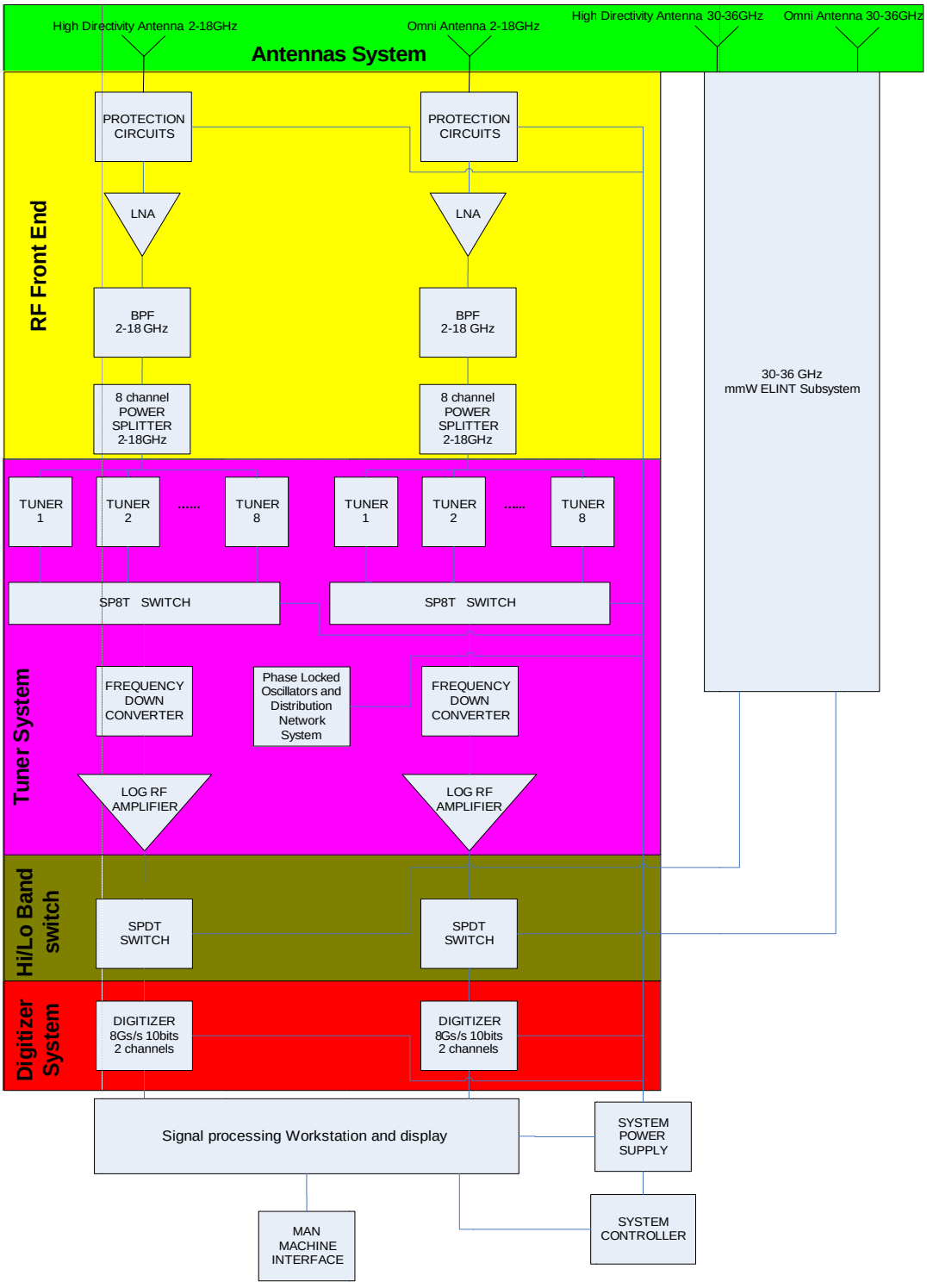
AEOLOS

Electronic Intelligence System

AMS Defence Integrated Systems

AEOLOS ELECTRONIC INTELLIGENCE SYSTEM

AMS ELINT system AEOLOS offers electronic intelligence in the 0.5-18 GHz frequency bands (L, S, C, X and J bands) with optional extension to 30-36 GHz.



GENERAL FEATURES

The AEOLOS ELINT system provides both manual and operator assistance (automated) modes of operation designed for radar signal detection, identification and direction finding of military, paramilitary naval air force and commercial radar signals. Manual modes of operation provide precision collection, statistical display, visualization, and identification of collected intercept. Operator assisted modes of operation support continuous scanning of frequency ranges of interest for activity and subsequent collection/analysis.

CAPABILITIES OUTLINE

The AEOLOS ELINT System has the following capabilities:

- Detection of non-comms signals over the 0.5-18 GHz frequency range
- Optional extensions available above and below the 0.5-18 GHz frequency range, especially at 30-36GHz range.
- Manual and Automated modes of operation supporting identification and direction finding
- Designed for precision detailed technical ELINT collection and analysis
- Wide 2000 MHz bandwidth for capturing modern, frequency agile emitters, high probability of intercept
- Standard 25 and 75 MHz narrow bandwidths for high precision signal measurement
- Optional addition of up to two narrower bandwidths for increased sensitivity(1, 5, 10 MHz)
- Algorithmic PRI deinterleaving support for up to 32 stagger levels with 10% jitter processing
- Real-time amplitude vs. frequency display with up to four accept/reject qualification boxes
- Real-time amplitude or frequency vs. latched pointing angle displays
- Full control of hardware and software settings via the software interface
- Software control architecture based on HTML web pages and JAVA real time updates programs for maximal host flexibility and extreme network friendliness
- Software control interface is easy to use and based on “Internet Explorer” friendly principles
- Current emitter displays with activity shown as detected across one or more bands of interest
- Real-time and post processing displays aid operator in signal separation, identification, analysis, and capture
- Support for external centralized database program that interfaces with one or more datasets to pass back matched emitter information; isolation of classified databases

- Local mission database can contain up to 9999 entries consisting of scan ranges of interest, previous emitter intercepts, or known database entries
- Perform scans and searches against the local Mission database or external database interface on a timed or continuous basis.
- High speed storage interface support to transfer collected radar data (PDWs) to external digital media(USB, LAN)
- Video Intrapulse collection capability and tools for visualization/analysis
- 360^{o} Instantaneous field-of-view using the Omni-directional antenna
- High gain, directional DF antenna supports spin, point, or sector modes
- Small, lightweight antenna assembly designed for use in mobile applications or fixed sites
- System can be used for radar surveillance and spectrum monitoring
- Built-in test hardware and software diagnostics for evaluating the system performance
- Storage of up to 1.000.000 Pulse Descriptor Words for capturing and processing diverse or agile signals
- Open VME architecture for flexibility and growth
- Up to 6 open PMC slots and 4 VME (6U) slots for addition of new features or customer related hardware

FRONT END SOFTWARE CONTROL ARCHITECTURE

The AEOLOS ELINT system passively collects, stores, analyzes, deinterleaves, identifies, and determines the line of bearing of substantive majority of radar emissions. The system is combined with high performance Windows 2000/NT/XP based workstations to control the equipment of the system and as a central data repository for further distribution into the command hierarchy.

Combined with the high performance hardware, a simple to use next generation network friendly command and control interface is provided. This interface, based on HTML (Web) and java programming, provides numerous graphical displays, algorithms, and features designed to provide real-time data presentation, collection, as well as enhanced post-processing analysis and storage of data.

PRECISION COLLECTION MODES

The system provides manual and automated modes of operation to support the wide variety of desired customer related ELINT, ESM, and frequency Monitoring applications. In manual modes, the system is designed to allow the operator to perform precision control over all hardware settings, visually

monitor and decide on emitter activity of interest, then selectively collect pulses that are within operator defined amplitude, frequency, pulse width, and pointing angle envelopes.

Once collected, emitter activity can be visualized, processed, analyzed, edited, reviewed, and stored onto hard disk. Particular attention has been paid to the design of the system to provide convenient and powerful tools to the operator to understand, both visually and statistically, and manipulate the collected data.

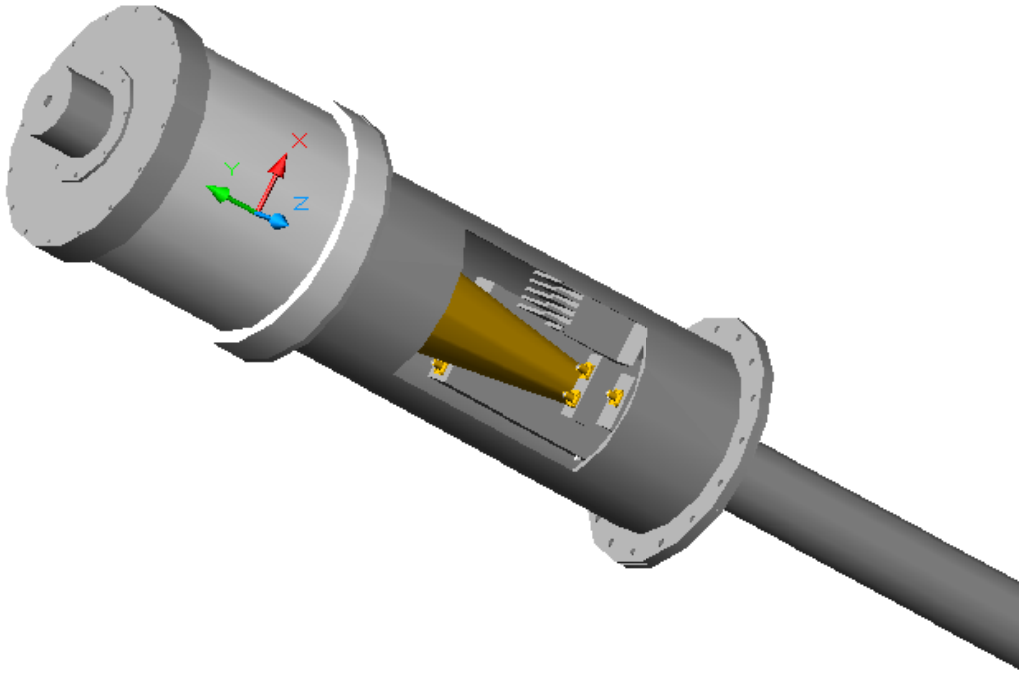
AUTOMATED COLLECTION MODES

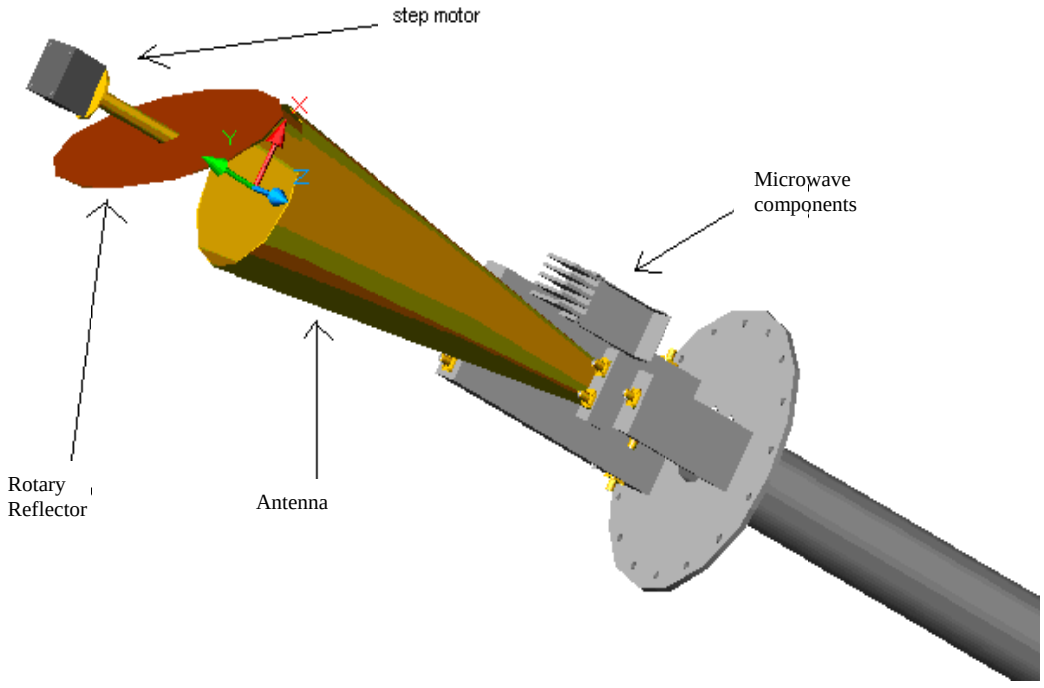
In the automated modes of operation, the AEOLOS ELINT system provides computer controlled acquisition across one or more frequency ranges of interest, previous intercept re-visits, or known database entries. In effect, depending upon the data that is loaded in the local mission database, the system can operate in various modes.

For example, the load mission database can be loaded with known emitter database entries, to monitor specifically known emitters. In other cases, previous intercepts can be retrieved from current activity list, or installed manually to monitor an intercepted emitter. In the more general sense, frequency ranges of interest can be loaded and automated collection activity will occur for the given range of interest.

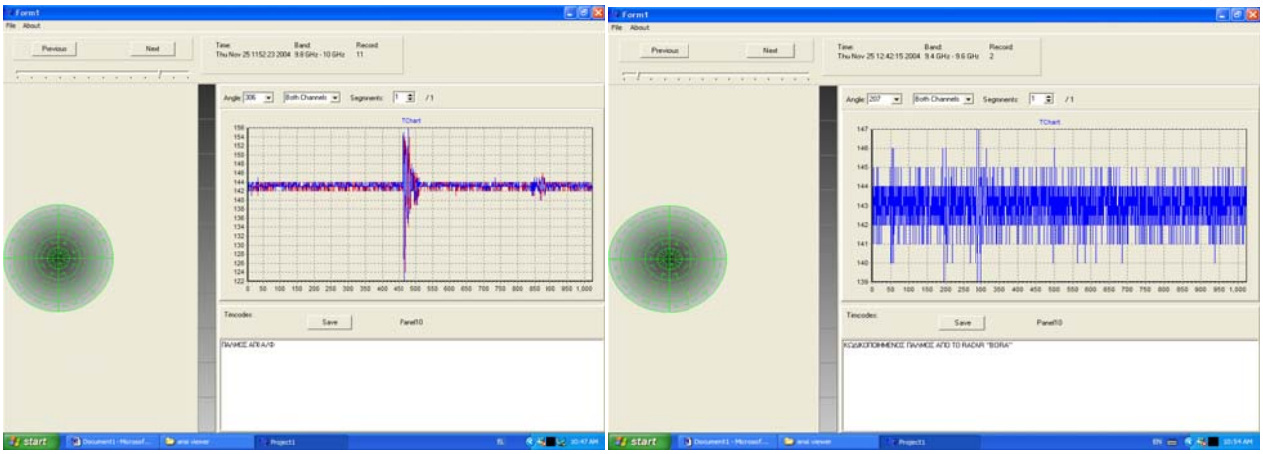
SIGNAL IDENTIFICATION

Signal identification, while in manual or automated modes of operation is provided using comparisons to the local mission database, or via the external database interface that is designed into the system. It is critical to node that the external database interface requires that the customer provide the intermediary program that allows the AEOLOS ELINT system to interact with pre-existing databases of information. The interface specification is provided as part of the system so that the customer can accomplish interfacing.





AEOLOS Rotating Reflector Antenna: Continuous azimuth rotation is possible with this type of antenna without rotary contacts



AEOLOS Software typical views: Note that both pulsed and CW radars are analyzed at the same time

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