

AISIS - Airborne Integrated SIGINT System

EL/I -3001



General

EL/I-3001 is a multi-platform, multi-role Airborne Integrated Signal Intelligence System (AISIS). The system is designed to cope with the challenges of modern dense non-communication (mostly radars) and communication network environments and to perform long-range, high-endurance SIGINT missions.

The system's tasks are to search, intercept, measure, locate, analyze, classify and monitor ground, airborne and naval transmissions, characterized by short duration, variety of signal types and frequent changes in signals parameters.

The main purpose of the system is to build-up real time Electronic Order of Battle (EOB) picture, and to provide valuable vital tactical and strategical intelligence that can be seamlessly integrated in the nation's intelligence database.

As a secondary mission, part of the airborne segment of the system can be converted into an Airborne Command and Control Center (ACC).

Description

The system's airborne segments are installed onboard the high performance Gulfstream G-5 Special Electronic Mission Aircraft (SEMA). Each aircraft includes advanced COMINT and ELINT sensors, 12 flexible COMINT and ELINT Operator Stations, local Servers, LAN, an airborne Recording/Playback System and an Intercom System. In addition it includes airborne terminals for Line-Of-Sight (LOS) Data Link, and Satellite Communication (SATCOM) Data Link, as well as standard HF/VHF/UHF radio sets.

The system's ground-based segments comprise of a central Ground Communication Center (GCC), ELINT and COMINT Operators Centers. The Ground Centers are used for pre-mission preparations, real-time mission control, real-time remote operation, post-mission off-line analysis, preparation and dissemination of EOB and intelligence reports.

In addition, an Integrated Logistic Support (ILS) package assures the system's readiness and high availability.

AISS - Airborne Integrated SIGINT System

Features

- High performances COMINT and ELINT receiving sensors with High Sensitivity and High Probability of Interception (HPOI):
 - COMINT frequency range: 20 –1200 MHz
 - ELINT frequency range: 0.5 – 18 GHz
- Automatic Processes:
 - High speed Scan and Search for signals within frequency bands of interest according to preprogrammed scan regime.
 - Signal acquisition parameters measurements, data reduction by filtration and signal type classification
 - Signal Direction-Of-Arrival (DOA) measurements
 - Instantaneous location (FIX) of transmitters.
- Manual Processes:
 - Analysis of new/unknown signals
 - Recording and on-line/off-line playback
 - Real-time monitoring and transcribing (Gisting)
 - Intelligence extraction, EOB build-up and reports preparations
 - Dissemination of EOB and intelligence reports.
 - Management and handling of databases
 - Internal and external voice, data and e-mail communications
- Operation Modes
 - Local Mode by onboard aircraft operators
 - Remote Mode by ground operators
 - Combined Mode by both onboard and ground operators
- Main SEMA G-5 Business Jet Features
 - Cruise Altitude: 50 Kft (typical), enabling up to 400 Km LOS communication/interception range
 - Cruise Speed: 0.8 Mach (typical)
 - Mission Endurance: 10 hours (typical)
 - FAA Certified and complying with RTCA/DO-160 C/D Environmental and EMC requirements
- Communication Systems
 - LOS microwave Data Link between the ground segment and the airborne platforms.
 - SATCOM Data Link between the ground segment and the airborne platforms.
 - HF/VHF/UHF air-to-air and air-to-ground Radio Communications between the airborne platforms, ground segments and other users of the ACC.
 - Intercom between all systems operators, onboard the aircraft and on the ground.
 - Ground WAN communication with the different parts of the ground segment, and external Intelligence Customers.



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