

ESEN



AIRBORNE COMINT SYSTEM

www.esensi.com.tr

System Overview

The Airborne Communication Intelligence (COMINT) System detects, demodulates, decodes, and locates Signals-of-Interest (SOI) conventional and digital Radio Frequency communication emitters with advanced Direction Finding (DF) and Signal Processing Algorithms in congested operational spectrum environments. It has the capacity for wideband detection and geolocation of weak emitter signals in the presence of strong interference. Target emitter locations are displayed on an interactive digital map with different layers. Dynamic configuration and tasking of the system allows continuous targeting of the potential emitters in the operational area.

- Multichannel parallel processing of wideband spectrum data
- Rapid and effective production of both tactical and strategic level intelligence including Electronic Order of Battle (EOB)
- Mission Management Software (Flexible and user-friendly software enables easy operation of the system)
- Signal Database (raw and processed sensor data storage)
- Mission Data File based automatic and multi-tasking
- Cross-cuing with other sensors such as EO/IR camera
- Ease of export - non-ITAR

Core Capabilities

ESEN specializes in developing tailored high performance RF and Geo-location systems. The company's solutions are powered by advanced processing techniques and supported by demonstrated state of the art DF and Geo-location algorithms.

Our core capabilities include:

- Systems engineering, antenna element selection, array analysis, design and integration support
- Innovative algorithm development
- RF and digital design, test and integration, payload integration and test
- Mechanical packaging and design for airborne systems
- Calibration of complex COMINT systems in-flight
- Technical data publication, training and field support

System GUI

Signal Monitoring UI



- Lines-of-Bearings (LOBs) to distinguish among SOIs
- Supports merge of target data over time
- Audio and raw data recording capacity
- Digital map provides platform, LOBs, error ellipses, etc.
- Supports various raster and vector map formats
- System health and status monitoring

Geolocation UI



The Graphical User Interface (GUI) provides mission operators the ability to control and display the results of the collection system for signal intercept, recording, precise and geo-location for both conventional and digital communications. The database provides the ability to store and replay, target lists and DF information to support post-mission.

Application

ESEN has experience designing and implementing high performance COMINT Systems on land and in air on manned aircraft including Beechcraft B300 type platforms. ESEN solutions are also adaptable to unmanned and different manned platforms based on SWaP requirements (Contact ESEN for details).

Key Features

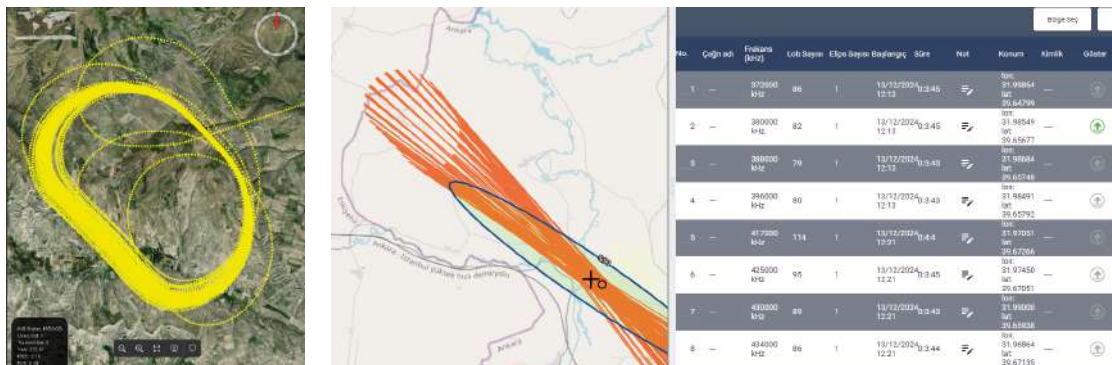
- Remote control of the sensor from a ground control station could be provided if required
- Transfer of production data to ground control stations via data links or SATCOM
- Adaptability to unmanned and different manned platforms based on SWaP requirements
- Multiple user operations in a manned aircraft
- Data/audio recording and offline analysis
- Mission Planning



Receiver Units



Antenna Array in the Pod



Sample spectrum outputs from the System

Technical Specifications

Frequency Range: 20-3000 MHz (optional up to 6 GHz and HF band)

Receiver Architecture: N Channel DF and wideband monitoring

Instantaneous Bandwidth: 100 MHz per channel

No. of DDCs: 64 (optional up to 1024 based on platform type and specs)

DF Accuracy: typically, 2° RMS

Sensitivity (at wideband receiver input): -115 dBm (for 10dB SNR)

Wideband and Narrowband IQ recording format: VITA49

Audio recording format: .wav

Antenna Array: N-Element in a pod and over the platform body

Environmental: D0-160 G

Weight: Manned - 135 kg (incl. A and B Kits, RF cables etc.), Unmanned - approx. 90 kg (changes with platform SWaP requirements)

Power: 28 V DC max. 55 Amper

Additional Info: Two pilots and two operator positions

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