Release Enhancements

SOCET GXP v4.3

BAE SYSTEMS

INSPIRED WORK

Advanced geospatial exploitation and customized product creation combined into one comprehensive solution

The release of SOCET GXP® v4.3 represents the latest evolution in geospatial exploitation software, allowing analysts to extract maximum value from a wide range of data including imagery, terrain, LiDAR, and features. Current release enhancements include:

- A new LiDAR elevation shaving capability
- An advanced Synthetic Aperture Radar (SAR) module which uses interferometric techniques to generate coherent change detection products
- Automatic cataloging of analyst observations created with GXP InMotion™ and discovery of those comments in the SOCET GXP Multiport® using the Workflow Improvement Module (WIM)
- Display of geospatial footprint results from WIM searches to better identify coverage areas
- Expansion of direct publishing capabilities to GXP Xplorer® to support additional formats such as KML/KMZ and geospatially aware JPEGs

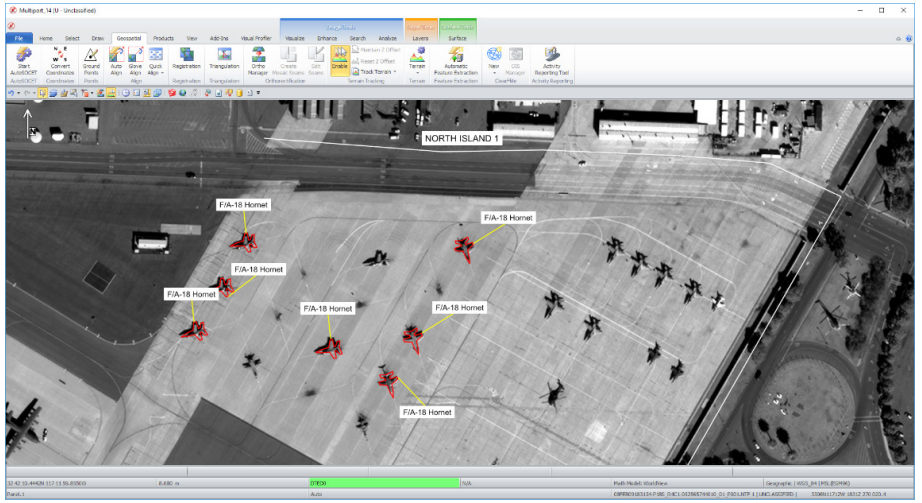
Incorporating customer feedback to significantly enhance workflow efficiencies, SOCET GXP v4.3 ensures an optimal user experience while continuing to expand upon the synergy between all of the GXP® software solutions.

Activity Reporting Tool

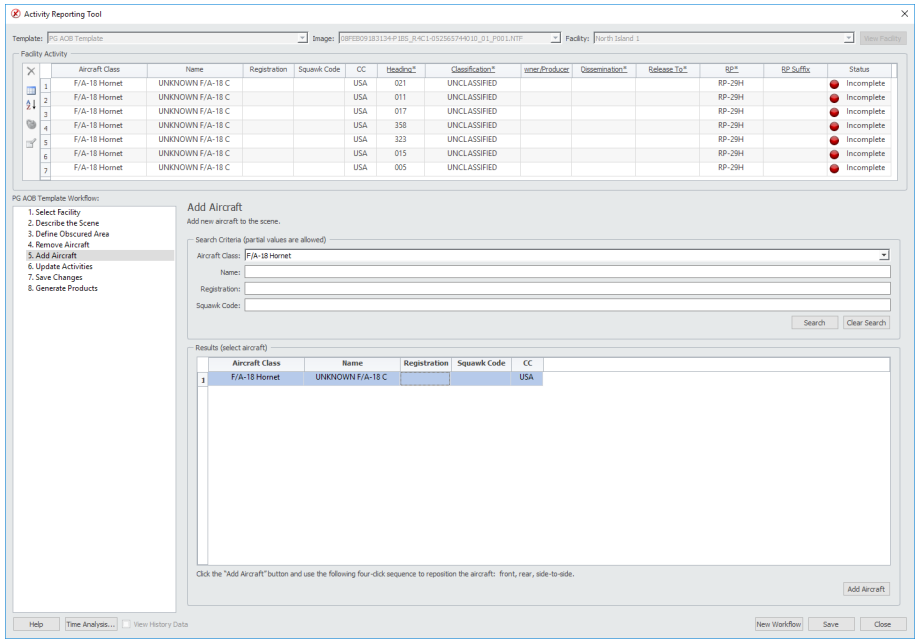
The Activity Reporting Tool (ART) is a workflow driven tool that allows analysts to efficiently create observations about activities in areas that are monitored over a period of time. A workflow wizard is provided that walks analysts through the steps and makes adding, updating, and storing object-based activity observations seamless. Analysts are presented with a table to update mandatory attributes while other attributes can be automatically populated using image metadata. Workflow steps are configurable.

Key enhancements:

- Streamline production of observations
- Monitor locations and create observations based on images taken at different points in time
- Jump interactively to areas of interest as new images are being exploited
- Customizable templates allow for rapid changes between different collection requirements
- Automatic database connection based on user selected templates
- Update attributes manually or have them automatically updated from image metadata
- Support for multiple database types



Utilize the new Activity Reporting Tool to monitor activity over areas of interest and identify activity levels over time. Imagery provided by DigitalGlobe®.



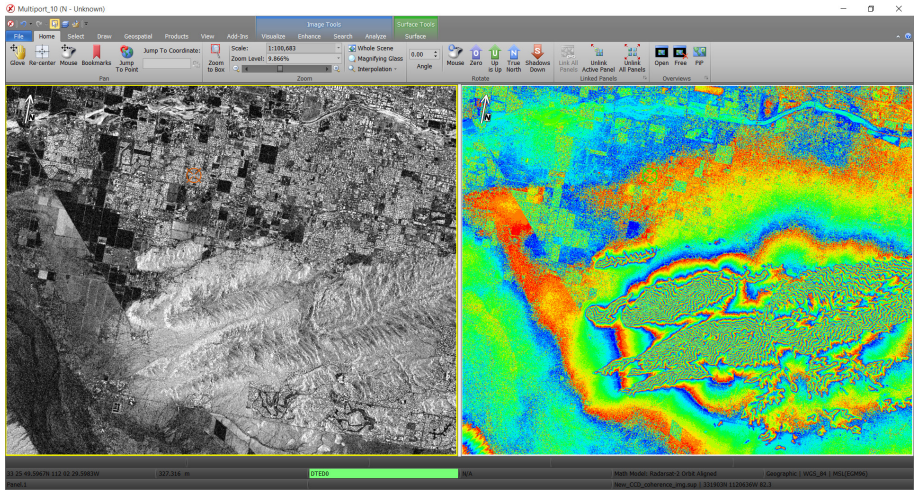
Customizable workflow wizard that guides users easily through identifying and attributing observations over a specified area.

Coherent change detection

SAR coherent change detection allows analysts to take advantage of the phase data in SAR sensors to easily detect areas of change in an image. The new SOCET GXP interferometric SAR module generates coherence images from a wide variety of sensors.

Key enhancements:

- Automatic registration
  - Full resolution
  - Up-sampled
  - Customizable point spacing
- Spatial smoothing
- Goldstein filtering
- Generation of interferograms and coherent change detection images



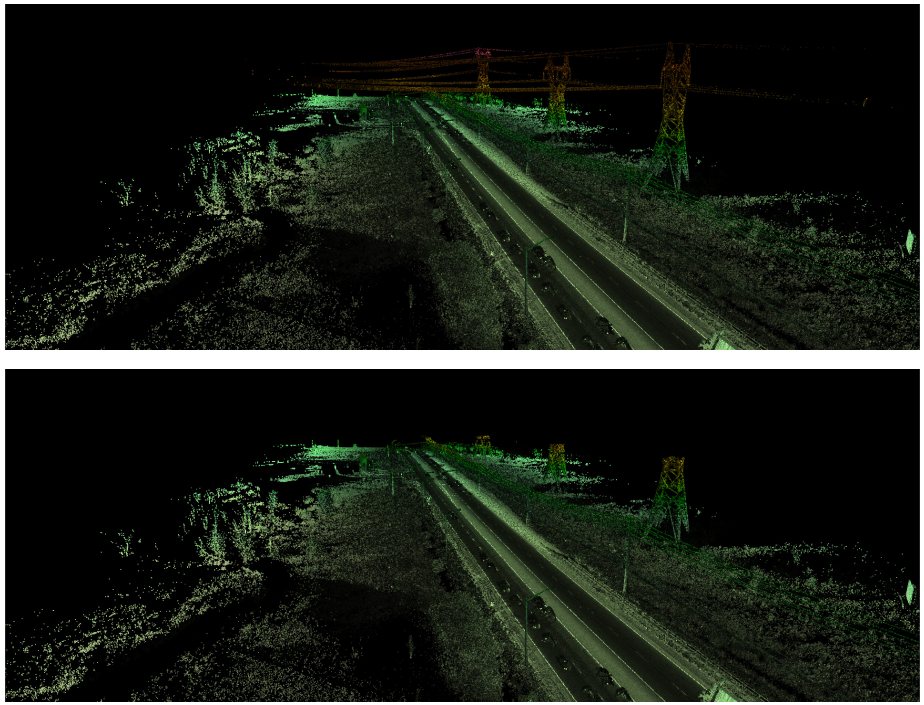
SOCET GXP Multiport showing a coherence image identifying areas of change between two SAR collects and a colorized interferogram in a linked panel. Imagery generated from RADARSAT-2 data provided by MacDonald, Dettwiler and Associates Ltd.

LiDAR elevation shaving

LiDAR exploitation continues to evolve in this latest release of SOCET GXP through improved coordinate recognition for .las point cloud files. In addition, LiDAR elevation shaving enables users to dynamically filter out points above a specified ground level, thereby allowing for the removal of clutter from a point cloud so analysts can easily identify objects of interest on the ground.

Key enhancements:

- Filter points based on a 2-D plane reference
- Filter points based on a reference bare earth terrain file
- Added support for binary point file (.bpf) point clouds*
- Updated coordinate reading from .las files



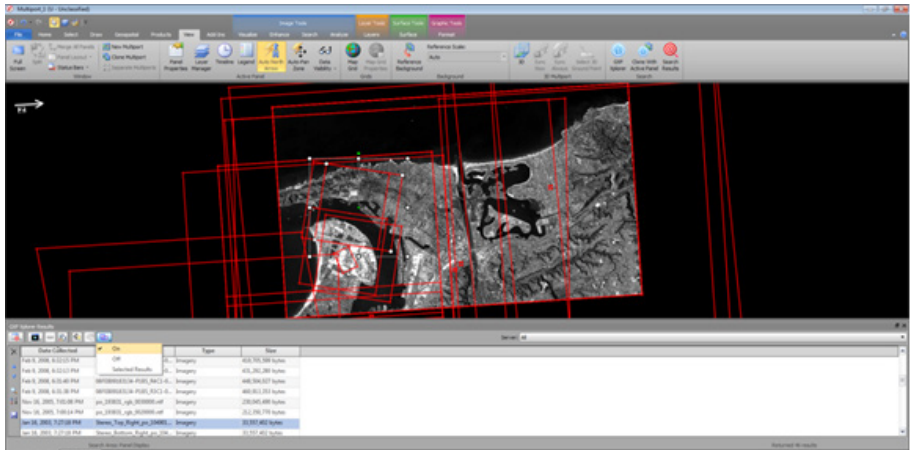
Quickly filter points above a specified ground level to visualize only the points you are interested in. © Optech Incorporated. Lynx Mobile Mapper M1 data provided courtesy of Optech.

Interoperability

The utilization of SOCET GXP and GXP InMotion Desktop in conjunction with GXP Xplorer and the GXP InMotion Video Server enhances workflows and makes sharing and exploiting data easier than ever. SOCET GXP can now populate coordinates in JPEG products, allowing for instantaneous sharing across workgroups by making them easily discoverable in the Map View of GXP Xplorer. In addition, the WIM can now access DigitalGlobe imagery from their historical catalogs that are linked to GXP Xplorer.

Key enhancements:

- Generate geospatially aware JPEG products*
  - Can be published to GXP Xplorer
- Search for historical DigitalGlobe imagery directly from the SOCET GXP Multiport using the WIM*
- Publish KML/KMZ to GXP Xplorer
- Improved spectral processing using streamed images
- Display footprints in the WIM*
- Filter results in the WIM based on time*



Display footprints for data cataloged in GXP Xplorer directly in the SOCET GXP Multiport to quickly identify alternative coverage for your area of interest. Imagery provided by DigitalGlobe.

Enhanced Control Image Base-like production

Enhanced Controlled Image Base (eCIB)-like products can now be generated in SOCET GXP. The eCIB specification adds new resolution levels for products, support for color products, and many additional options.

Key enhancements:

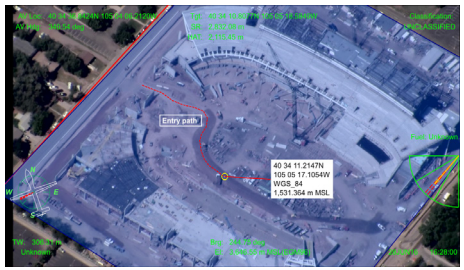
- Generate .5, 1, 2, and 5 meter products
- Support for color multi-band products
- NITF 2.1 JPEG 2K compression
- Shapefile overviews

Enhanced exploitation and product creation in GXP InMotion Desktop application

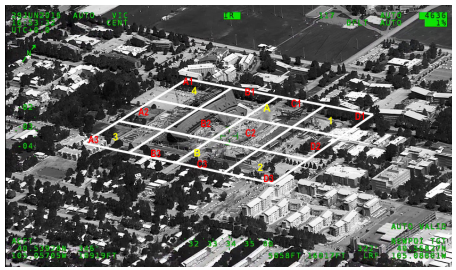
GXP InMotion has been further improved allowing analysts to create advanced products and easily share those utilizing the power of GXP's suite of products. New annotation tools enable users to draw directly on video, while playing, and additional graphics can be created in ground space allowing them to maintain spatial reference as the sensor focuses on different locations. Users can publish products and video clips created in GXP InMotion directly to GXP Xplorer making discovery and dissemination more efficient than ever.

Key enhancements:

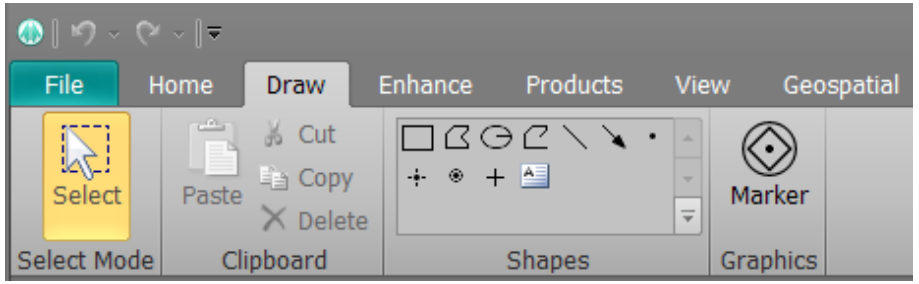
- Exploit multiple channels per mission
- Initiate missions directly from GXP InMotion Desktop
- Improved tagging of mission events
- Search for and load archived videos based on analyst comments
- Load graphics files in GXP InMotion
- Drawing tools have been added to GXP InMotion
  - Users can draw graphics in ground space
  - Points, lines, and polygons can be annotated
- Publish directly to GXP Xplorer from GXP InMotion
  - Videos
  - Clips
  - Chips
- Updated entry controls for generating analyst comments
- Updated Video Editor
  - New playback controls mirror GXP InMotion Desktop
  - Save products to Audio Video Interleave (AVI) format
- Support for H.265 High Efficiency



Annotated video with a KML overlay and graphics drawn in GXP InMotion. Data provided by L-3 EO/IR MX-15.



Video with Gridded Reference Graphic (GRG) and Sequence graphics overlaid in GXP InMotion. Data provided by L-3 EO/IR MX-15.



GXP InMotion's new Draw tab, for rapid annotation capability directly on the video.

Additional enhancements

SOCET GXP v4.3 incorporates further capability enhancements to image analysis, product creation, feature collection, photogrammetry, 3-D modeling, remote sensing, and additional workflows. In addition, advanced drawing and publishing options make creating complex products simple. Finally, new sensor models have been added to ensure the most comprehensive collection of sensor model support in the industry.

- Earth-i DMC3 sensor model
- Generic point cloud sensor model*
- SENSRB sensor model*
- Mensuration Services Program (MSP) updated to v1.5.1.1
- Support for Geopositioning Metadata Model (GMM)
- Product export to GeoPackage*
- Addition of icons and targets on Jump to Point
- Users can create graphics at a specified coordinate
- Improved Cut/Copy/Paste to retain styles for text boxes
- New minimum footprint radius for the Helicopter Landing Zone (HLZ) tool
- Users can customize which metadata fields are exported to PowerPoint®
- Users can specify pixels per inch when generating products with templates
- Allowance for explicit JPIP streaming when streaming from GXP Xplorer
- Filter for removing single point tracks
- Support for H.265 video files with KLV metadata
- Option for autosave and recovery of GXP InMotion activity log
- New API test client for GXP InMotion

** Items were patched into v4.2*

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