



Cielo™ is the software component of the Orlaith™ Ecosystem - a multi-purpose platform delivering near real-time intelligence through advanced algorithms, Earth observation (EO) processing, signal intelligence, and control system automation.

Paired with FeatherEdge™, the hardware platform enabling resilient, low-latency communications and networking, Cielo™ transforms raw space-based data into actionable insight at the edge.

Powered by AI, machine learning, and data fusion, Cielo™ brings autonomy, precision, and reliability to government, defense, intelligence, and commercial missions.

Key Benefits

- » **Actionable Data Services** - Delivering low-latency insights, data visualization, and intelligent networking with data fusion capabilities for mission success
- » **Intelligent Mission Execution** - With AIS collection, radio occultation, and data analytics for optimized mission performance and military communication
- » **Advanced Data Handling** - Featuring preprocessing, georeferencing, and machine vision capabilities for actionable intelligence and informed decision-making
- » **Algorithm Deployment** - Mission planning, deployment, and control with containerized virtual platform for 3rd party algorithm deployment

Capabilities



Algorithm Deployment

Mission Planning, Deployment, and Control

- » Containerized Virtual Platform for 3rd party algorithm deployment

Control System Automation

Predictive Maintenance

- » Monitor trends in health and status data on board the satellite

Power System Management

- » Intelligent system monitoring

Rendezvous, Proximity Operations, and Docking (RPOD)

- » Machine vision informing attitude and range for Closed-Loop Guidance

Data Services

Data Delivery

- » Low latency insights
- » ESRI for data visualization and segmentation

Intelligent Networking

- » Data fusion

Earth Observation Data Handling

Preprocessing L0 to L1B

- » Georeferencing
- » Atmospheric correction
- » Sensor-specific radiometric correction
- » Model camera system layout
- » Pixel co-registration

Machine Vision

- » Fire detection
- » Image tiling and restitching
- » Change detection
- » Object detection and classification
- » Event detection
- » Environmental analysis

Mission Execution

AIS Collection (Ground and Space-based)

- » Raw data packet collection
- » Derive data and analytics from raw data packets

Radio Occultation

- » Inform high frequency wave propagation for military communication