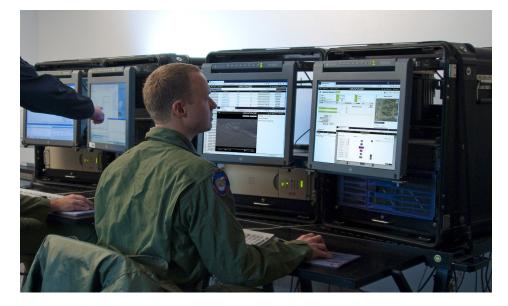# VANTAGE

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 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. The cross-platform system works with Linux and Windows, is accessible through a web-based browser interface, and is extensible for multiple platforms and algorithms. VANTAGE is also scalable; implementation options range from a single workstation up to a distributed, high-performance computer cluster.

FEATURES

Near Real-Time Ingest

- Supported sensors & platforms include, but are not limited to, SYERS, ASARS, ATARS, LSRS
- 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)

Extensible Framework

- Plugin software development kit
- Third-party algorithm integration
  - Enables intellectual property protection
- Unclassified framework

Data Conditioning

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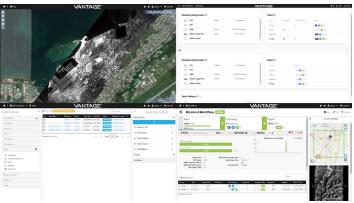- Metadata calculation
- Anomaly correction

Data Analytics

- Third-party algorithm integration, including machine learning
- Near real-time generation of analyst-ready products

Product Distribution

- Compression
- Multi-protocol support

VANTAGE Rapid Processing of Digital Tactical Data

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.

SOFTWARE OVERVIEW

Data Acquisition
- Real-time Common Data Link (CDL)
- STANAG-compliant solid-state recording devices
- Local disk/RAID
- DVD/CD
- TCP/IP stream
- FMV & MTI

Product Formation
- Mosaic/product generation
- Plugin framework for third-party processing algorithms
- Configurable dataflows
    - Multiple data paths/processing chains

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 CentOS
- National Imagery Transmission Format Standard (NITFS)
- Basic Image Interchange Format (BIIF)
- ISO/IEC 12087-5
- STANAG 4607, 4609, 4575, 4676
- Motion Industry Standards Profile (MISP) compliant

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

SUPPORT APPLICATIONS

VIEWPOINT
VANTAGE ViewPoint displays full-resolution imagery, MTI, and FMV and enables users to manipulate image display data.

STANAG 4575 Reader
The STANAG 4575 Reader provides an interface to download data from a STANAG 4575-compliant device.

SOAR Simulator or Analyzer Router
VANTAGE SOAR enables users to perform complex data link operations using systems that interface with the Sky Lynx CDL box.

SDL