

THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

Argus

Enabling actionable intelligence through enhanced visualization

Argus is an ISR PED application that facilitates COMINT Data Collection and Mission Forensics for Northrop Grumman's Airborne SIGINT Product Line sensors, including the CSS-1500 and CSS-4000. Argus leverages data visualization technology to provide an interactive, dynamic environment for large scale data analysis. The data collection capability provides a new paradigm for collecting and visualizing COMINT data. Argus supports both real-time and forensic processing of collected COMINT data. It greatly eases the operator workload, and provides the SIGINT analyst with powerful tools to rapidly assess the signal environment.

Argus processes and analyzes the SIGINT data collected from the Airborne SIGINT sensor. This provides a data mining capability that gives analysts tools to visu-

alize data and then sort, organize and categorize it dynamically, resulting in correlations and trends that become immediately apparent in visually interactive formats including heat maps, customizable graphs, and geospatial displays. Argus is ideally suited for performing SIGINT **Mission Optimization, Visualization of Collected SIGINT Data and Threat Discovery.**

Argus can connect directly to a live mission, or can process data from past missions allowing users to playback mission events from multiple missions. Interaction with the mission and sensor is exposed through a streamlined graphical user interface, enabling rapid collection modifications and providing immediate visual feedback on the mission's collection. Forensic views of the data are integrated with mission management and sensor control,

integrating fusion capabilities with mission execution. Analysts, evaluators and trainers can leverage the playback of previous missions to review operator performance, evaluate mission management decisions, or provide a realistic training environment with real mission data.

Argus thrives on information, and can ingest data from multiple missions at once, enabling longer term strategic analysis and trend identification. It is a vital tool for effectively analyzing the rapidly increasing number of COMINT sensors. Argus supports the analyst paradigm shift from the 1:1 ratio and enables analysts to handle information from multiple platforms simultaneously, fusing all intelligence into a coherent picture, while maintaining the ability to filter data for a single mission or sensor.



- Rapid mission analysis playback – to find targets of interest
- Mission optimization – including collection, training, and reporting
- Real-time threat exploitation – liberates the operator
- Can operate in a DCGS environment
- Point and click operator accelerators

Argus also integrates Northrop Grumman’s “Arrow” Instantaneous Geolocation technology. This has significance both for those executing the mission and in post mission analysis. Currently during a mission crews need to wait to collect enough LOPs to produce a geolocation on a high-priority signal. With Arrow and Argus, crews can derive the location instantly, and pass time-sensitive information onto the supported units. Analysts using Argus for post-mission analysis can produce their own geolocation from the mission information, regardless of whether or not a collection operator tasked the sensor during the mission.

Increased Situation Awareness

Currently, Situational Awareness (SA) tools are either integrated with the sensor on 2D UNIX workstations, or partially integrated with the sensor on Windows workstations with *Google Earth’s 3D geospatial interface. Argus is able to bring full sensor information to the Windows environment with a rich *NASA World Wind 3D map interface and familiar user interface. LOPs are drawn in real-time, and layers are easily turned on or off for

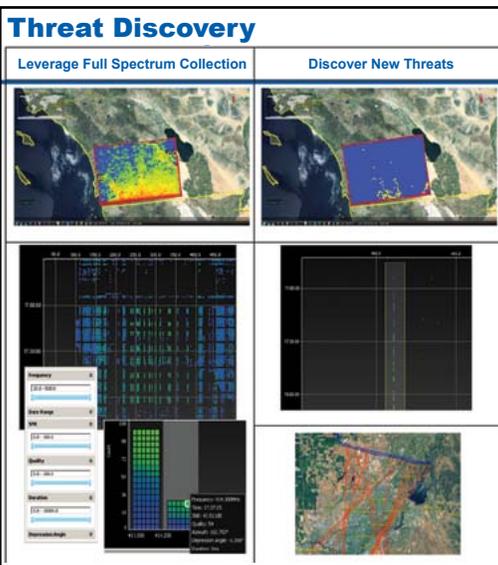
quick customization. Modes for following the aircraft are provided that include 3D top viewing. Using Arrow, SIGINT analysts can quickly associate LOPs and produce a geolocation from current or past data. Combined with the playback feature, crews now have a DVR-like interface for the mission enabling rewind, pause, and fast forward. The playback is coupled with the moving map above, so crews can observe the aircraft flying while LOPs are drawn on the map. The playback interface also shows a quick overview of collection results during the mission.

Signal Data Visualization and Forensics

One of the biggest barriers to effective fusion of derived mission SIGINT is the ability to process large amounts of data and present it in an intuitive form. The most powerful aspect of Argus is the SIGINT forensic tools which combine filter criteria, graphs, and a heat map geospatial overlay. Argus has the ability to process data from multiple missions so that trends and patterns can be quickly discovered

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Argus features:

- Real-time and playback modes
- Mission playback and forensics tool – supports mission planning, CONOPs development, and operator training

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