ■

// WRC-27

Spectrum Consulting with the European Defence Agency

LS telcom is supporting the European Defence Agency (EDA) in the preparation of European defence positions for the World Radiocommunication Conference 2027 (WRC-27). The work focuses on analyzing spectrum developments relevant to future military communications and defence systems.

Current activities include technical support in international spectrum coordination forums and several ongoing studies related to WRC-27 agenda items 1.7 and 1.2, addressing spectrum requirements and regulatory developments affecting defence capabilities.

Further tasks are planned under upcoming contracts, including continued technical analyses, expert participation in spectrum coordination meetings, and support to EDA in preparing European defence positions for WRC-27. ■

// Membership

LS telcom Joins AFCEA Global Network



LS telcom has recently become a member of AFCEA, the international association that connects military, government, industry and academia in the fields of communications, information technology and security. With chapters and members around the world, AFCEA provides a well-established platform for dialogue, collaboration and knowledge exchange across the global defense and security community.

By joining this network, LS telcom strengthens its engagement with key stakeholders working to advance secure and resilient communications infrastructures. The membership enables the company to exchange expertise, follow emerging technological developments and contribute to discussions shaping the future of defense communications and spectrum management.

Participation in AFCEA also opens further opportunities for cooperation with partners from government, armed forces, research institutions and industry. Through this platform, LS telcom aims to support innovation and the development of advanced solutions that address the evolving challenges in communications, cybersecurity and information systems.

With the new membership, LS telcom reaffirms its commitment to supporting customers worldwide with secure, reliable and future-ready communication solutions for critical and defense-related applications. ■

// CMS: Upward and Downward Interoperability

One Monitoring Picture: CMS Interoperability in the Electromagnetic Domain

LS telcom's Central Monitoring Software (CMS) forms the central processing and coordination layer of the LS OBSERVER monitoring environment. The system collects measurement data from distributed sensors, processes and analyzes the information, and distributes the results across operational command structures.

The CMS enables upward interoperability by forwarding processed measurement data, signal analysis results, and geolocation information to higher-level command systems, where they contribute to the operational picture and decision-making processes. At the same time, the system provides downward interoperability by integrating field-level monitoring assets such as mobile monitoring stations, direction-finding units, and airborne sensors. This includes the Airborne Measurement Unit (AMU), which delivers spectrum monitoring and direction-finding data from UAV-based platforms. The CMS processes these airborne measurements together with ground-based sensor data, allowing operators to correlate information from multiple sources.

Designed as a manufacturer-independent platform, the CMS can process measurement data from monitoring equipment of different vendors. By aggregating and correlating data from ground and airborne sensors, the system enriches the situational picture with electromagnetic information and supports spectrum awareness in operational environments. ■



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