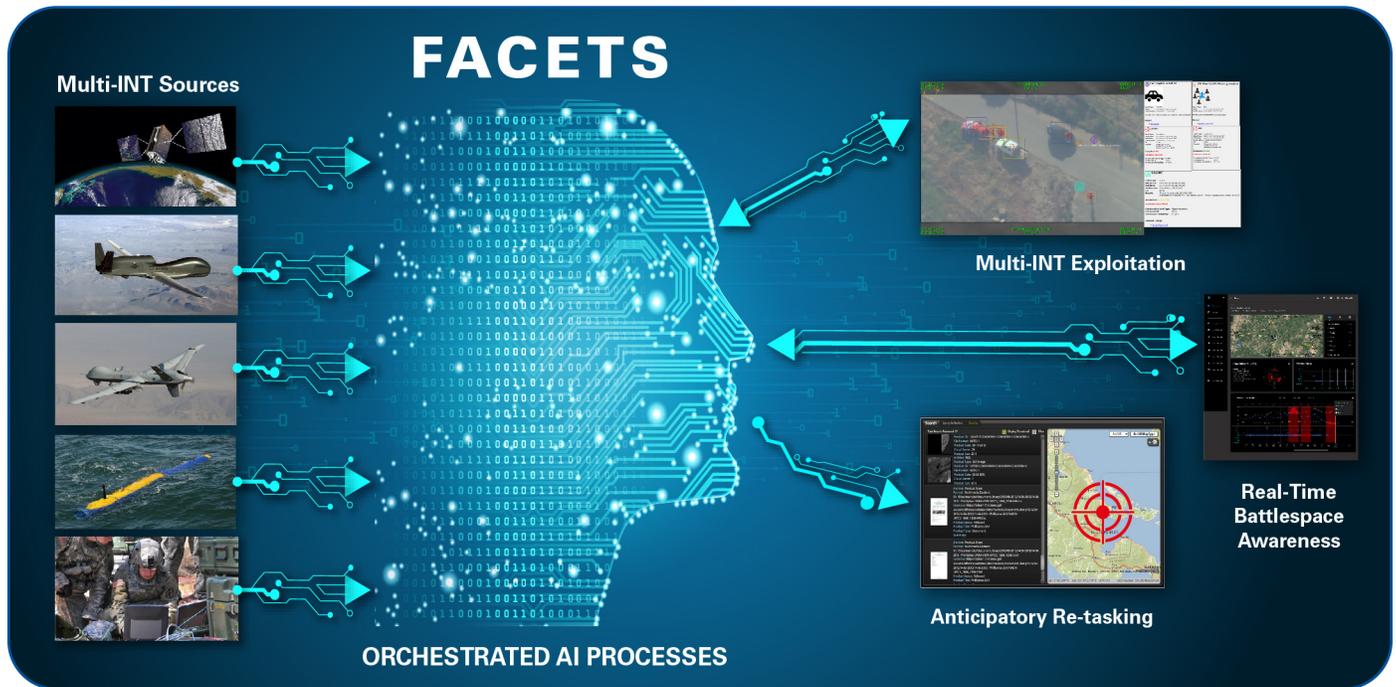


FACETS

Fusion Analytics Core Element Transaction Services



Overview

General Dynamics Mission Systems' Fusion Analytics Core Element Transaction Services (FACETS) enables customers to enhance and automate their existing capabilities to reduce the analysts' cognitive burden. This includes automated algorithm deep learning, object detection and characterization, and correlation and fusion of information from multiple sources and INTs. Correlation increases the confidence that an object is a specific type or its relationship with other entities has a specific attribute. FACETS then utilizes the fused data in our mathematical models to alert users of objects or areas of interest. FACETS solutions support missions across land, air, sea, space, and cyber domains.

FACETS provides higher-value intelligence through Human/Machine Collaboration and provides the following benefits:

- Automatically correlate extracted object information across multiple INTs to improve object recognition and characterization.
- Derive object of interest by aligning with key indicators and analytic models through probabilistic and mathematical inference.
- Deliver the objects for low-bandwidth transmission and presentation in existing Common Operating / Intelligence Picture (COP/CIP) interfaces.

Features

- Plug and play any algorithm
- Orchestration of data flow
- Algorithm chaining
- Interface with other tools quickly
- Build your own processes
- Configure in production
- Scalable
- Load balancing

General Dynamics Mission Systems' FACETS was honored as an Industry Innovator as part of the Public Sector 360, 2019 Government Innovation Awards.

Assured Data Transport

A combination of repositories working together to store and keep track of data as it is sent through the FACETS ensures delivery from source to destination. FACETS is scalable with intuitive coordination between each node in a cluster to accommodate the specific performance needs per site.

Build Your Own Processes and Services

Create tailored processes and plug them directly into dataflows during operations to meet real-world demands. In addition, FACETS supports custom developed controller services to provide common resources such as SSL context, databases, connections to external servers, and more.

Reduce Manual Load on Users

Purpose-built processes in FACETS automate tasks, such as the creation of clipmarks from objects detected in full motion video (FMV), minimizing the load on analysts. Client applications connected to FACETS receive information from sources like algorithms, services, and other applications and display that information seamlessly to the user.

Secure Dataflow Pipelines

FACETS employs the use of encryption protocols for the exchange of data to secure information in transit and at rest. Access to data is controlled using pluggable authorization and is determined based on permission level i.e. read-only, administrator, manager, etc.

Real-Time Processing

Adapters are included in the FACETS to route full motion video from its source to any destination desired for processing, algorithm training, exploitation, etc. FACETS ingests output from the exploitation of full motion video and translates the data into formats ingested by client players and other tools.

Data Provenance

A lineage of the data passing through the FACETS is recorded for traceability within each dataflow. Movement of data from source to destination, including all intermediate points, is visible for continuous optimization of the dataflows.

Example Use Cases

The FACETS orchestrated AI processes supports a variety of mission use cases. For example:

Multi-INT Exploitation - FACETS anticipates analyst needs based on areas of interest or mission needs and automatically correlates available data from multiple sources. FACETS presents the correlated data in existing exploitation tools for improved context and situational awareness.

Left of Launch - FACETS automates tracking and custody of targets of interest; fusing data across sources to characterize the activity at the site. FACETS continually assesses activities and events against activity models and notifies users or systems that a launch is imminent.

Real-Time Battlespace Awareness - FACETS delivers fused Multi-INT data to common operational pictures (COP) allowing military operators real-time SA of the battlespace. Processing is orchestrated across space and ground to fuse data from space and terrestrial intel sources. FACETS enables rapid deployment of algorithms and applications for new data sources into automated processes for improved object discovery and intent for military targeting or tracking.

Anticipatory Re-tasking - FACETS automates sensor-to-shooter target custody tracking timelines through anticipatory models and optimizing re-tasking based on available intel resources. Processing is pushed to the point of entry at the sensor and optimized to available compute resources.

Technical Specifications

- Runs on the following Host Operating Systems:
 - Linux
 - Unix
 - Windows
 - Mac OS X
- Requires Java 8 or newer
- Compatible with the following Web Browsers:
 - Google Chrome
 - Mozilla Firefox
 - Microsoft Edge
 - Safari
- Deployable as a Docker image in a containerized environment