



# Ground Based Comms EA Systems

Indra's Communications EA Systems provide high operational performances to reinforce the EMS domain in the new digitized battlefield.

## Mission

Modern battlefield is increasing digitalization in an unprecedented pace. In this scenario, being able to secure Electromagnetic Spectrum (EMS) is vital to guarantee survival in symmetric, asymmetric and hybrid conflicts.

Indra's Communications Electronic Attack (EA) Systems provide Land Forces with effective means to gain superiority in the EMS domain, guaranteeing its use by own forces and restricting or even denying access to the adversary.

The systems provide the most advanced and effective electronic surveillance and attack capabilities against communications networks, combined in a ground mobile platform.

Different configurations are available, covering HF, UHF, VHF and part of SHF frequency bands, with different radiated powers and even including direction finding means in the same platform.

## Operational Modes

### Passive Electronic Surveillance

Electronic Support (ES) means included in all the systems enables them to carry out detection, technical analysis and interception of communications signals.

The ES Subsystem (optional) provides signals emitters direction finding and geo-location by triangulation (if DF are available from several stations) of the emitters.

### Electronic Protection and Attack

Modern warfare is highly dependent on the EMS to gain tactical, operational, and strategic advantage.

The objective of EA is to deny adversary's effective communications capabilities by transmitting interfering signals or to create confusion by transmitting false signals with similar modulation and parameters as the target system.

In both cases, it will be more difficult for the adversary to establish proper communications, forcing them to operate in a contested EMS scenario, reducing or nulling the information exchange and jeopardizing their C2 capability.

## ES Specific Features

- Scanning of the EMS to detect active emissions, being conventional or modern agile/wideband emitters (FH, SS, etc.).
- Direction finding and in-depth analysis of emitters, including full intelligence extraction (COMINT).
- Recording of wideband EMS sectors, demodulated audio or data signals.
- Providing the operator with an integrated, friendly and easy to understand graphical user interface.
- Supervision of the operative status of the station's local equipment.

## EA Specific Features

- Jammer based on a SW defined multirole countermeasure (CM) generator. Any type of waveforms, including user-defined ones, are available.
- Active and Reactive operation modes. Continuous jamming or only when activity in prefixed threatening signals is detected.
- 'Look-through' in all EA modes. The system automatically stops jamming briefly to assess threat signal evolution.
- Multi-emitter jamming capability in Time Division Multiplex (TDM) mode or synthesizing various simultaneous signals with different modulations.
- High gain directive antennas on steerable masts to assure optimum ERP focused on the area of interest. DF data from ES are used to aim automatically the antennas.
- Omni transmission antennas to perform lower-ERP jamming if targets locations are widely spread in azimuth or unknown.

## Full Integration with ES Subsystem

The advanced ES subsystem provides early alert and emitter characterization, allowing:

- Automatic selection of the most effective countermeasure, based on easily updatable libraries.
- Responsive and look-through controlled jamming and deception.
- Adaptive jamming signal depending on the threat characteristics.
- Specific Follower Jamming mode.

## Modularity and Flexible Integration

- Flexible architecture, allowing further upgrades and future enhancements.
- Powerful BITE: initialization, operator initiated and continuous.
- Easy maintenance, based on a modular design concept.
- Sheltered installation. Transmitting antenna configuration adaptable to the platform.



Networked operation with Indra C-ES & C2 Systems for enhanced Situational Awareness

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