

# VANTAGE™

## Rapid Processing of Digital Tactical Data



The Space Dynamics Laboratory (SDL) developed the VANTAGE software to process digital intelligence, surveillance, and reconnaissance data in near real time to generate and distribute analyst-ready products.

Used by all branches of the US military, this robust software system's easy-to-use visual interface provides real-time insight into mission processing performance and is simultaneous-mission capable. Its forward-thinking design enables data conditioning and data analytics, including integration with machine learning algorithms.

The VANTAGE system is customizable and can adapt to a variety of mission objectives and scenarios. Its plugin framework enables customized product generation workflows using predefined and custom components. VANTAGE supports Linux and Windows and is accessible through a web-based browser interface. The system is scalable and extensible for multiple platforms and algorithms. Implementation options range from a single workstation up to a distributed, high-performance computer cluster.



### FEATURES

#### Near Real-Time Ingest

- Streamlined integration of sensor & platform data
- Multi-INT sources, including single- & multi-band electro-optical/infrared (EO/IR), synthetic aperture radar (SAR), hyperspectral (HSI) & multispectral (MSI), full motion video (FMV) & moving target indicator (MTI)
- Multi-mission/instrument support

#### Extensible Framework

- Plugin software development kit enables algorithm integration without altering VANTAGE
- Third-party algorithm integration including:
  - Machine learning
  - Automatic target recognition
  - Object detection
- Enables intellectual property protection
- Unclassified framework that supports algorithm integration at multiple security levels
- Cloud deployable

#### Product Formation

- Mosaic/product generation
- Configurable dataflows
  - Multiple data paths/processing chains
- Near real-time generation of analyst-ready products

#### Data Conditioning

- Sensor platform data conformance to industry standards
- Metadata calculation
- Anomaly correction

#### Data Distribution

- Compression
- Multi-protocol support
- Rapid data transfers across wide-area, high-latency networks, enabling near real-time decisions

## SOFTWARE OVERVIEW

### Data Acquisition

- Real-time Common Data Link (CDL)
- Local disk/RAID
- DVD/CD
- TCP/IP stream
- FMV & MTI

### Image Screening/Display

- Near real-time display of georectified thumbnails
- On-demand display of full-resolution images
- Image zoom, pan, rotate & magnify
- Latitude/longitude & north indicators
- Annotation data display
- NITF file header display

### Image Product Storage & Sharing

- Distributed output plans
  - FTP, SFTP & network copy
  - File output can be modified for classification, filename, or specific NITF header fields
- Print/save/copy to clipboard
- Display/export NITF 2.1, JPEG 2000
- Store & query data in the VANTAGE database
- DCGS Integration Backbone (DIB) interface

### Full Motion Video

- MPEG-2 & H.264 video compliant
- KLV metadata display
- Video products (NITF, JPEG, video clips)

### Situational Awareness

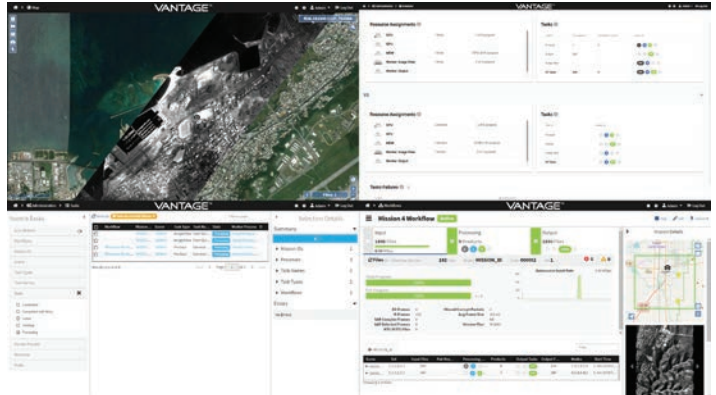
- Ability to show sensor & air vehicle situational awareness
- Cue display (manual & automatic cues)

### Compatibility

- Windows & Linux Rocky
- National Imagery Transmission Format Standard (NITFS)
- Basic Image Interchange Format (BIIF)
- ISO/IEC 12087-5
- Motion Industry Standards Profile (MISP) compliant

### Usability

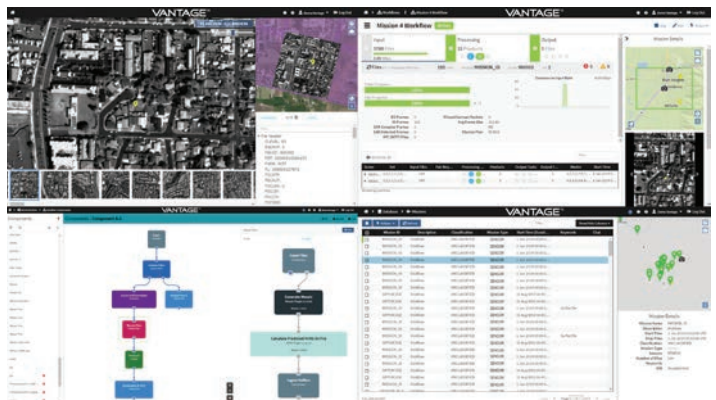
- Modular/expandable design to support additional sensors & data devices
- User-friendly, web-compatible interface



Workflows enable customized data flow configuration based on mission needs.



Users can screen imagery from an active workflow or the database for detailed inspection and analysis.



The FMV Viewer enables users to play and manipulate video streams from live and stored data.