GXP® Desktop v4.6.0 cumulative release enhancements

Evan Miller
GXP Product Development

Height 265.481m

Multispectral Analysis
- Glass
- Steel

BAE SYSTEMS

GXP Desktop v4.6.0.0 release enhancements

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GXP Desktop v4.6.0.0 release enhancements

- This presentation contains the enhancements included in SOCET GXP® and GXP InMotion™ released December 19th, 2024.

  - GXP Desktop software are full installations.

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SOCET GXP v4.6.0.0 release enhancements

BAE SYSTEMS
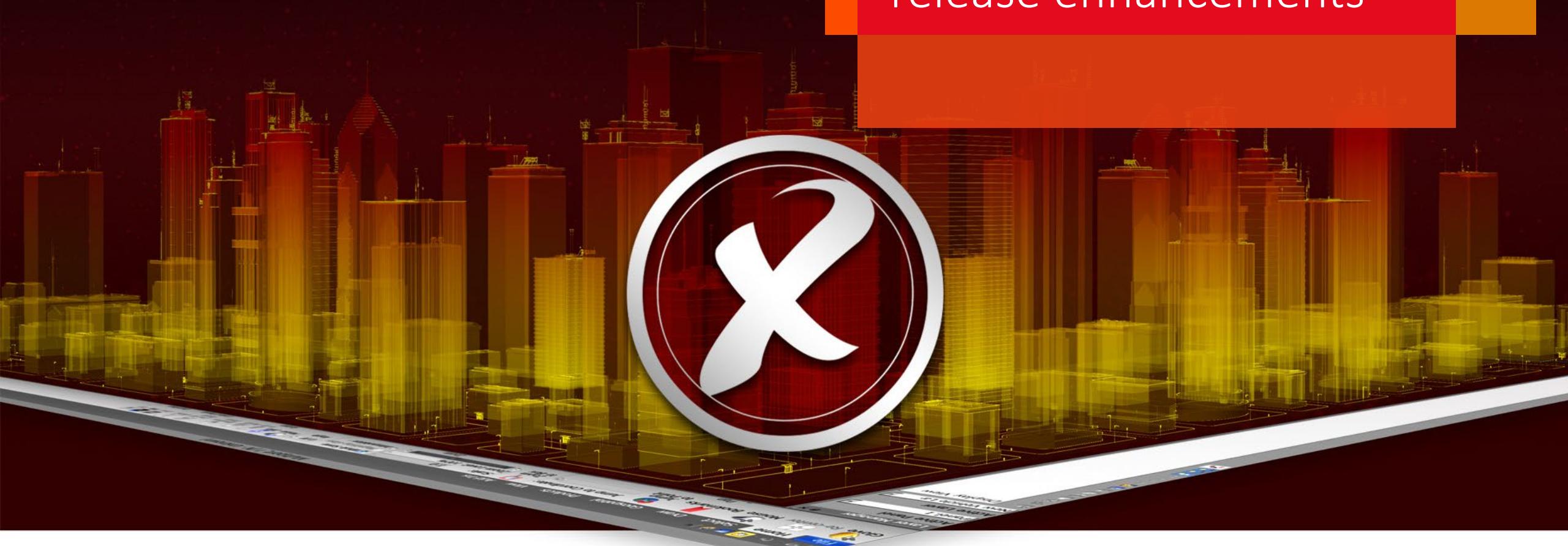
Infrastructure updates

- Added support for Microsoft Windows® 11.

- Removed LEAD video filter dependencies.

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API updates

- Added the ability to set camera parameters in the 3D Multiport^{TM}.

- Removed WGS-84 dependencies.

  - Now the planetary community can use the API to make image to ground calls without having to do a conversion.

- Added the ability to toggle the 3-D North arrow in a 3D Multiport.

- Updated JavaScript® API to support:

  - Jump to Point.

  - Set zoom and rotation.

  - Create graphics/update graphics.

  - Retrieve CE/LE.

  - Textbox support.

- Redesigned API queries to handle larger datasets to get returns quicker.

  - Example: 1-1000, 1001-2000, etc.

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Trackball name preference

- We added trackball as a dropdown to allow users to quickly select their input type.

Input controls preference
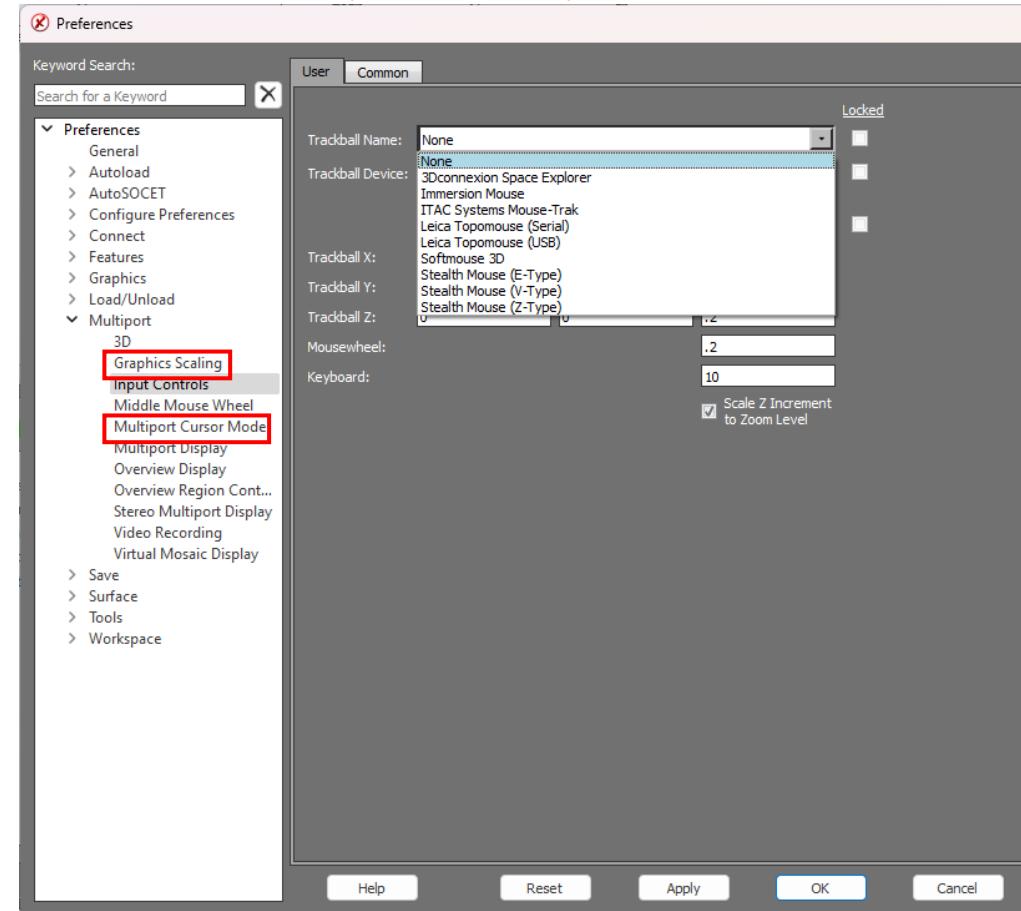
Preferred Streaming Protocol preference

- Allows users to select how they want their imagery streamed into SOCET GXP from their GXP Xplorer® Platform server.

Streaming protocol preference
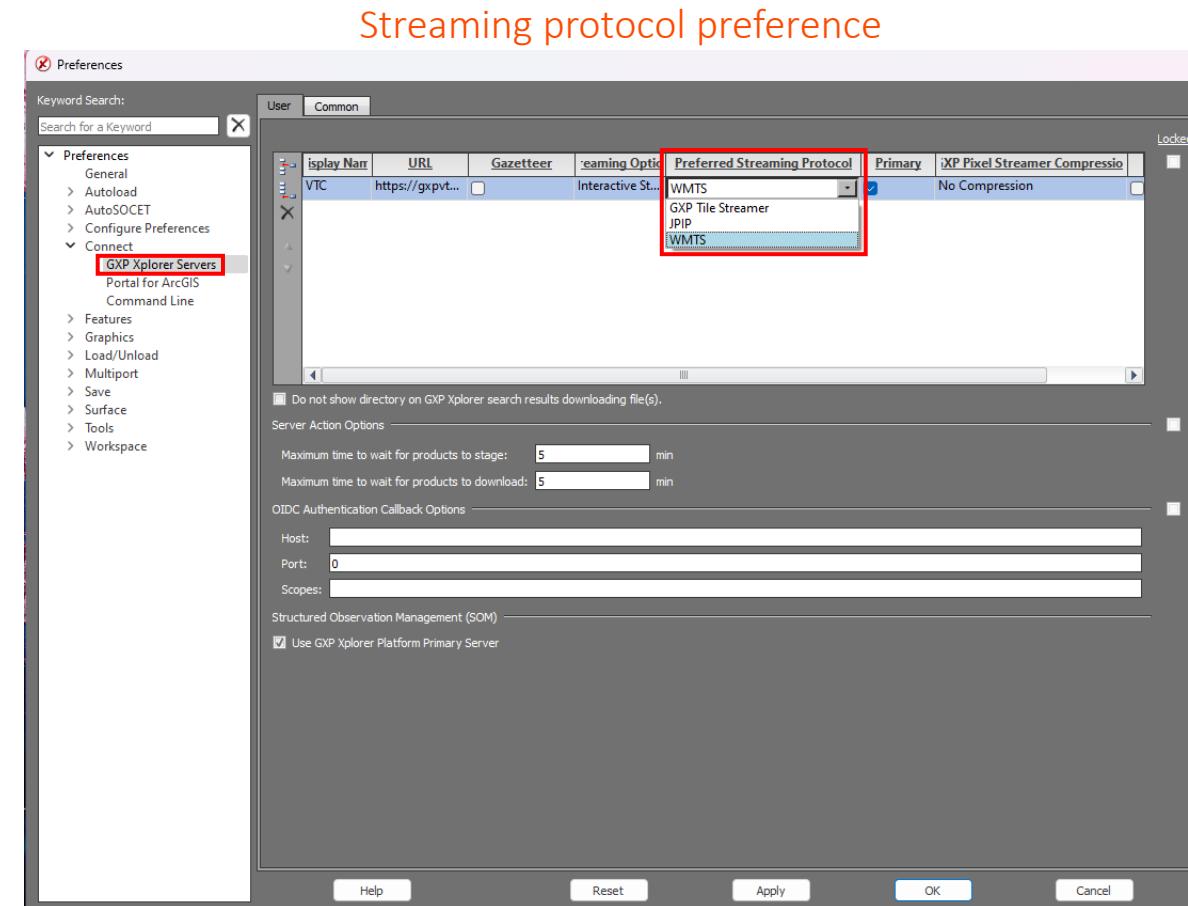
Quick Snap Hotkey

- Allows users to quickly snap to a point using a hotkey.

  - Insert Vertex must be enabled.
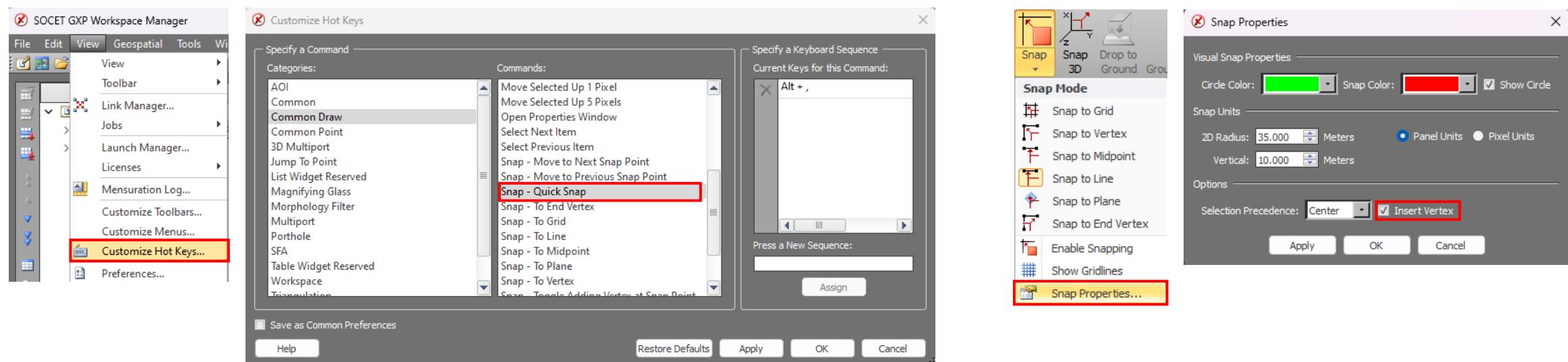
BAE SYSTEMS

Map Background functionality

- Users can rename Map Backgrounds in Preferences and in the Multiport.

Map Background Preference
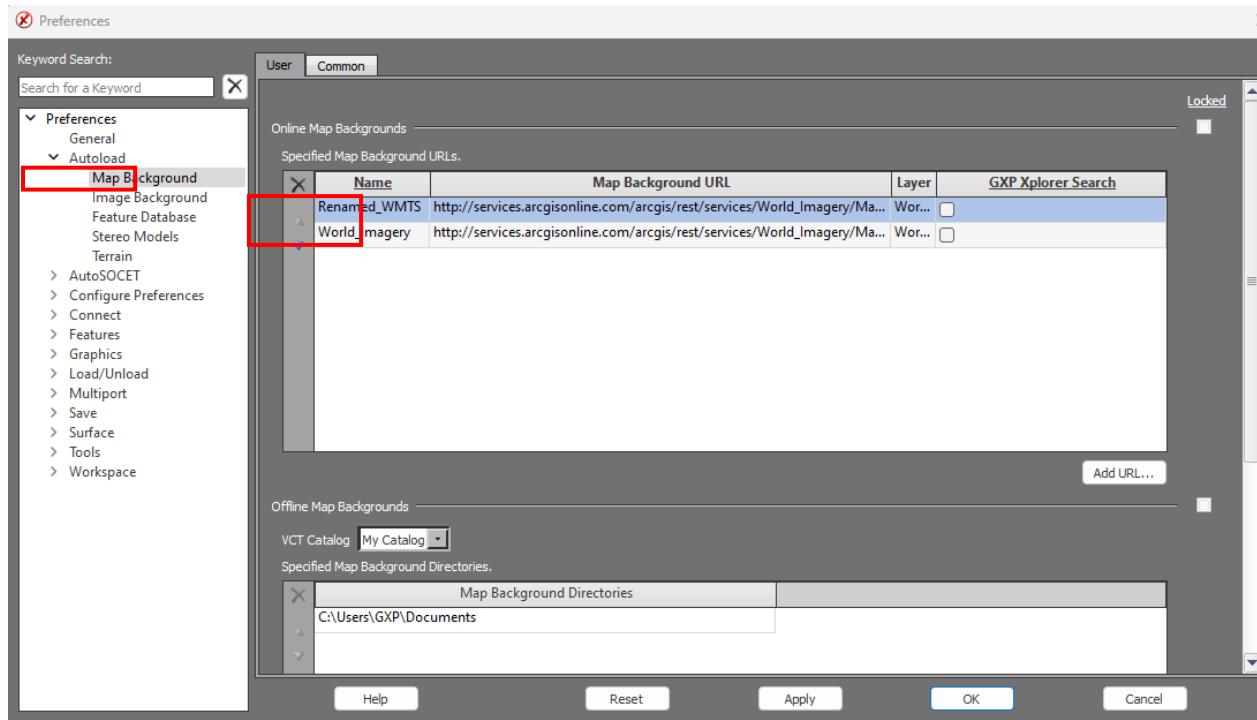
Map Background Rename from Multiport
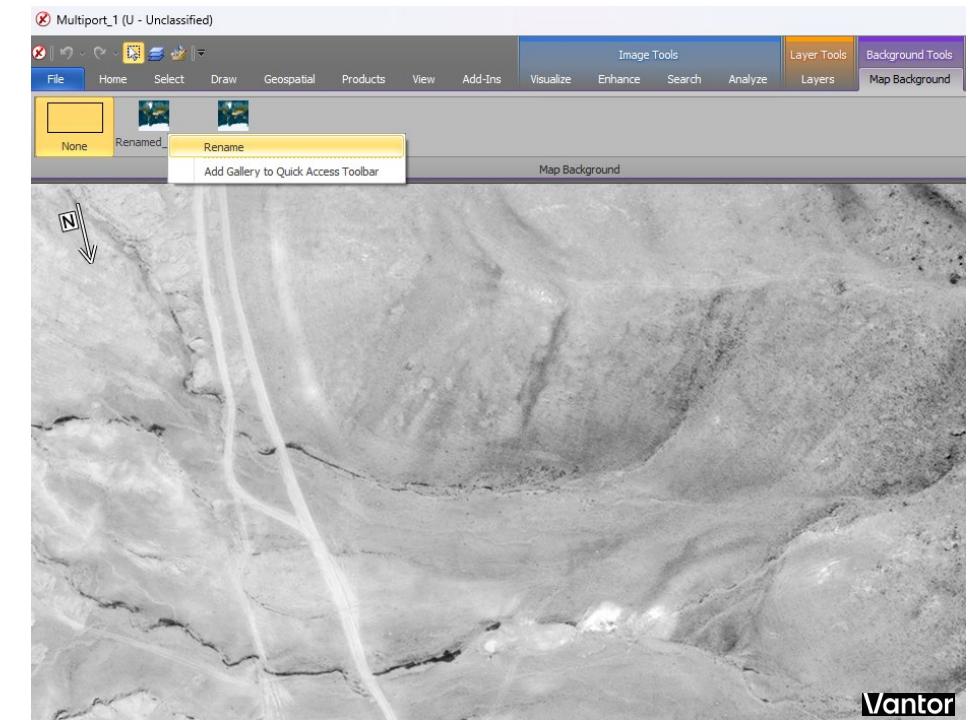
Map Background thumbnails

- Map Backgrounds are now easily identified by their thumbnails in the Multiport.

Map Background Thumbnails

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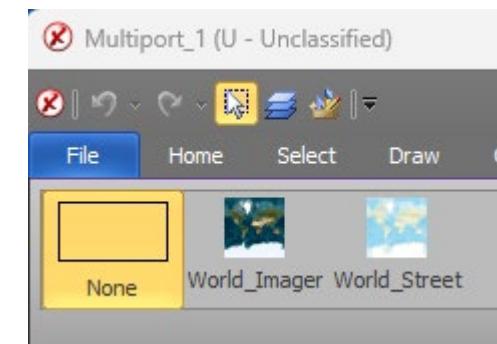
Non-Earth Registration (NER) load/save

- Allows users to load previously saved NER work.

- Enables users to save work prior to workflow completion.

NER button location
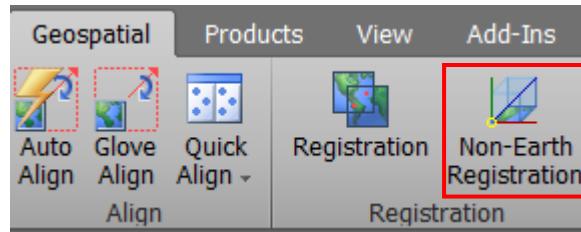
NER Open/Save button
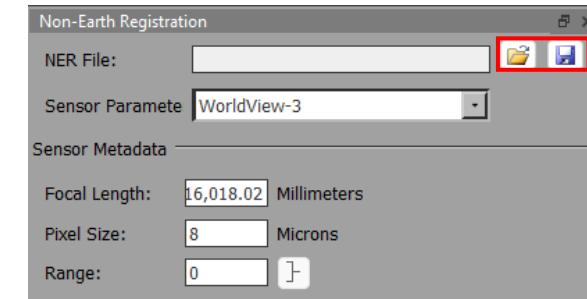
BAE SYSTEMS

Point graphics units preference

- Users can now use point size instead of pixels.

  - Maintains graphic size across different screen resolutions.

  - Can be updated on the fly.

Graphics Units Preference

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New point graphics units preference

- Example:

BAE SYSTEMS
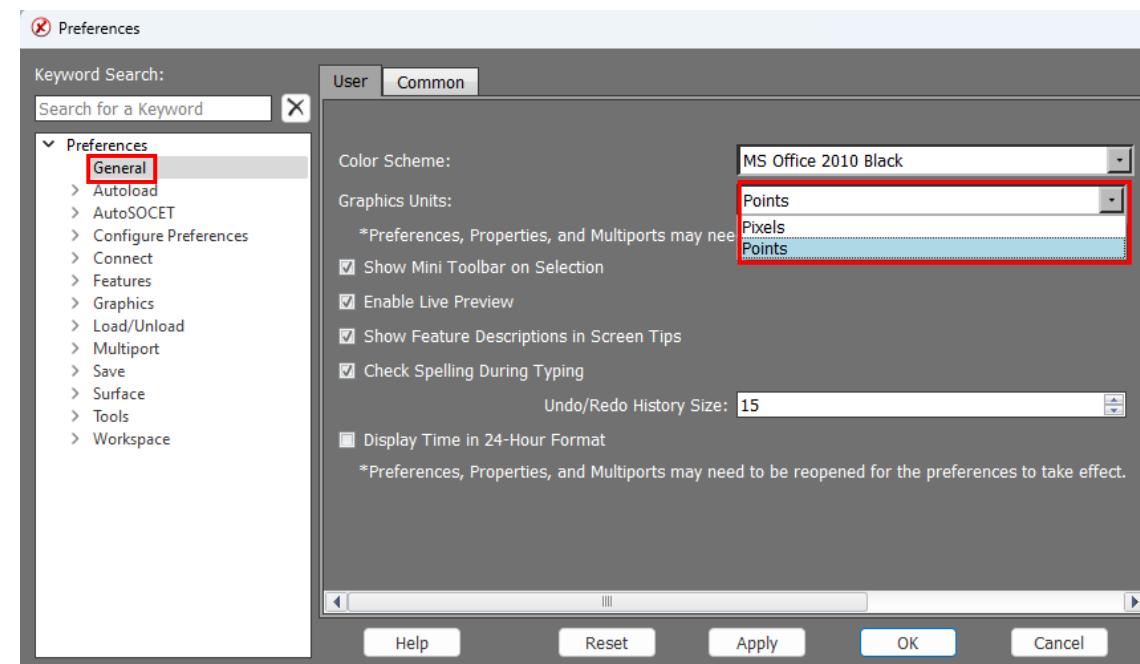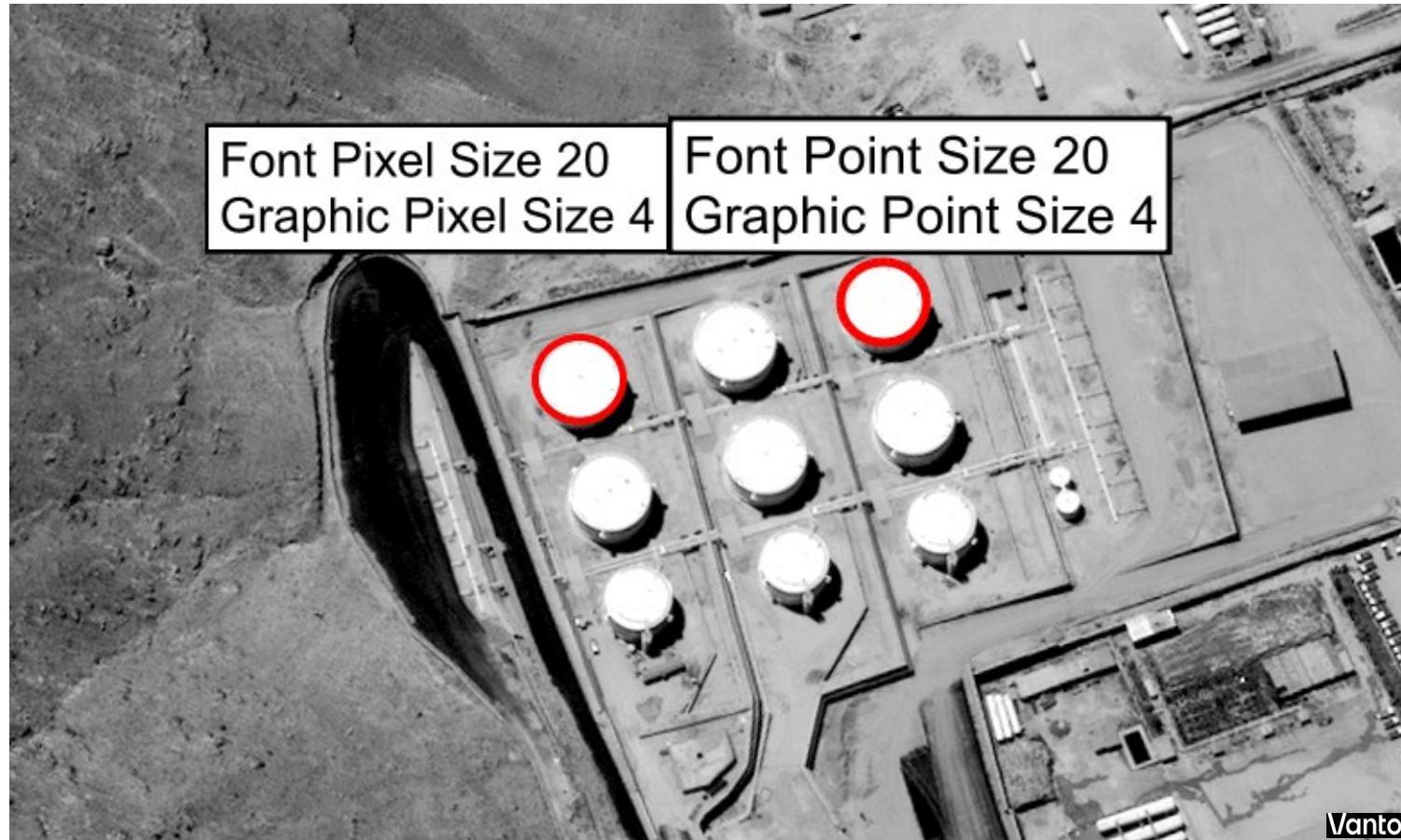
Additional new features

- Now clean up all files after an MIE4NITF file is unloaded.

- GXP Automatic Tools for Object Recognition (GATOR):

  - Added the ability to support AOI's from Ortho map and imagery.

  - SOCET GXP now gets its source classification for GATOR detections from GXP Xplorer Platform.

- Users can now populate SNSPSB records with eCIB creation.

- Optimized triangulation and terrain convert jobs to look for errant points and remove them.

- Added the ability to Skip gaps in MTI data playback.

  - If the data has a gap in coverage, it will automatically be skipped when animated.

- Added messaging to inform the user if their InSAR data isn't compatible for CCD (Coherent Change Detection) generation.

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GXP InMotion v4.6.0.0 release enhancements

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Point graphics units preference

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Graphics Units Preference

BAE SYSTEMS
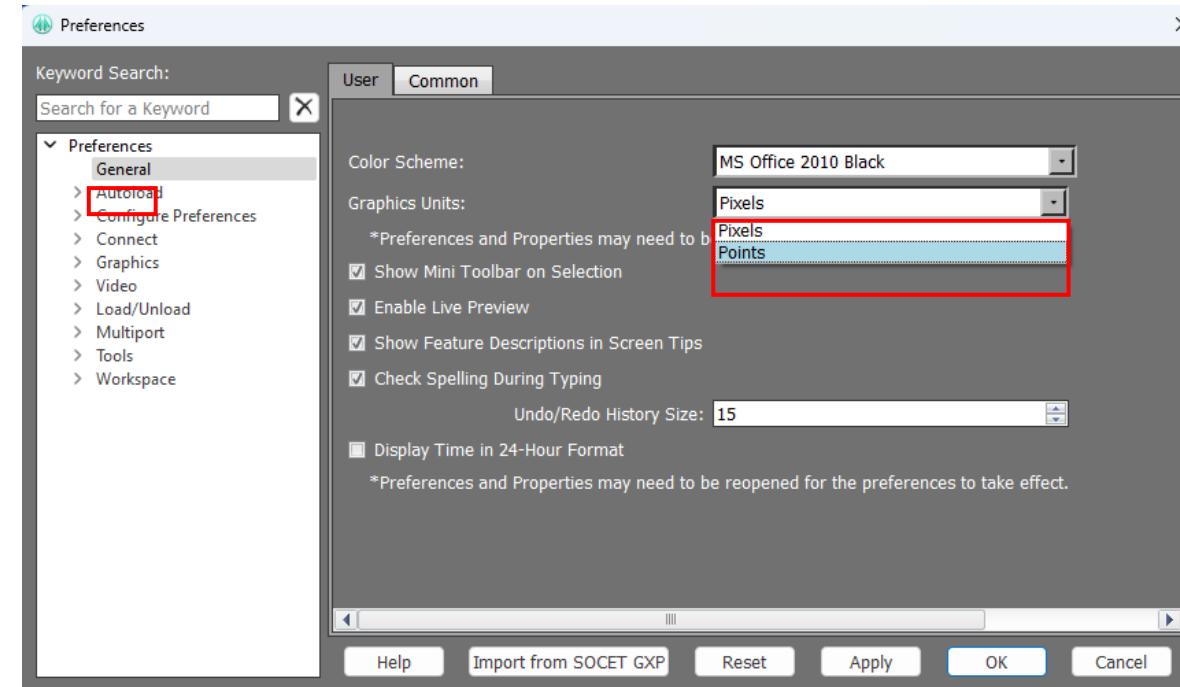
New point graphics units preference

- Example:
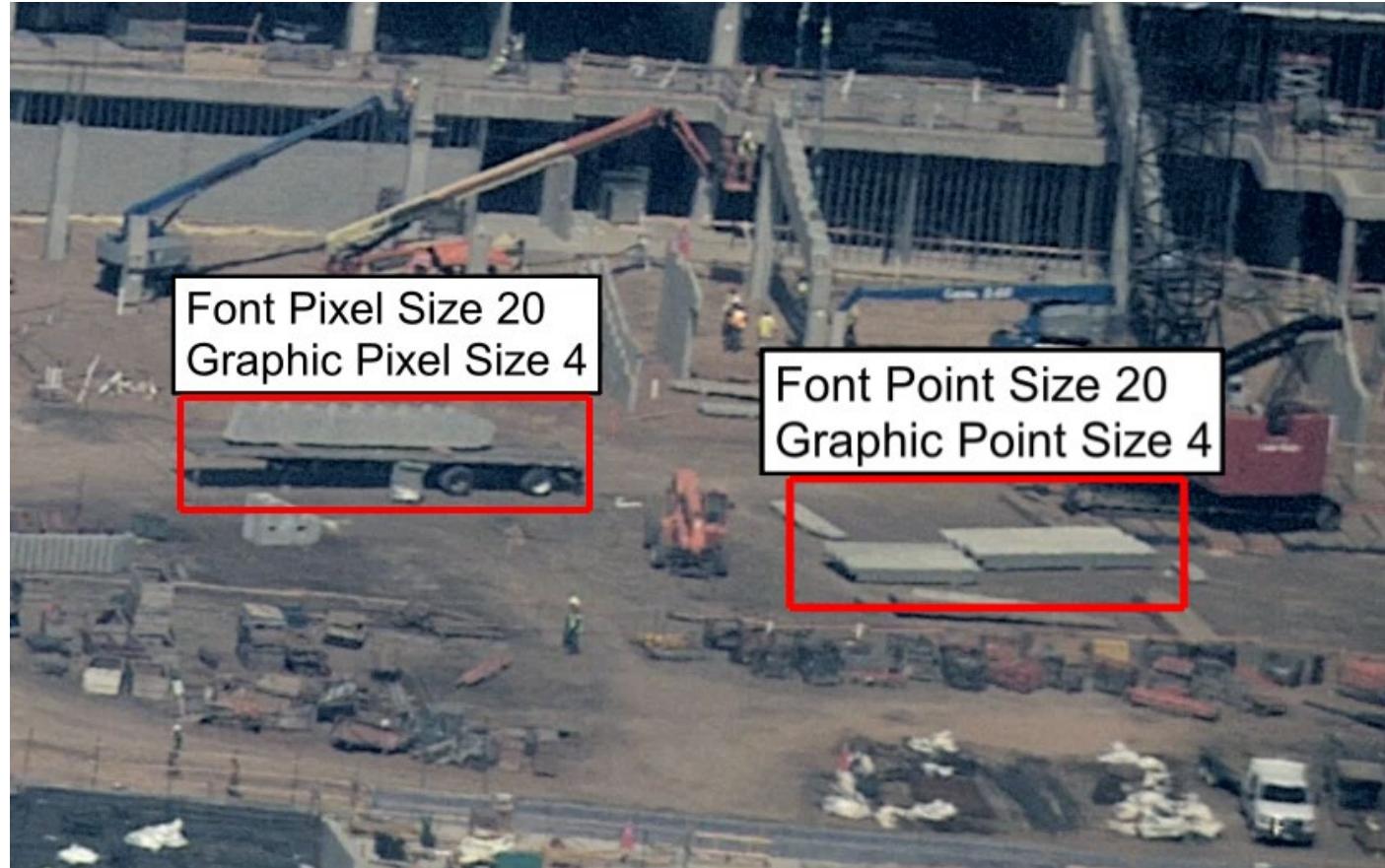
Imagery of MX-15 videos over Ft. Collins, CO; Courtesy of L-3 Communications, EO/IR Inc.

GXP Desktop v4.6.0.1 release enhancements

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GXP Desktop v4.6.0.1 release enhancements

- This presentation contains the enhancements included in SOCET GXP and GXP InMotion released March 27th, 2025.

    - GXP Desktop software releases are full installations.

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SOCET GXP v4.6.0.1 release enhancements

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Infrastructure updates

- Updated to JavaScript 11.

- Updated PostgreSQL®.

- Updated OpenSSL®.

- Added support for .NET 8.

- Integrated OAuth2.0 authentication.

- Updated UnicodeDateTime.

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Added preference for Default Cursor tool

- Allows cursor to default to Glove tool.

Default Cursor Tool preference

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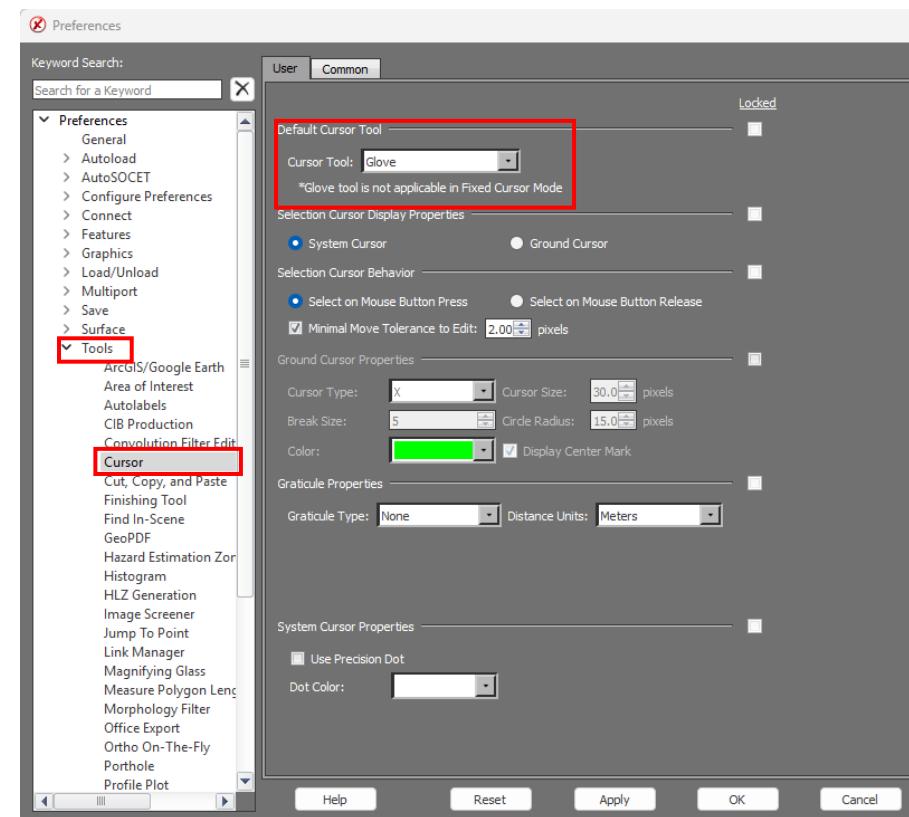
# Added Hotkey for Glove tool

- Allows cursor to quickly change to Glove tool.

<p style="text-align:center; color:#e8542a;">Glove tool Hot Key location</p>
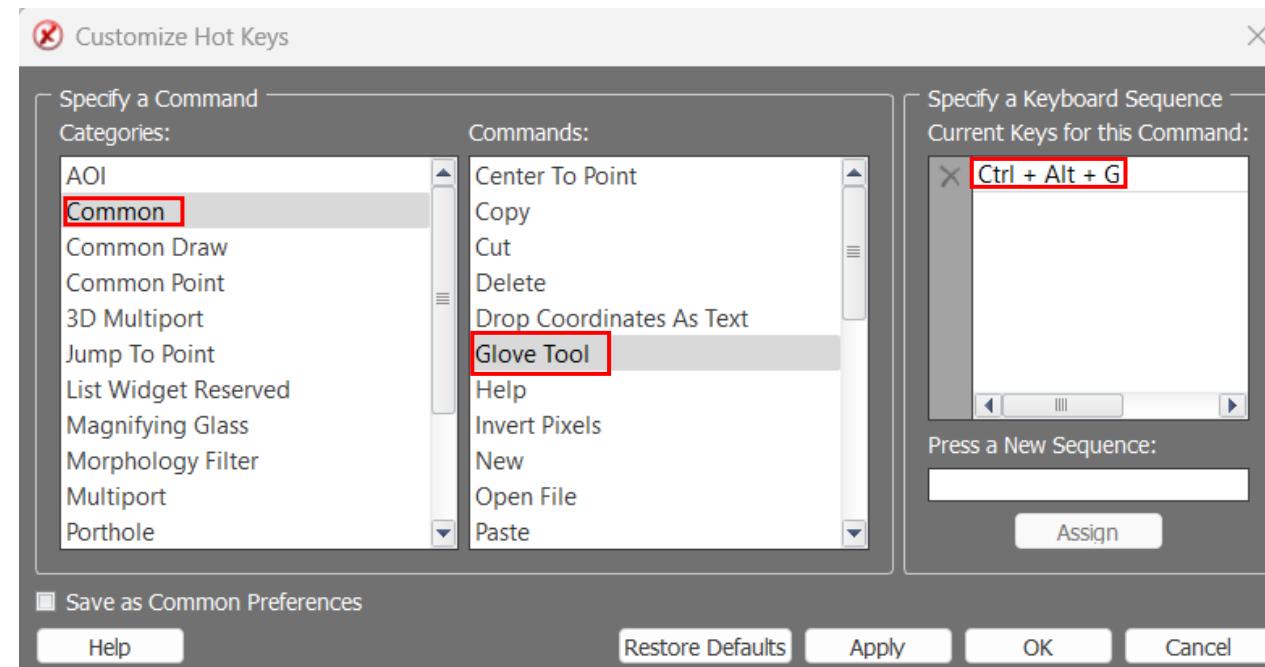
Added Measurement Override to Preferences

- Measurement overrides were added to Bracket & Range and Bearing graphics preferences.

Measurement preference location
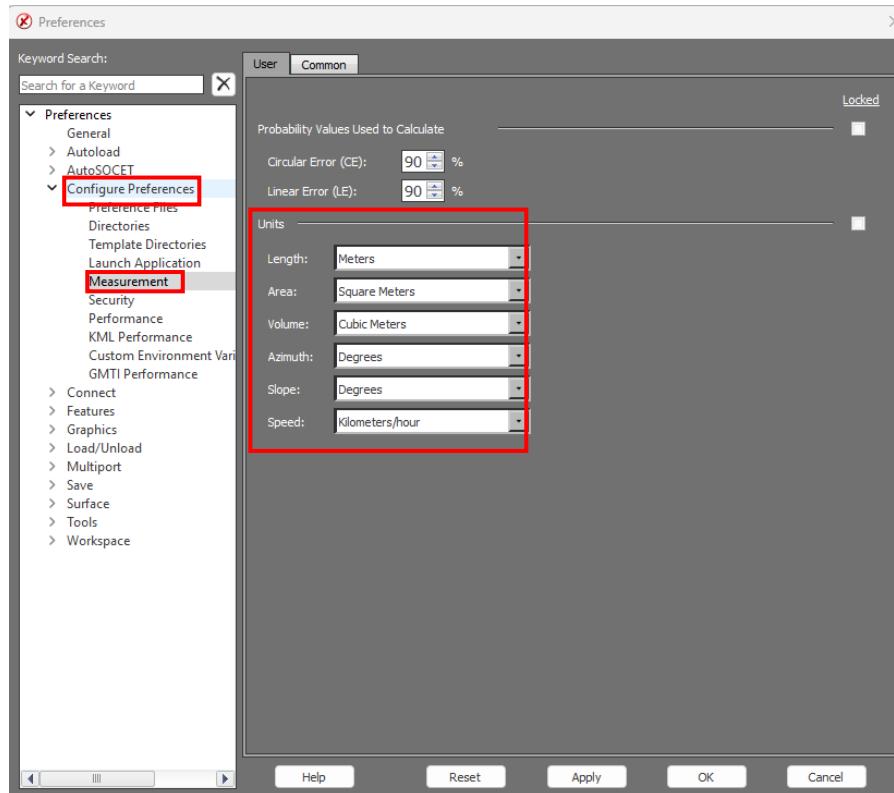
Override Measurement preference location
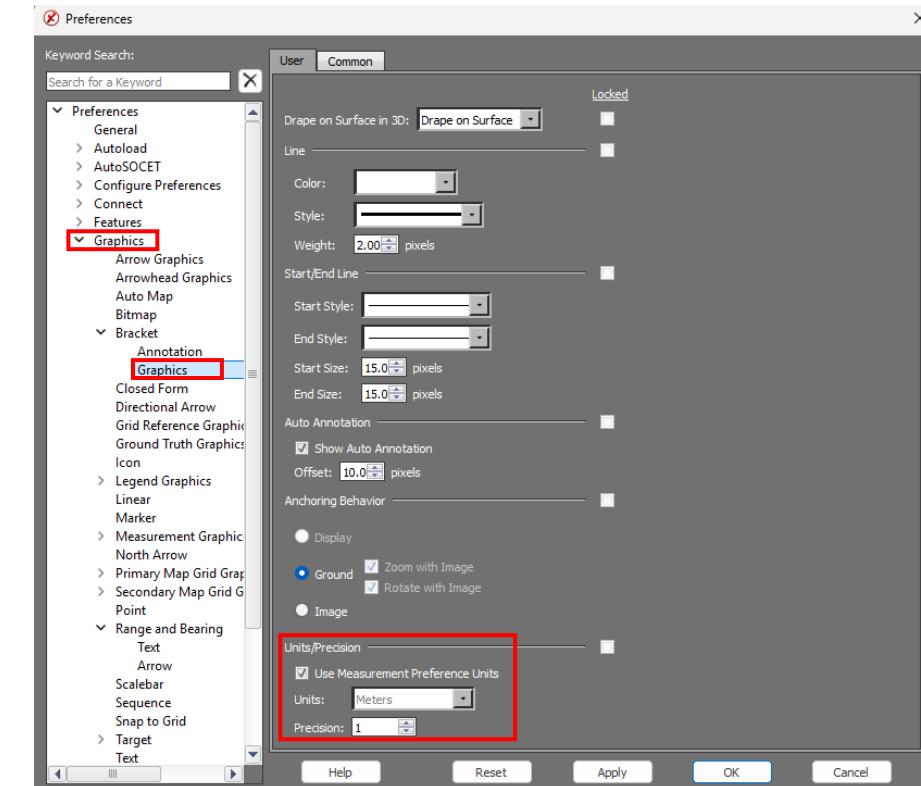
Sync Cursor

- Allows users to sync cursors between SOCET GXP and ArcGIS® Pro.

  - Improves QC time.

  - Viewing extents automatically update.

  - Cursors sync in the following modes:

    - Fixed Image.

    - Fixed Cursor.

    - Stereo.

    - Split Screen Stereo.

  - Hotkey is "Alt + Shift + S".

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Sync Cursor ...2

Sync Cursor Preference location

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Sync Cursor …3

Sync Cursor UI

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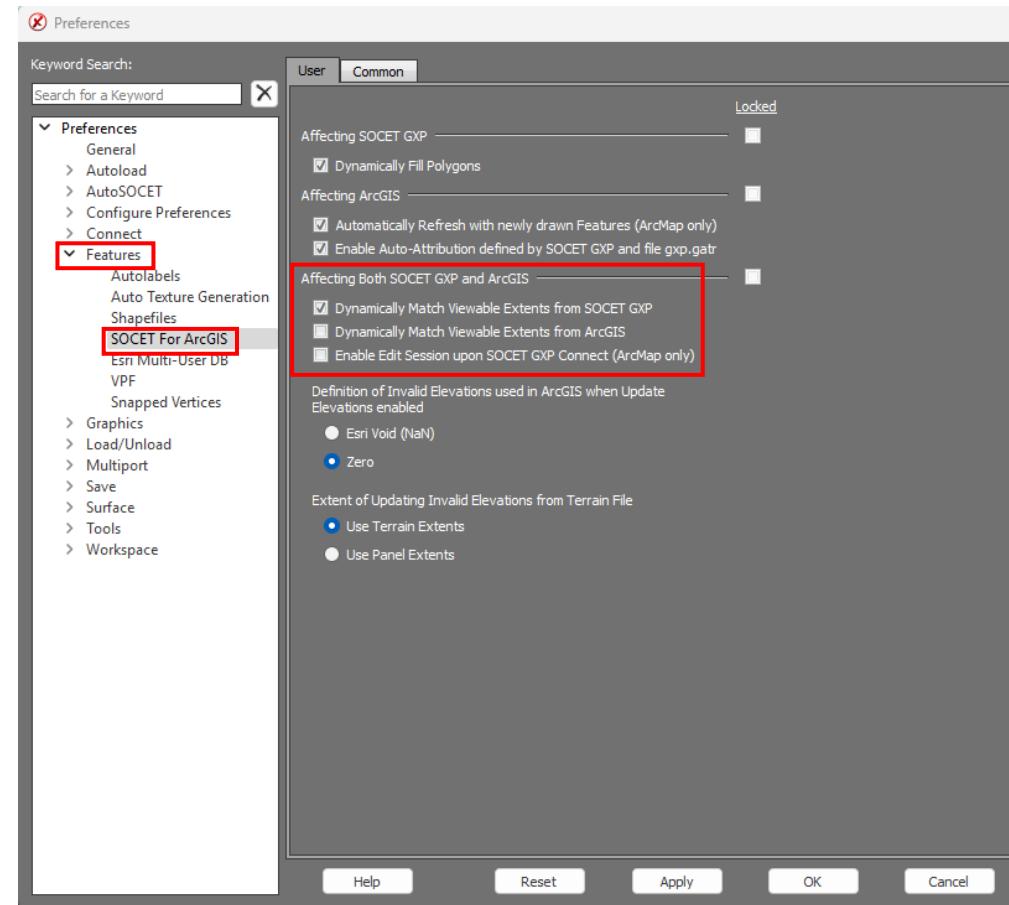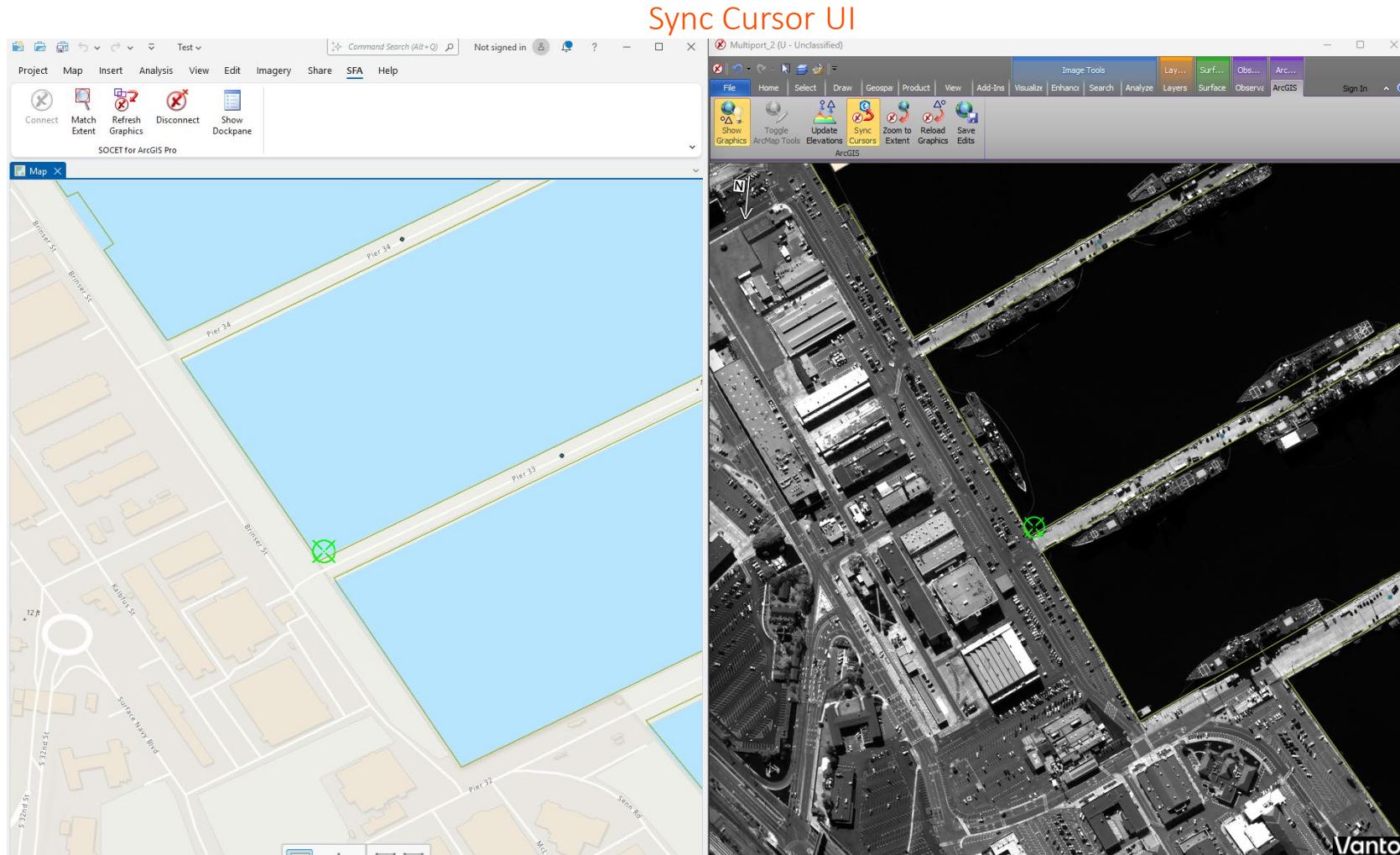
Web Service Layer

- Added a preference for Web Service Layers.

  - Allows for easier configuration and management.

  - Added OAuth2.0 authentication support.

Web Service Layer Preference
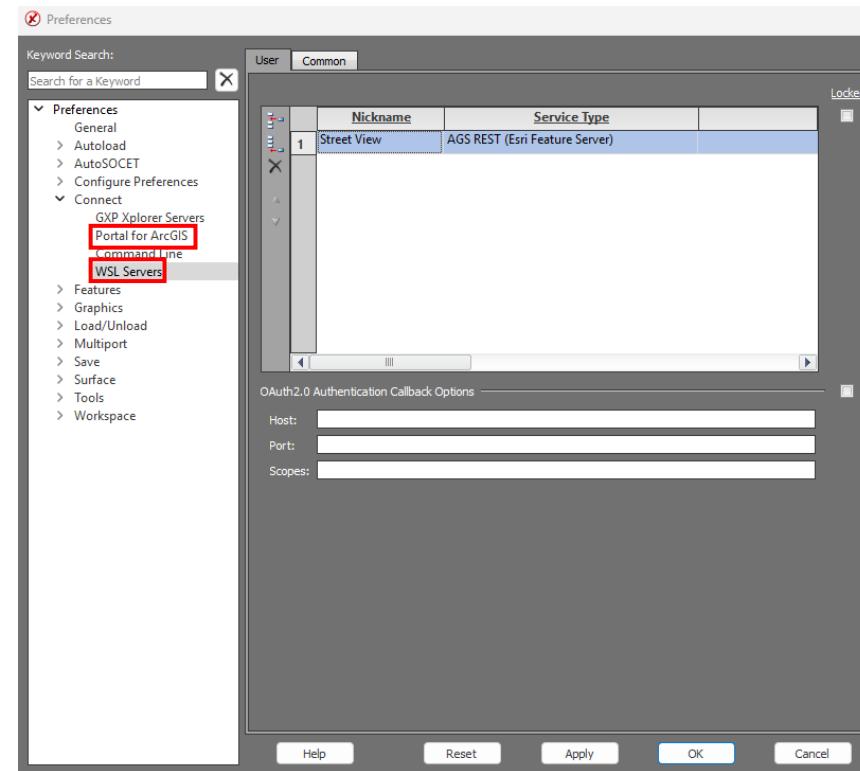
Web Service Layer ...2

- Added additional Esri® Authentication using OAuth2.0.

Web Service Layer using OAuth2.0
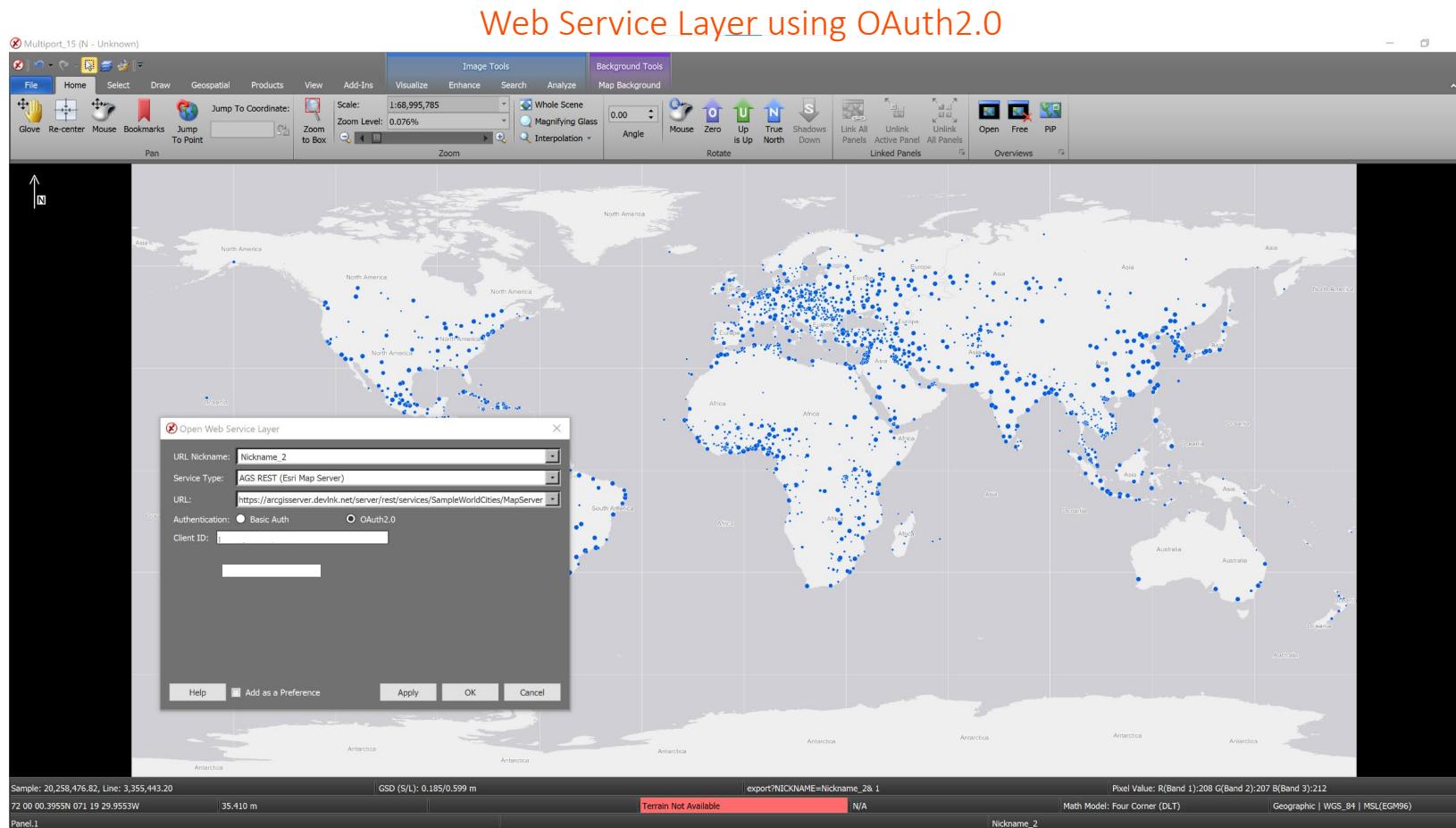
Added Layer Name to Esri results

- When an Esri Feature Service is selected from the GXP Xplorer Connector we return the service URL and Layer Name.

 - Enables users to quickly select and display layers of interest.

Feature Service Layer
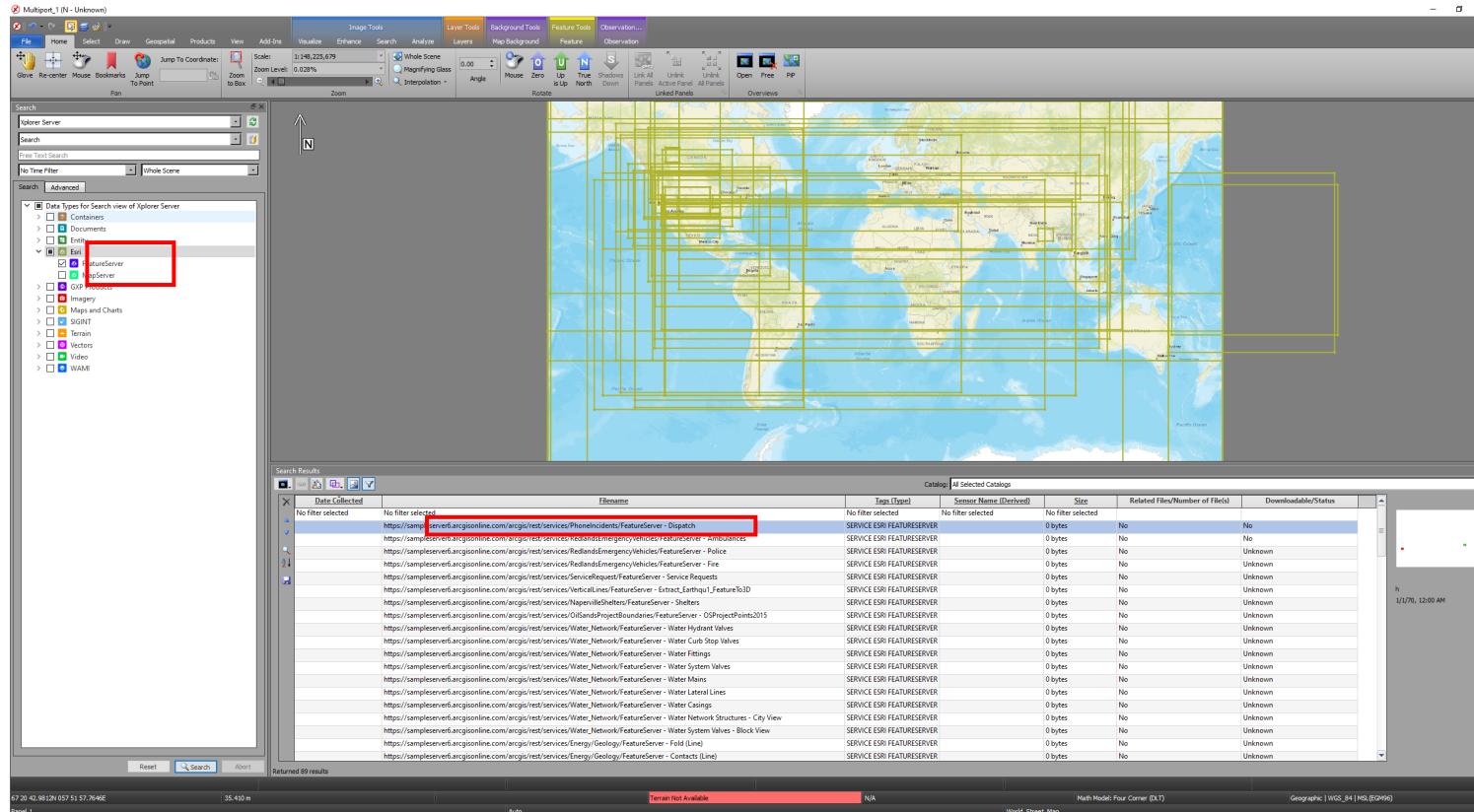
Loading Observations status

- Users can now get feedback when loading Observations into a SOCET GXP Multiport.

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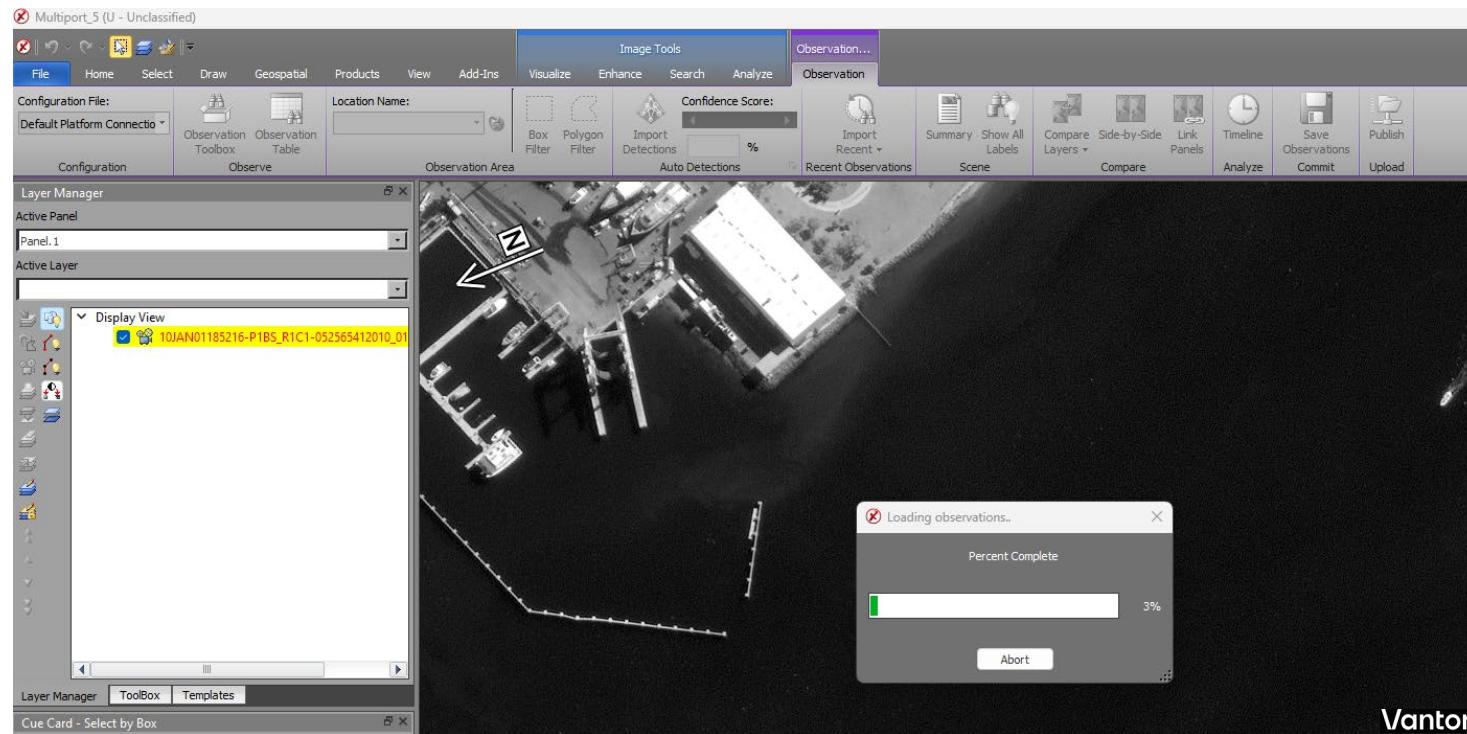
Scalebar improvements

- Abbreviated units of measurement.

  - m = Meters.

  - km = Kilometers.

- Dynamically update via preferences.

- Enables users to save work prior to workflow completion.

- Convert orientation of scalebar.

  - Vertical/Horizontal.

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Scalebar improvements ...2

Scalebar Preference
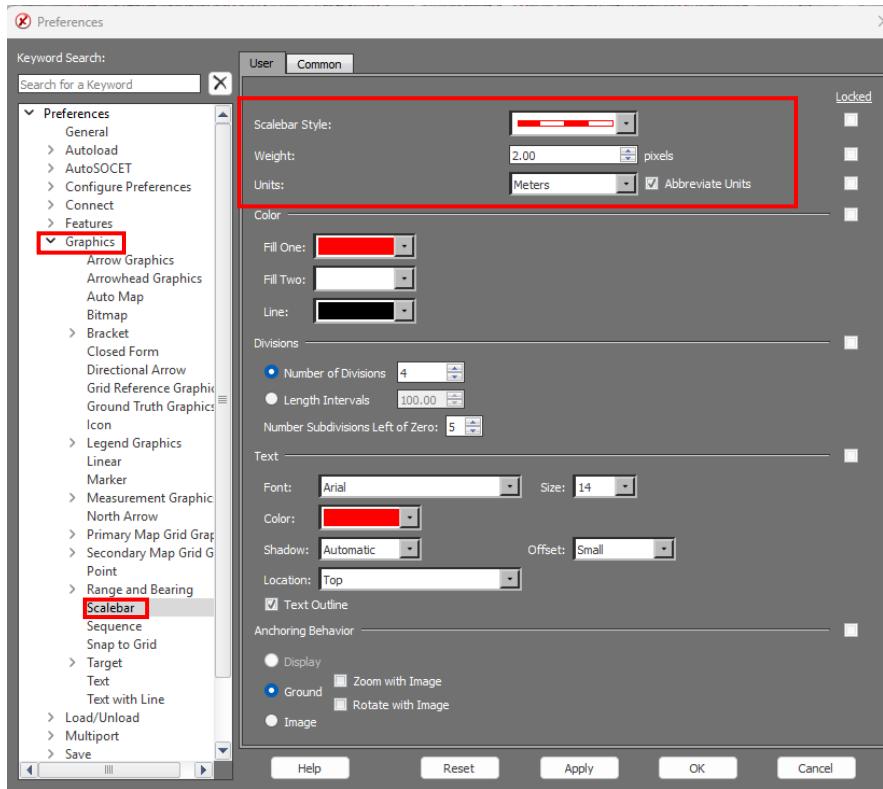
Scalebar Properties

BAE SYSTEMS
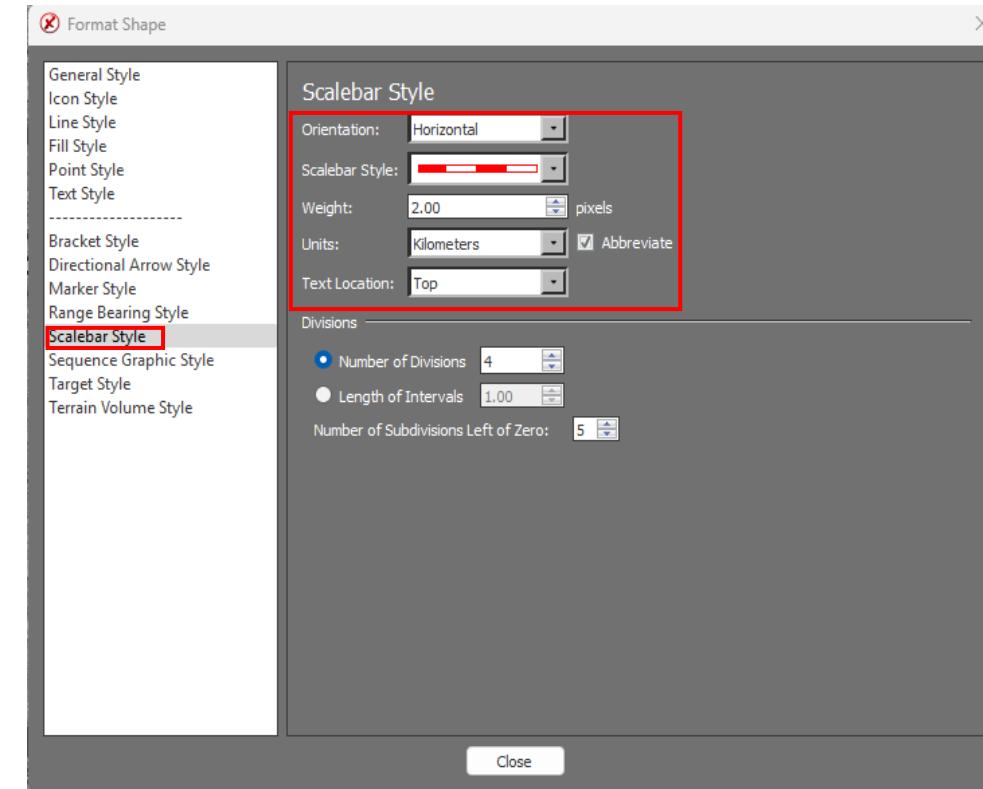
Scalebar improvements ...3

Scalebar Visualization
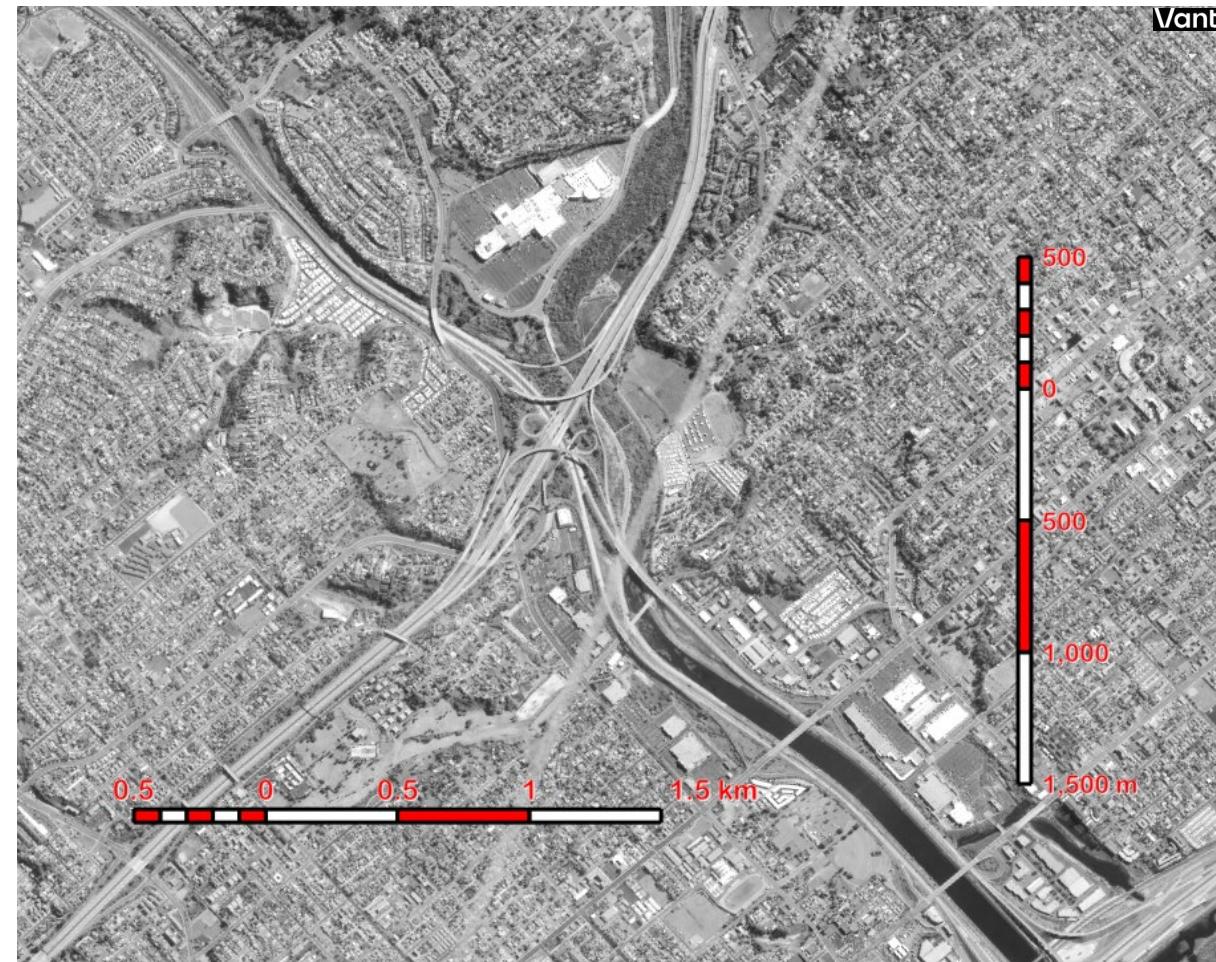
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Multi-line style improvements

- Line style weights are now the entirety of the line style.

Linear Graphics Preference
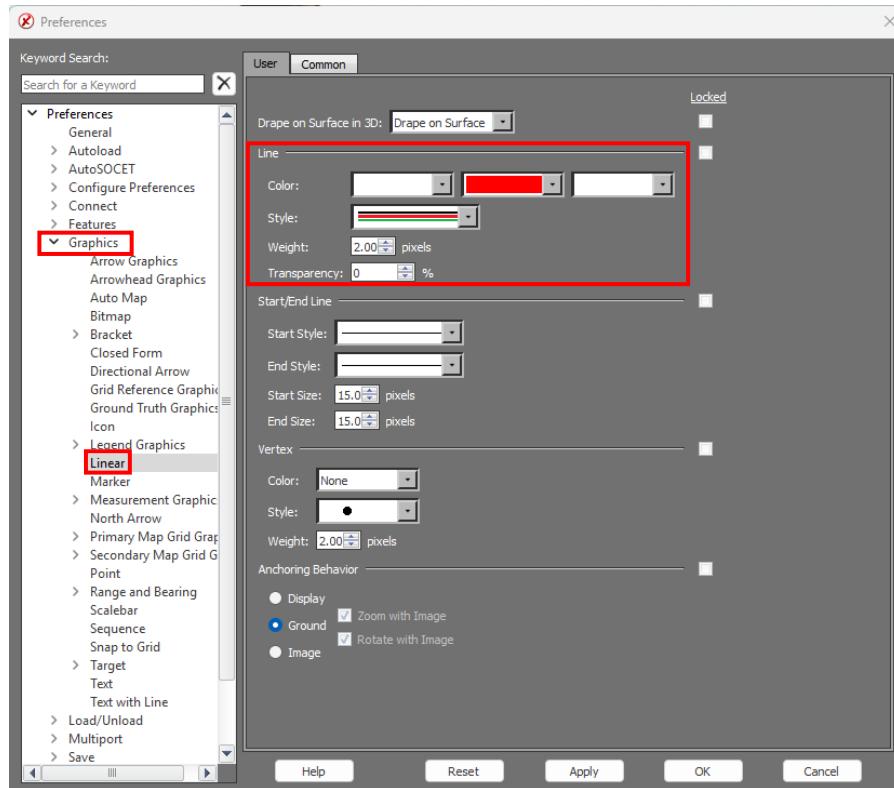
Linear Graphics Properties
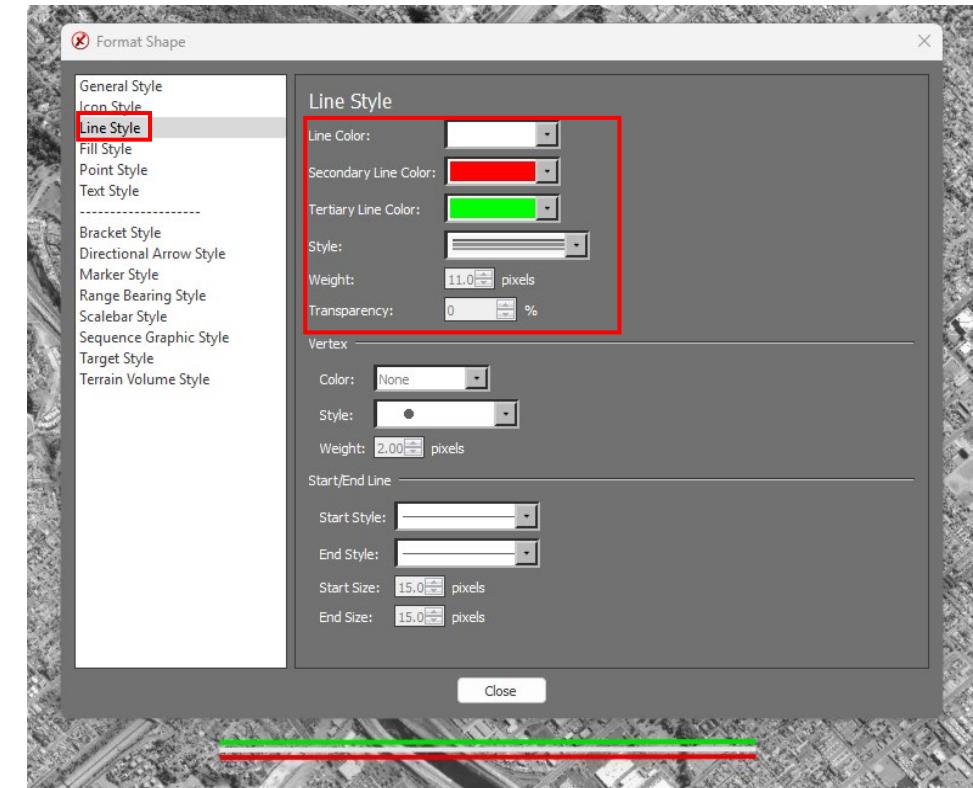
Additional new features

- Cleaned up Debug log.

- Added GATOR GPU support.

  - UI change in GXP Xplorer Platform.

  - Environment variable change in SOCET GXP.

    - GPU is enabled when environment variable is set to: GXP_GATOR_USE_CUDA=TRUE.

  - Default is set for GPU optimization.

- Improved Epipolar rectification for oblique viewing.

  - A new sensor model was created for viewing extremely distorted imagery in stereo.

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GXP InMotion v4.6.0.1 release enhancements

BAE SYSTEMS

Map Background functionality

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Map Background preference
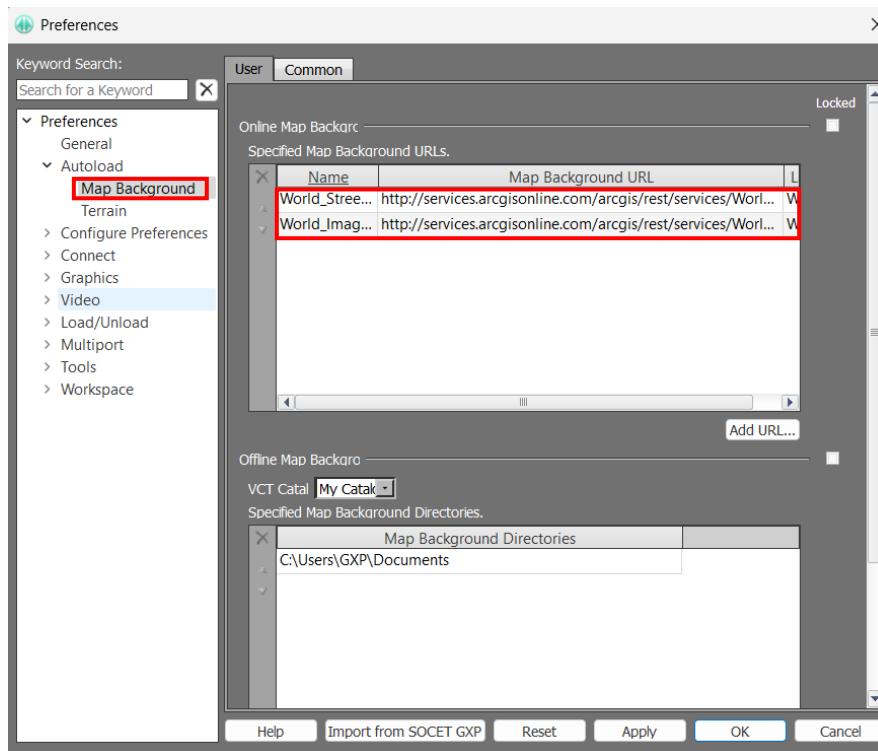
Map Background view and Rename from Map Window
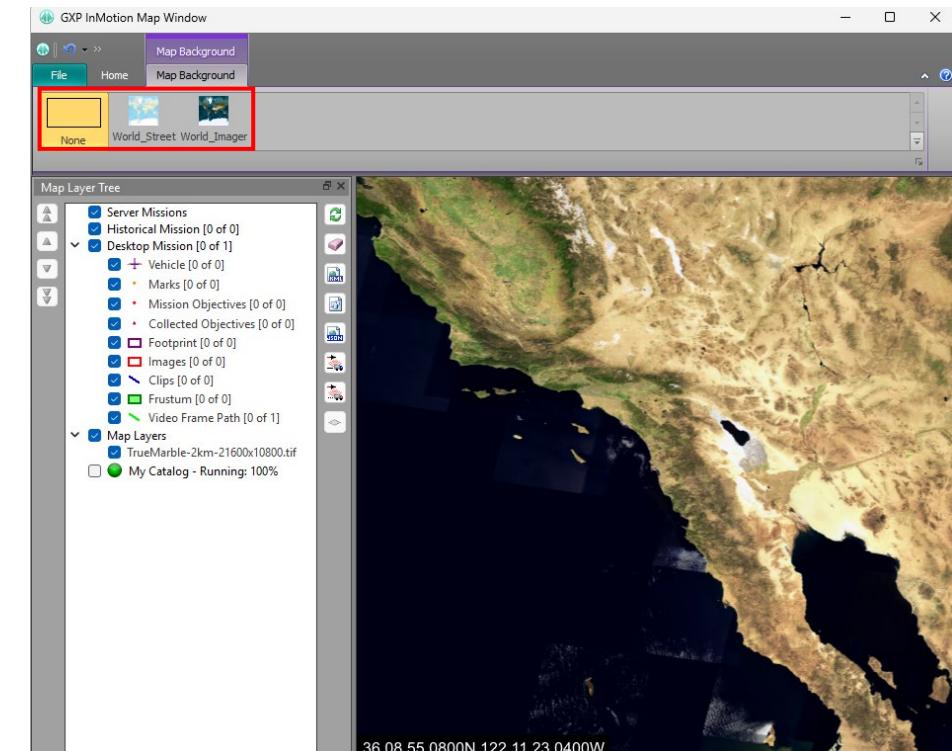
BAE SYSTEMS

Added Measurement Override to Preferences

- Measurement overrides were added to Bracket & Range and Bearing graphics preferences.

Measurement preference location

Override Measurement preference location

BAE SYSTEMS

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- Allows cursor to default to Glove tool.

<p style="color:orange; text-align:center">Default Cursor Tool preference</p>

BAE SYSTEMS
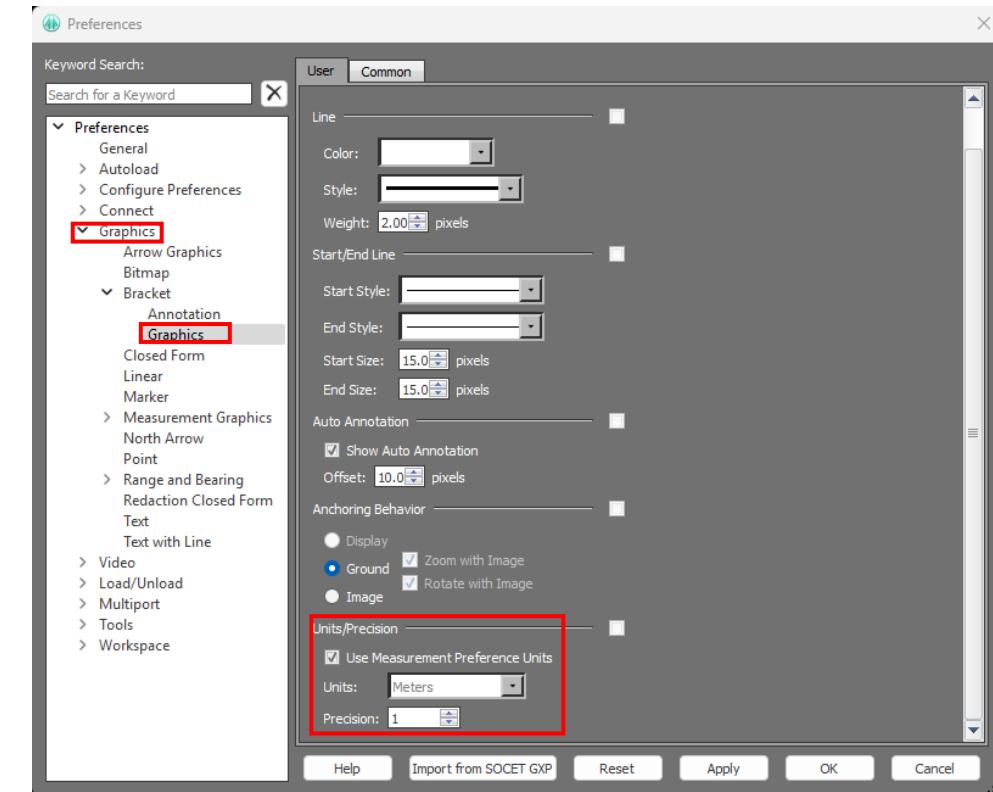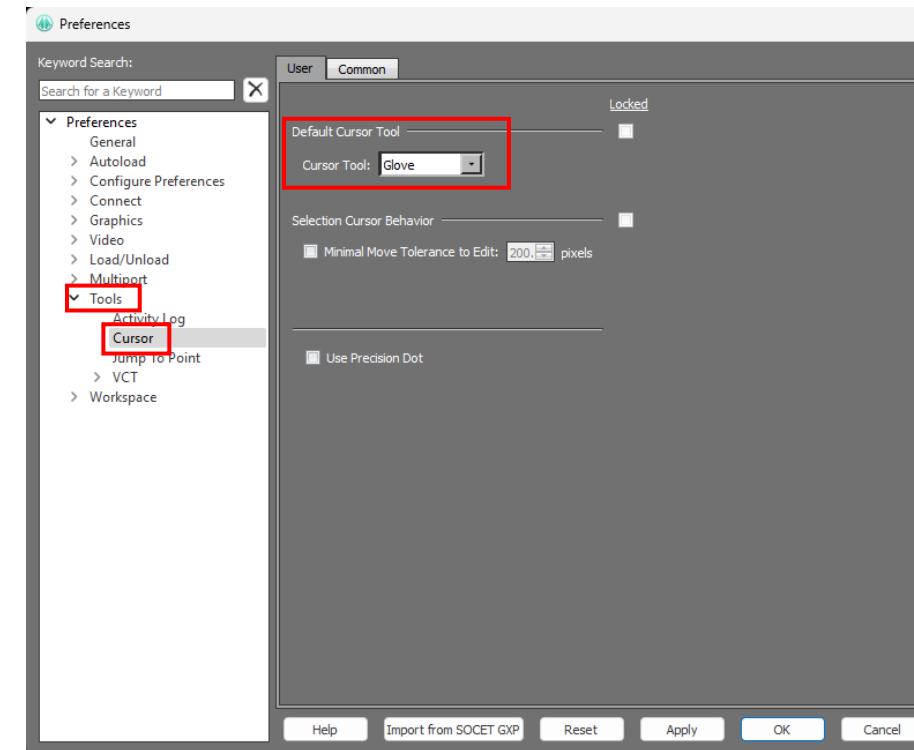
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Linear Graphics preference
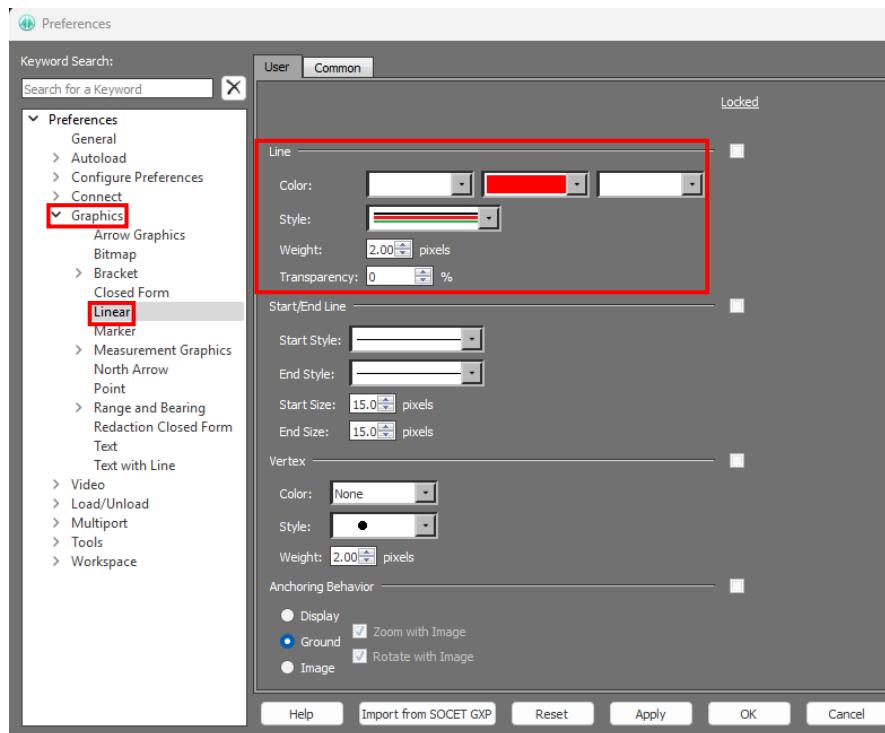
Linear Graphics properties
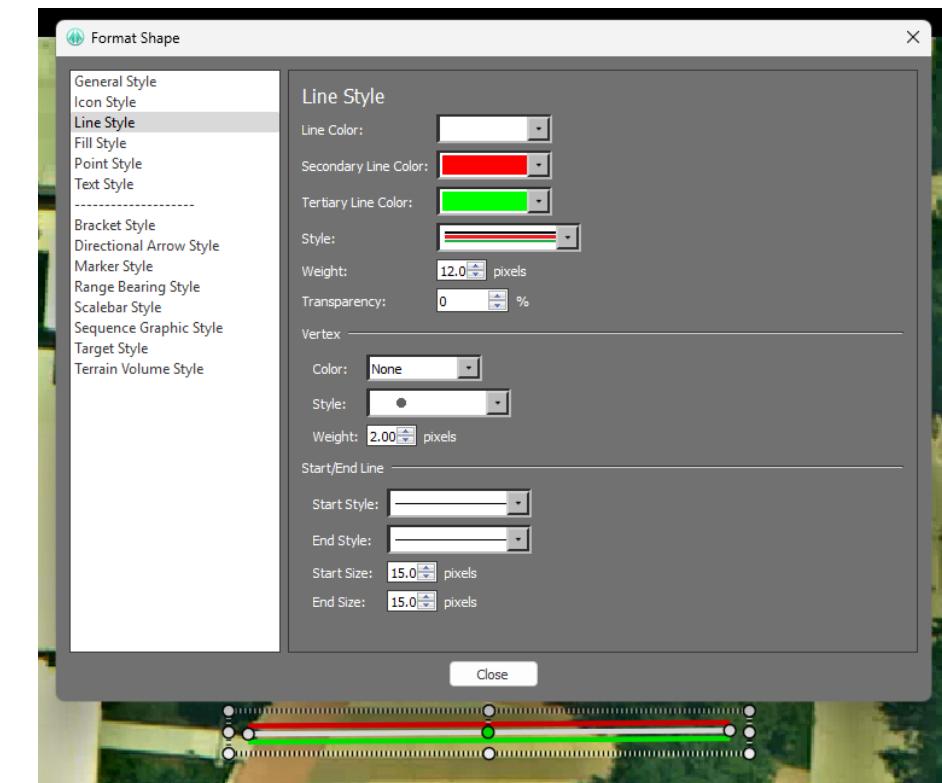
Imagery of MX-15 videos over Ft. Collins; Courtesy of L-3 Communications, EO/IR Inc.

BAE SYSTEMS

GXP Desktop v4.6.0.2 release enhancements

Evan Miller
GXP Product Development

Multispectral Analysis
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Height 265.481m

BAE SYSTEMS

GXP Desktop v4.6.0.2 release enhancements

- This presentation contains the enhancements included in SOCET GXP and GXP InMotion released June 27th, 2025.

  - GXP Desktop software releases are full installations.

BAE SYSTEMS

SOCET GXP v4.6.0.2 release enhancements

BAE SYSTEMS

Infrastructure updates

- Updated to Kakadu v8.4.1.

- Updated to GDAL v3.7.0.

- Updated the OSGI jar file for PowerPoint® template import.

- GXP Job Service security improvements.

  - Removed "*" from the SOCET GXP Job Service Access Restrictions.

    - It will now only communicate internally on the computer versus over the network.

  - Disabled the Job Service HTTP Server.

    - Example location: C:\Program Files\BAE SYSTEMS\SOCET GXP 4.6.0\Config\GXPJobService\js-config.xml.

    - Edited line: <TCP_PORT localhost-only="false" port-number="1354"/>.

BAE SYSTEMS

Added 2-D Scene Feature and Icon Scaling

- Allows features and icons to be scaled by the user.

Default Icon Style preference

BAE SYSTEMS
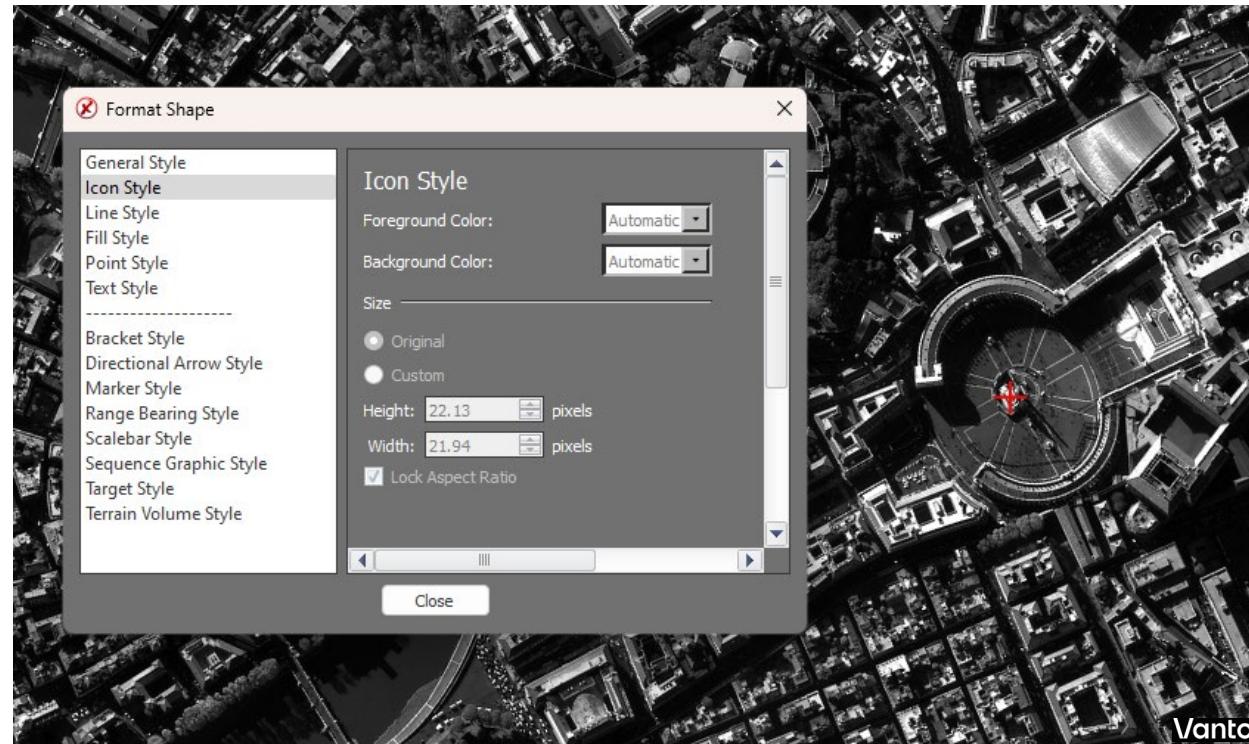
Added 2-D Scene Feature and Icon Scaling …2

- Preference location and settings.

  - No need to close and re-open your Multiport for this to be enabled.

Default Icon Style Preference
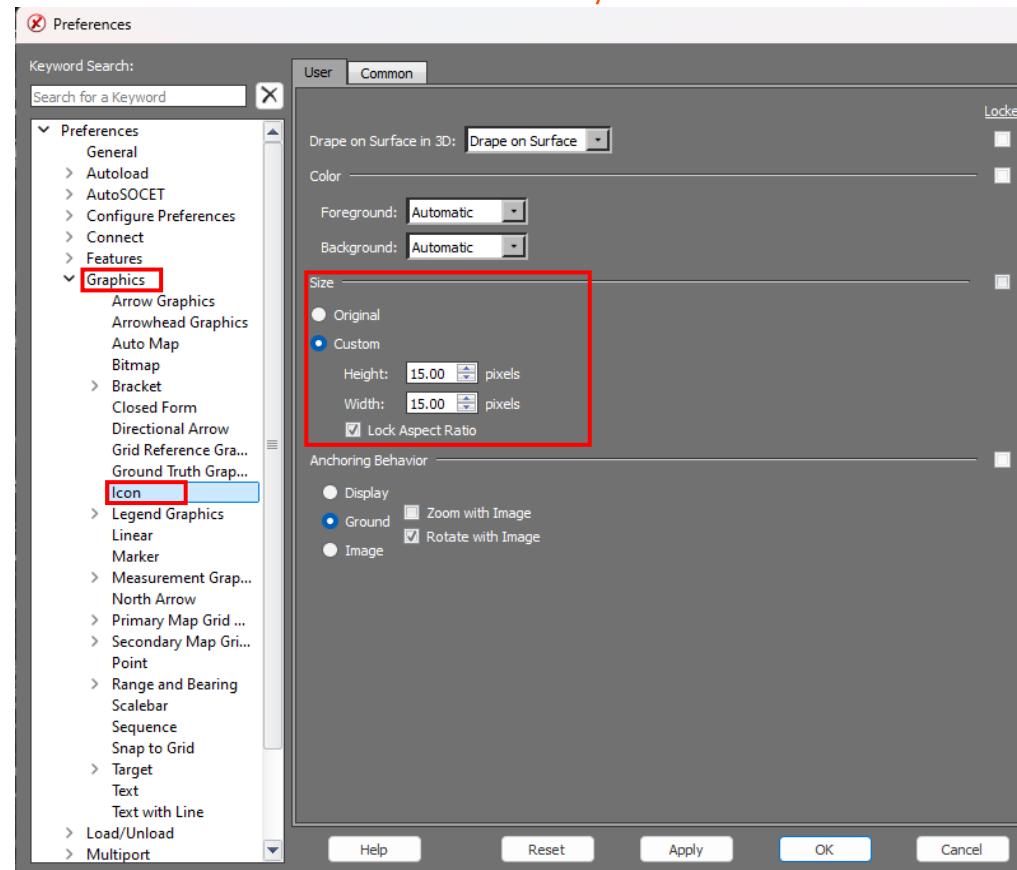
Added 2-D Scene Feature and Icon Scaling ...3

- Allows features and icons to be scaled by the user.

Custom Icon Style preference

BAE SYSTEMS
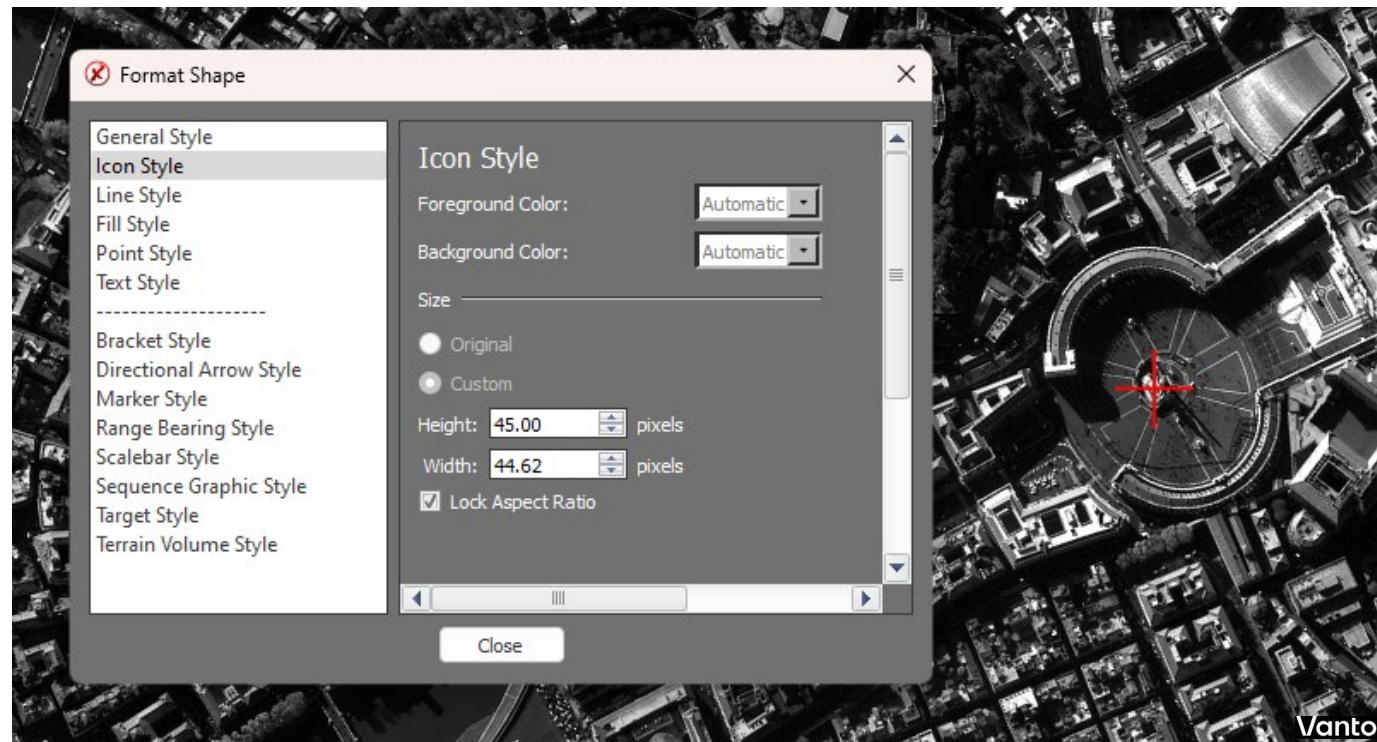
Removed "Unknown" Entities from the SOM Toolbox

- Improves Data Model load times.

- Added Observation Progress bar.

Entities update

BAE SYSTEMS

Added .3tz (3-D Tiles Zipped) support

- .3tz files can now be opened in SOCET GXP.

  - We will extract and load the data via File Open and/or Drag and Drop into the Workspace Manager.

.3tz file loaded in the Workspace Manager
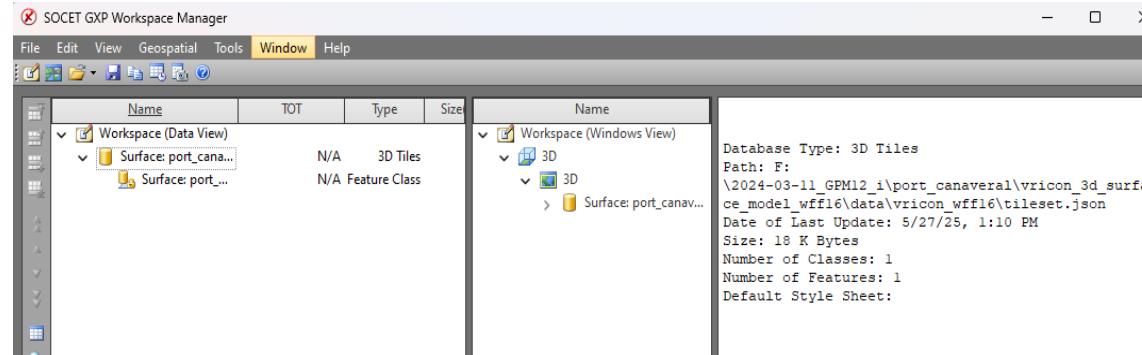
3-D Tile Visualization in a 3D Multiport

Updated the GPM Plugin

CE/LE is now retrieved with GPM data

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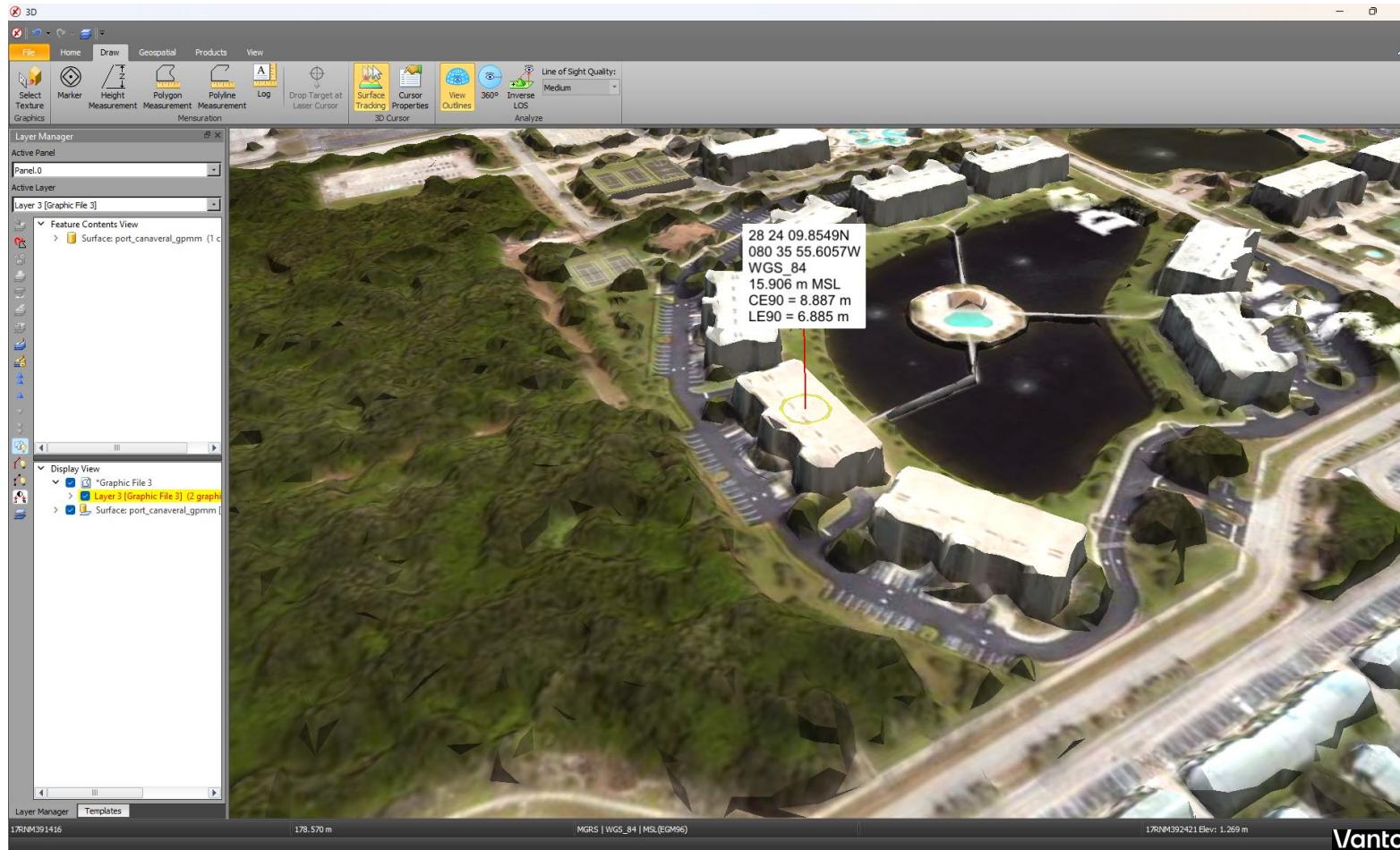
Magnifying Glass with Scalebar support

- Allows users to add a scalebar to their Magnifying Glass.

- Works for all output product types.

Scalebar Style Properties
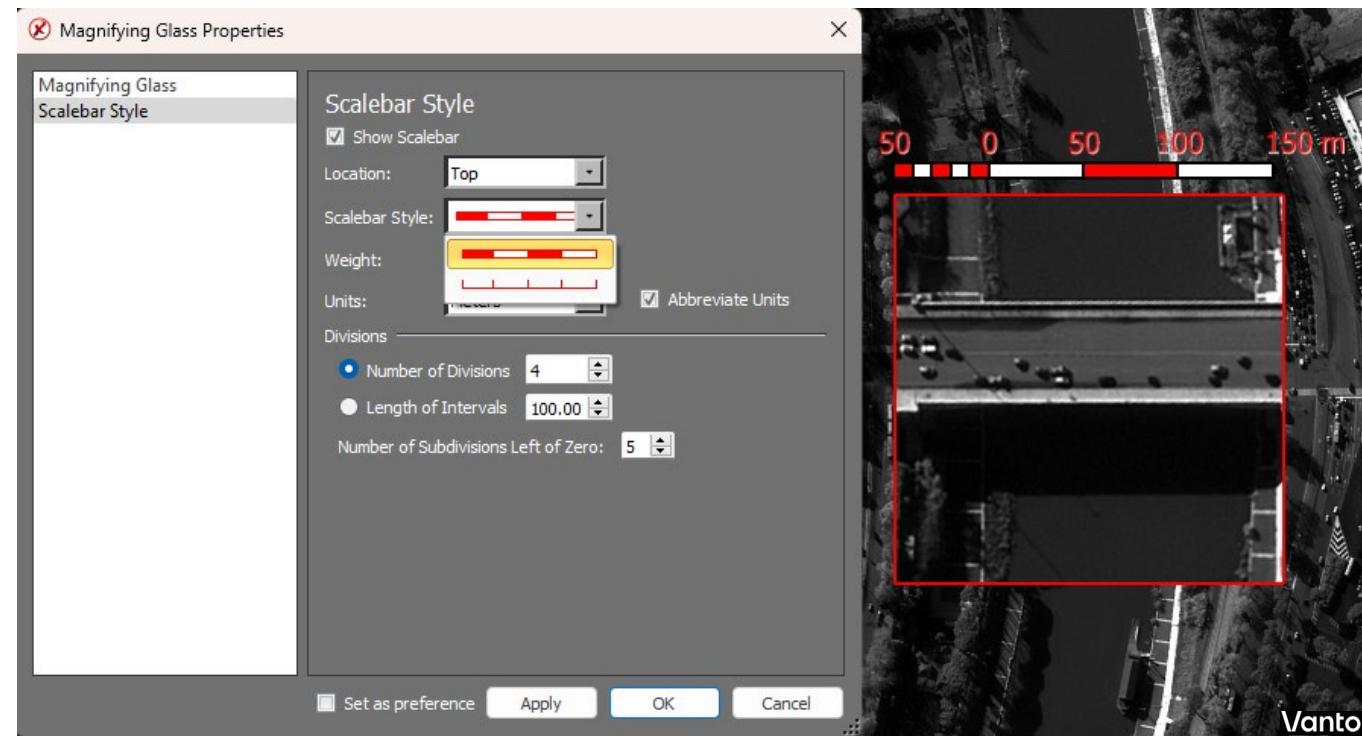
Improved Line Style Weighting

- Improved line style smoothing.

- Weight is now the entirety versus individual pieces that make up the line.
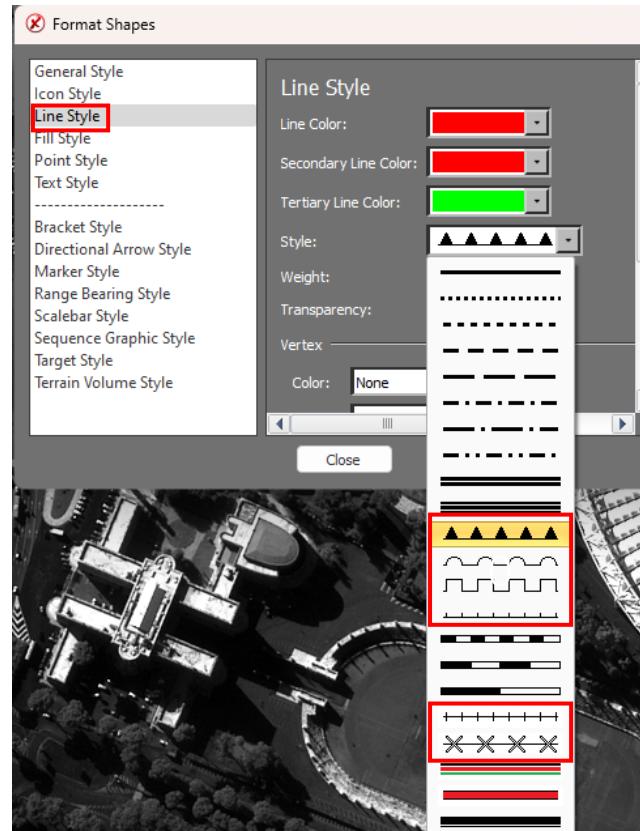
Additional Line Style Weighting
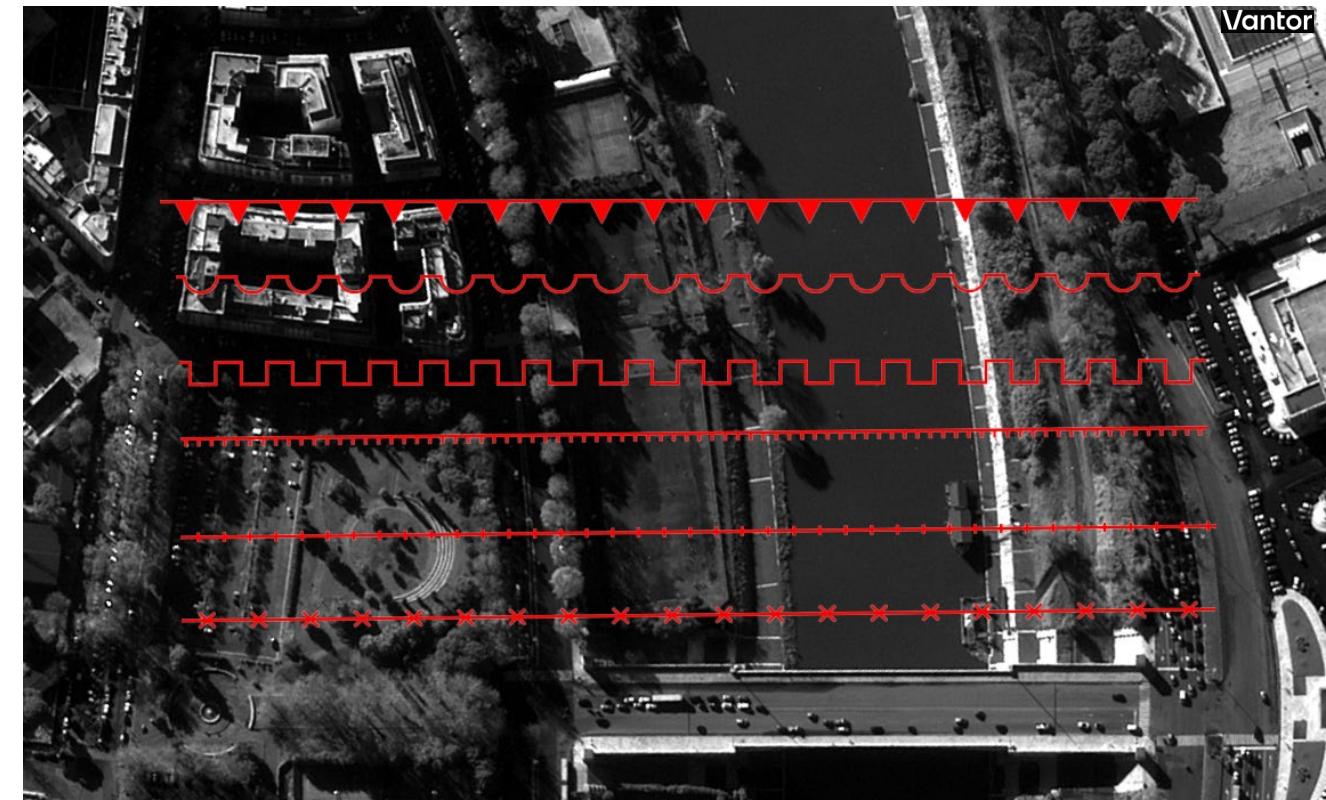
Added Ellipse Symbolization

- Enables users to configure ellipses for feature data.

Ellipse Symbolization Properties
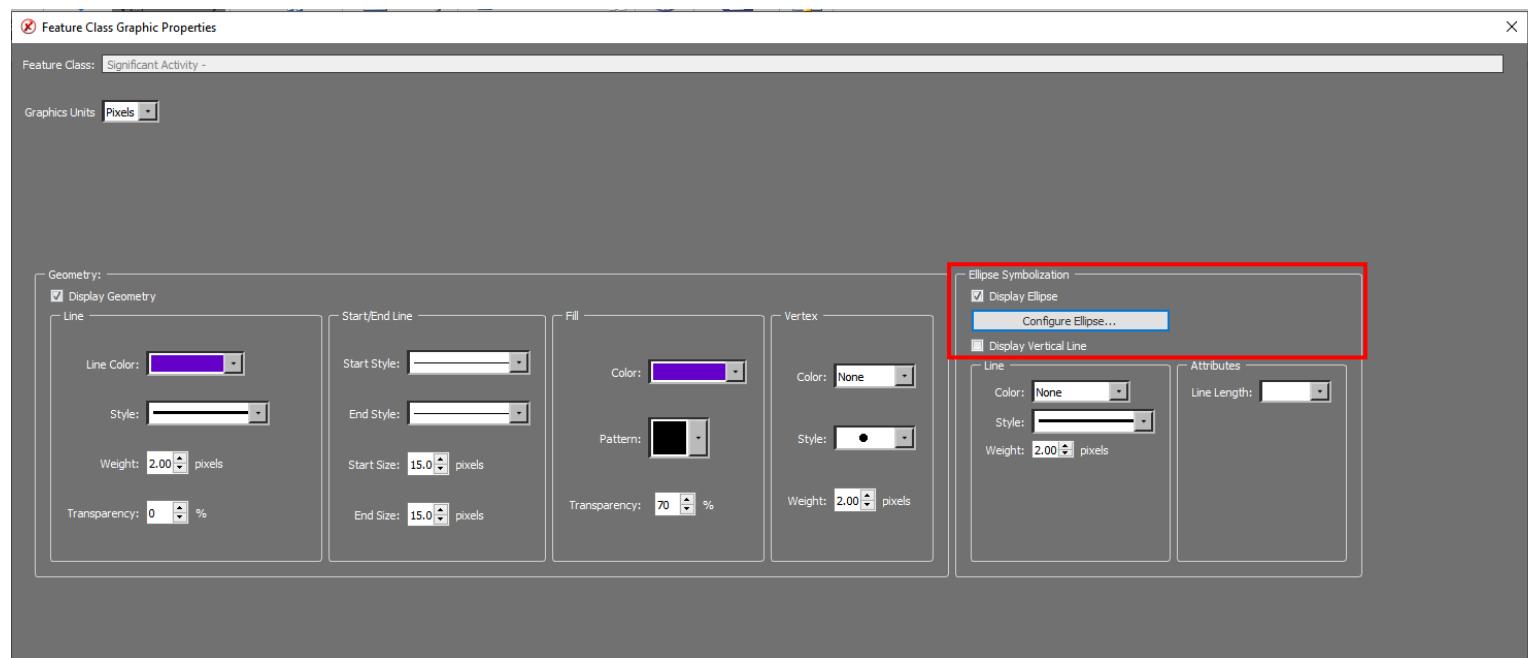
Additional new features

- Added support for PKI authentication for OGC® Web Feature Services.

- Added "Ground to Image" capability with our JavaScript API.

- Cleaned up Debug log (Phase 2 effort).

- Added support for CIB and ECIB in the Polar Zones.

- Updated sensor models and coordinate systems in Polar Zones.

- Added heterogeneous collection from PostGIS databases directly to SOCET GXP.

- Added observation Progress Bar for Esri Geodatabases.

- Removed "All Equipment" node from the Observation Toolbox.

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GXP InMotion v4.6.0.2 release enhancements

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New features

- Updated our SENSRB plugin.

- Cleaned up Debug log (Phase 2 effort).

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GXP Desktop v4.6.0.3 release enhancements

Evan Miller
GXP Product Development

BAE SYSTEMS

GXP Desktop v4.6.0.3 release enhancements

- This presentation contains the enhancements included in SOCET GXP and GXP InMotion released September 30th, 2025.

  - GXP Desktop software releases are full installations.

BAE SYSTEMS

SOCET GXP v4.6.0.3 release enhancements

BAE SYSTEMS
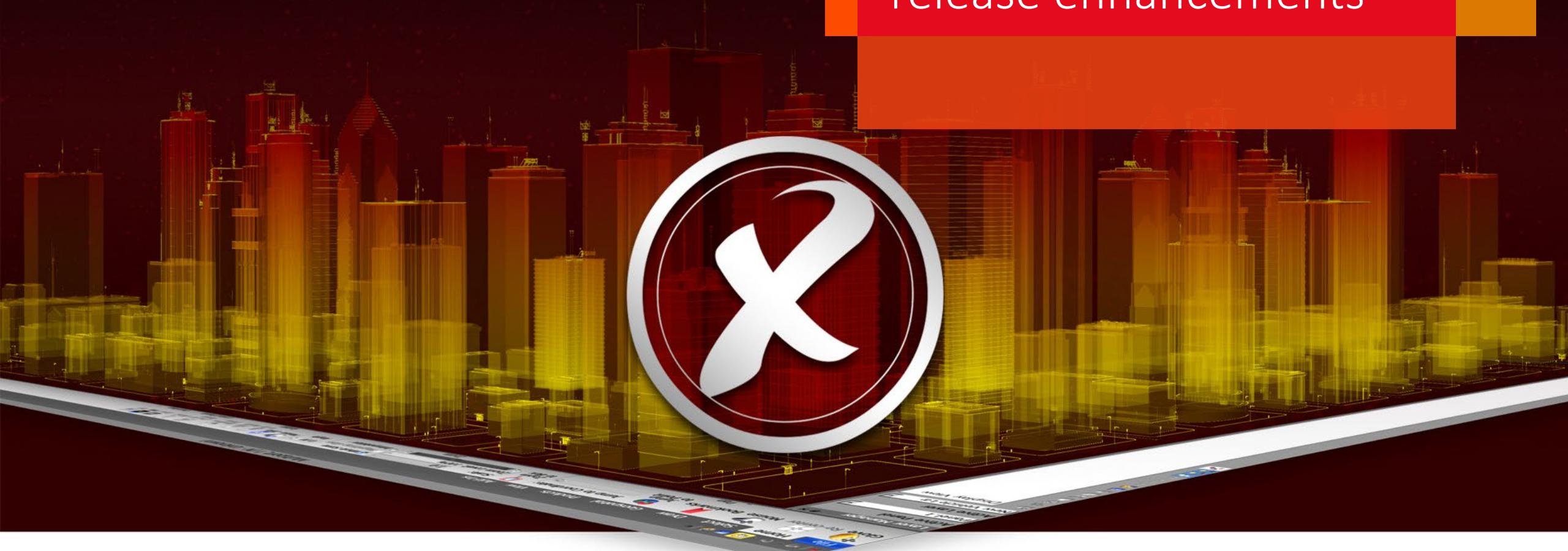
Infrastructure updates

- Updated to SIPS 2.5.5.

- Updated OpenJDK® to 11.0.27.6.

- Updated FFmpeg to v7.0.2.6.57.

- GXP Job Service security improvements.

  - Implemented XXE (XML External Entity) Prevention.

  - Instituted a whitelist for job service executables.

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New Auto Labels and North Arrow

- Image Center Coordinates.

  - We now support up to 4 different Image Center Coordinate Systems (similar to Marker and Target preferences).

Auto Labels
Imagery Area Center Coordinates (image)
Imagery Area Center Coordinates, Coord1 (image)
Imagery Area Center Coordinates, Coord2 (image)
Imagery Area Center Coordinates, Coord3 (image)
Imagery Area Center Coordinates, Coord4 (image)
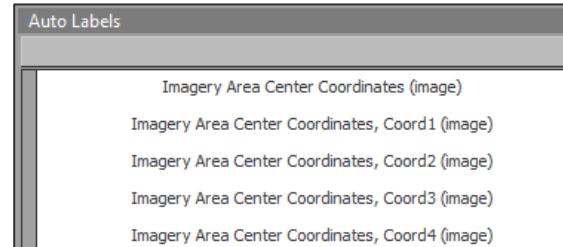
- Image Country Name.

  - Added the ability to display the full country name (uses config file to map 2-letter Code to full name).

Auto Labels
Country Code (image)
Country Name (image)
Datetime Group (image)
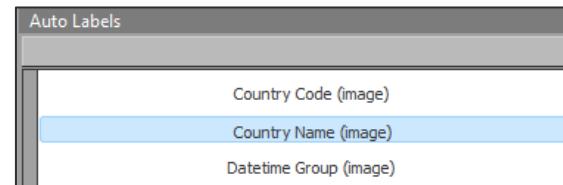
- Added a new North Arrow.

BAE SYSTEMS

Community Layers

- Enables an enterprise environment or a specific user to determine what OGC URLs the want to display.

  - Can be directly accessed from GXP Xplorer Platform via SOCET GXP preferences.

  - These can be exported from GXP Xplorer, saved in a shared location and mapped to it in the SOCET GXP preferences.

  - Users can also build their own individual Community Layer file and map to it in the SOCET GXP preferences.

- Allows users to quickly access service layers w/o loading each individual one and significantly improves useability by removing excess work.

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Community Layers ...2

- Access GXP Xplorer Community Layers in Preferences.
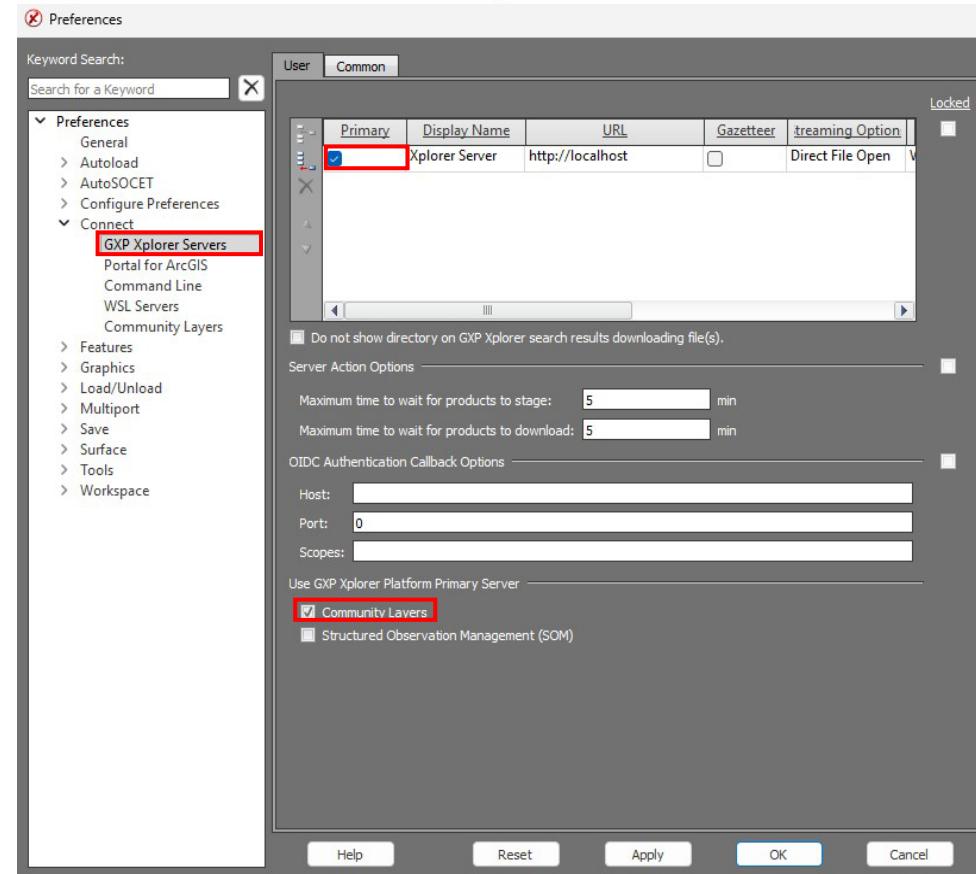
Community Layers ...3

- Access Community Layers in Preferences.

  - If you do not have access to a GXP Xplorer Platform you can manage a local copy by editing the JSON we provide.

    - Install directory/Config/Community Layers.

      - communityLayers.json.

  - They can also be exported from a GXP Xplorer Platform and dropped on the local system and map to them.
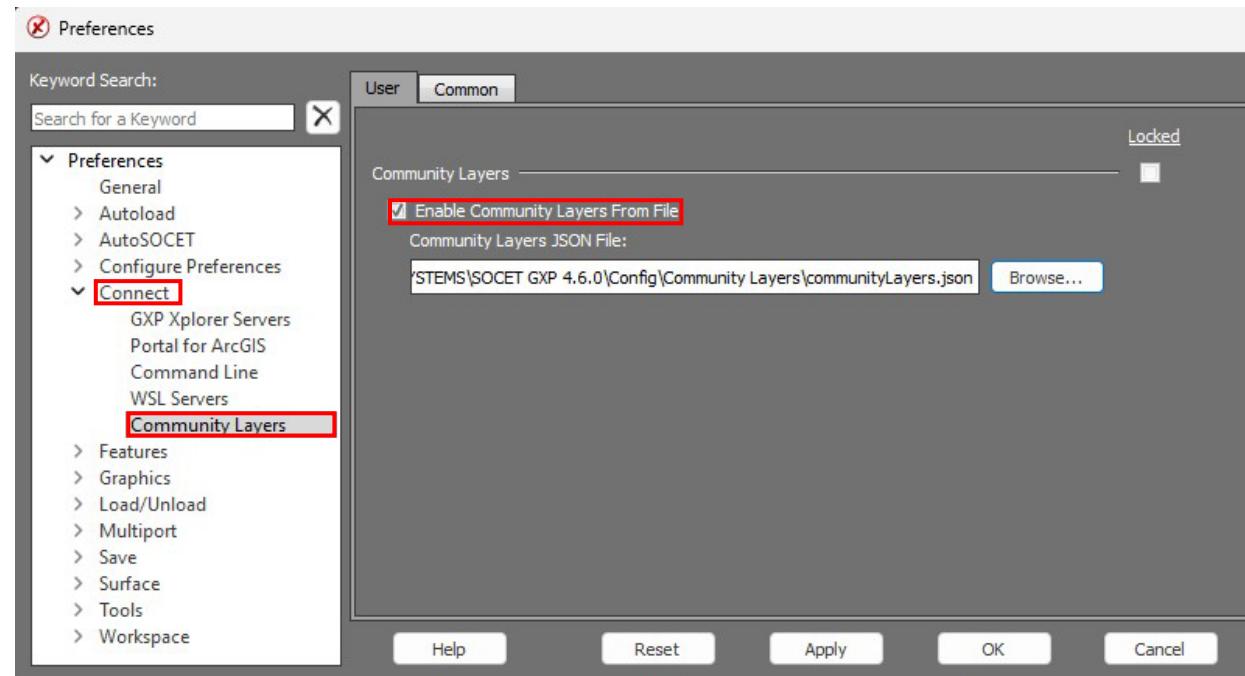
Community Layers ...4

BAE SYSTEMS
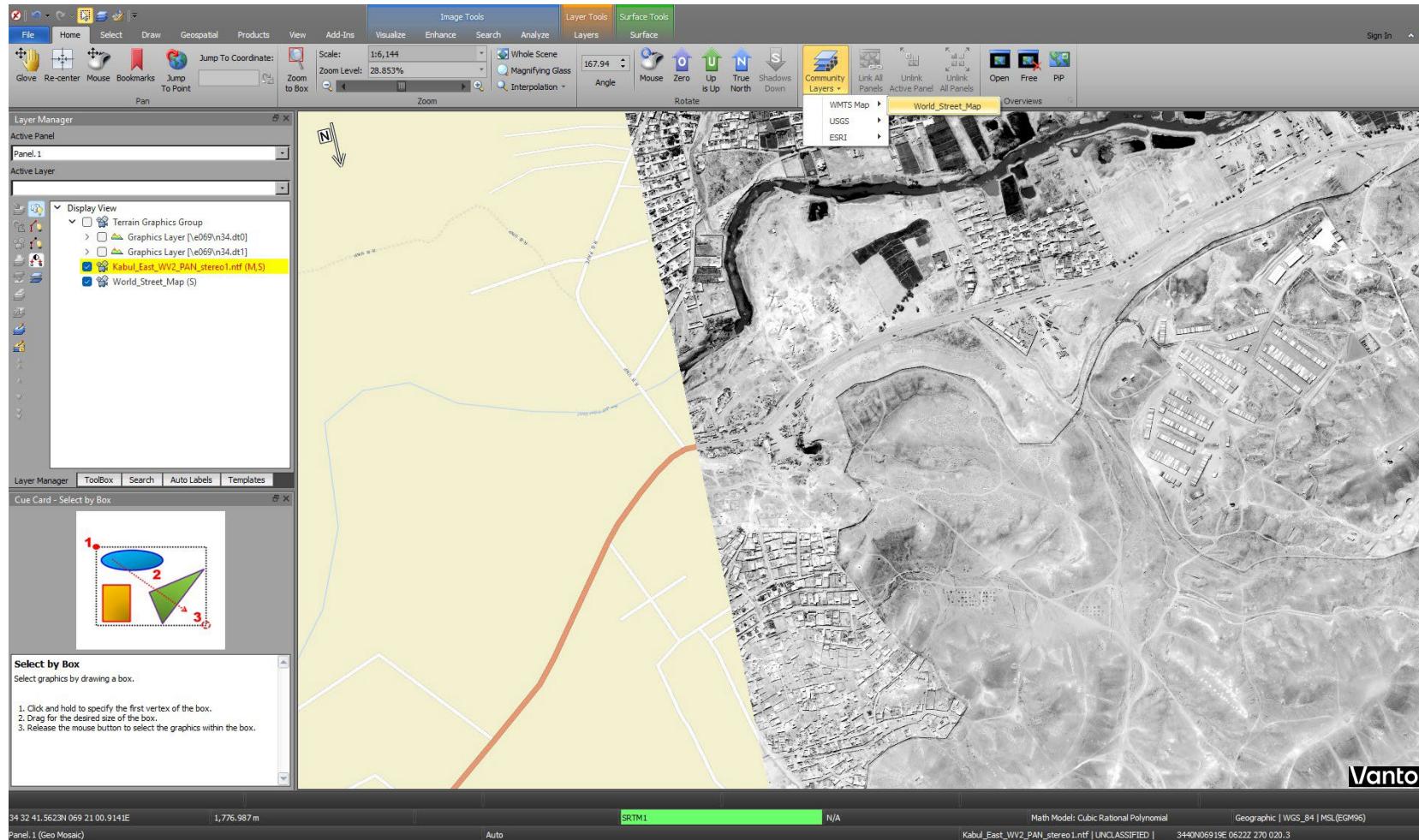
Finishing Tool improvements

- Support was added for PowerPoint template.

  - Use existing PowerPoint Templates instead of creating new ones.

- Finishing Tool image enhancements.

  - Added all items from the 2D Multiport to the Finishing Tool to give the user a more robust set of tools

  - Finishing Tool image enhancements.
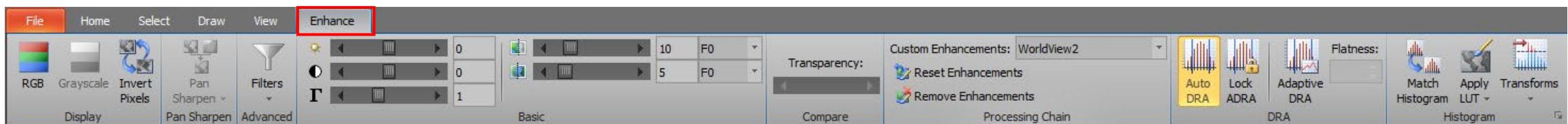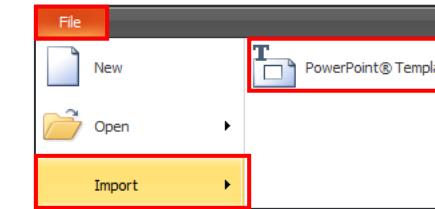
- Export to PowerPoint with editable graphics

  - Same look and feel from the 2D Multiport was added to the Finishing Tool.

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Attribute Filtering

- Users now can filter features in the Layer Manager by attributes in the Display View.

  - Right click the layer to filter on.

    - Allows the user to select Filter by Attribute.

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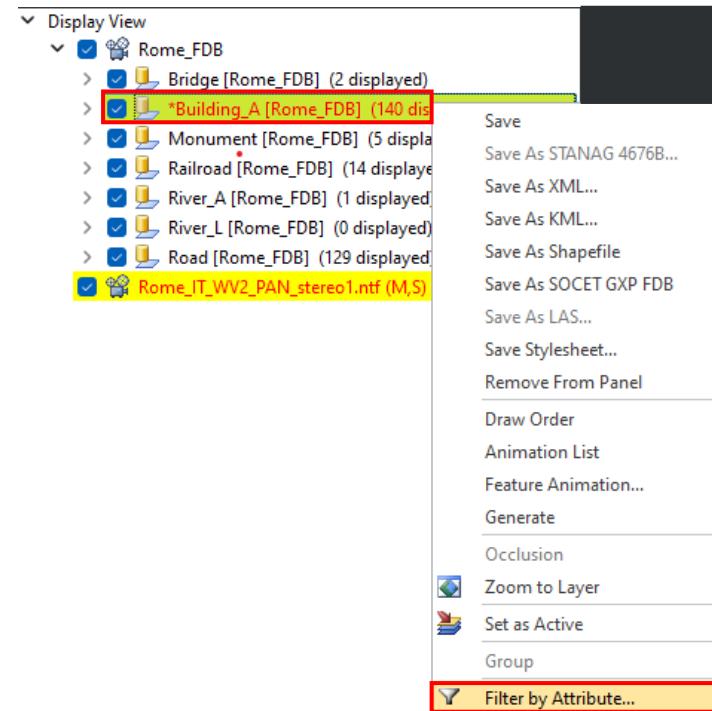
Attribute Filtering …2

- Select Attribute to filter on.

Attribute Filtering ...3

- Layer icon changes to reflect filtering is enabled.
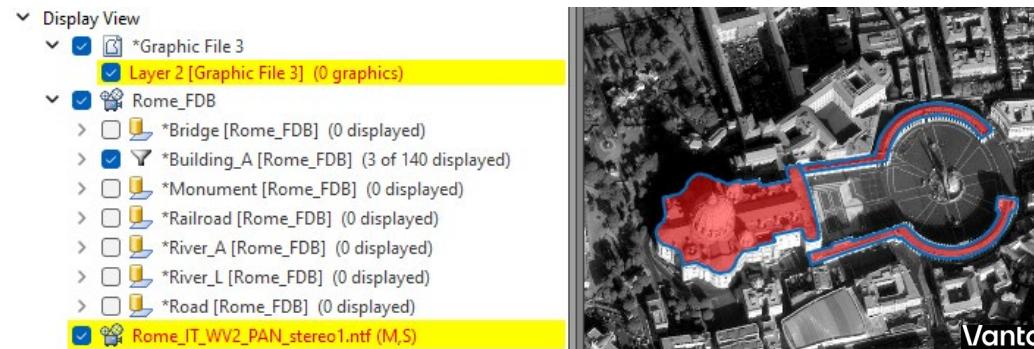
- Remove filter.

  - Right click the layer the filter was applied to and select Remove Attribute Filter.

Load Observations and Detections from Notifications

- Observations and detections can now be loaded into SOCET GXP directly from the GXP Xplorer Platform notifications.

- Configuration in SOCET GXP.

  - Preference must be configured for the GXP Xplorer Platform server.

    - Selected as the Primary Server.

    - Structured Observation Management (SOM) dialogue box selected.

  - In the GXP Xplorer Platform, select Notifications.

    - Load notifications into SOCET GXP.

    - All data and observations are displayed.

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Load Observations and Detections from Notifications ...2

- Select the notification bell icon.

  - Load the notification into SOCET GXP.
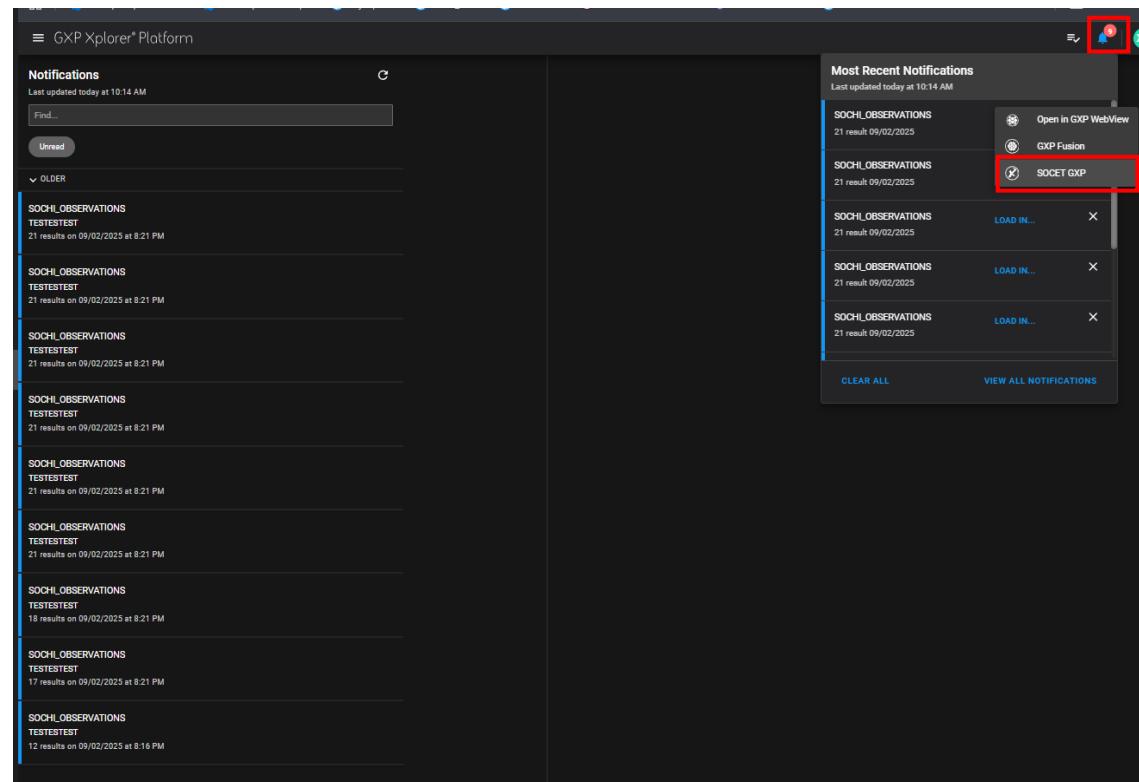
Load Observations and Detections from Notifications …3

- Data from the notification loads into the SOCET GXP Workspace Manager and a Multiport is opened.

  - Notifications have a different icon, and Type is listed as Notification.
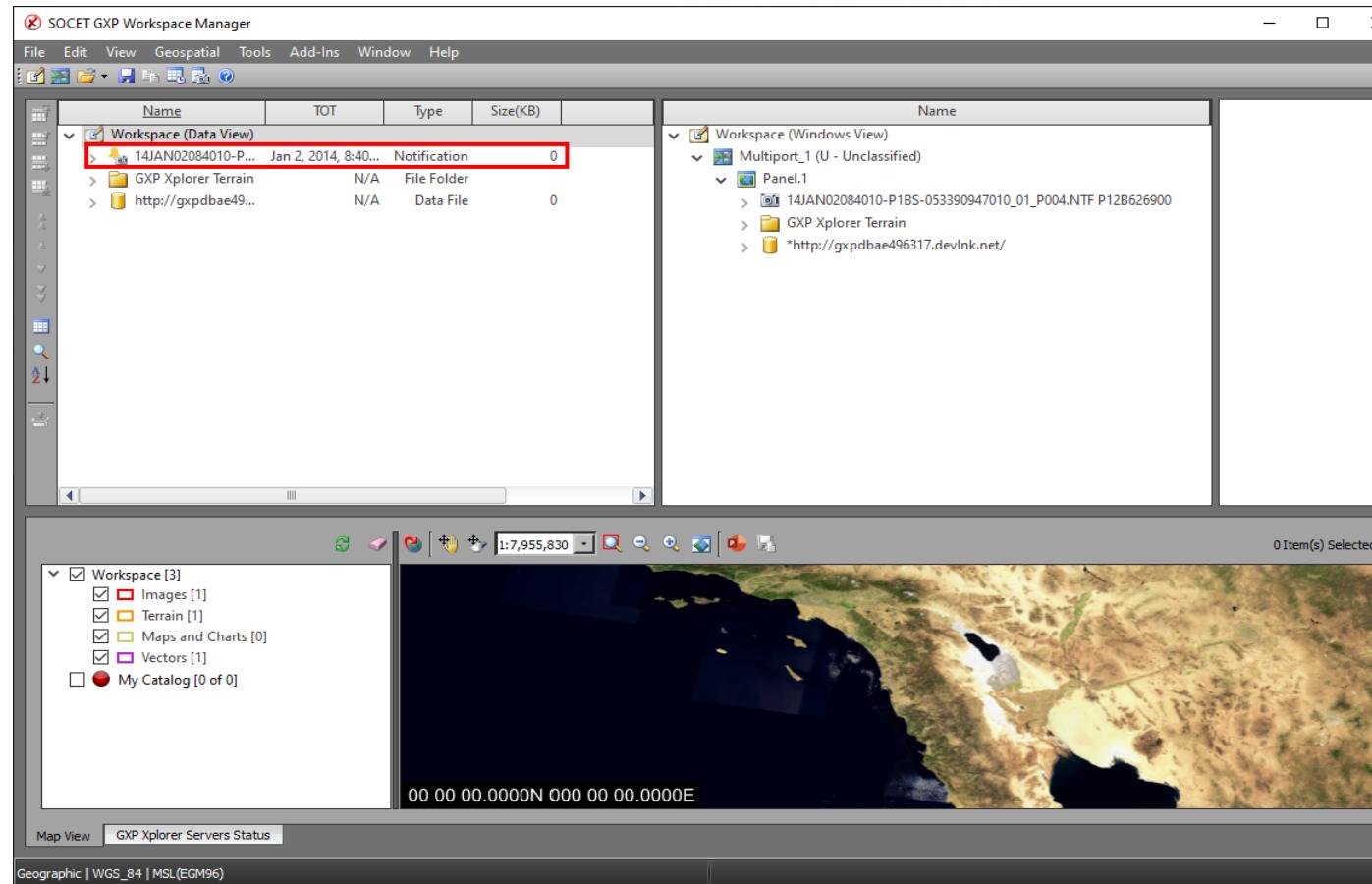
Load Observations and Detections from Notifications ...4

- Data loads into a Multiport for quick visualization and editing.

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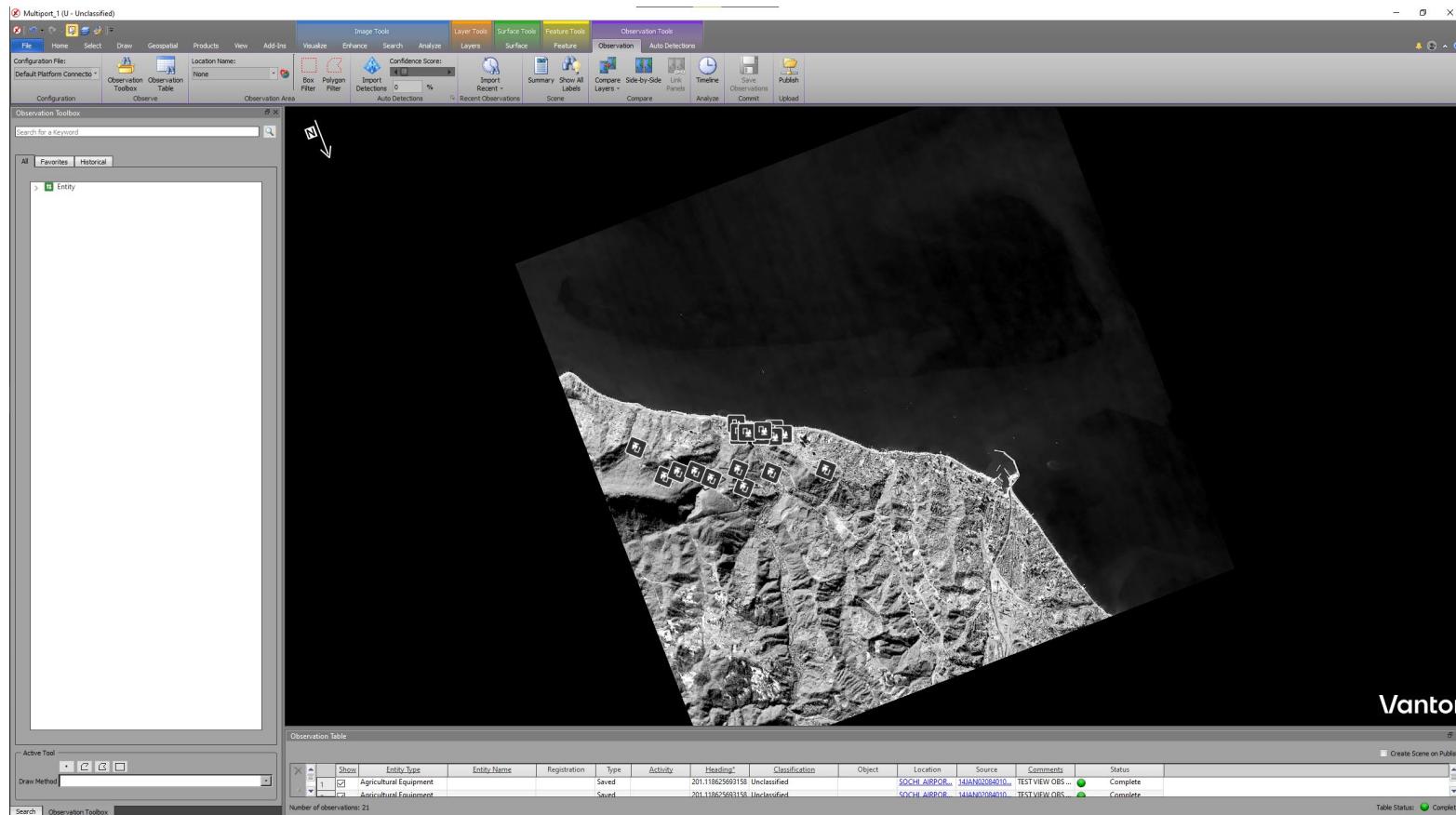
Additional new features

- High Throughput JPEG 2000 (HTJ2K) is now supported.

  - HTJ2K also provides bitrate improvements for both the numerically and visually lossless compressions.

  - This also significantly improves exploitation performance while decreasing storage requirements.

- New support for opening and displaying HDF5 OPIR data.

- Significantly improved performance when opening large Esri databases.

- Updated support for Vantor GEGD Pro plugin.

  - Enables users to access and display imagery from MAXAR directly into a SOCET GXP Multiport.

- Increased support for CIB/eCIB production over the polar zones.

- Added a hotkey to quickly zoom back to a 1:1 zoom level, alleviating the need to go back to the Multiport UI to perform this task.

  - Hotkey: ctrl+1.

  - Can be remapped in Hot Key menu.

- We can now Direct File Open GPM 1.2 data directly into SOCET GXP from the GXP Xplorer Platform 2.6.2 and later

- Added convert coordinates function in our JavaScript API.

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GXP InMotion v4.6.0.3 release enhancements

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New features

- Improved our Video Dumper tool to make the KLV output more human readable.

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GXP Desktop v4.6.0.4 release enhancements

Evan Miller
GXP Product Development

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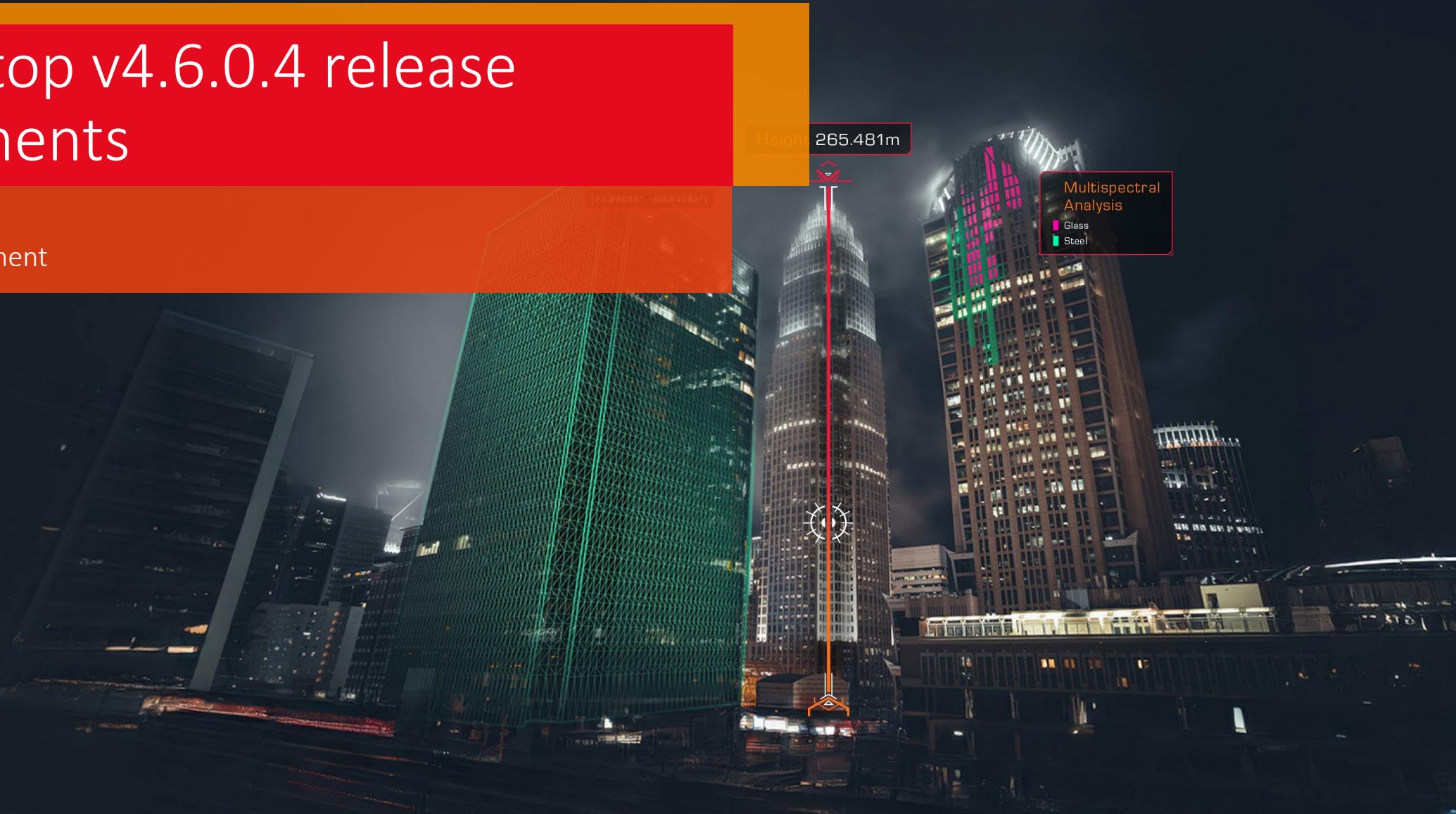
GXP Desktop v4.6.0.4 release enhancements

- This presentation contains the enhancements included in SOCET GXP and GXP InMotion released December 18th, 2025.

  - GXP Desktop software releases are full installations.

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SOCET GXP v4.6.0.4 release enhancements

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Infrastructure updates

- Updated to MSP v3.1.

- Improved Esri Feature Service Performance.

  - We removed unnecessary calls that could have led to timeouts.

- Updated SQLite® to mitigate vulnerabilities.

  - v3.50.4.

- Updated GDAL to mitigate vulnerabilities.

  - v3.7.0.

- Upgraded libcurl to mitigate vulnerabilities.

  - v8.14.1.

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New .xsup support

- When running automated triangulation jobs, the GXP Xplorer Platform generated Support Files will use the .xsup file extension as opposed to .sup.

  - When automated triangulation is performed in the GXP Xplorer Platform, DeepTie is used to auto-locate tie points and are correlated together to perform sensor model adjustments and output a .xsup file.

  - These .xsups are supported in SOCET GXP and displayed like regular .sup files.

    - Drag and Drop.

    - File Open.

    - Open via the GXP Xplorer Platform query.

    - Open or download via the GXP Xplorer Search in SOCET GXP.

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GPM 1.2 PPE (Per Point Error) support

- Users can now calculate an accurate CE/LE from 3D Tiles containing embedded PPE.

  - Status bar is also updated to support CE/LE.
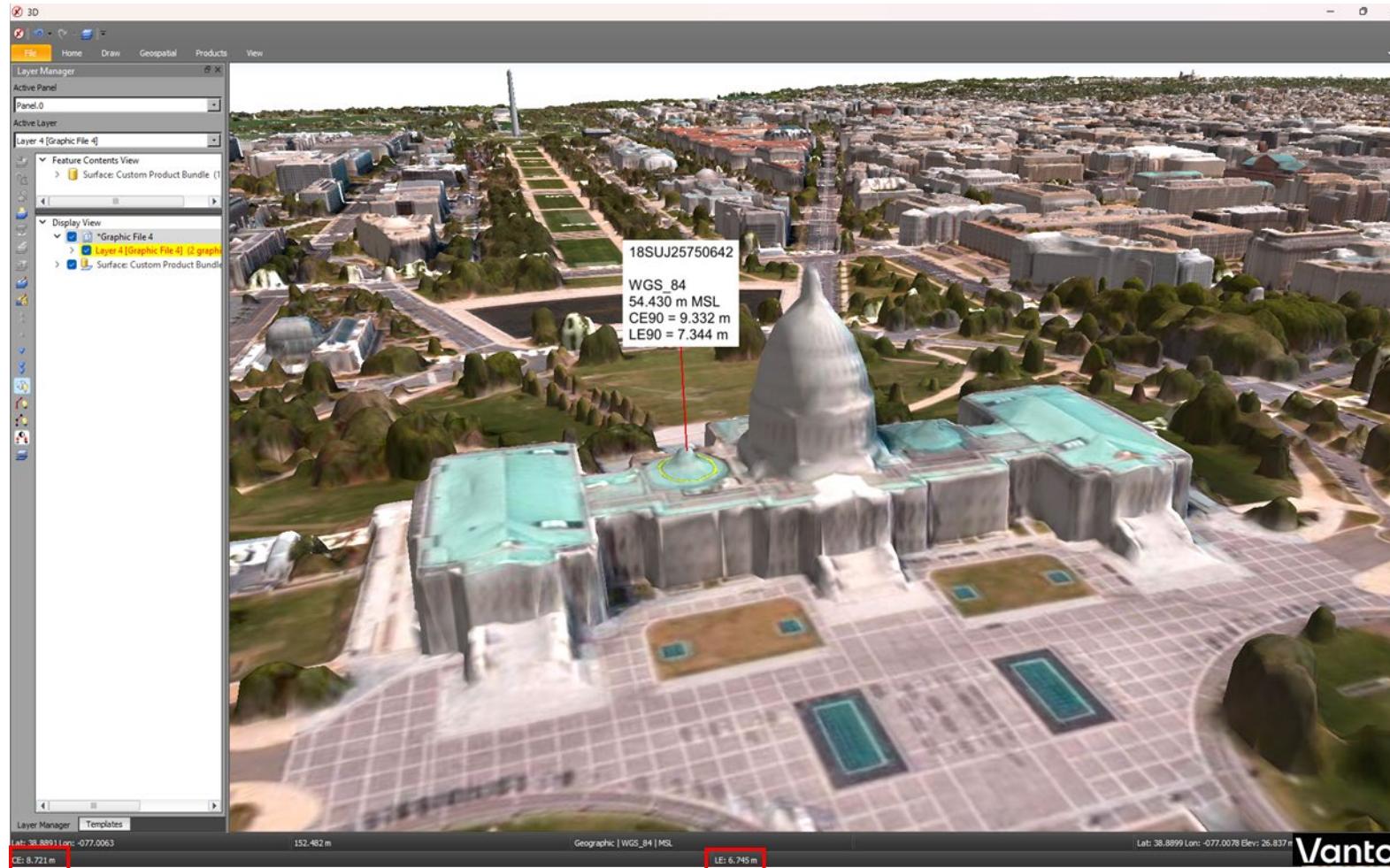
Additional new features

- Added support for ArcGIS Pro 3.4 and 3.5.
- Added improved Super Resolution models.
  - Requires a Deep Object License.
- Improved debug logging.
  - Removed full source file paths to alleviate confusion.
- Added support for getting the terrain type from our JavaScript API.
- Changed Horizontal Units default to Degrees for terrain output.

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GXP InMotion v4.6.0.4 release enhancements

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Infrastructure updates.

- Added support for STANAG 4607 v4 Metadata.

- MISB 0903.6 support was added.

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Occlusion Visualization

- Utilizing an Occlusion file users can load the camera parameters into GXP InMotion Desktop, so the users know where blockers might appear during their mission.

- File location: Install Directory: \BAE SYSTEMS\SOCET GXP 4.6.0\Config\Video\Occlusions.

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Occlusions in the Heads Up Display

- Visualizing Occlusion in GXP InMotion Desktop, so the users know where blockers might appear during their mission. Borders can be defined by importing an Occlusion file.

- It is enabled in preferences to display it in the Heads Up Display.

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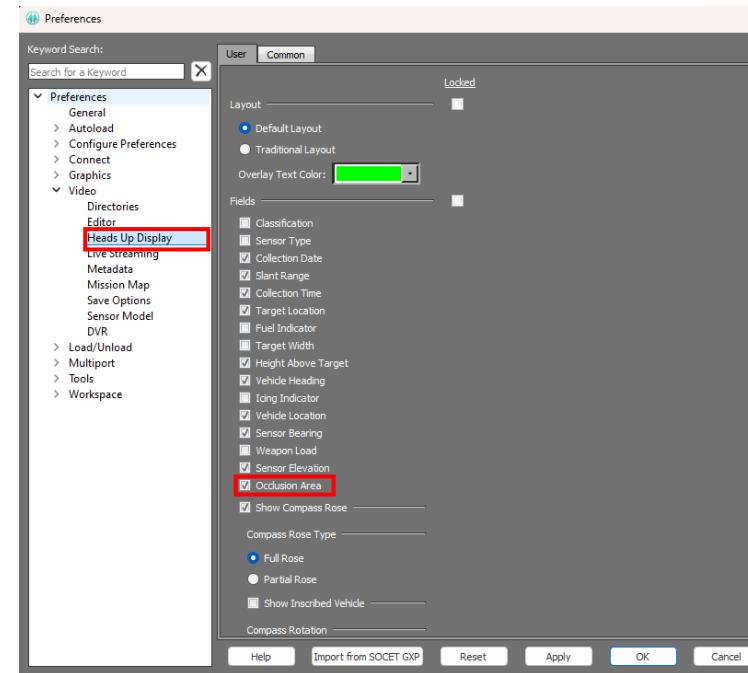
Occlusions in the Heads Up Display ...2

- Heads Up Display showing the occlusion in the frame.
  - Red frame indicates an occlusion, and the green outline is the camera footprint in relationship to the occlusion
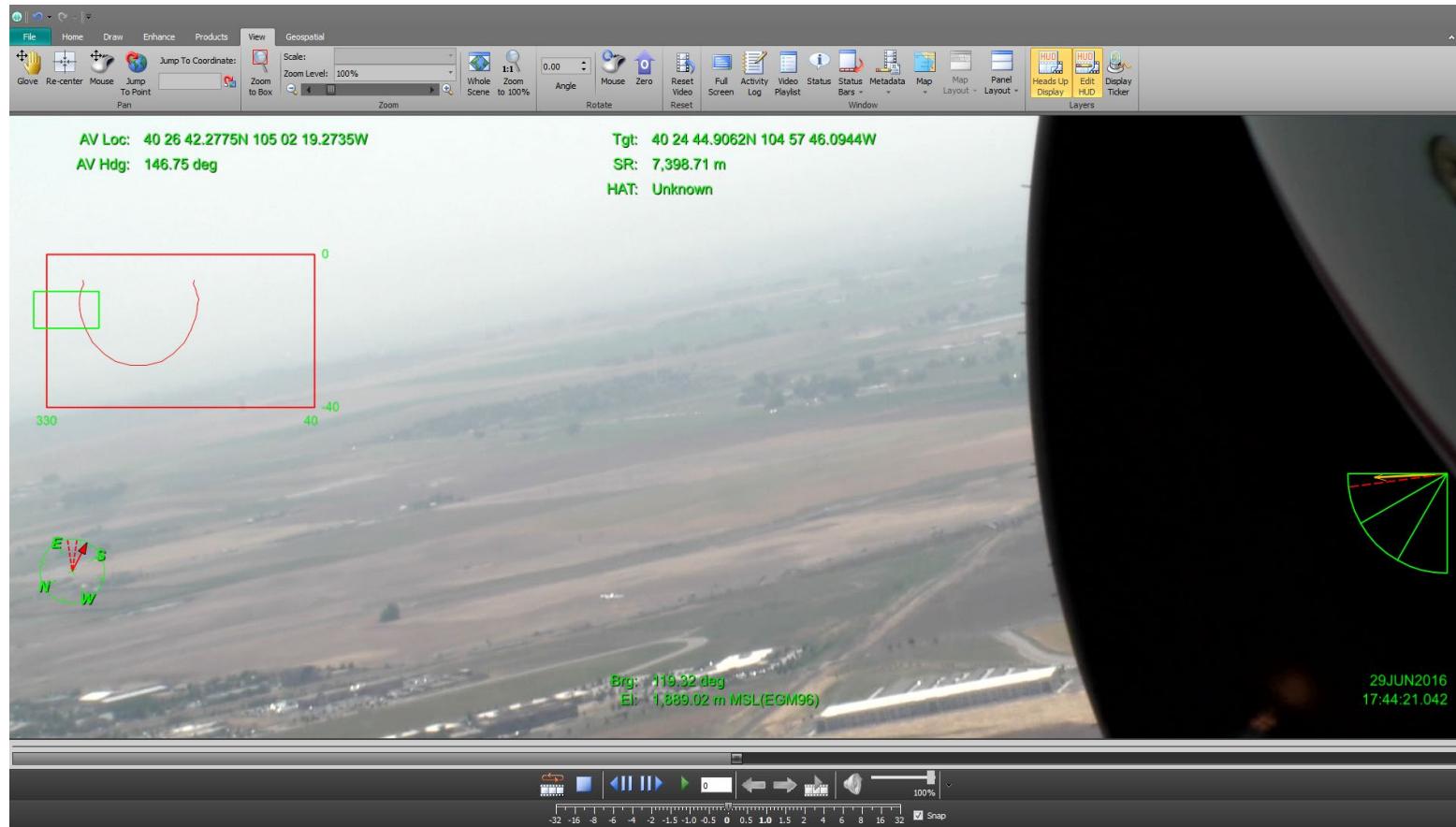
Imagery of MX-15 videos over Ft. Collins, CO; Courtesy of L-3 Communications, EO/IR Inc.

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Occlusion Visualization in the Map View

- When the occlusion file is configured, it identifies areas that are blocked in the Map View
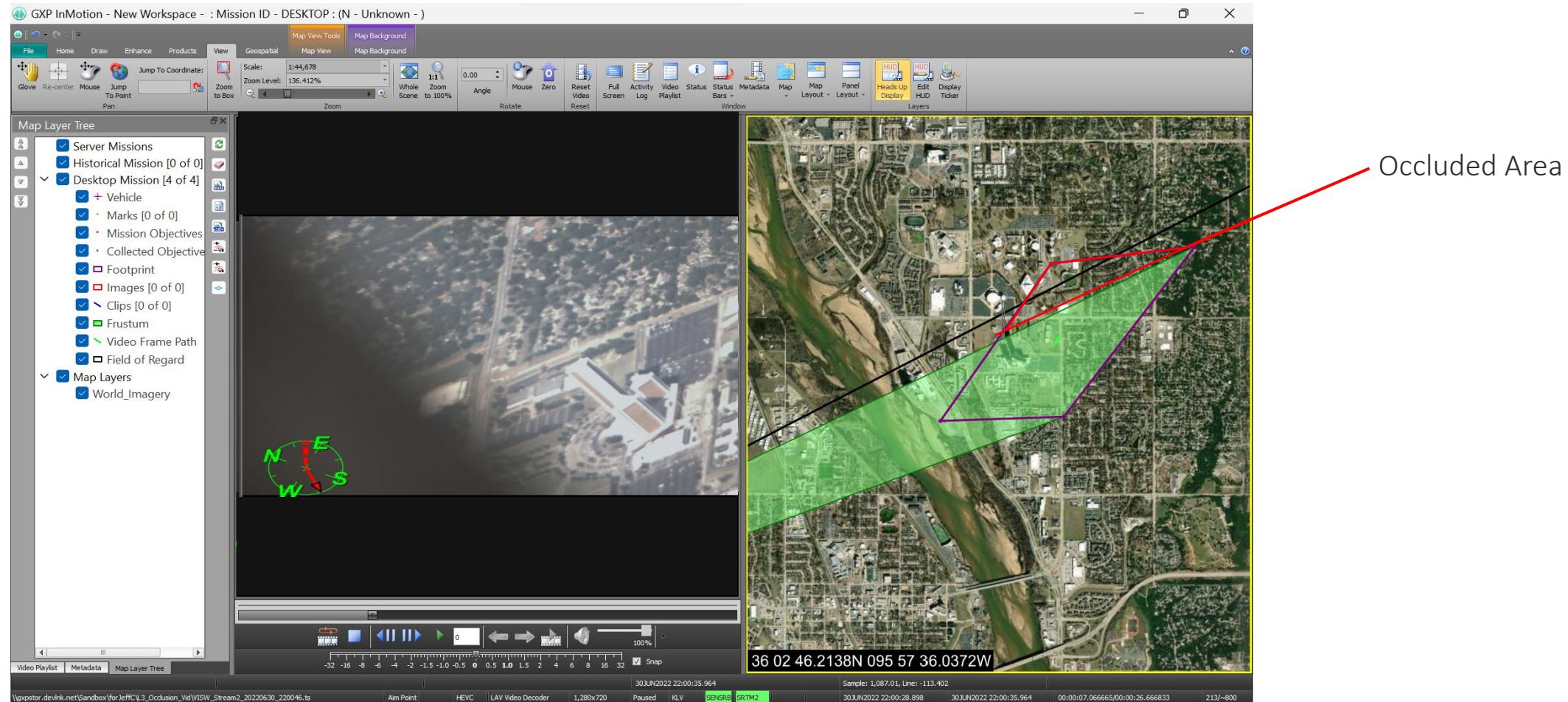
Imagery of MX-15 videos over Ft. Collins, CO; Courtesy of L-3 Communications, EO/IR Inc.

Ingest and display external metadata from a file

- Enables users to import external metadata, filter and display in the metadata viewer.

  - Supports .csv formatted data.
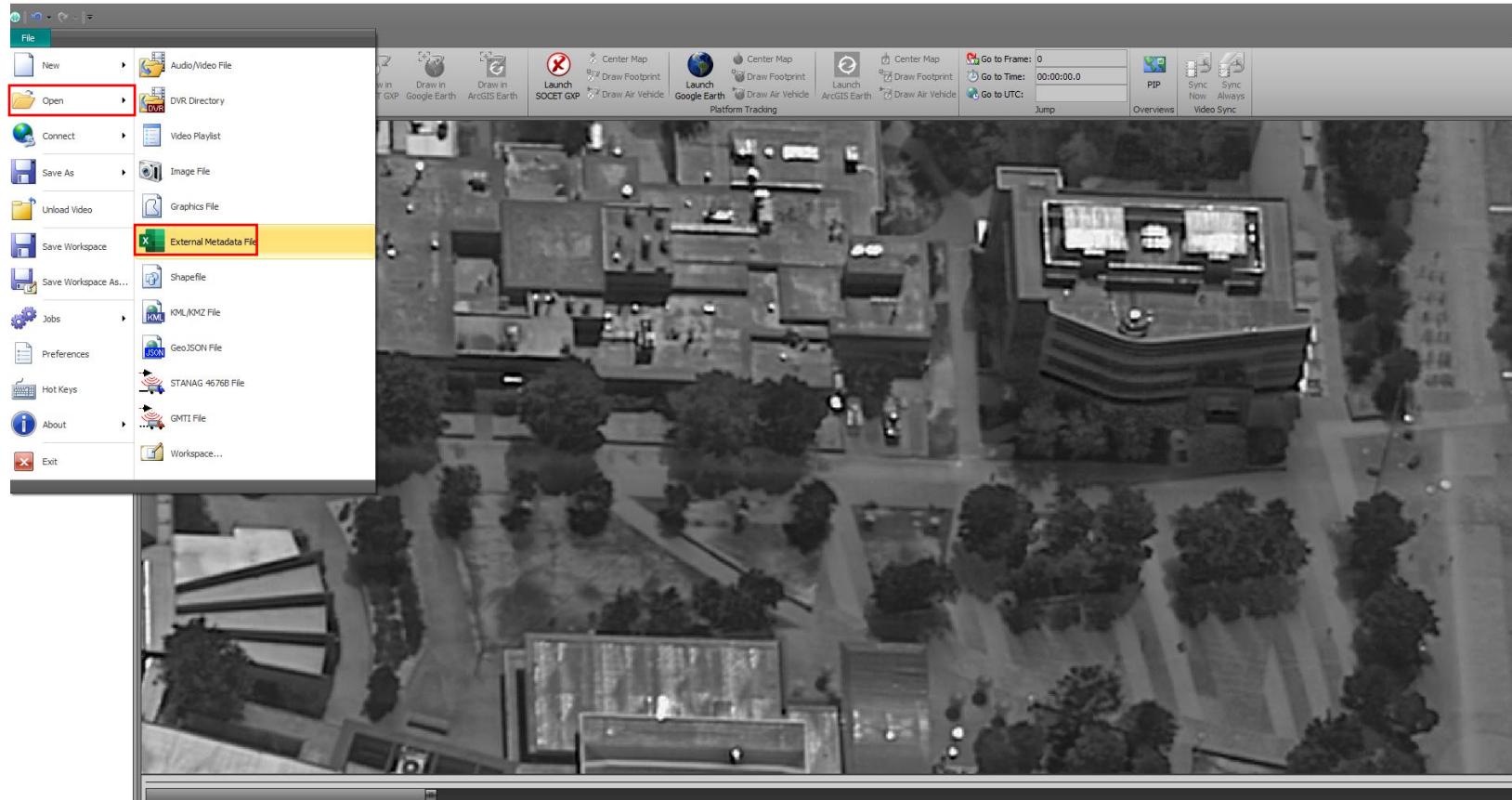
Imagery of MX-15 videos over Ft. Collins, CO; Courtesy of L-3 Communications, EO/IR Inc.

Ingest and display external metadata from a file ...2

- Import Metadata and assign columns, only columns assigned will be displayed.
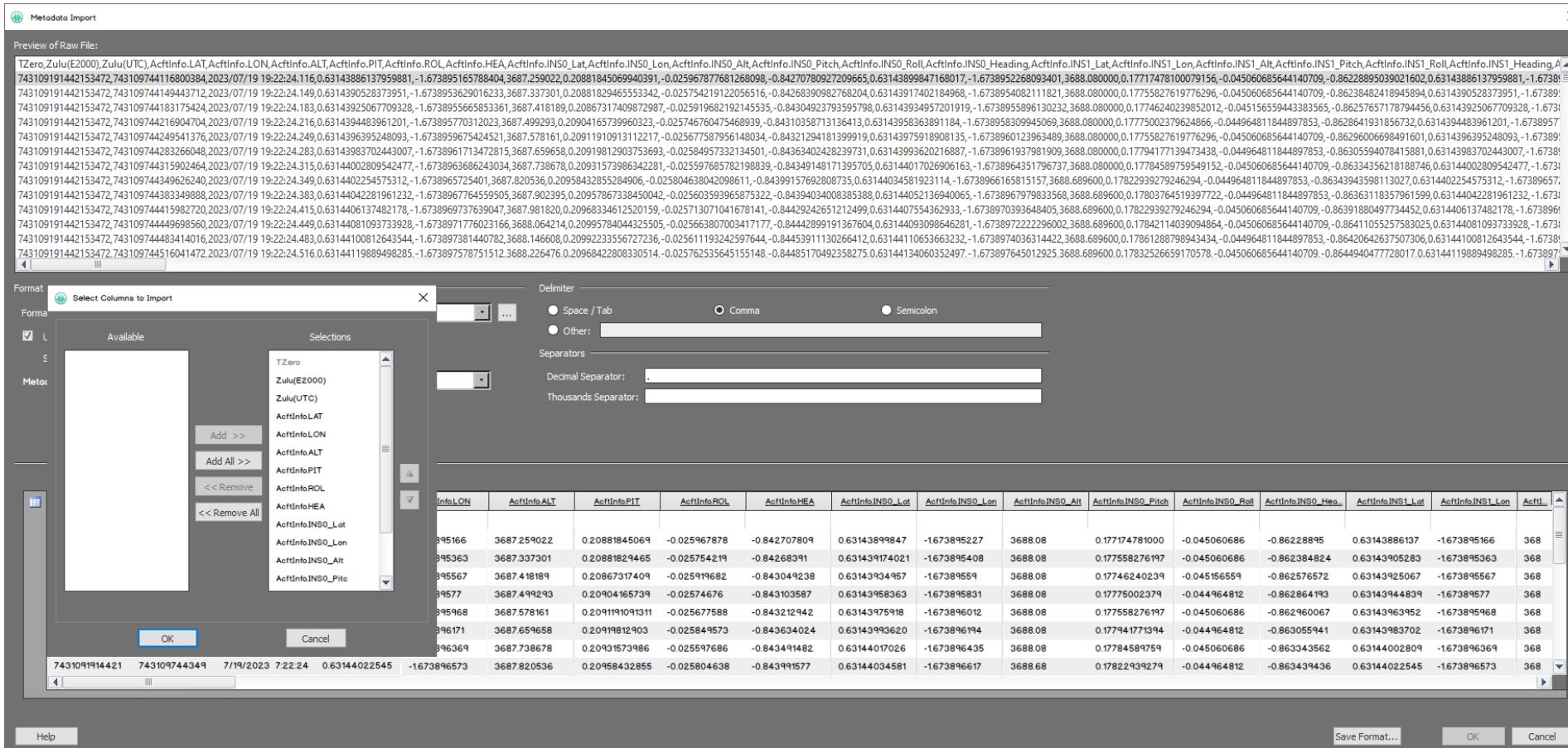
Ingest and display external metadata from a file …3

- Once loaded the new metadata file can be selected

  - View tab and drop down the Metadata button, select External Video Metadata

  - New External Metadata dockable window appears
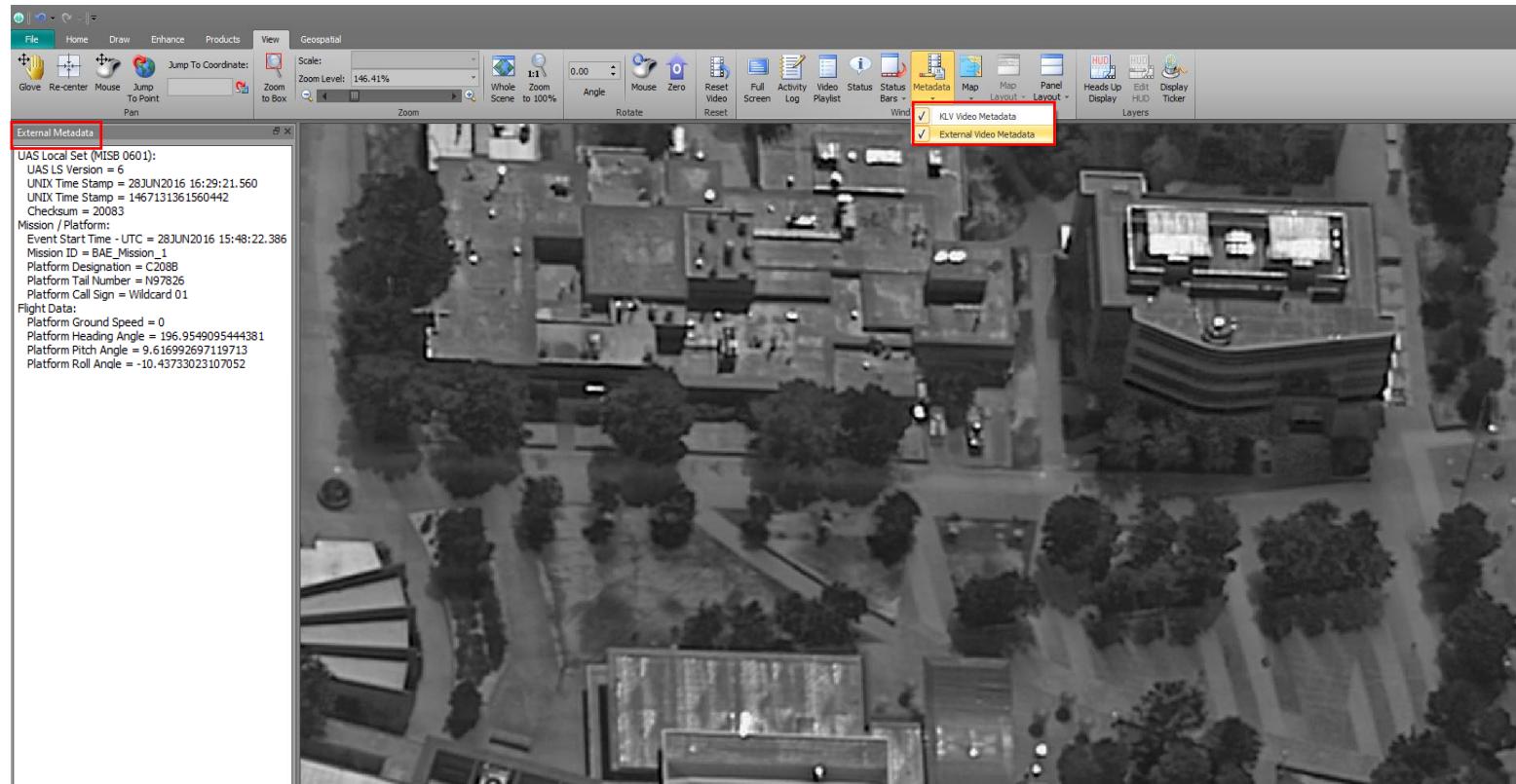
Imagery of MX-15 videos over Ft. Collins, CO; Courtesy of L-3 Communications, EO/IR Inc.

Thank you

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