

GXP® Desktop v4.6.0 cumulative release enhancements

Evan Miller
GXP Product Development



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.

SOCET GXP v4.6.0.0 release enhancements



Infrastructure updates

- Added support for Microsoft Windows® 11.
- Removed LEAD video filter dependencies.

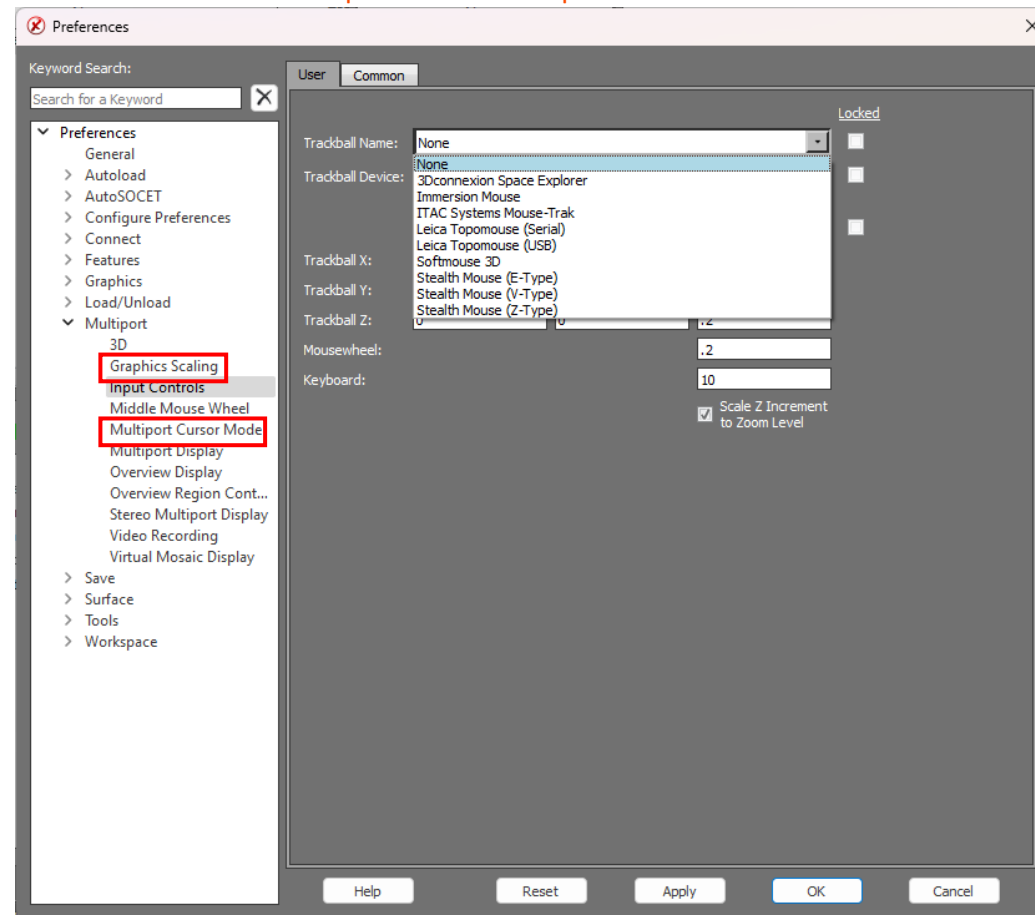
API updates

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

Trackball name preference

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

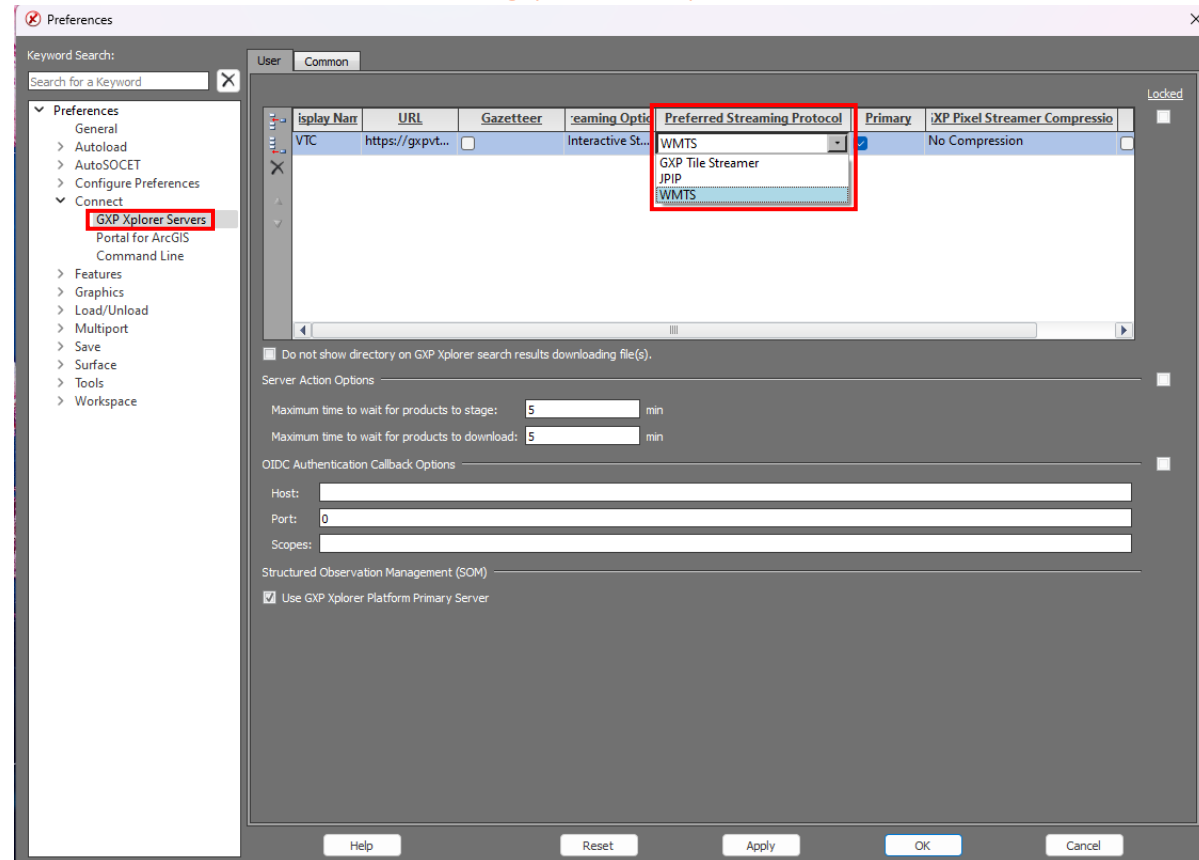
Input controls preference



Preferred Streaming Protocol preference

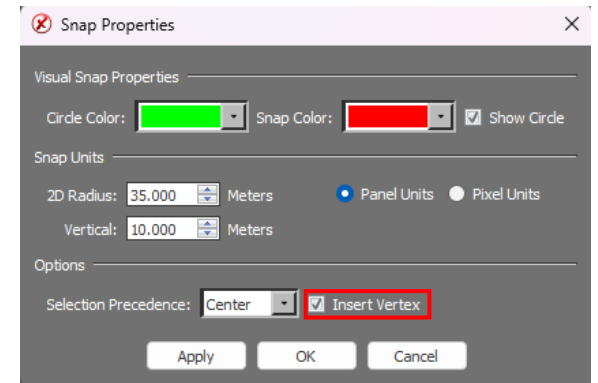
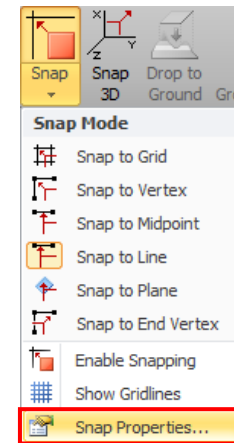
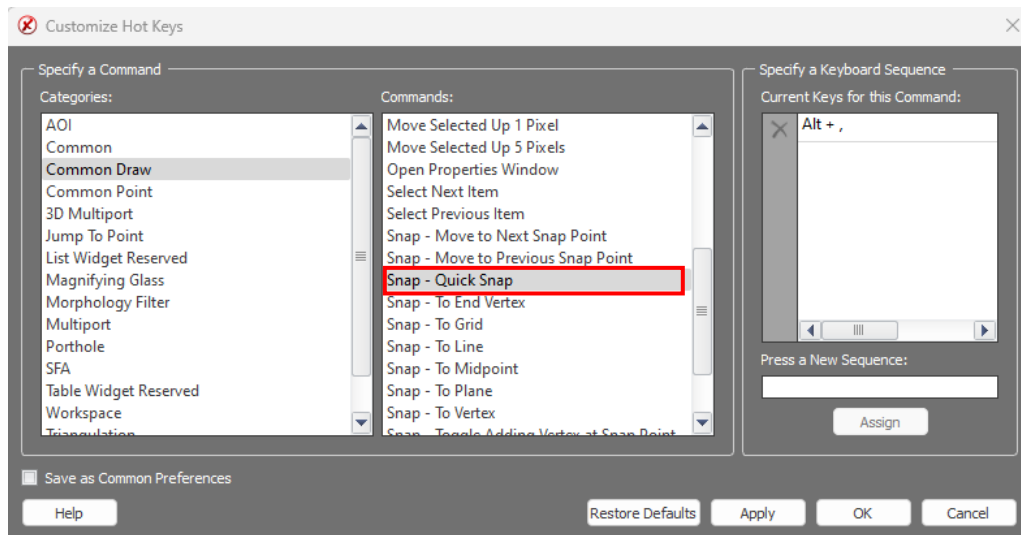
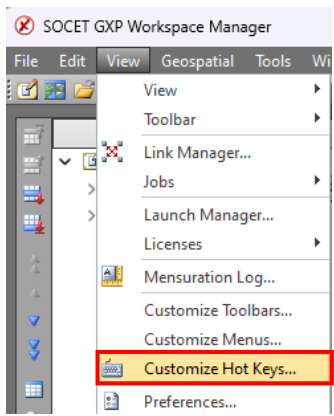
- Allows users to select how they want their imagery streamed into SOCET GXP from their GXP Xplorer® Platform server.

Streaming protocol preference



Quick Snap Hotkey

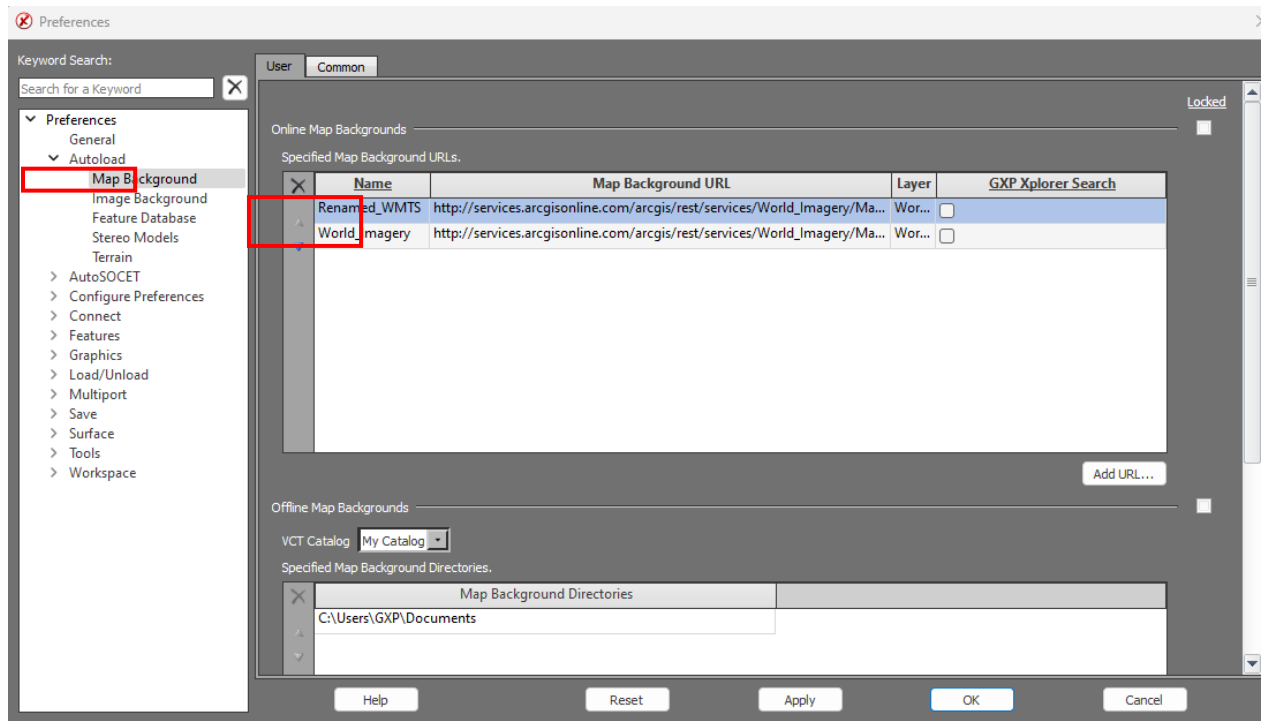
- Allows users to quickly snap to a point using a hotkey.
- Insert Vertex must be enabled.



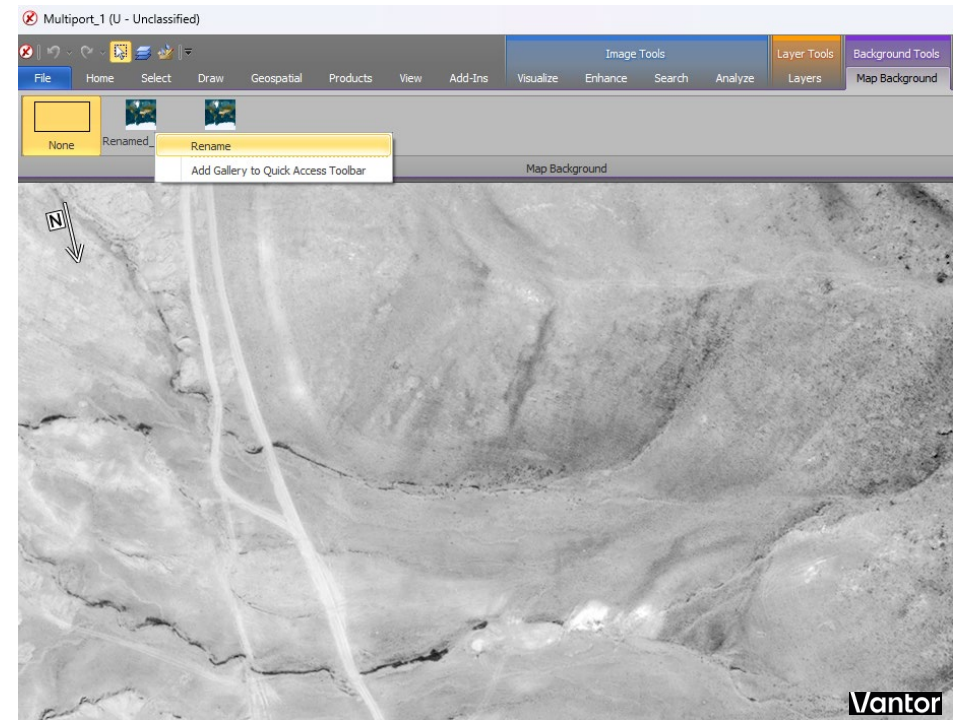
Map Background functionality

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

Map Background Preference



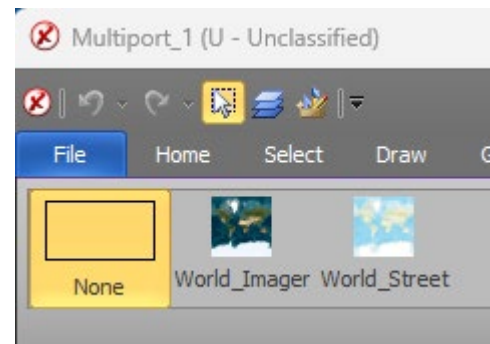
Map Background Rename from Multiport



Map Background thumbnails

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

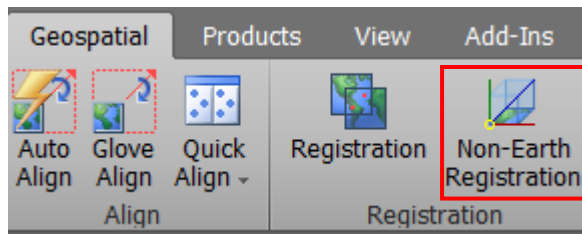
Map Background Thumbnails



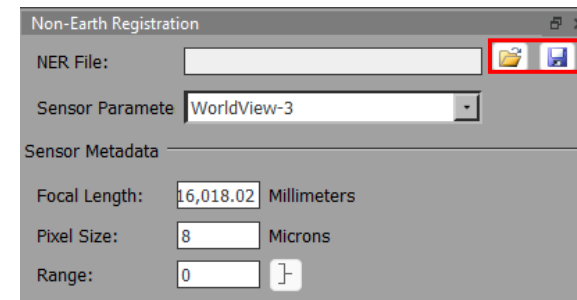
Non-Earth Registration (NER) load/save

- Allows users to load previously saved NER work.
- Enables users to save work prior to workflow completion.

NER button location



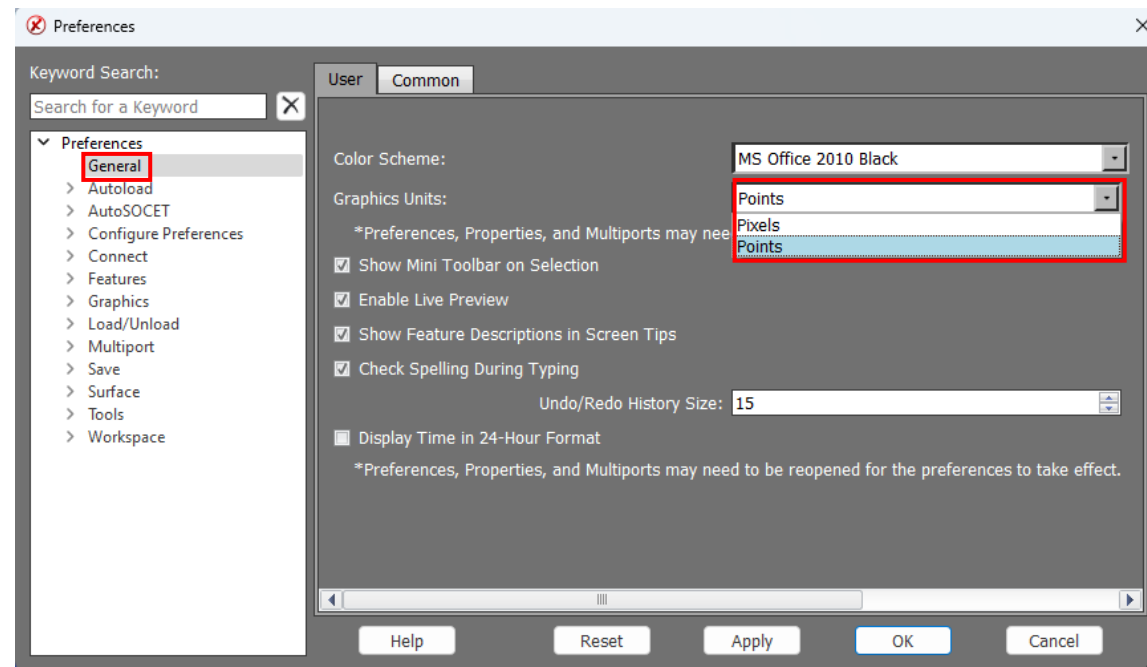
NER Open/Save button



Point graphics units preference

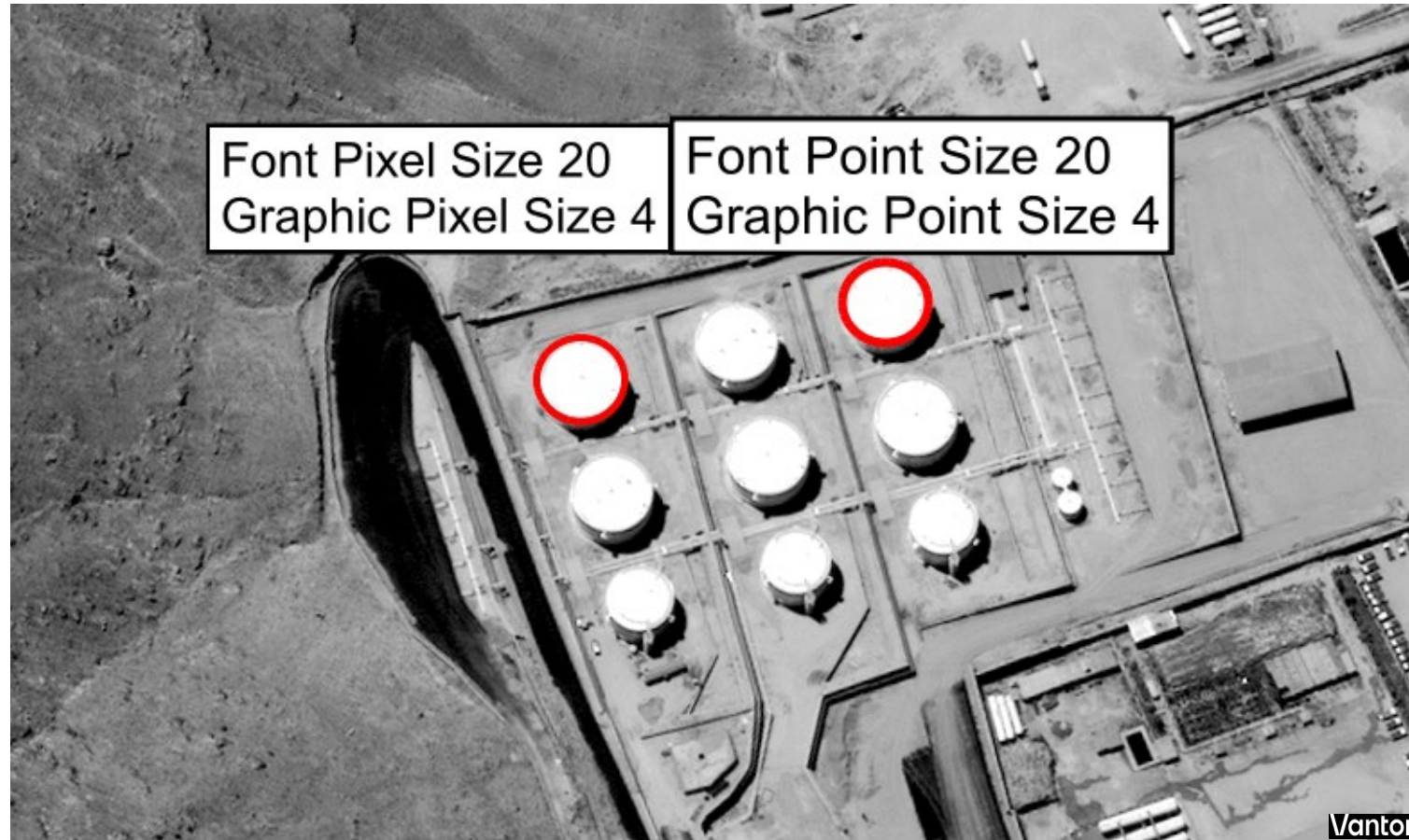
- Users can now use point size instead of pixels.
- Maintains graphic size across different screen resolutions.
- Can be updated on the fly.

Graphics Units Preference



New point graphics units preference

- Example:



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.

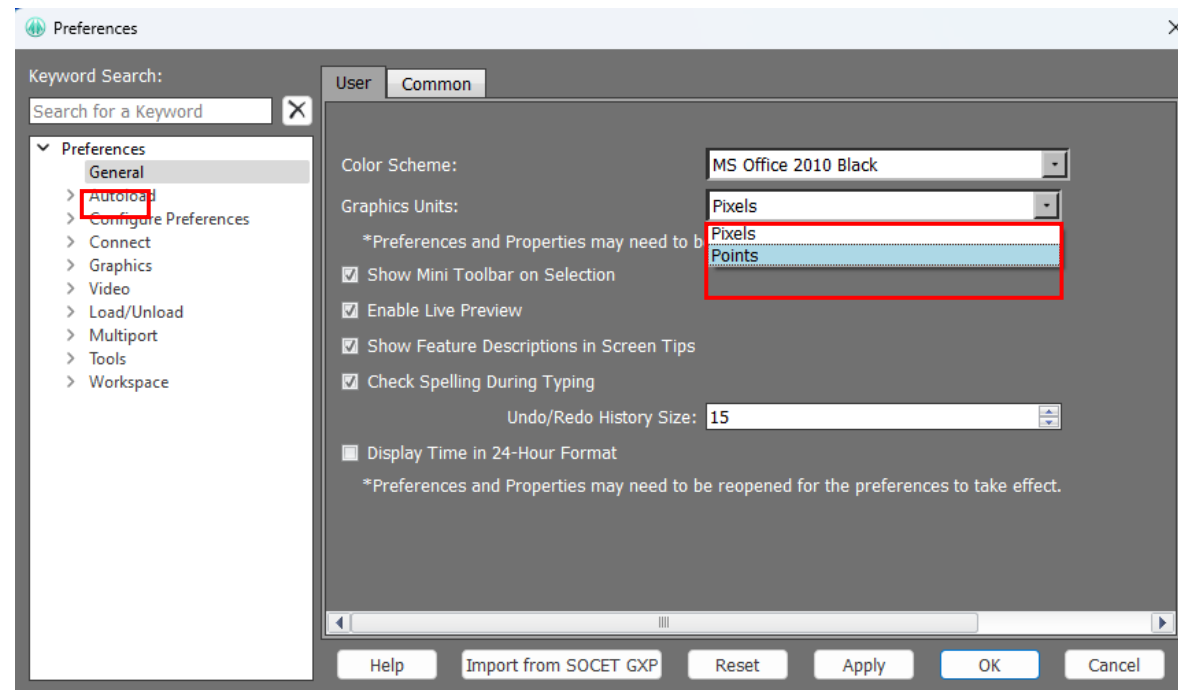
GXP InMotion v4.6.0.0 release enhancements



Point graphics units preference

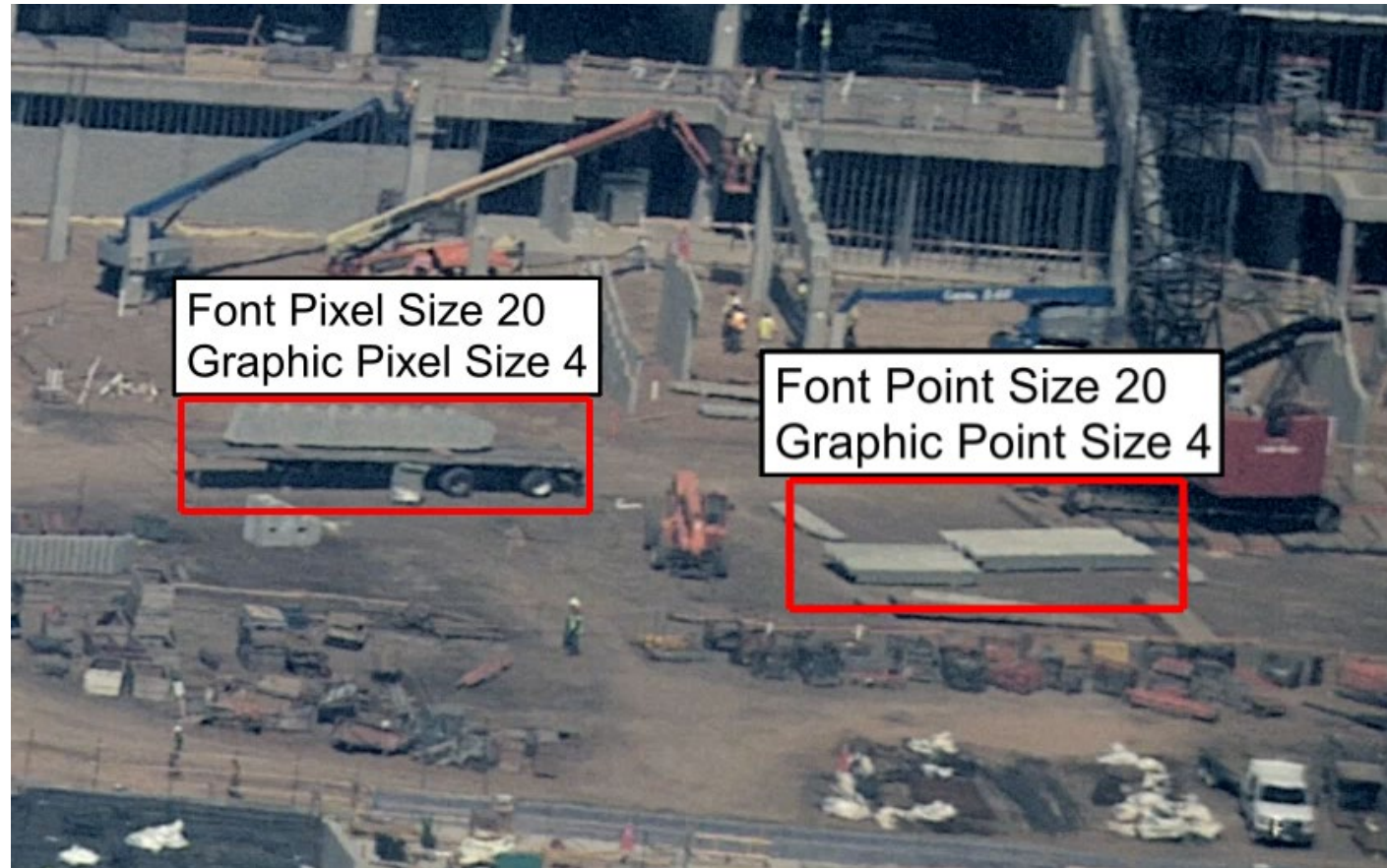
- Users can now use point size instead of pixels.
- Maintains graphic size across different screen resolutions.
- Can be updated on the fly.

Graphics Units Preference



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 Product Development



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.

SOCET GXP v4.6.0.1 release enhancements



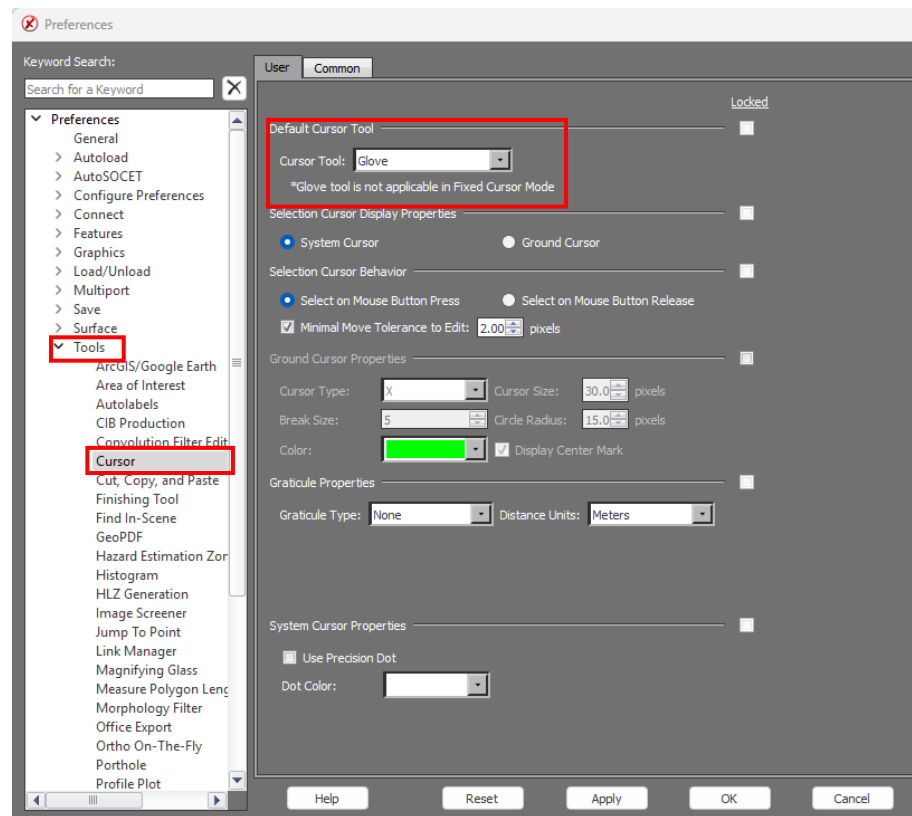
Infrastructure updates

- Updated to JavaScript 11.
- Updated PostgreSQL®.
- Updated OpenSSL®.
- Added support for .NET 8.
- Integrated OAuth2.0 authentication.
- Updated UnicodeDateTime.

Added preference for Default Cursor tool

- Allows cursor to default to Glove tool.

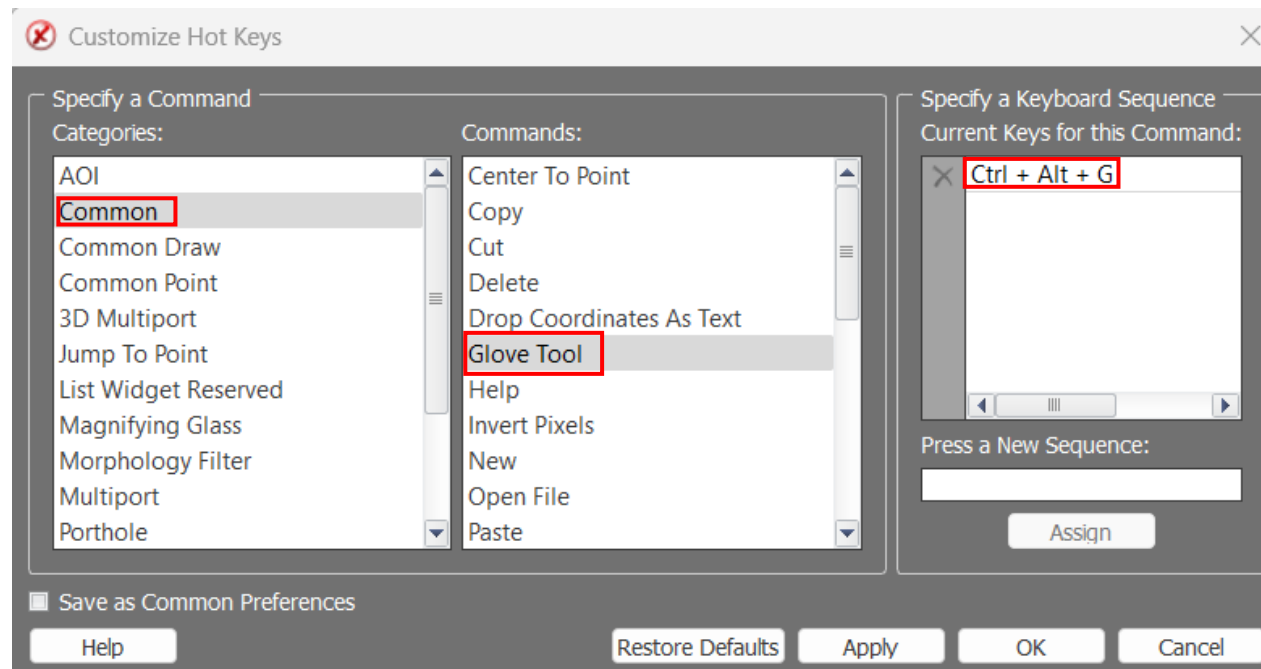
Default Cursor Tool preference



Added Hotkey for Glove tool

- Allows cursor to quickly change to Glove tool.

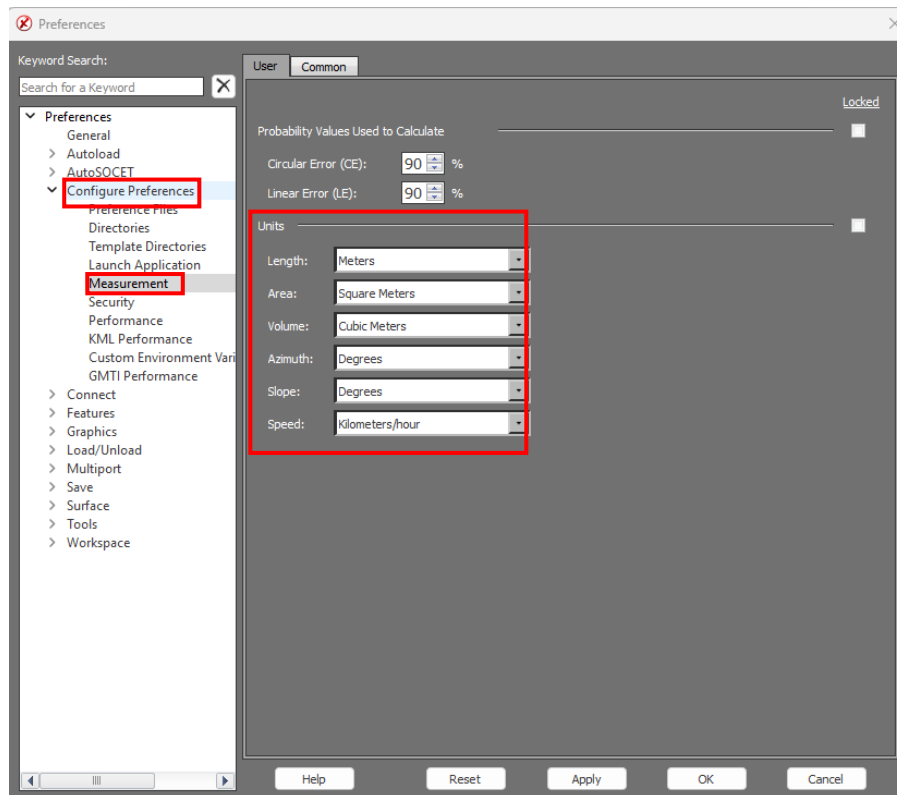
Glove tool Hot Key location



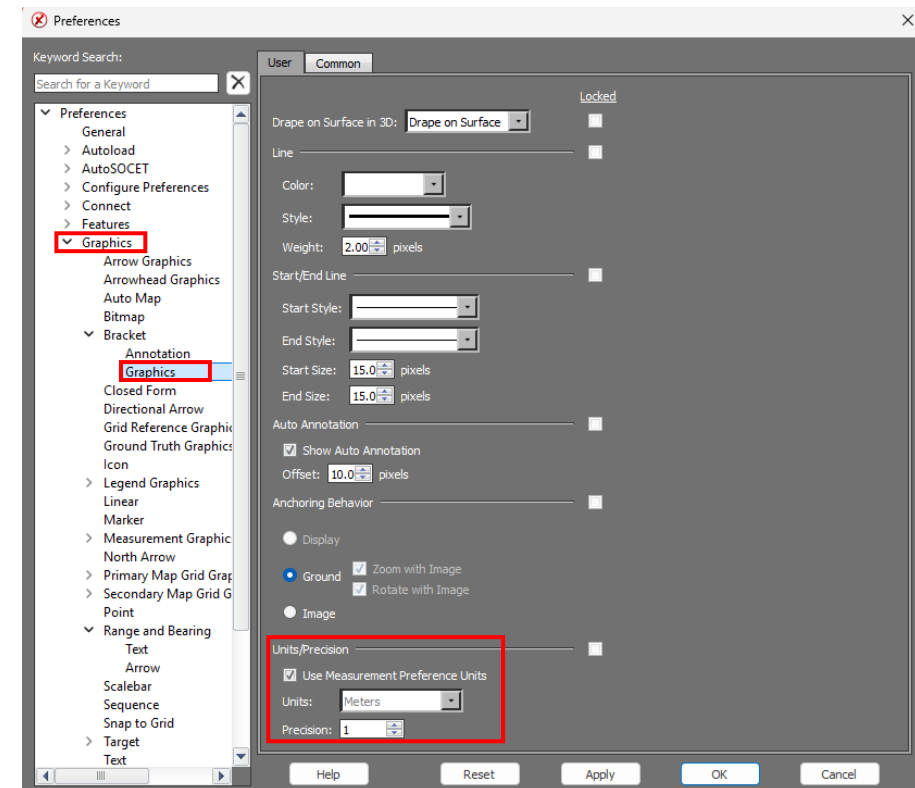
Added Measurement Override to Preferences

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

Measurement preference location



Override Measurement preference location

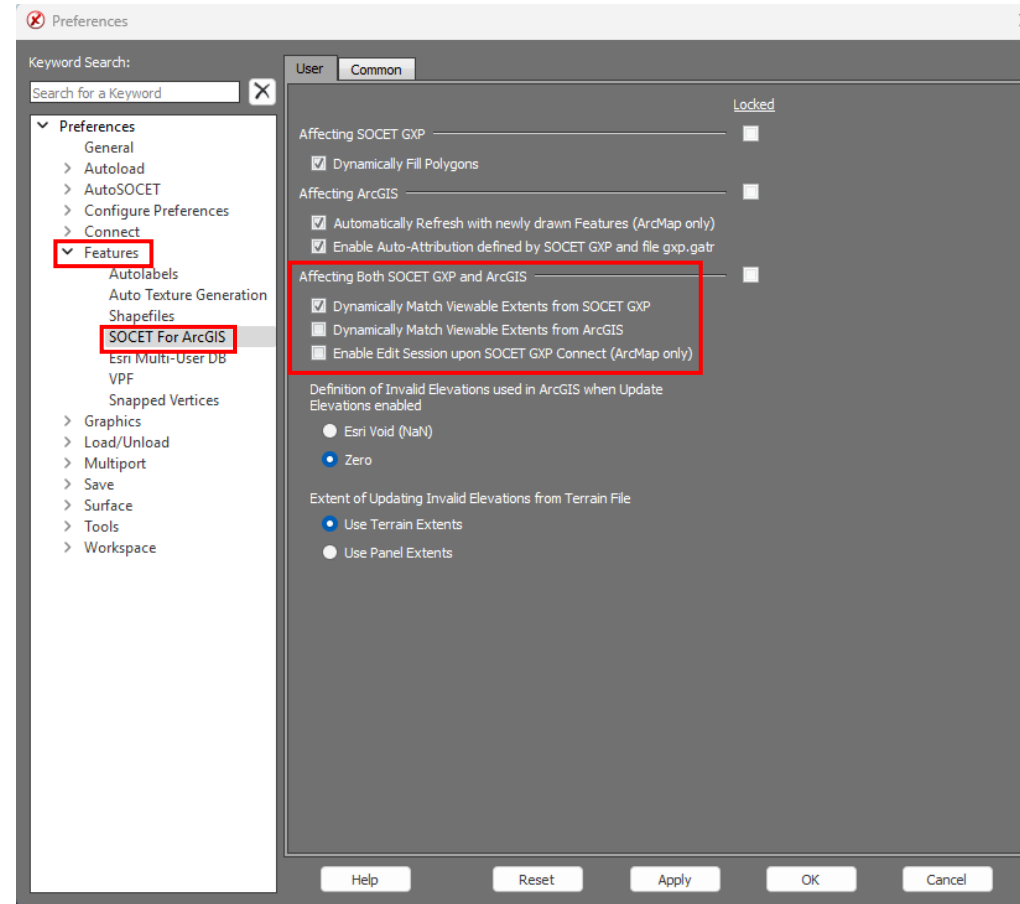


Sync Cursor

- 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”.

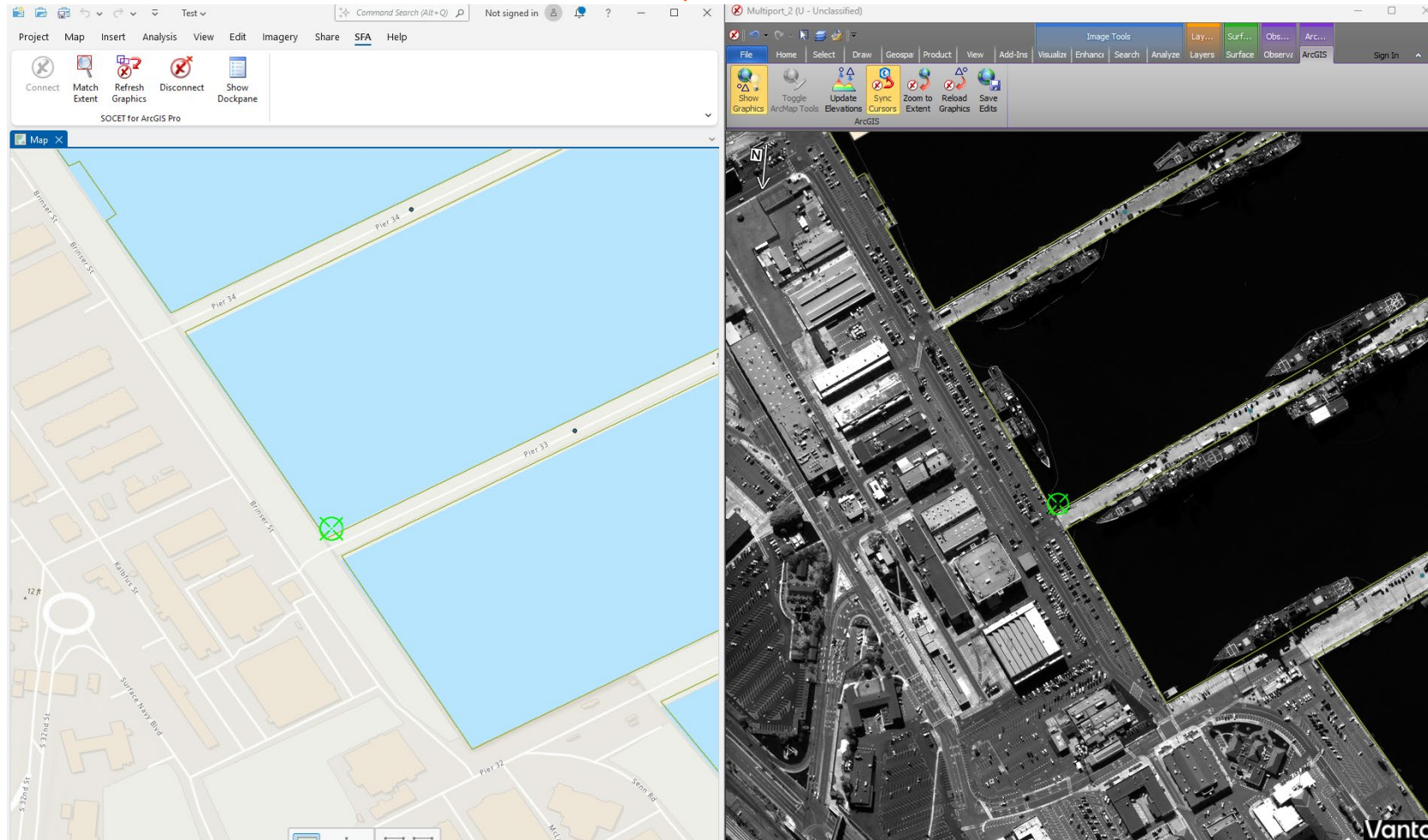
Sync Cursor ...2

Sync Cursor Preference location



Sync Cursor ...3

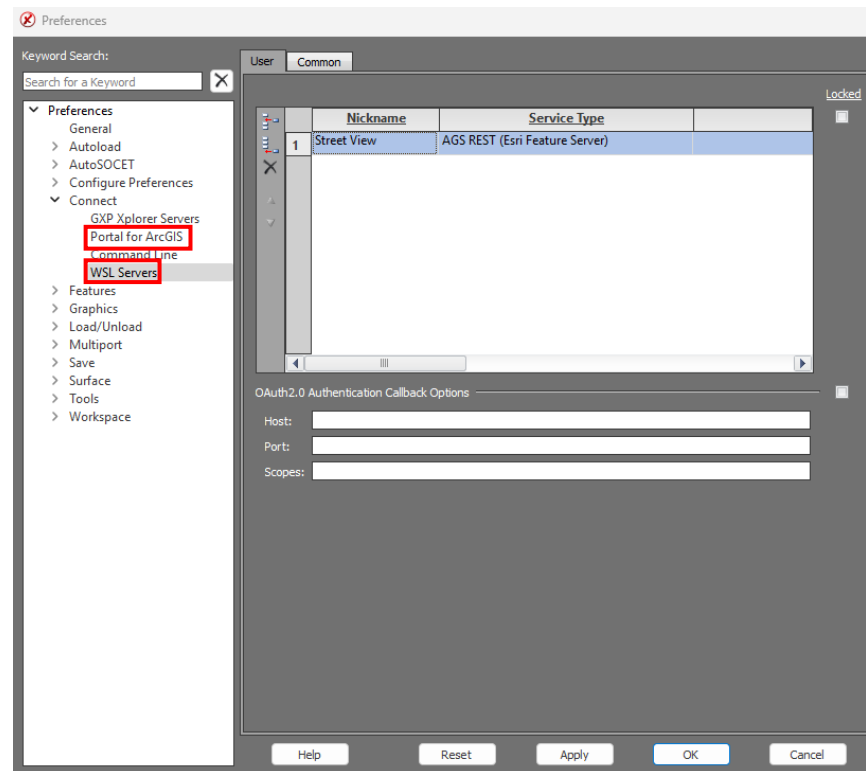
Sync Cursor UI



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

The screenshot displays the ArcGIS Desktop interface. The main map shows a world map with numerous blue dots representing city locations. A dialog box titled 'Open Web Service Layer' is open in the foreground. The dialog box contains the following fields and options:

- URL Nickname: Nickname_2
- Service Type: AGS REST (Esri Map Server)
- URL: <https://arcgisserver.devlink.net/server/rest/services/SampleWorldCities/MapServer>
- Authentication: Basic Auth OAuth2.0
- Client ID: [Empty field]

At the bottom of the dialog box, there are buttons for 'Help', 'Add as a Preference', 'Apply', 'OK', and 'Cancel'.

The status bar at the bottom of the ArcGIS Desktop window shows the following information:

- Sample: 20,258,476.82, Line: 3,355,443.20
- GSD (S/L): 0.185/0.599 m
- export?NICKNAME=Nickname_2& 1
- Pixel Value: R(Band 1):208 G(Band 2):207 B(Band 3):212
- 72 00 00.3955N 071 19 29.9553W
- 35,410 m
- Terrain Not Available
- N/A
- Math Model: Four Corner (DLT)
- Geographic | WGS_84 | MSL(EGM96)
- Panel_1
- Nickname_2

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.

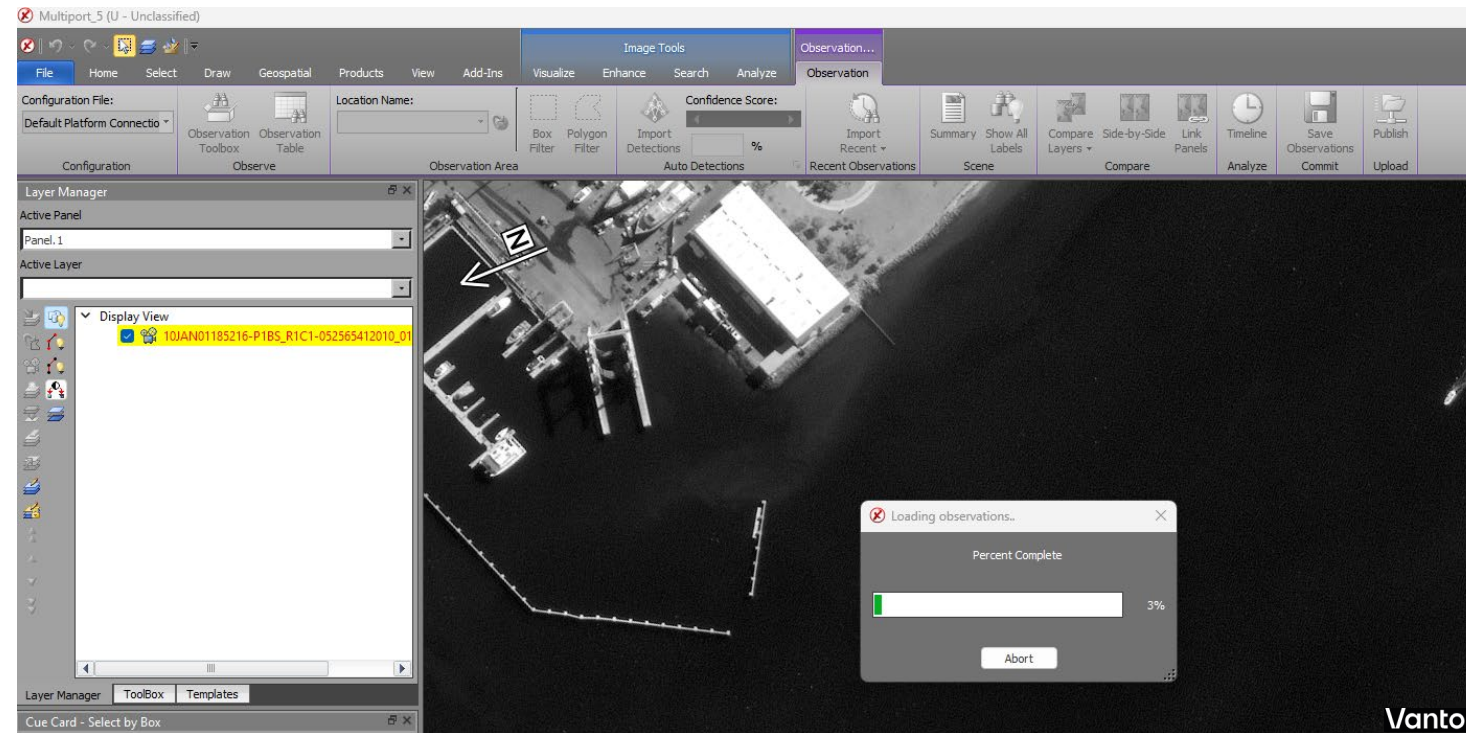
Feature Service Layer

The screenshot displays the GXP Xplorer Connector interface. The search results table at the bottom shows a list of services. The first row is highlighted in red, indicating the selected service. The table columns include Date Collected, Filter, Filename, Tags (Type), Sensor Name (Used/Not), Size, Related Files/Number of Files, and Downloadable/Status.

Date Collected	Filter	Filename	Tags (Type)	Sensor Name (Used/Not)	Size	Related Files/Number of Files	Downloadable/Status
No filter selected	No filter selected	https://sampleserver1.arcgisonline.com/arcgis/rest/services/PhoneticOrders/FeatureServer - Dispatch	No filter selected	No filter selected	No filter selected	No	No
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/PhoneticOrders/FeatureServer - Dispatch	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/RedlandsEmergencyVehicles/FeatureServer - Ambulance	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/RedlandsEmergencyVehicles/FeatureServer - Police	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/RedlandsEmergencyVehicles/FeatureServer - Fire	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/ServiceRequest/FeatureServer - Service Requests	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/VerticalLines/FeatureServer - Extract_Earthquake_FeatureSet	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/NapervilleHomes/FeatureServer - Shakes	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/OilSandsProjectBoundaries/FeatureServer - OSPagesPoints2015	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water Hydrant Valves	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water Cub Stop Valves	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water Fittings	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water System Valves	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water Mains	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water Lateral Lines	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water Casings	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water Network Structures - City View	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Water_Network/FeatureServer - Water System Valves - Block View	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Energy/Geology/FeatureServer - Fold (Line)	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown
		https://sampleserver1.arcgisonline.com/arcgis/rest/services/Energy/Geology/FeatureServer - Contacts (Line)	SERVICE ESRF FEATURESERVER		0 bytes	No	Unknown

Loading Observations status

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

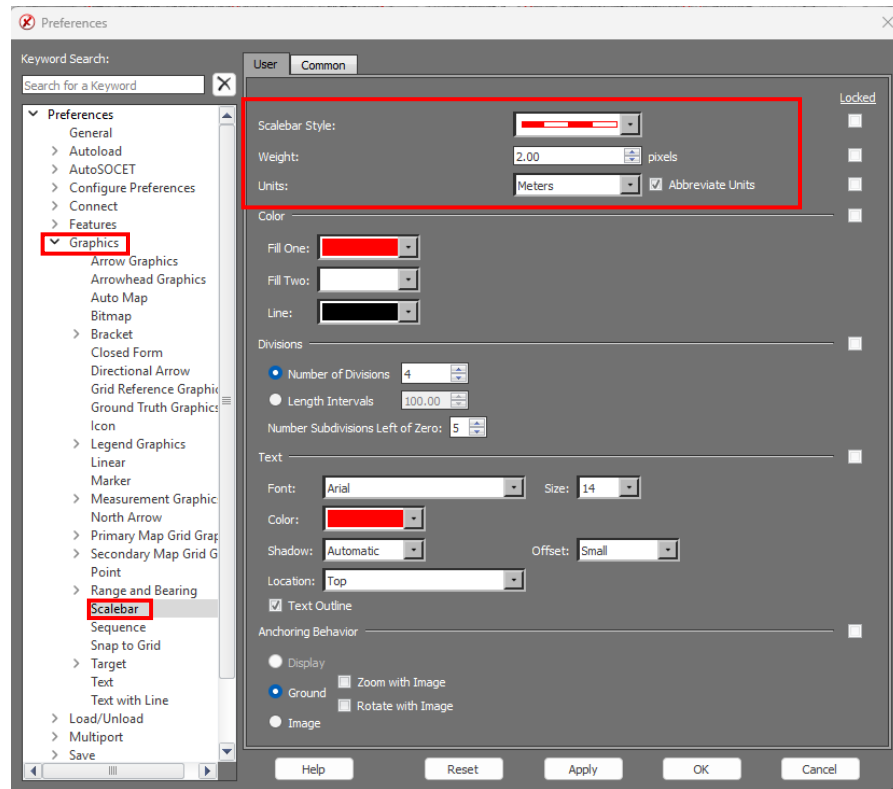


Scalebar improvements

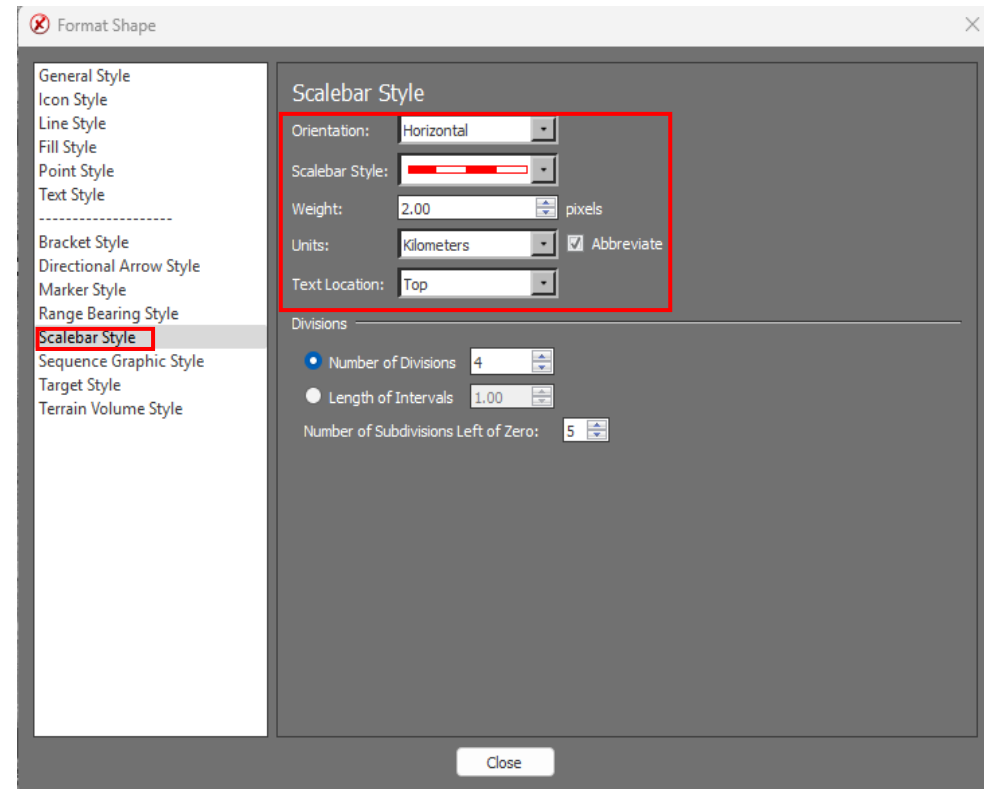
- Abbreviated units of measurement.
 - m = Meters.
 - km = Kilometers.
- Dynamically update via preferences.
- Enables users to save work prior to workflow completion.
- Convert orientation of scalebar.
 - Vertical/Horizontal.

Scalebar improvements ...2

Scalebar Preference

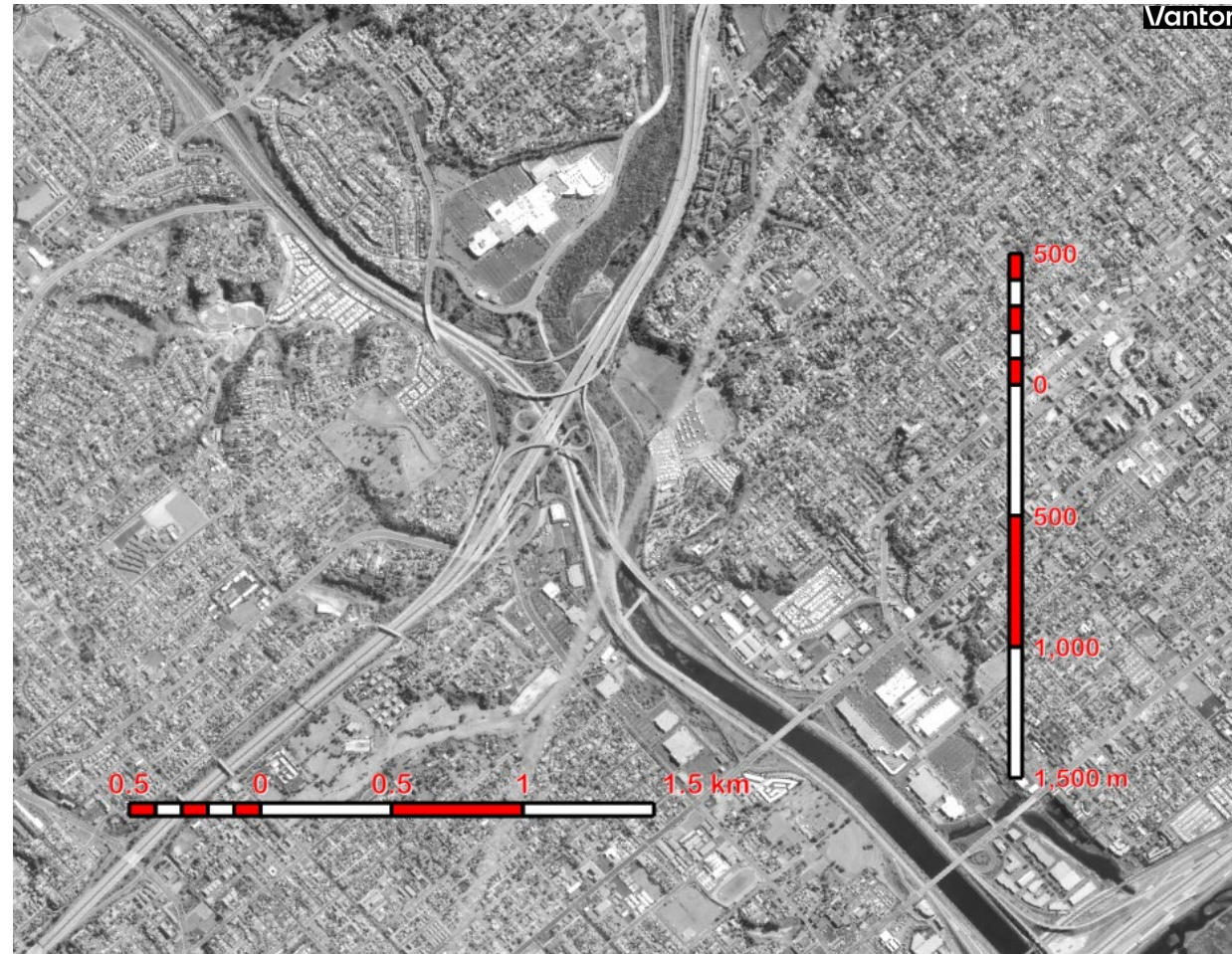


Scalebar Properties



Scalebar improvements ...3

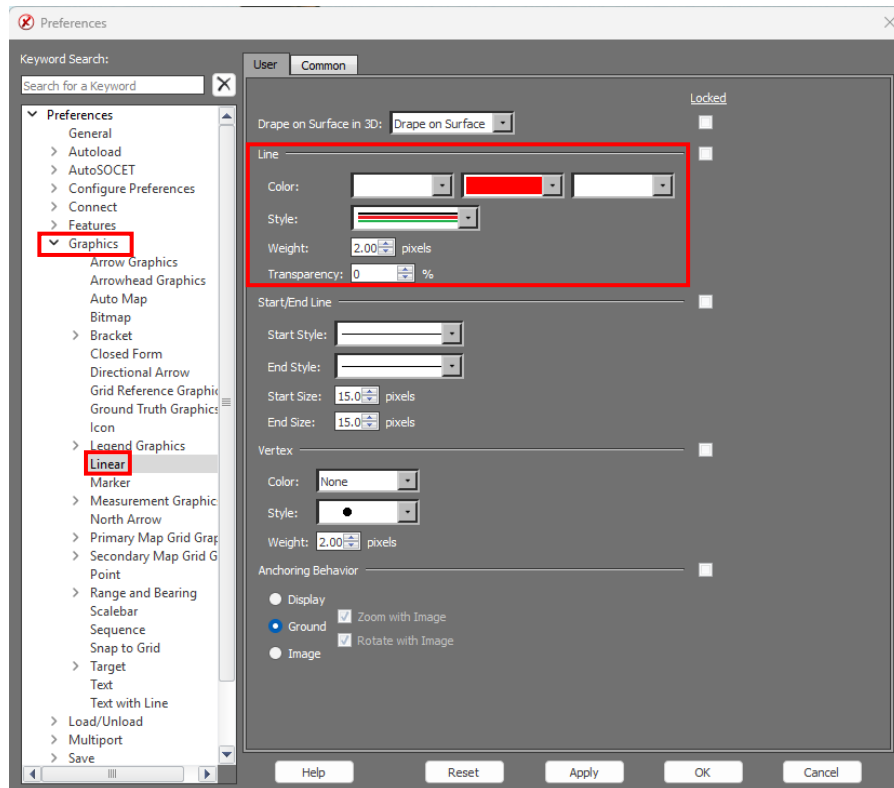
Scalebar Visualization



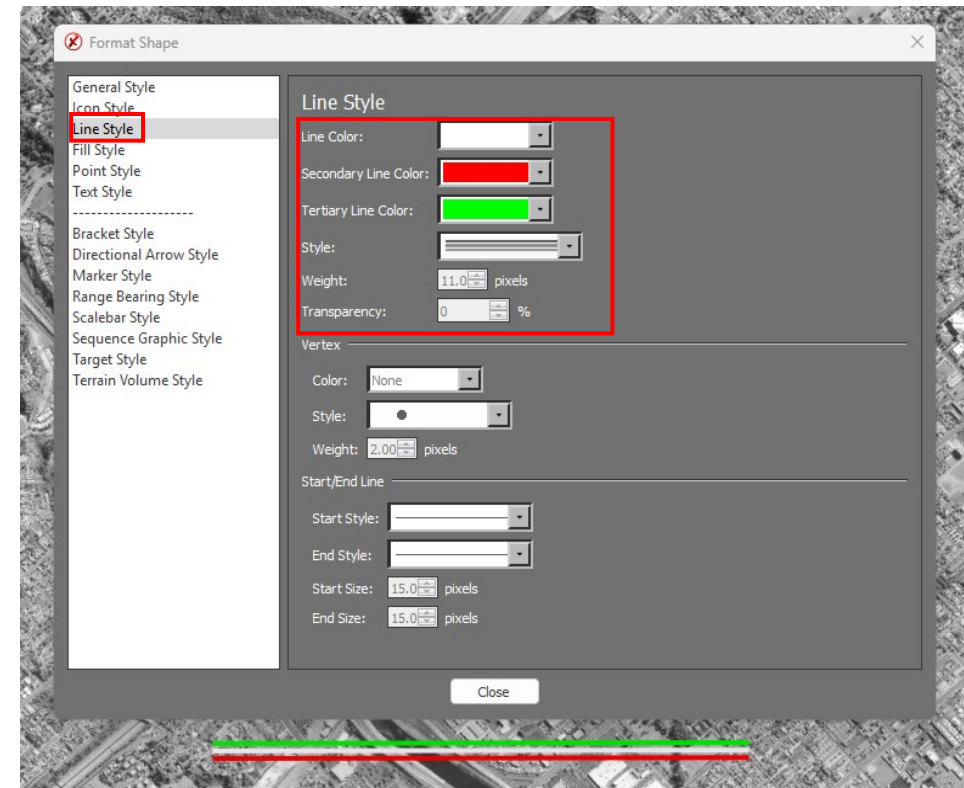
Multi-line style improvements

- 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.

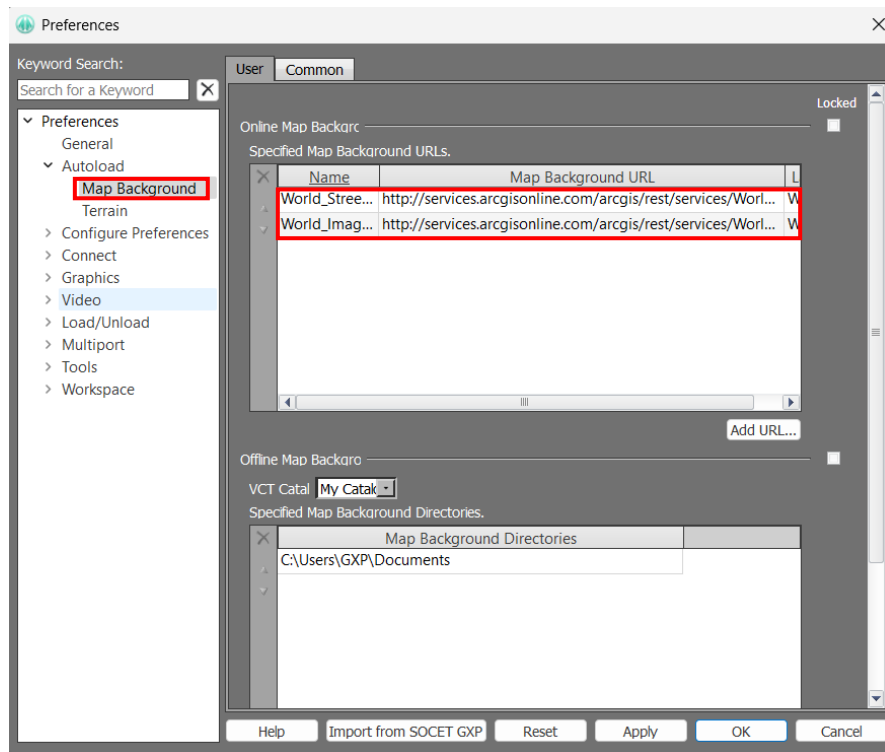
GXP InMotion v4.6.0.1 release enhancements



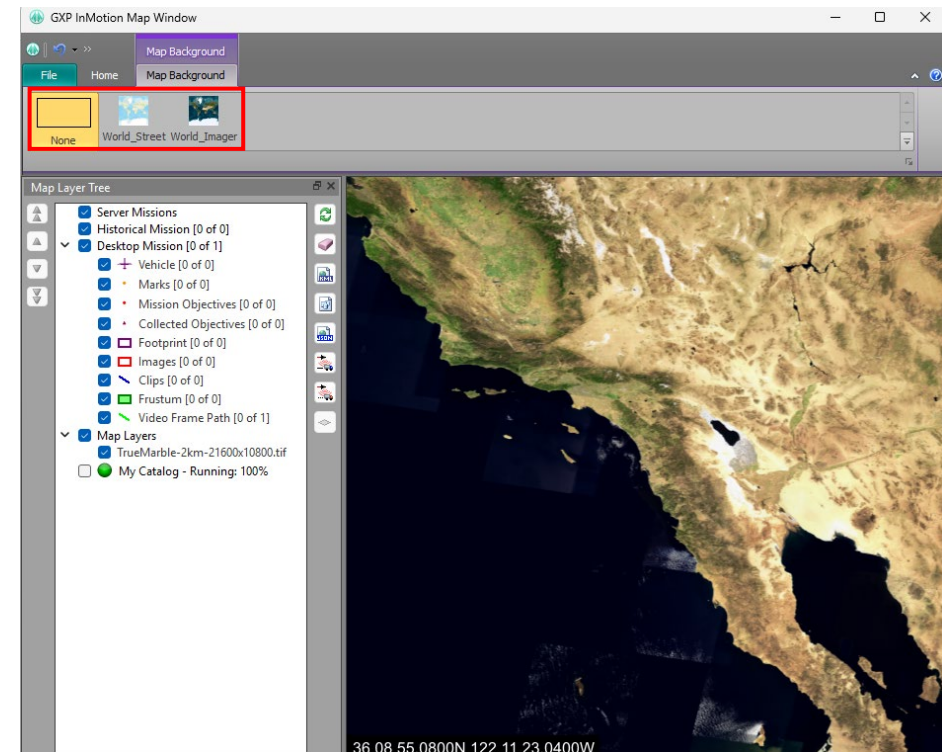
Map Background functionality

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

Map Background preference



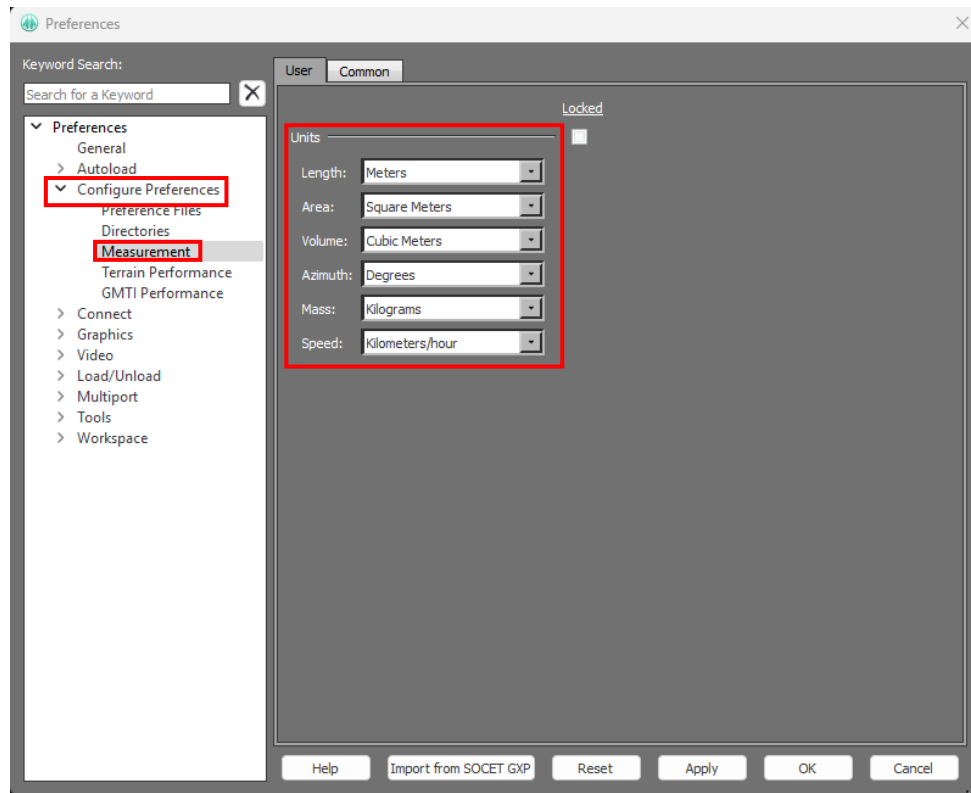
Map Background view and Rename from Map Window



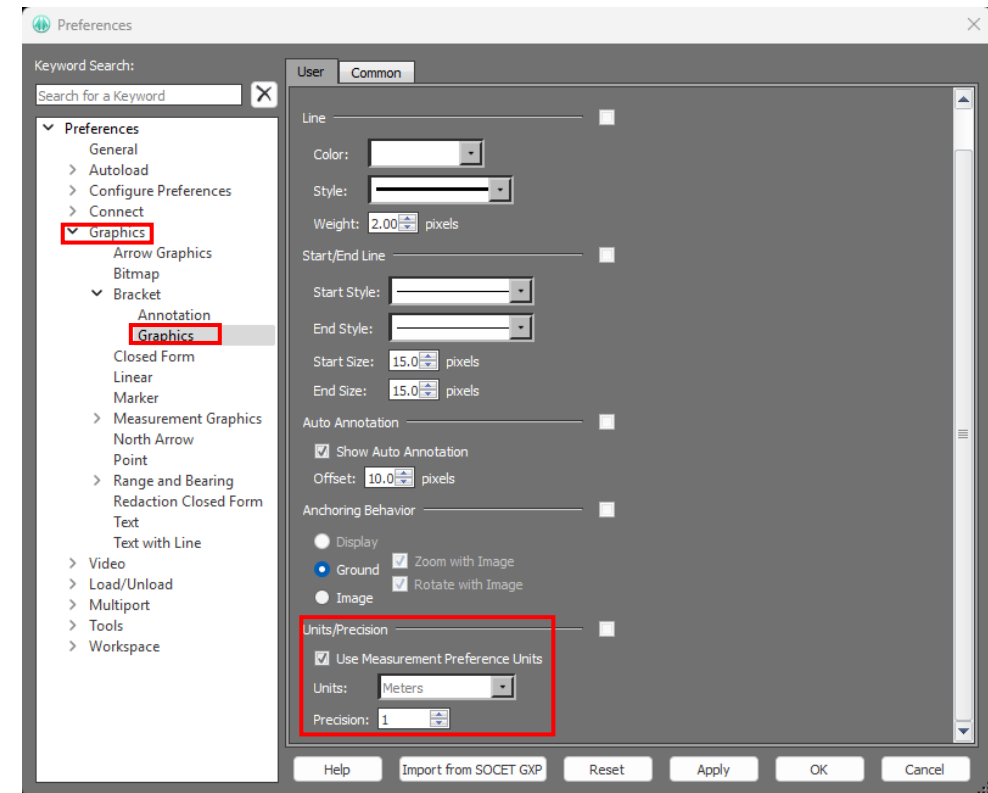
Added Measurement Override to Preferences

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

Measurement preference location



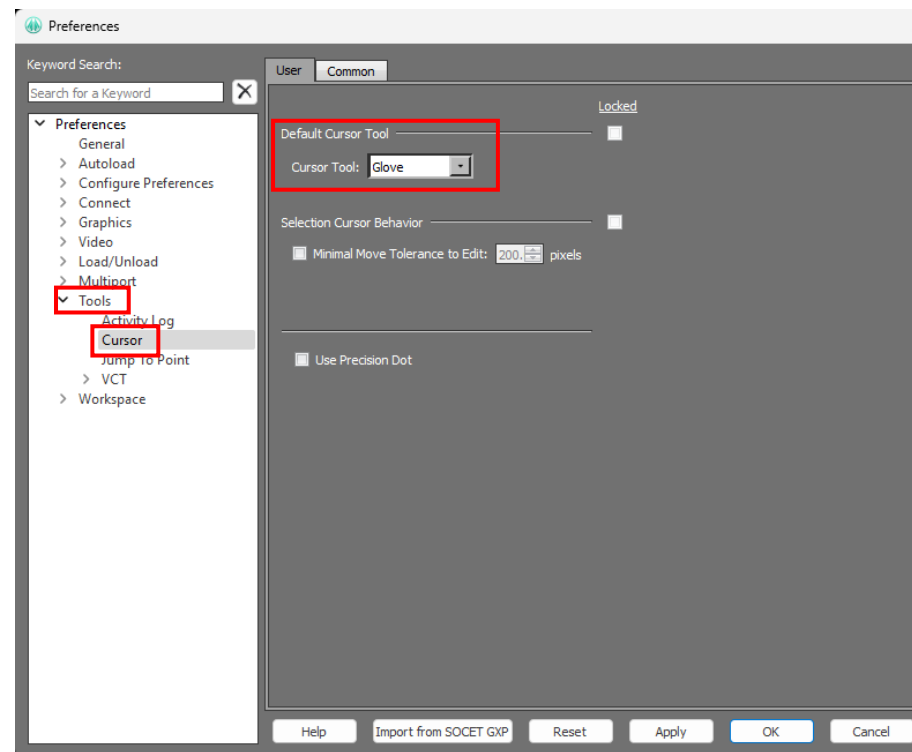
Override Measurement preference location



Added preference for Default Cursor tool

- Allows cursor to default to Glove tool.

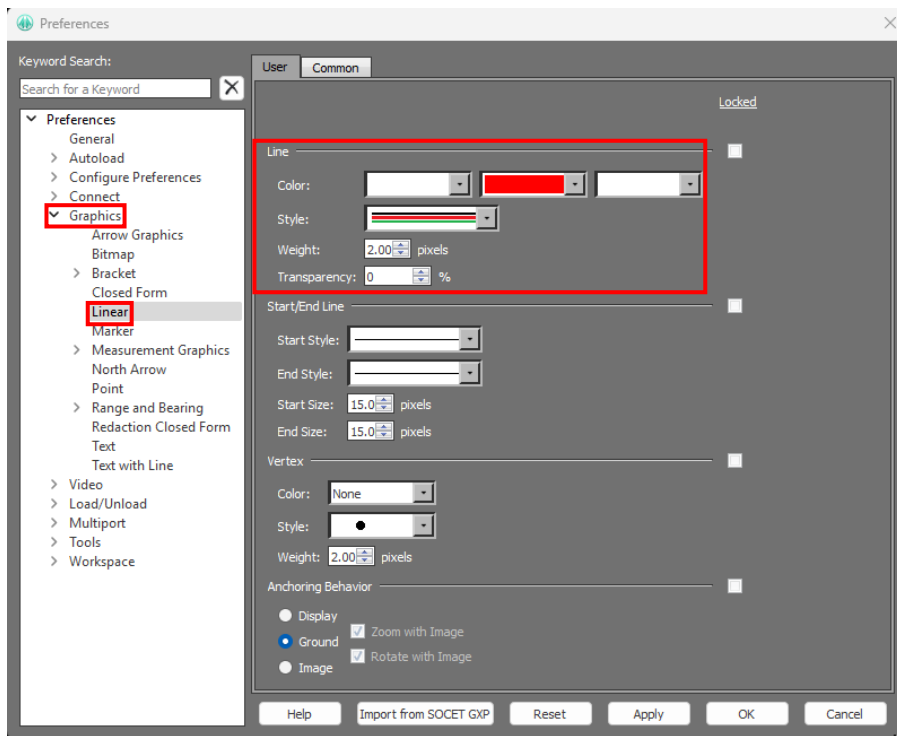
Default Cursor Tool preference



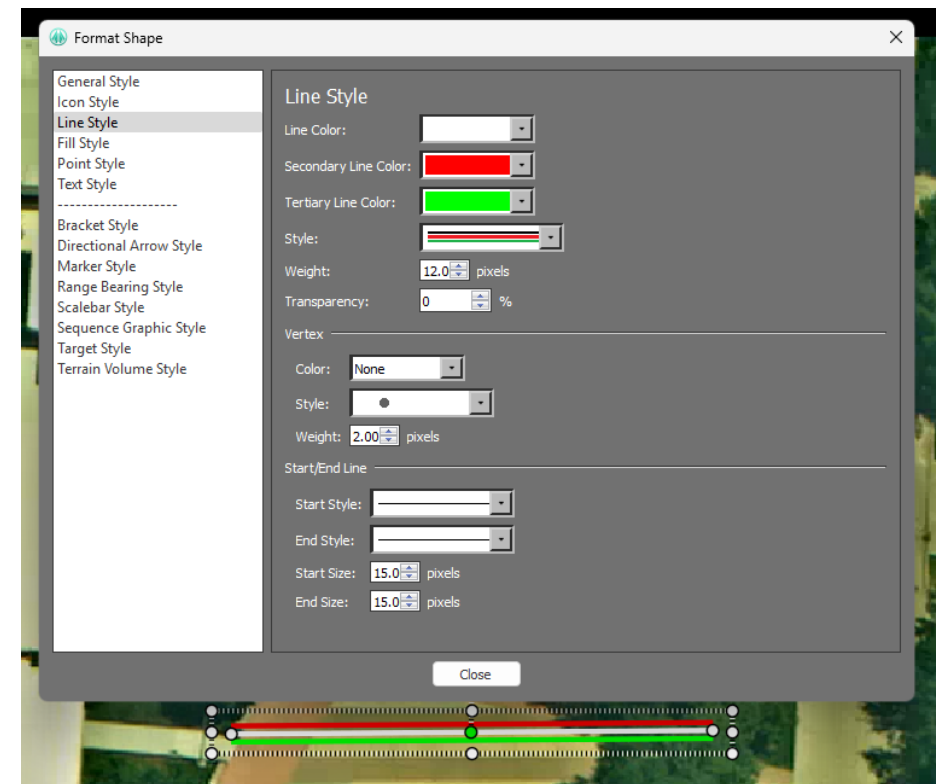
Multi-line style improvements

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

Linear Graphics preference



Linear Graphics properties



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

GXP Desktop v4.6.0.2 release enhancements

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GXP Product Development



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.

SOCET GXP v4.6.0.2 release enhancements



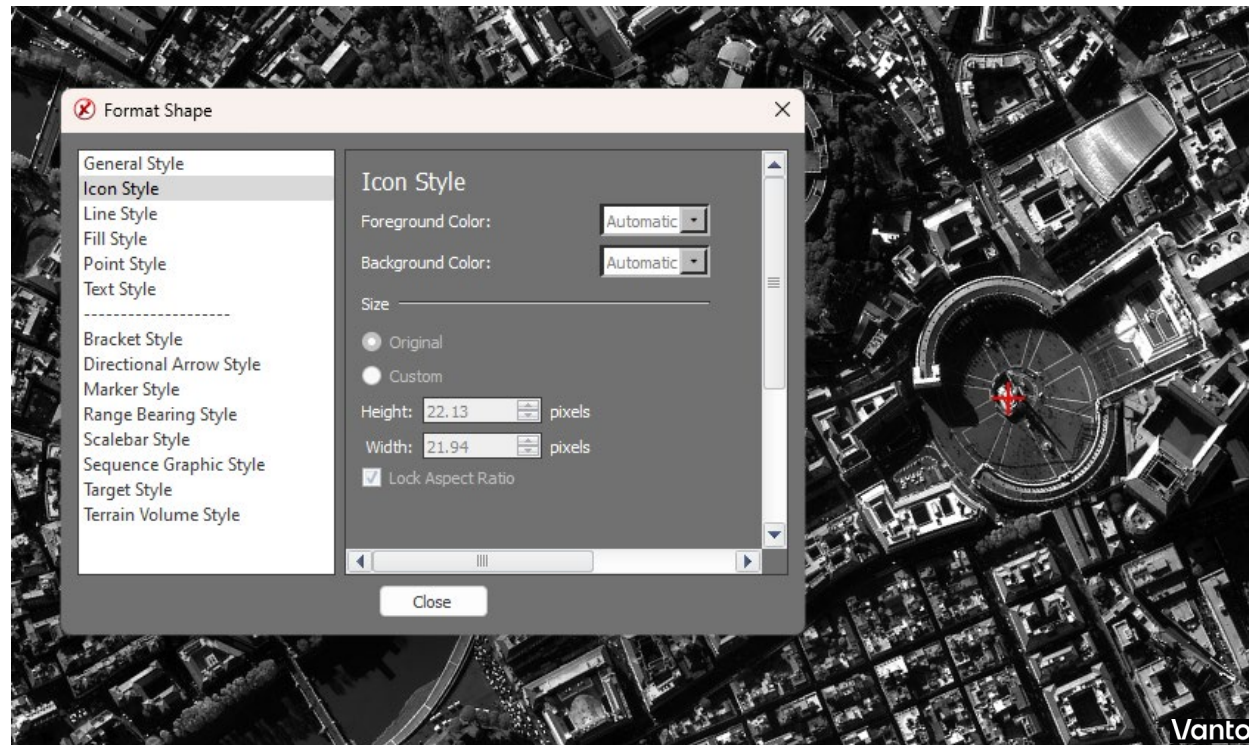
Infrastructure updates

- 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"/>.

Added 2-D Scene Feature and Icon Scaling

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

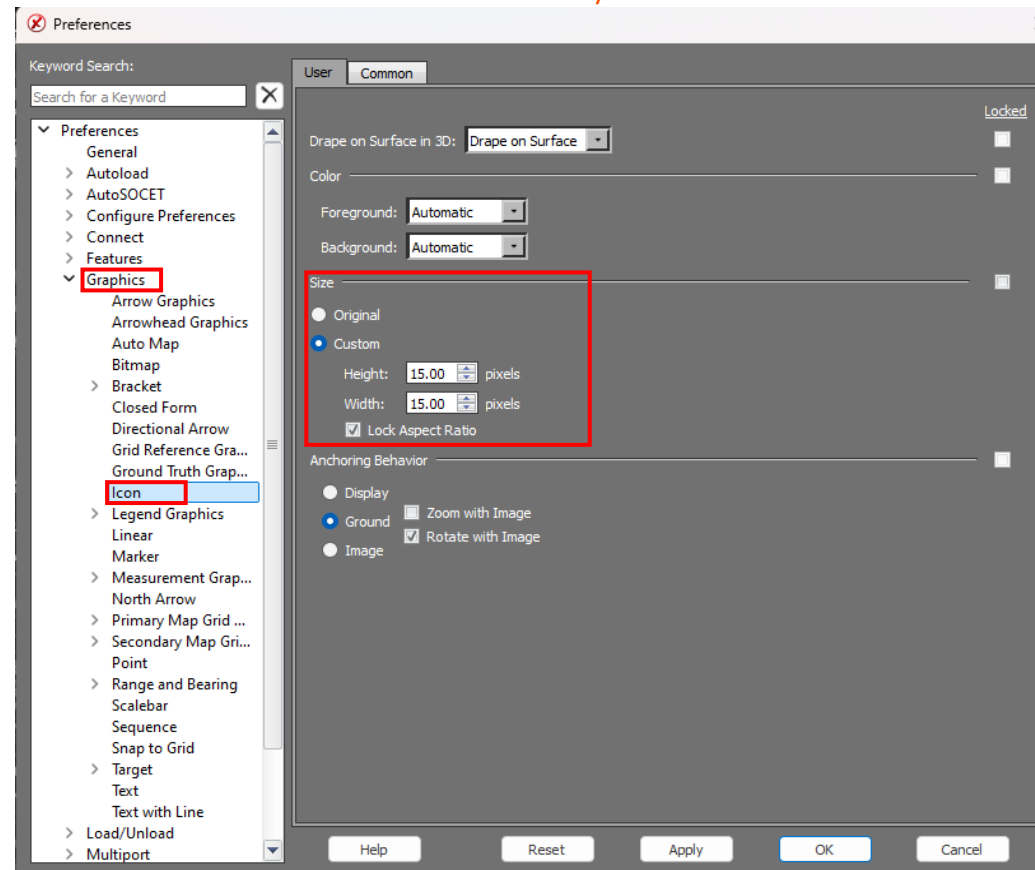
Default Icon Style preference



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.

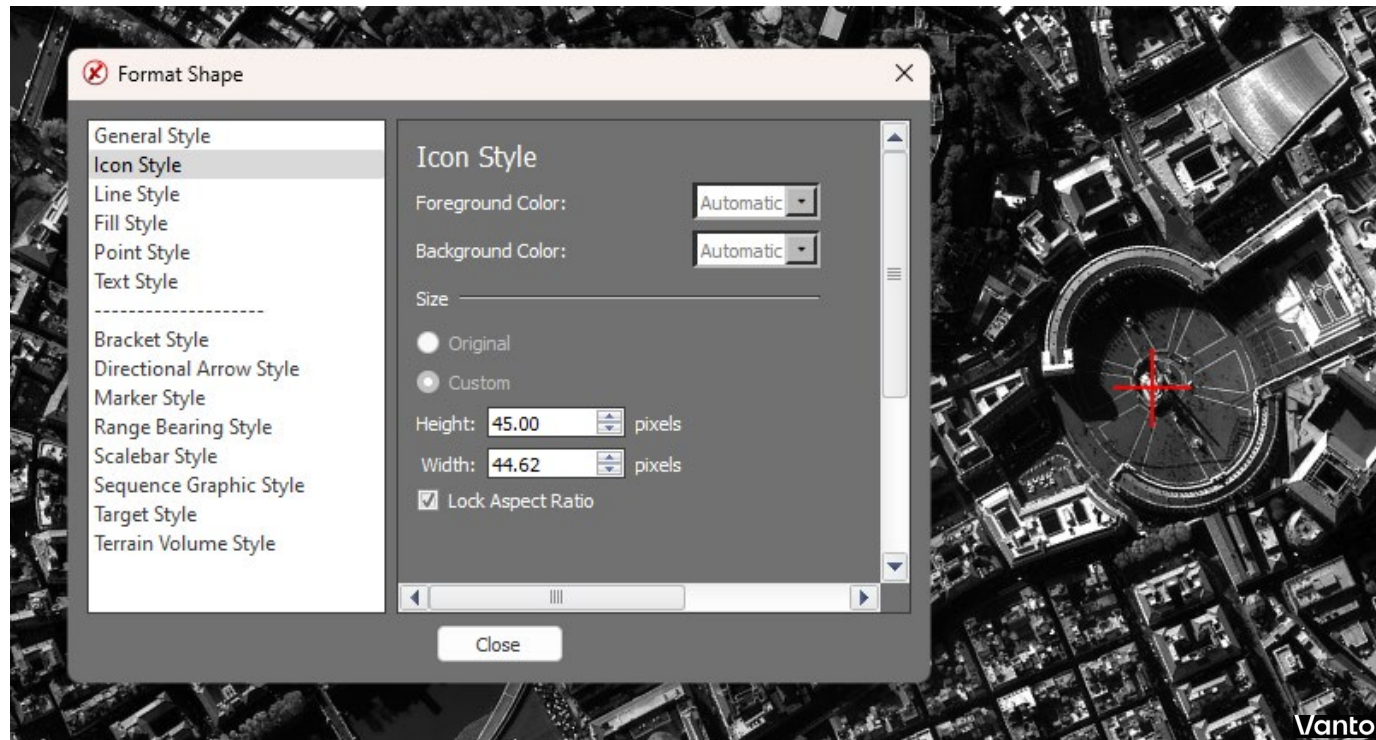
Default Icon Style Preference



Added 2-D Scene Feature and Icon Scaling ...3

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

Custom Icon Style preference



Removed “Unknown” Entities from the SOM Toolbox

- Improves Data Model load times.
- Added Observation Progress bar.

Entities update

The screenshot displays the software's Observation Toolbox on the left, which is organized into a tree view. The 'Entity' category is expanded, showing sub-categories like Equipment, Sensor, Site Element, Vehicle, Air, Military, Land, Space, Water, Weapons, and Organization. The 'Military' sub-category is highlighted. Below the toolbox, the 'Active Tool' is set to 'One-Click'. The main map area shows an aerial view of an airfield with several green selection boxes overlaid on aircraft. At the bottom, the 'Observation Table' is visible, containing the following data:

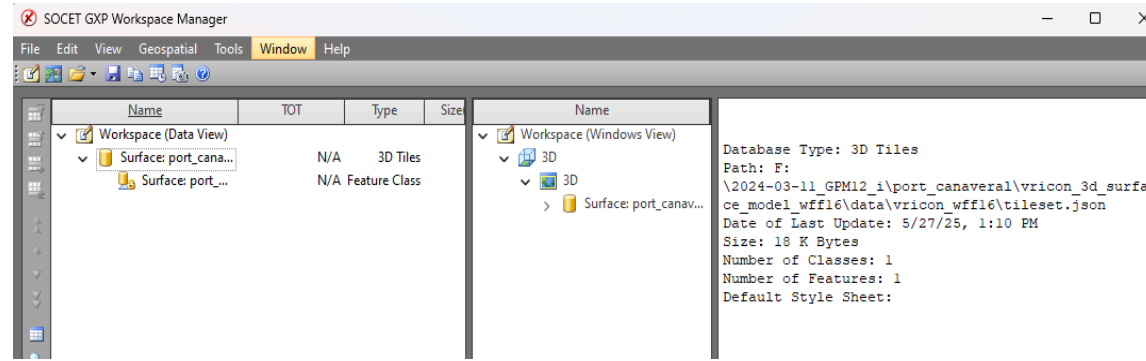
	Show	Entity Type	Entity Name	Registration	Type	Activity	Heading*	Classification	Object	Location	Source	Comments	Status
1	<input checked="" type="checkbox"/>	Fighter			Manual		0			None	Kabul West W...		Complete
2	<input checked="" type="checkbox"/>	Military			Manual		0			None	Kabul West W...		Complete
3	<input checked="" type="checkbox"/>	Military			Manual		0			None	Kabul West W...		Complete
4	<input checked="" type="checkbox"/>	Military			Manual		0			None	Kabul West W...		Complete

Number of observations: 4
Table Status: ● Complete

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

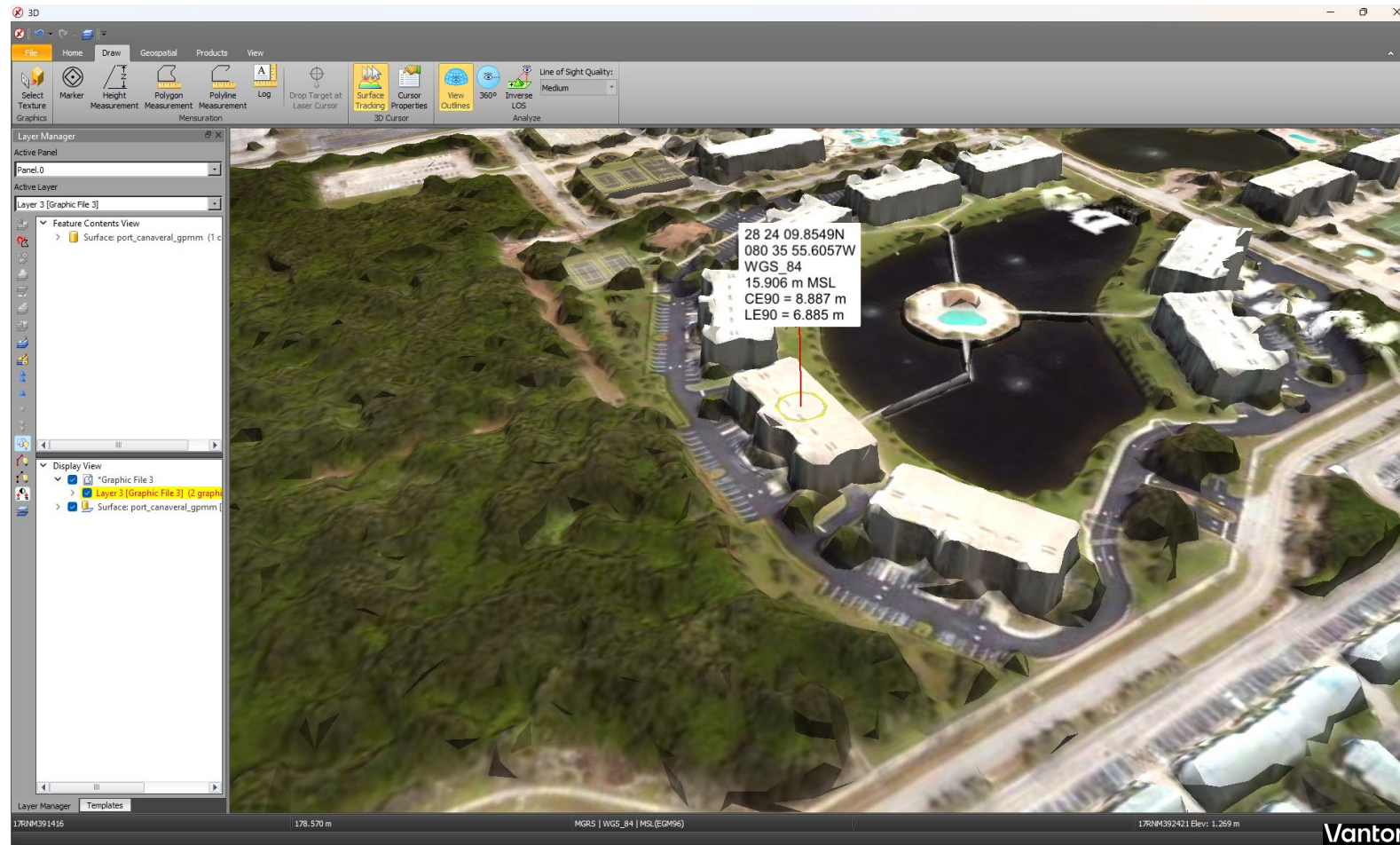


3-D Tile Visualization in a 3D Multiport



Updated the GPM Plugin

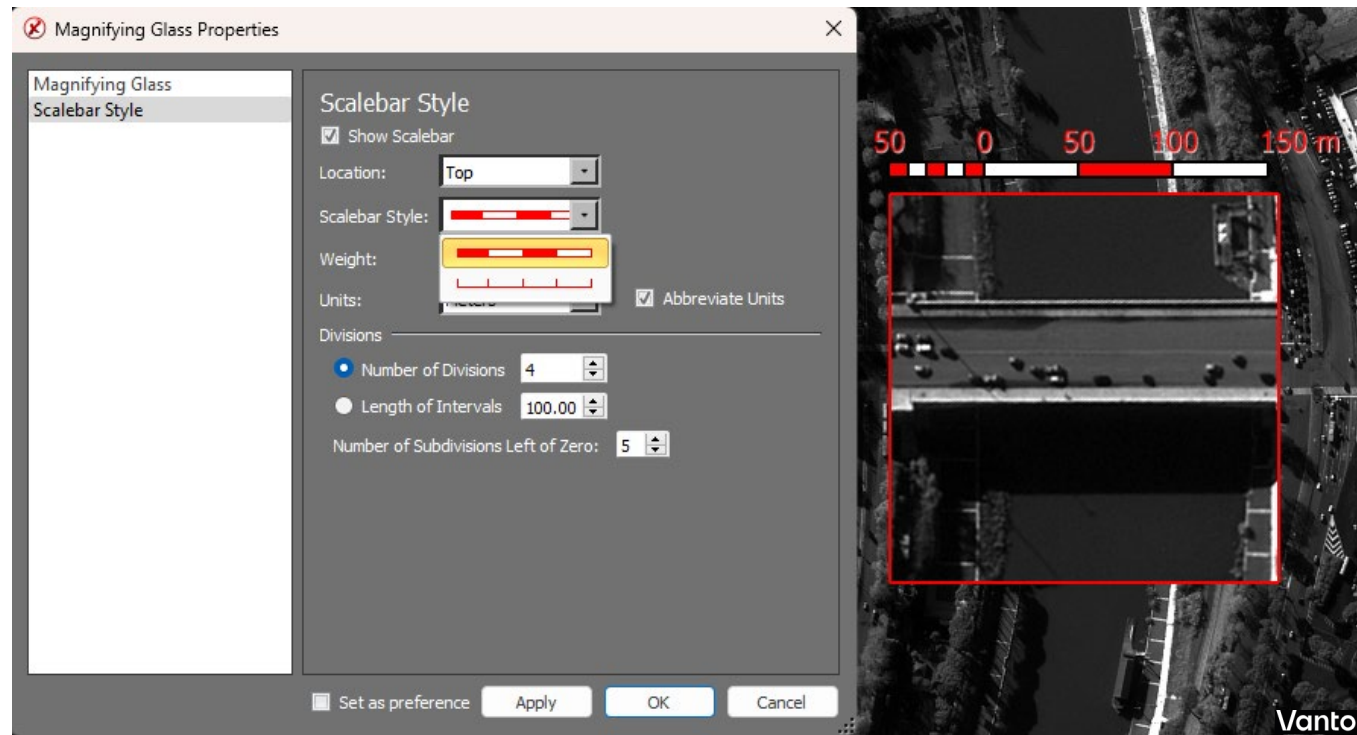
CE/LE is now retrieved with GPM data



Magnifying Glass with Scalebar support

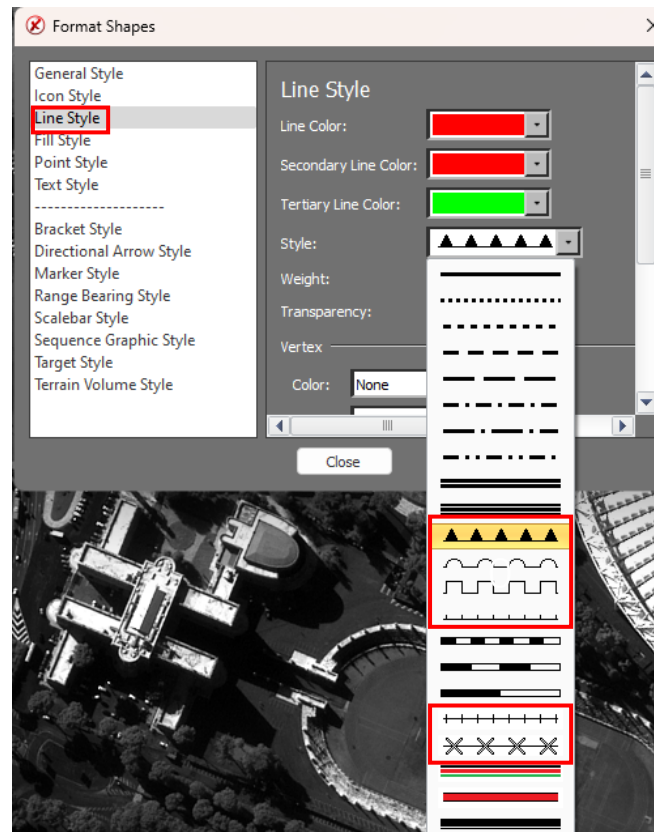
- Allows users to add a scalebar to their Magnifying Glass.
- Works for all output product types.

Scalebar Style Properties

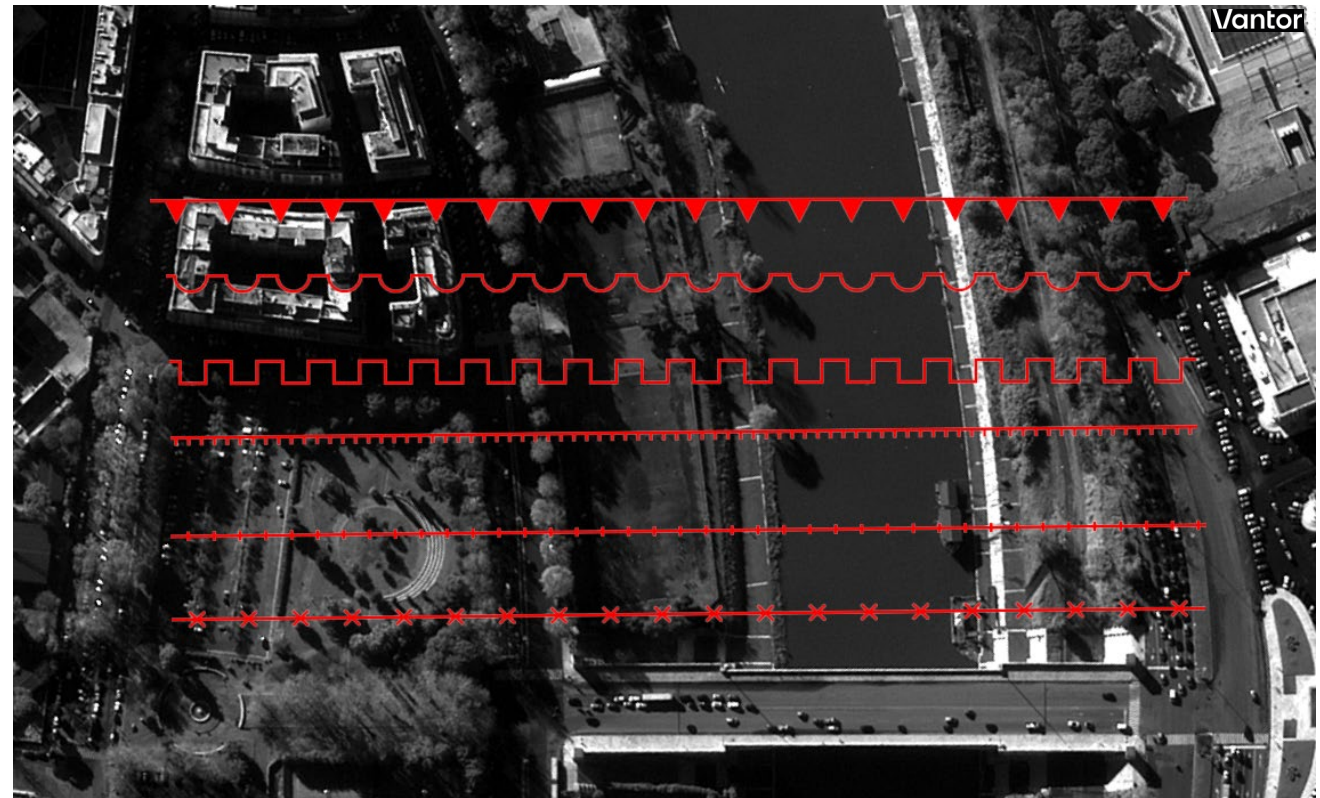


Improved Line Style Weighting

- Improved line style smoothing.
- Weight is now the entirety versus individual pieces that make up the line.



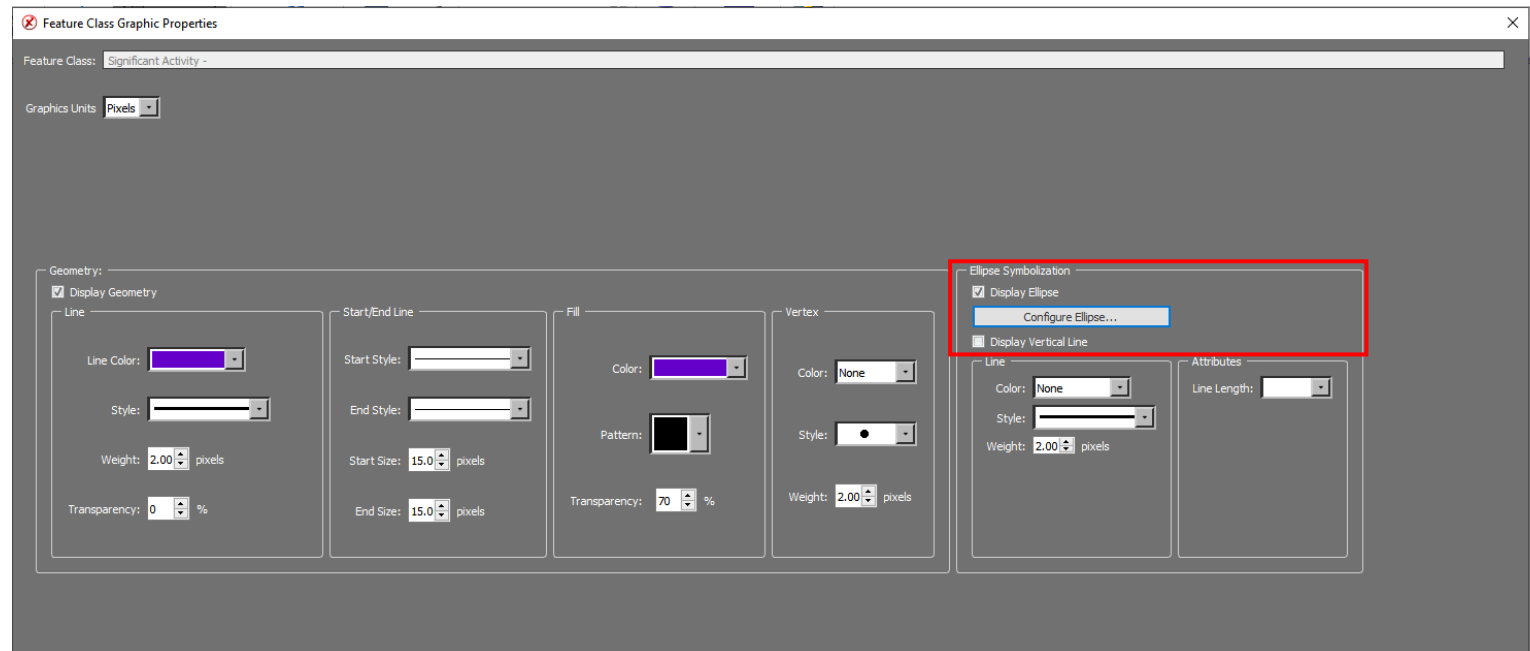
Additional Line Style Weighting



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.

GXP InMotion v4.6.0.2 release enhancements



New features

- Updated our SENS RB plugin.
- Cleaned up Debug log (Phase 2 effort).

GXP Desktop v4.6.0.3 release enhancements

Evan Miller
GXP Product Development



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.

SOCET GXP v4.6.0.3 release enhancements

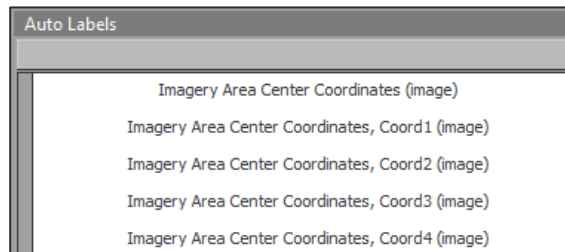


Infrastructure updates

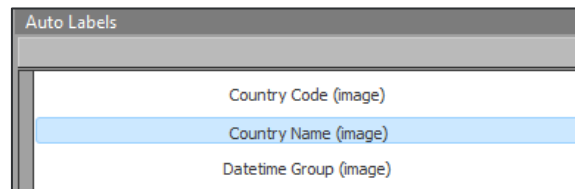
- Updated to SIPS 2.5.5.
- Updated OpenJDK® to 11.0.27.6.
- Updated FFmpeg to v7.0.2.6.57.
- GXP Job Service security improvements.
 - Implemented XXE (XML External Entity) Prevention.
 - Instituted a whitelist for job service executables.

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).



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



- Added a new North Arrow.

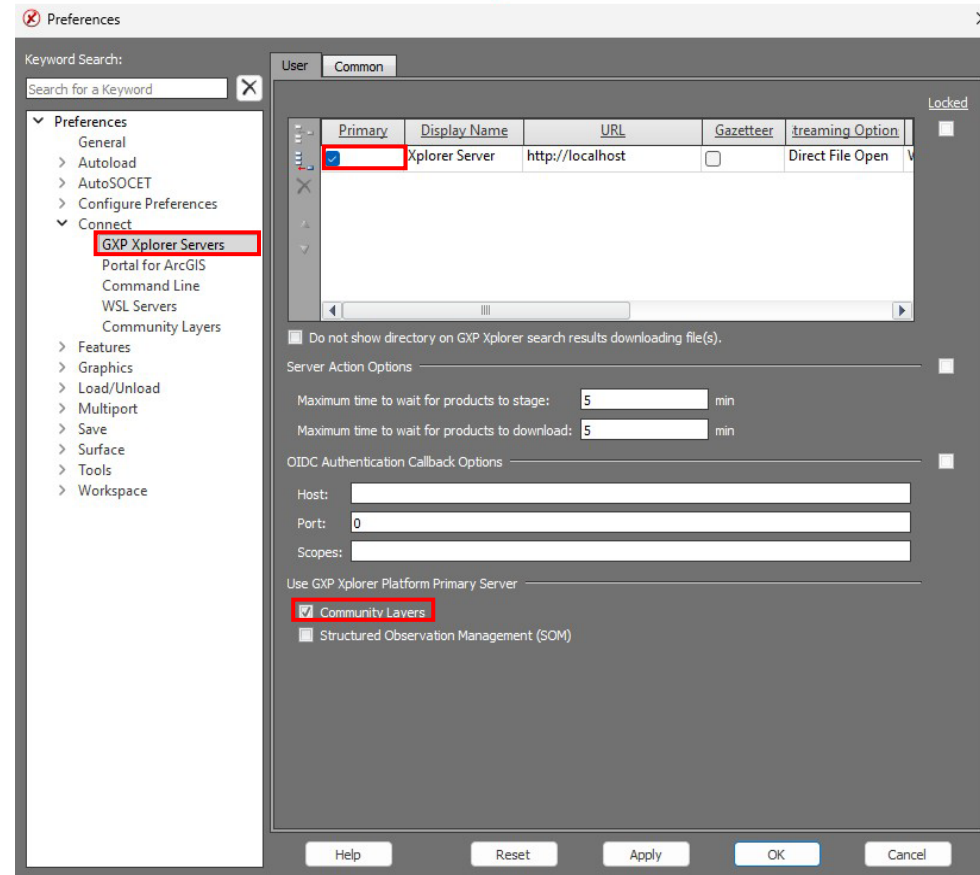


Community Layers

- Enables an enterprise environment or a specific user to determine what OGC URLs they want to display.
 - Can be directly accessed from GXP Explorer Platform via SOCET GXP preferences.
 - These can be exported from GXP Explorer, 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 usability by removing excess work.

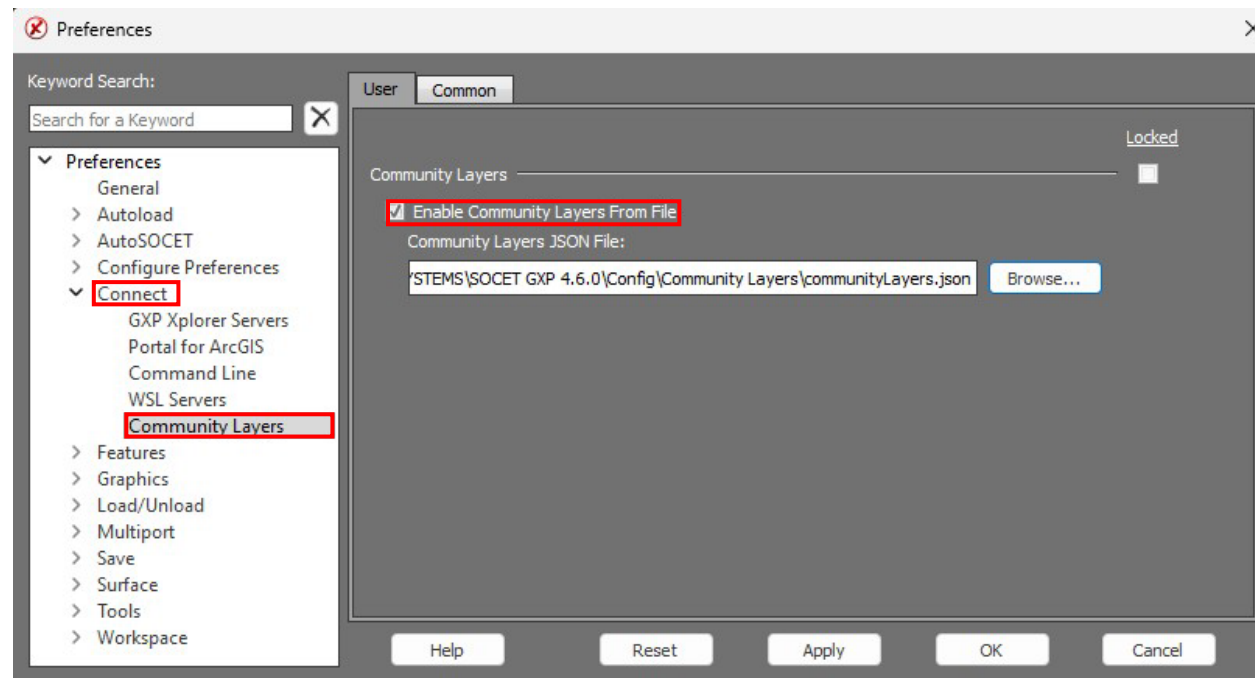
Community Layers ...2

- Access GXP Xplorer Community Layers in Preferences.

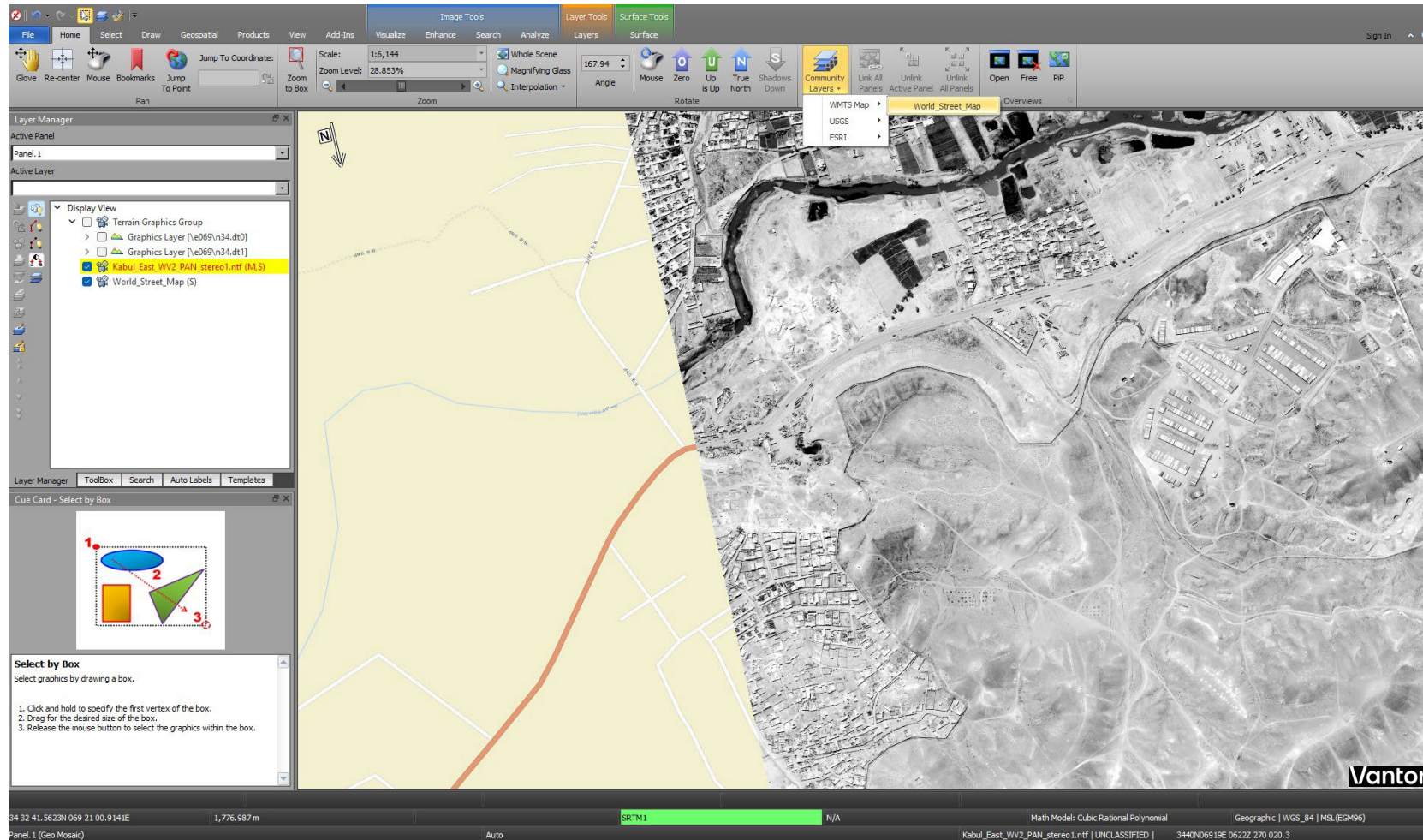


Community Layers ...3

- 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.

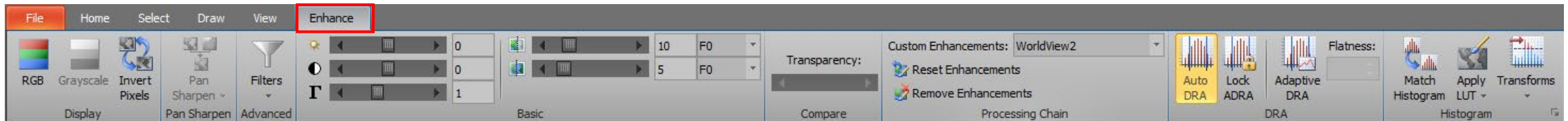
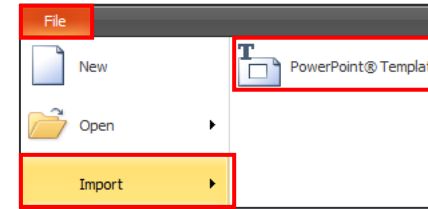


Community Layers ...4



Finishing Tool improvements

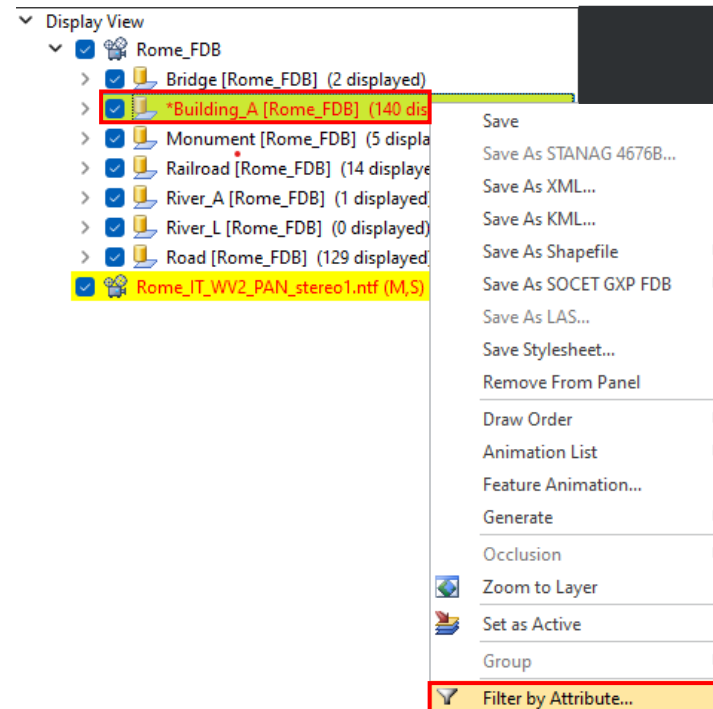
- Support was added for PowerPoint template.
- Use existing PowerPoint Templates instead of creating new ones.
- Finishing Tool image enhancements.
 - Added all items from the 2D Multiport to the Finishing Tool to give the user a more robust set of tools
 - Finishing Tool image enhancements.



- Export to PowerPoint with editable graphics
- Same look and feel from the 2D Multiport was added to the Finishing Tool.

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.



Attribute Filtering ...2

- Select Attribute to filter on.



Attribute Filtering ...3

- Layer icon changes to reflect filtering is enabled. > 



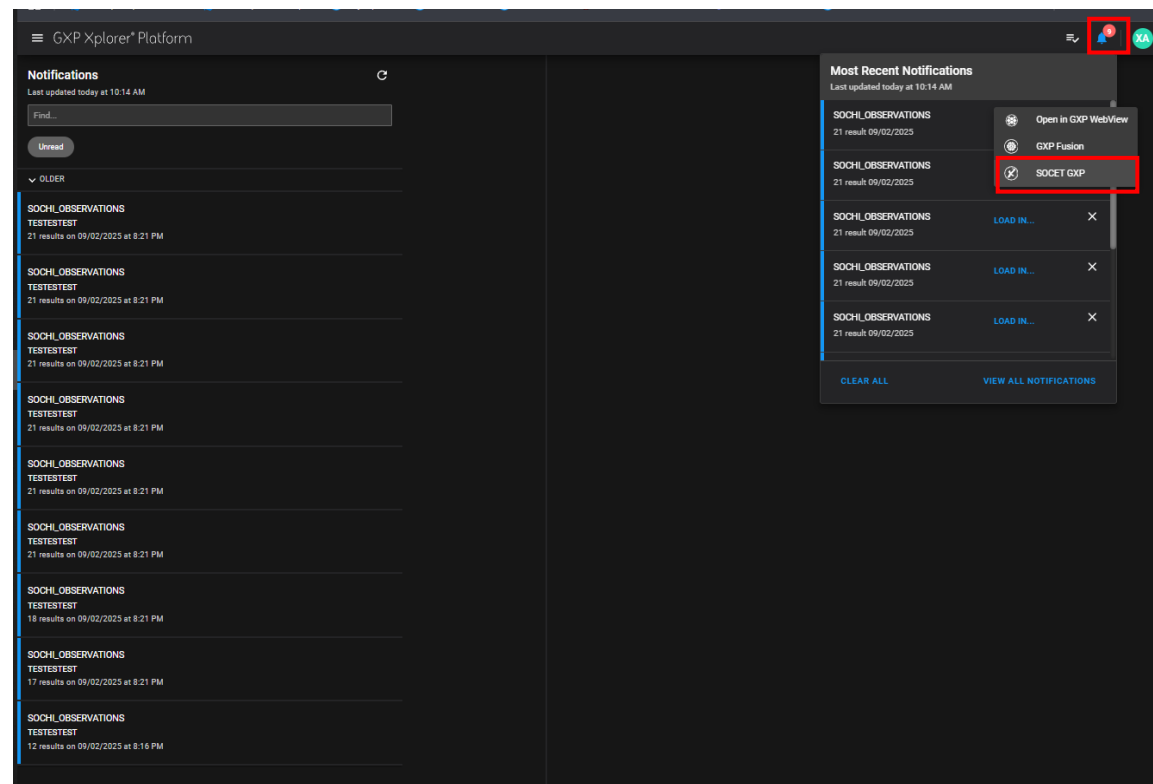
- Remove filter.
 - Right click the layer the filter was applied to and select Remove Attribute Filter.

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.

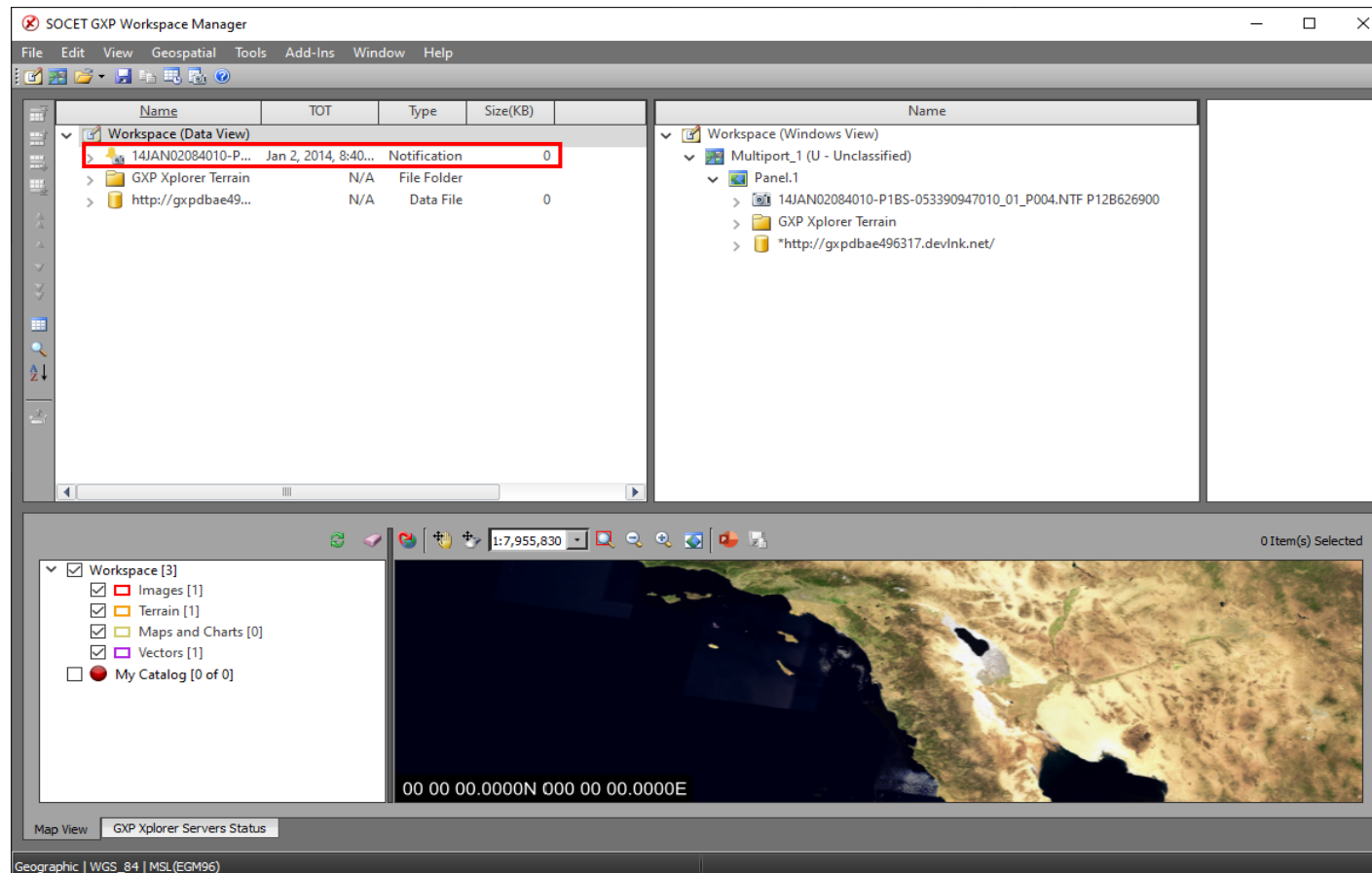
Load Observations and Detections from Notifications ...2

- Select the notification bell icon.
- Load the notification into SOCET GXP.



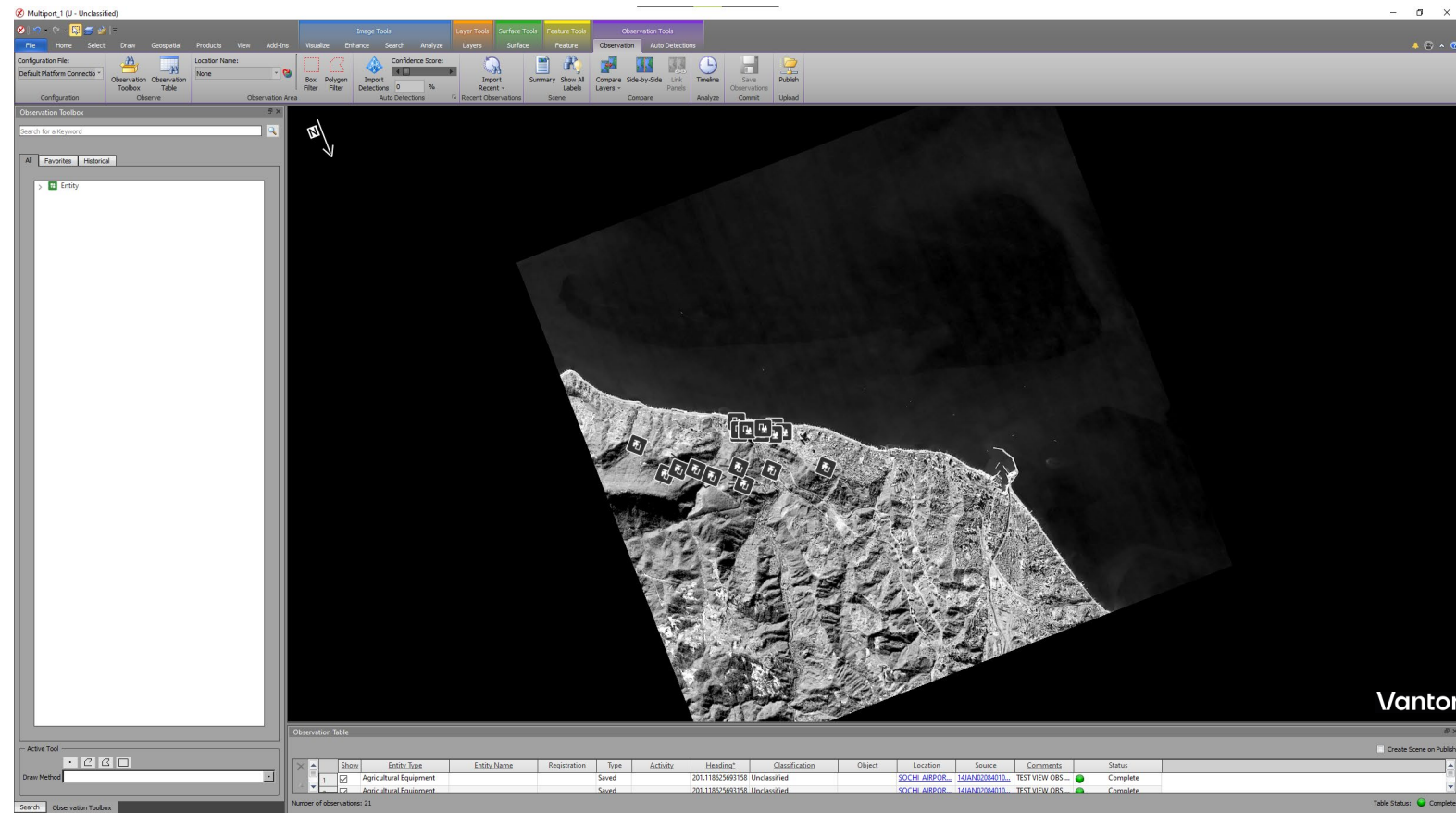
Load Observations and Detections from Notifications ...3

- 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.



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.

GXP InMotion v4.6.0.3 release enhancements



New features

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

GXP Desktop v4.6.0.4 release enhancements

Evan Miller
GXP Product Development



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.

SOCET GXP v4.6.0.4 release enhancements



Infrastructure updates

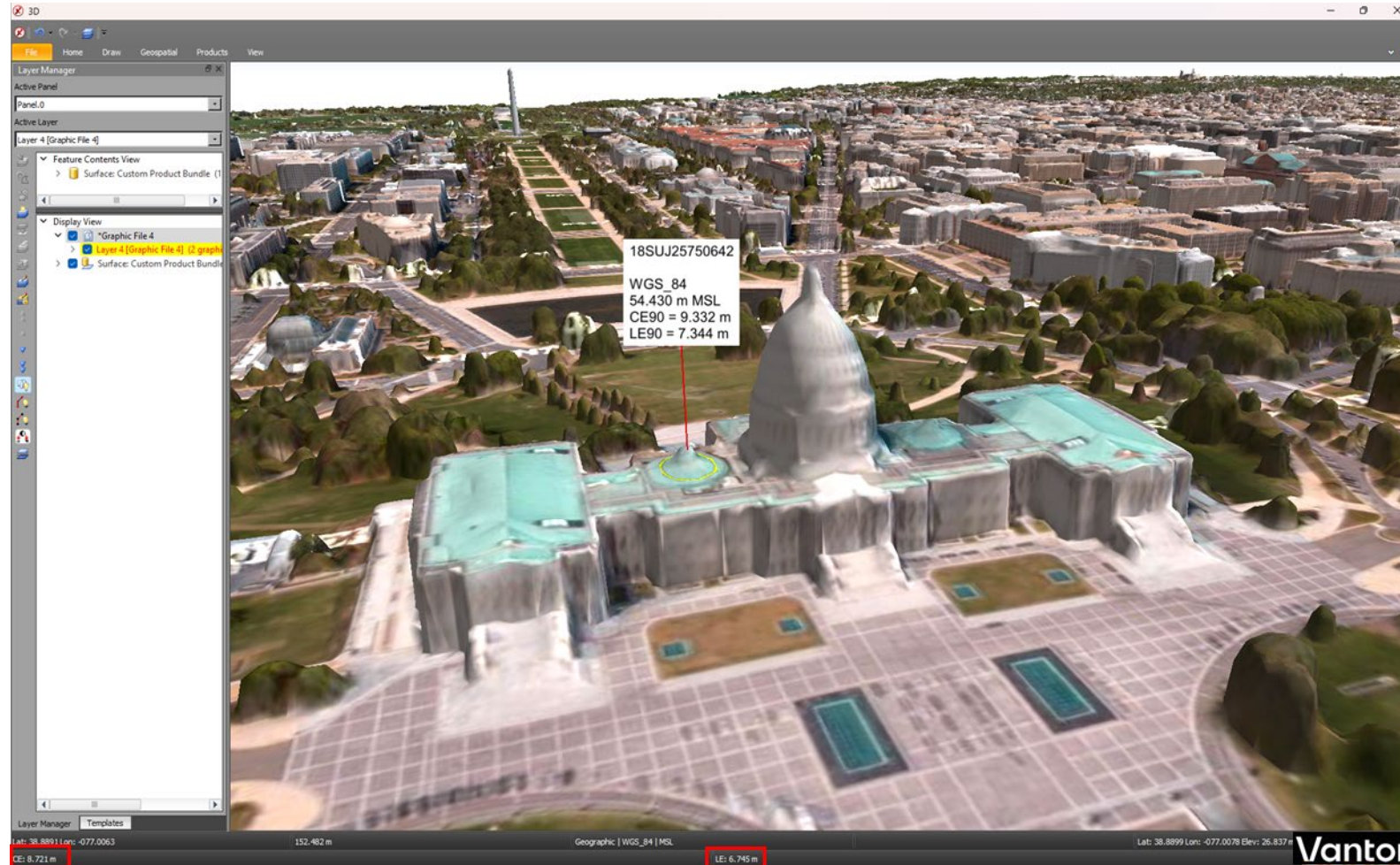
- Updated to MSP v3.1.
- Improved Esri Feature Service Performance.
 - We removed unnecessary calls that could have led to timeouts.
- Updated SQLite® to mitigate vulnerabilities.
 - v3.50.4.
- Updated GDAL to mitigate vulnerabilities.
 - v3.7.0.
- Upgraded libcurl to mitigate vulnerabilities.
 - v8.14.1.

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.

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.

GXP InMotion v4.6.0.4 release enhancements



Infrastructure updates.

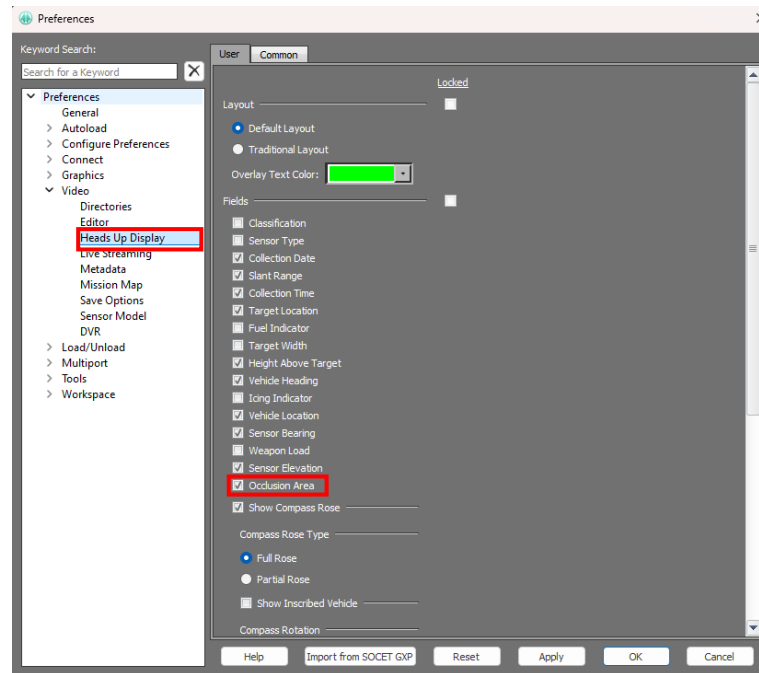
- Added support for STANAG 4607 v4 Metadata.
- MISB 0903.6 support was added.

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.

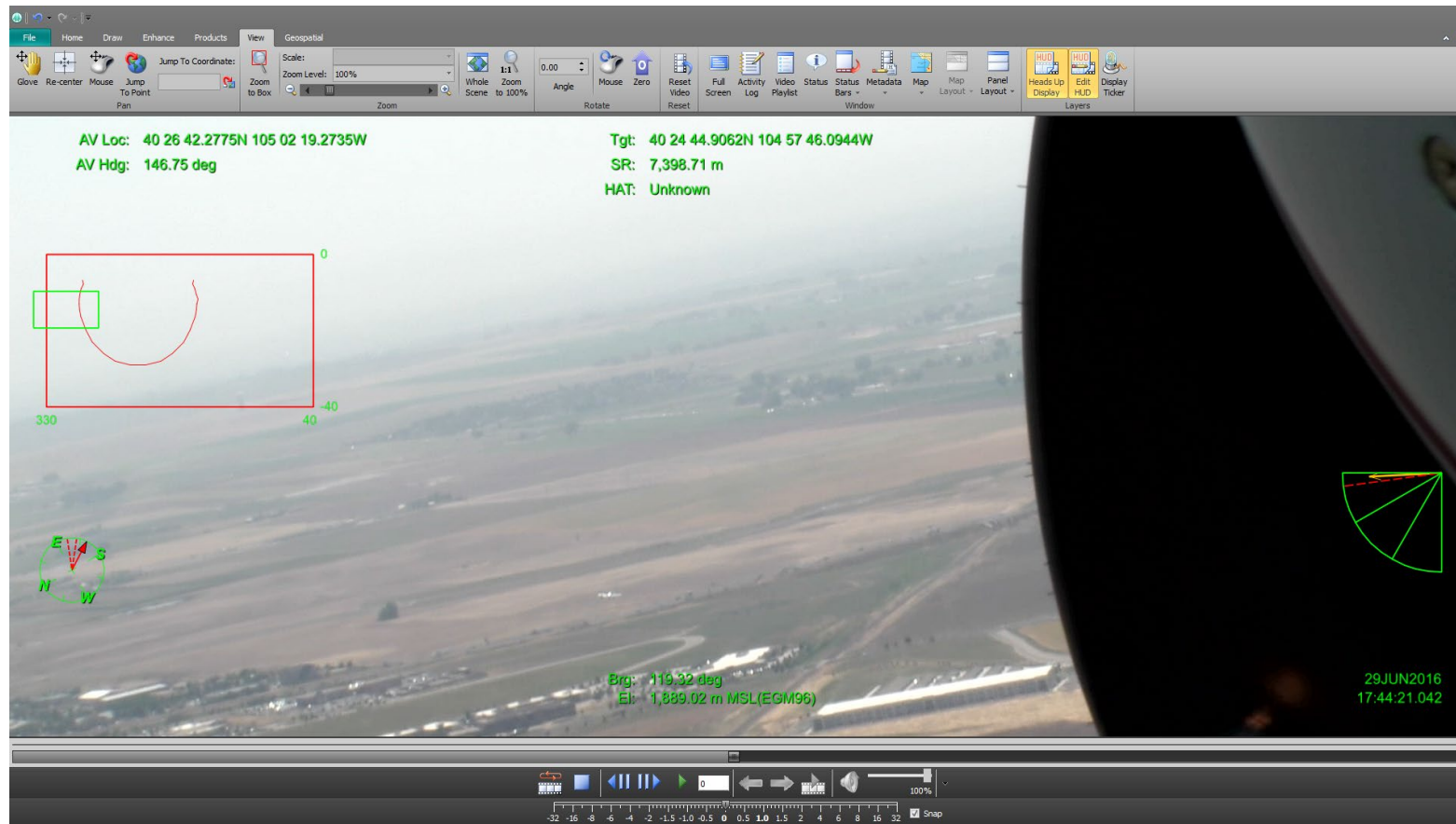
Occlusions in the Heads Up Display

- 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.



Occlusions in the Heads Up Display ...2

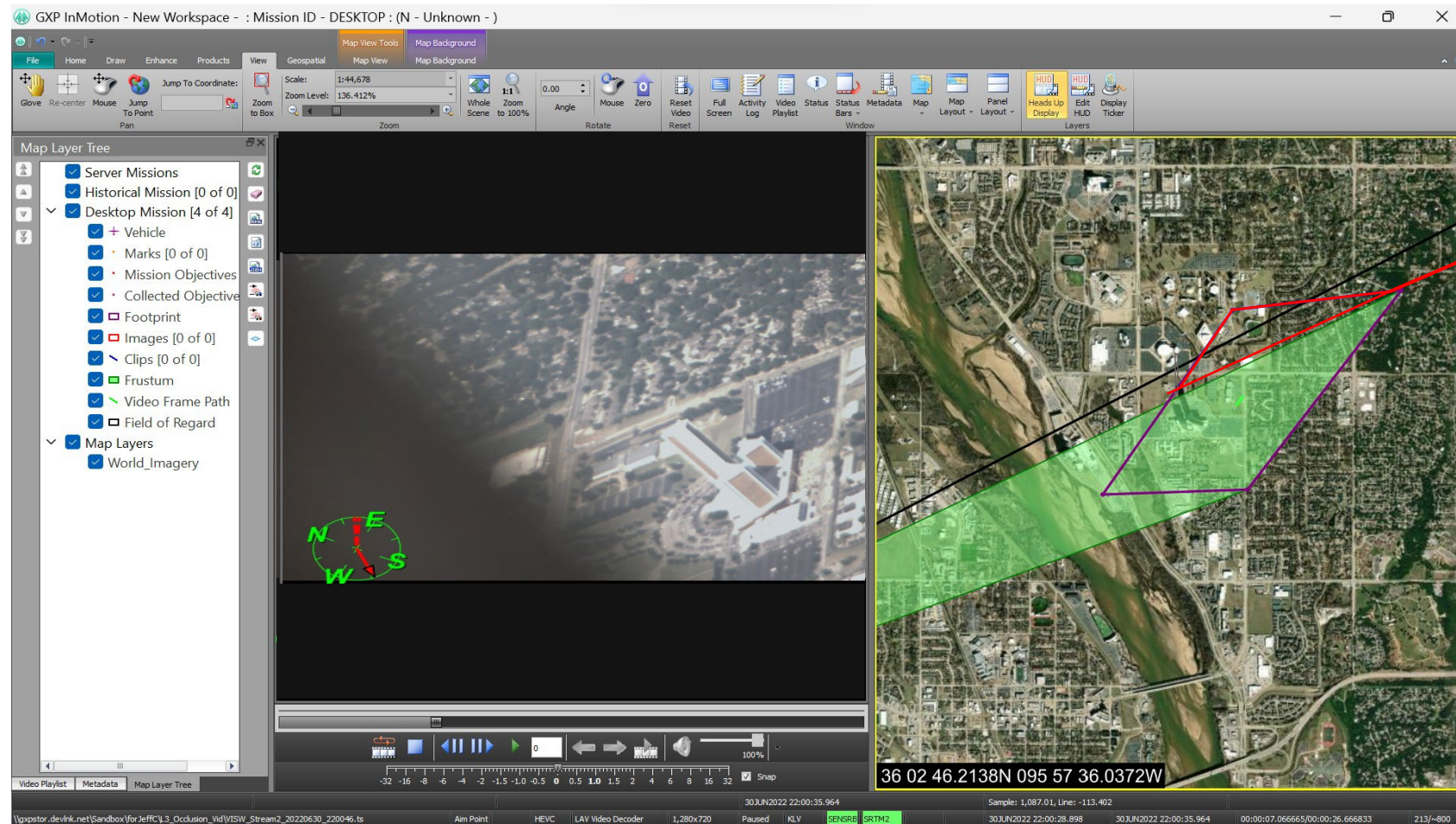
- Heads Up Display showing the occlusion in the frame.
- Red frame indicates an occlusion, and the green outline is the camera footprint in relationship to the occlusion



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

Occlusion Visualization in the Map View

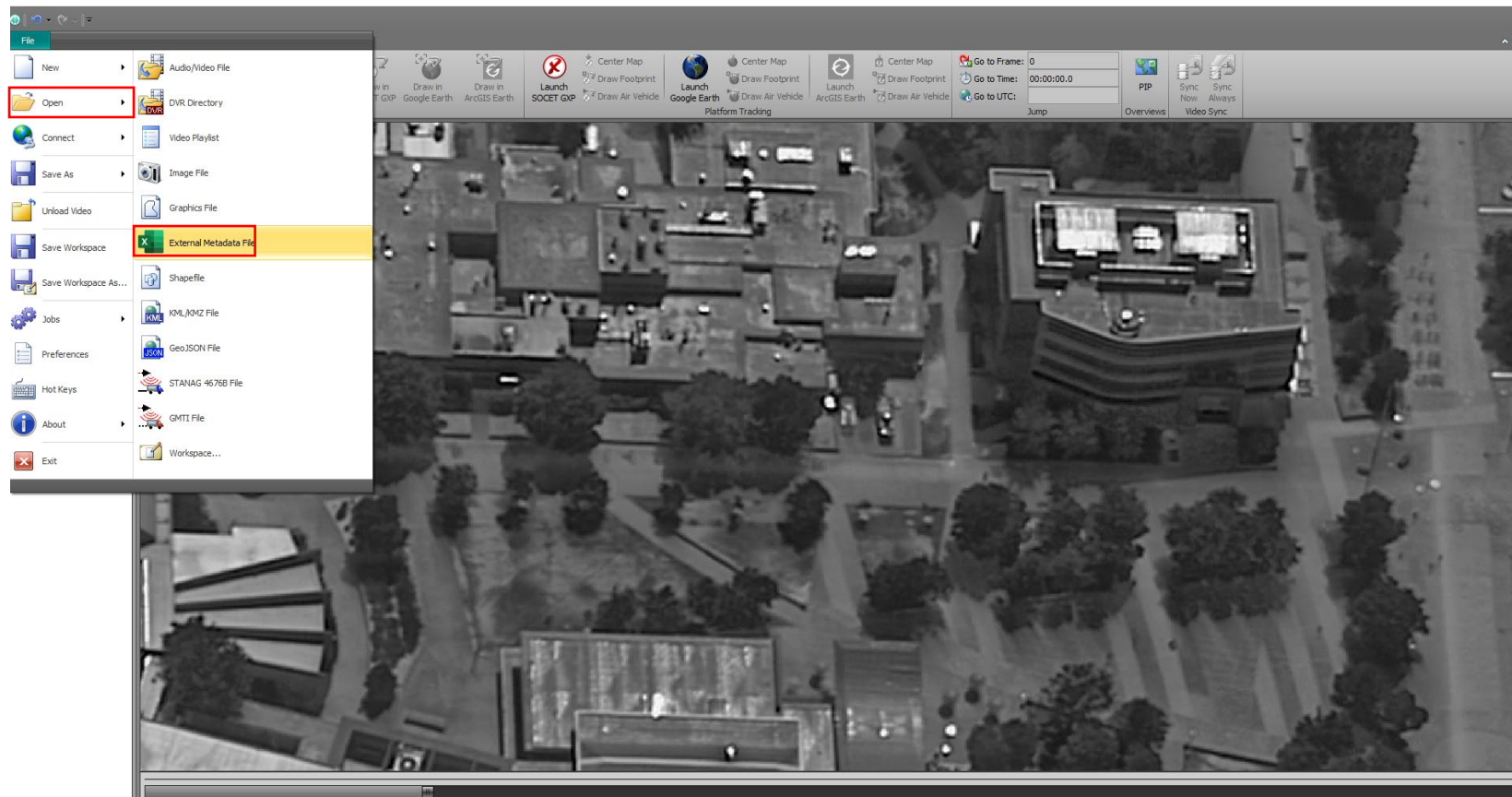
- When the occlusion file is configured, it identifies areas that are blocked in the Map View



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.

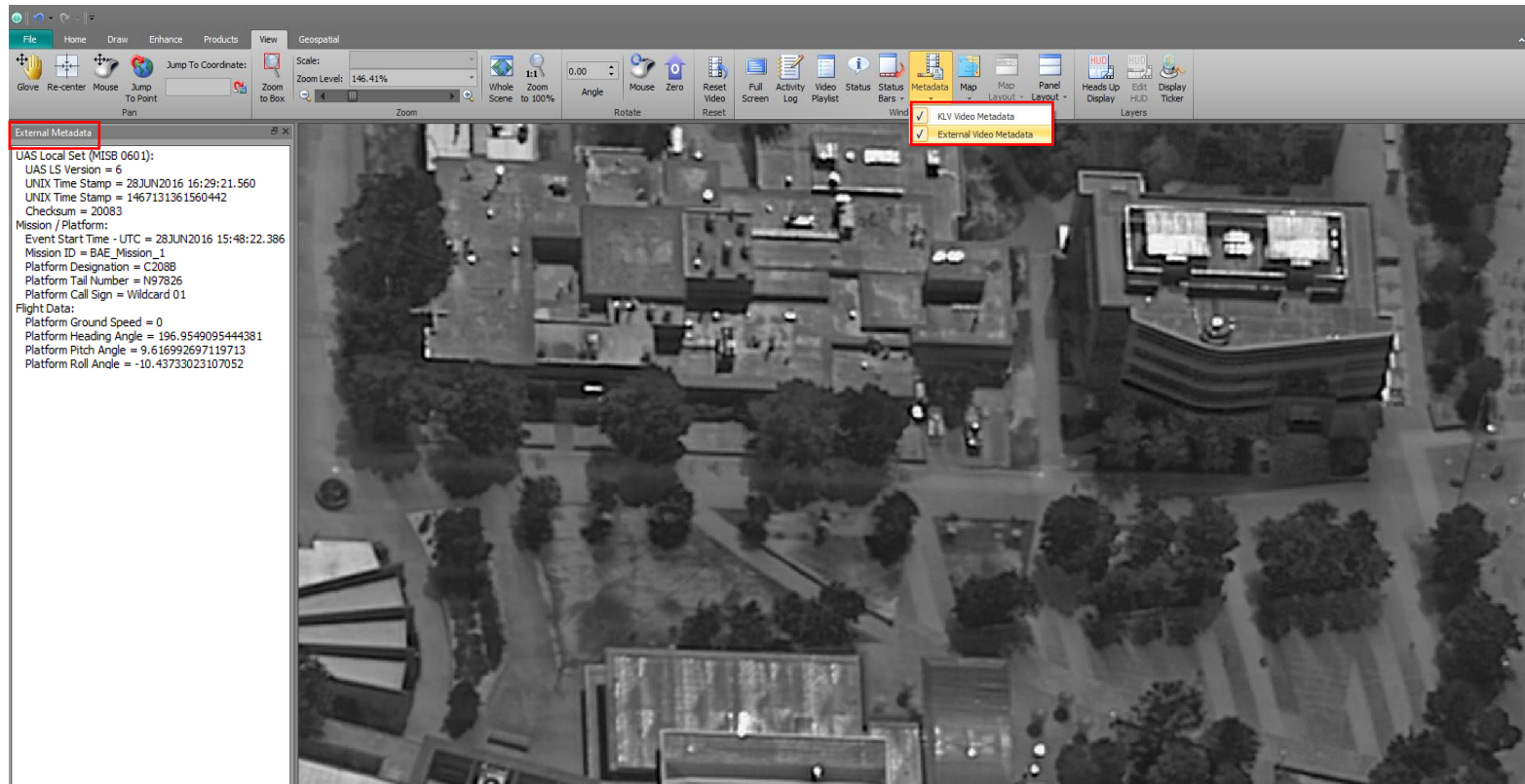
Ingest and display external metadata from a file ...2

- Import Metadata and assign columns, only columns assigned will be displayed.

The screenshot displays the 'Metadata Import' dialog box. At the top, there is a 'Preview of Raw File' section showing a large block of text representing the raw metadata. Below this, the 'Format' section is active, showing a 'Select Columns to Import' window. This window has two panes: 'Available' and 'Selections'. The 'Available' pane lists various metadata fields such as 'TZero', 'Zulu(E2000)', 'Zulu(UTC)', 'AcftInfoLAT', 'AcftInfoLON', 'AcftInfoALT', 'AcftInfoPIT', 'AcftInfoROL', 'AcftInfoHEA', 'AcftInfoINSO_Lat', 'AcftInfoINSO_Lon', 'AcftInfoINSO_Alt', and 'AcftInfoINSO_Pitch'. The 'Selections' pane shows the same list with some items selected. Below the panes are 'Add >>', 'Add All >>', '<< Remove', and '<< Remove All' buttons. To the right of the panes are 'Delimiter' (Space / Tab, Comma, Semicolon), 'Separators', 'Decimal Separator', and 'Thousands Separator' fields. At the bottom of the dialog is a table with columns corresponding to the metadata fields and rows of data. The table has columns: Info_LON, AcftInfo_ALT, AcftInfo_PIT, AcftInfo_ROL, AcftInfo_HEA, AcftInfo_INSO_Lat, AcftInfo_INSO_Lon, AcftInfo_INSO_Alt, AcftInfo_INSO_Pitch, AcftInfo_INSO_Roll, AcftInfo_INSO_Hea..., AcftInfo_INSO_Lat, AcftInfo_INSO_Lon, AcftI... and a final column with values like 368, 368, 368, etc.

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.

GXP Desktop v4.6.0.5 release enhancements

Evan Miller
GXP Product Development



GXP Desktop v4.6.0.5 release enhancements

- This presentation contains the enhancements included in SOCET GXP and GXP InMotion released March 31st, 2026.
- GXP Desktop software releases are full installations.

SOCET GXP v4.6.0.5 release enhancements



Infrastructure updates

- Removed support for .
 - Esri deprecated late 2025.
- Updated OpenCV to mitigate vulnerabilities.
 - V4.12.0.
- Removed OpenCodes to mitigate vulnerabilities.

AIFE (Automatic Intelligent Feature Extraction) support

- AIFE uses SAM2 (Segment Anything Model 2) to extract buildings and trees automatically.
- Using TSR (Terrain Shaded Relief) images for SAM2 to segment 3D features has the following advantages:
 - More accurate separations.
 - Fewer missing segmentations.
 - Higher geometry accuracy.
 - No shadow problems.
- TSR image may not have sharp edges of buildings and houses when the DSM is extracted from Photogrammetry.
- AIFE will also allow users to quickly break out building and trees to use in a 3D environment.
- We value your input as we continue to develop and refine this new capability. Your feedback is greatly appreciated and will help inform future enhancements.

AIFE from a TSR

- Results in more accurate separation.
- SAM2 extracts one segmentation from panchromatic image vs four segmentations from TSR image.

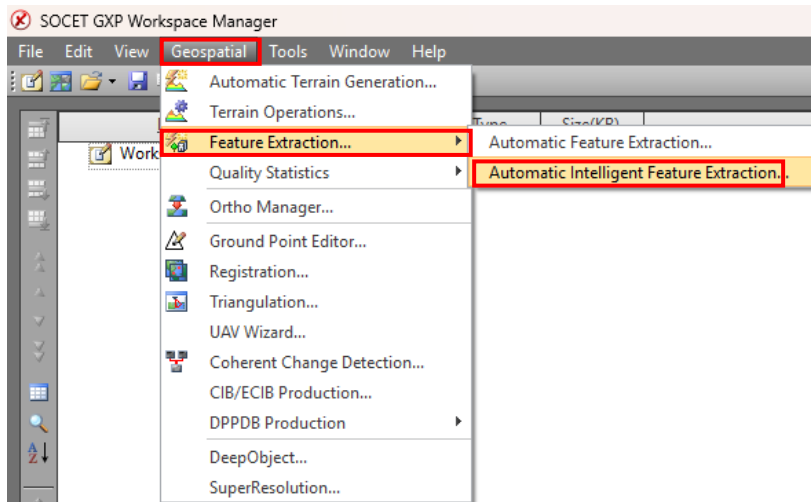


AIFE information

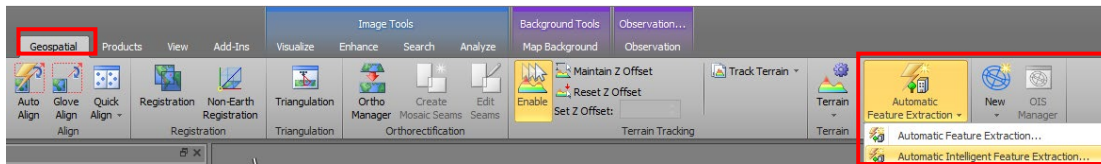
- What software license or bundle are these available with?
 - These capabilities are included in the XA (Xtreme Analysis) bundle and include:
 - DSM/DEM Generation.
 - AIFE.
 - SuperResolution demonstration license.
 - Needs to be requested separately through the customer portal.
 - Where can I find the models for AIFE?
 - They can be found on the MyGXP Customer Portal.
 - If you require assistance downloading them, please reach out to our support team.
- Prerequisites:
 - XA license bundle or above.
 - Hardware specs:
 - NVIDIA RTX® series GPU card compatible with CUDA 11.8.
 - 12GB RAM or more.
 - Admin privileges
- AIFE README.
 - The .zip contains README files that walk through the model deployment.

AIFE user interface

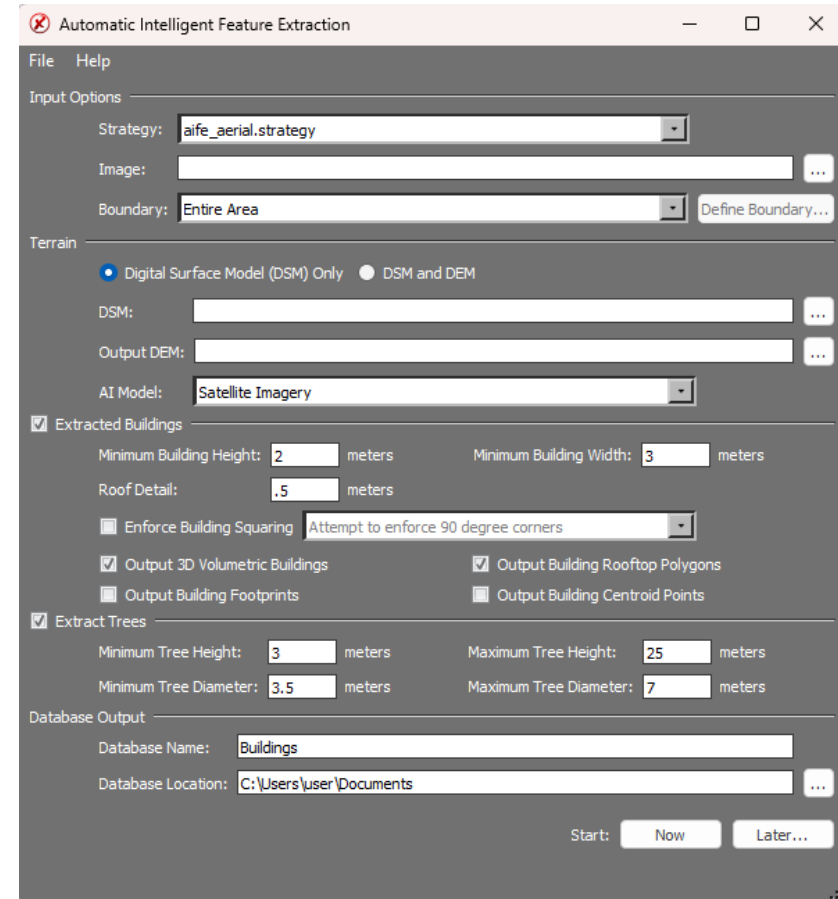
- AIFE Access:
- Workspace Manager:



Multiport:

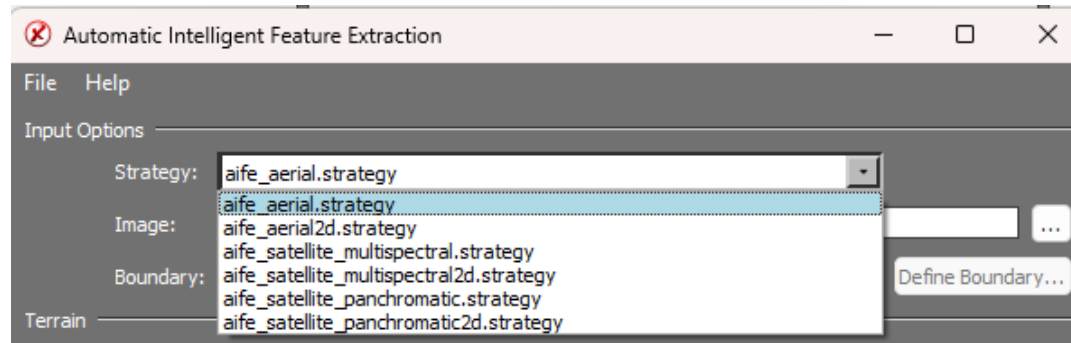


- AIFE User Interface:

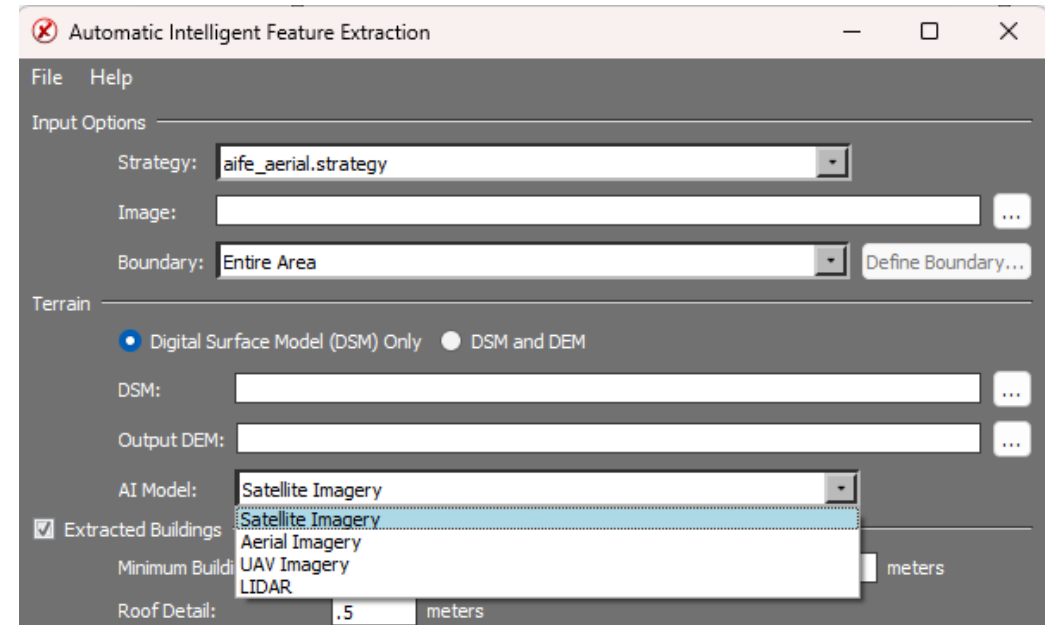


AIFE user interface ...2

- AIFE Strategies:

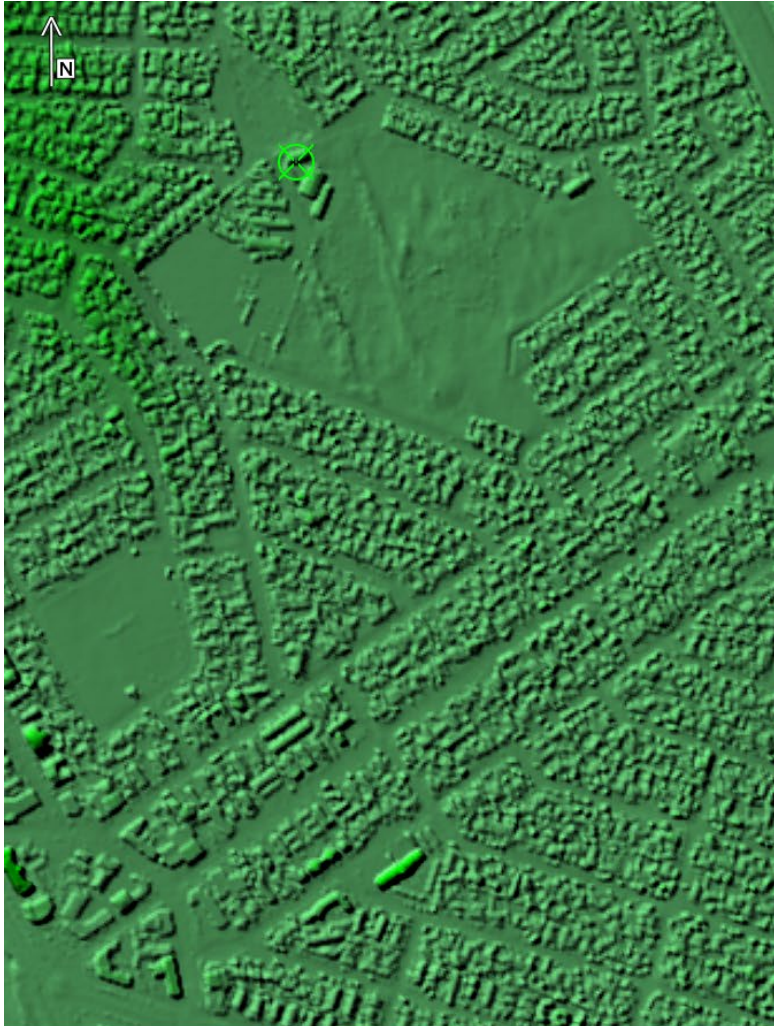


- AI Models:

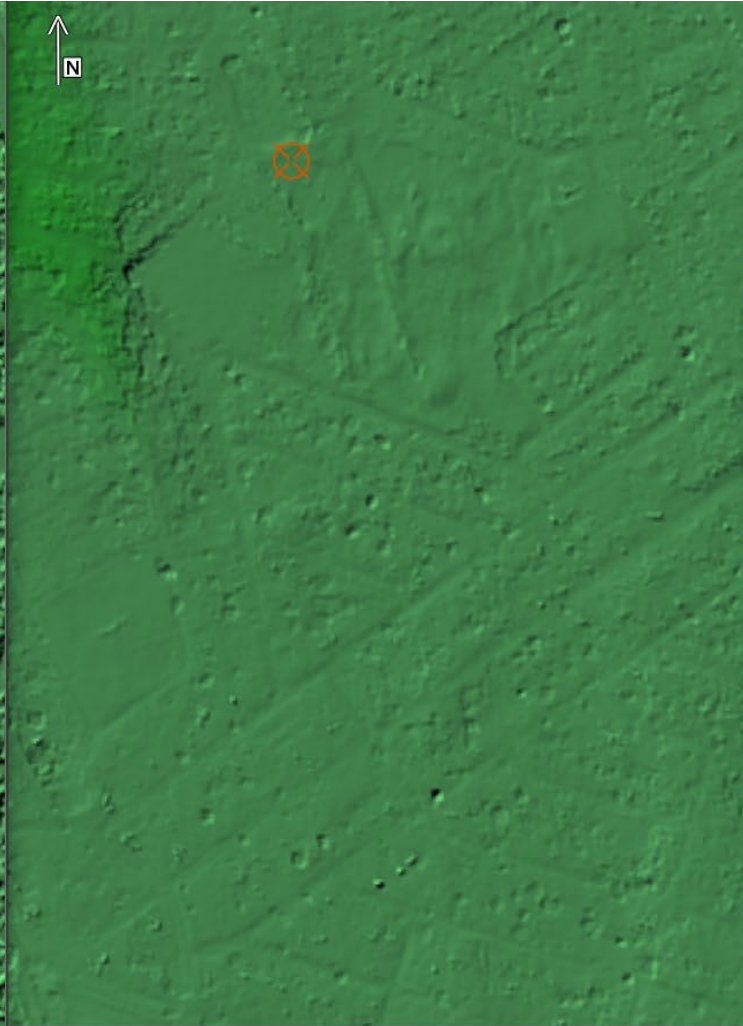


AIFE output products

DSM with TSR



DEM with TSR



Features Extracted from DSM



AIFE output products ...2

- 3D Mesh for Complex Rooftops

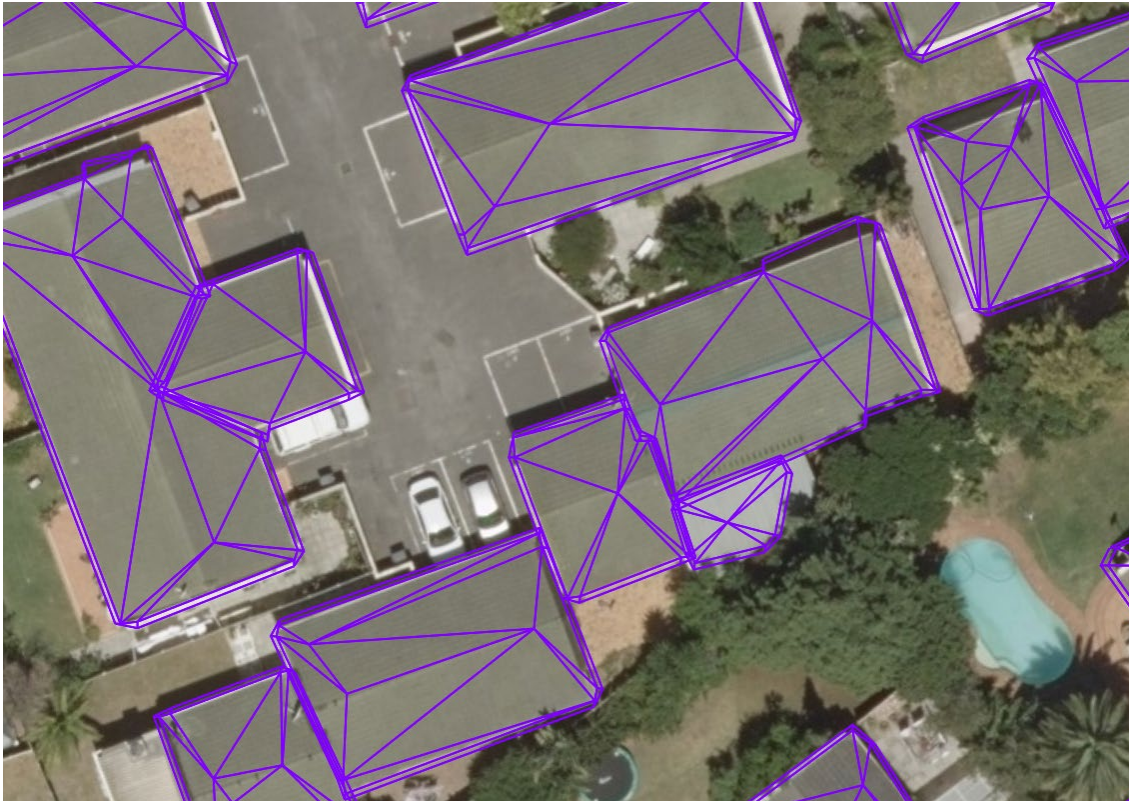


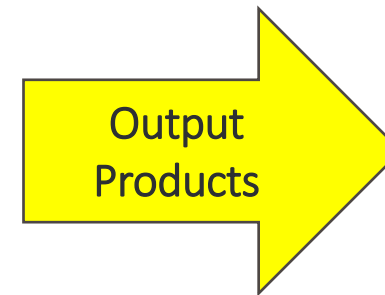
Image © ESRI South Africa



Vantor

AIFE additional Information

- For best results we offer three AI components that contribute to improved accuracy in an end-to-end, fully automatic workflow.
- Preprocessing.
 - Bundle-adjust imagery.
 - Optional: PAN+MSI → Pan-sharp.
 - **SuperResolution** to enhance 2X higher resolution.
- Terrain Generation.
 - **Intelligent photogrammetry**: DSM → DEM transformation.
 - Optional: Generate accurate ortho imagery using DSM.
- AIFE.
 - Input: Imagery, DSM, DEM.
 - Use SAM2 to find accurate footprints from rooftops of buildings.
 - Extract 3D building features from DSM, within SAM2 footprints.
 - Model complex rooftops.



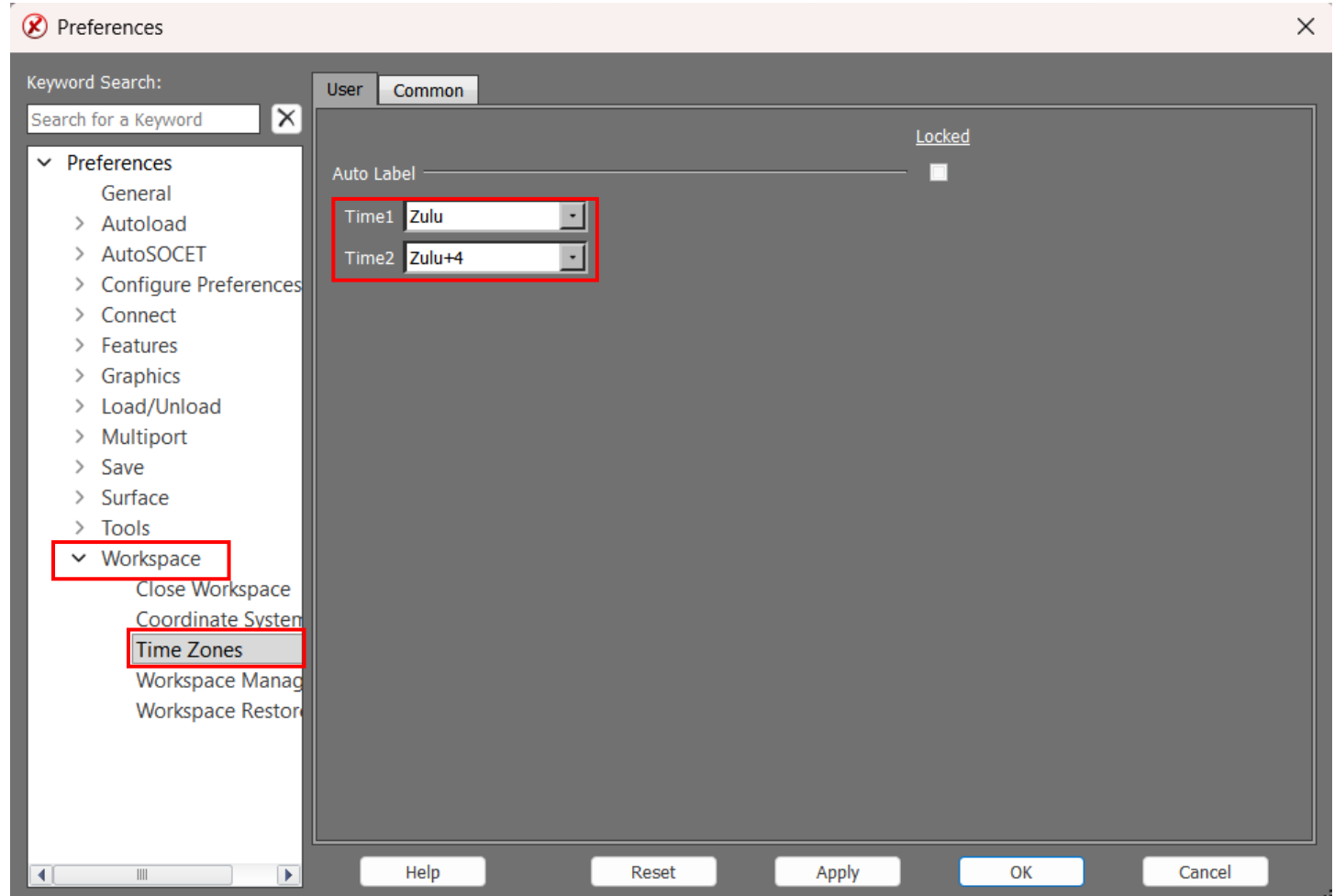
Bare-Earth DEM
Database of features

New Autolabel support

- Users can now specify a time zone and have it auto populate.
 - This enables two different time zones to be added to a template for quick product creation.
 - Example: Time Over Target might need to be in Zulu and local time to the imaged area.
- 3 Letter Country Code support was added.
 - If data has 3 letter Country Codes in the metadata, we'll parse it and auto populate it in a textbox.
 - We also support 2 letter Country Code conversions to 3 letter outputs.

New Time Zone Autolabel support

- Preference Location:




New Time Zone Autolabel support ...2

- Autolabel Formatting:
 - Select “Time Over Target” from the Autolabel list.
 - *This will default to Zulu time until edited*.
 - Edit Autolabel:
 - Time Over Target: <\$Time Over Target, Time1\$>.
 - The autolabel will now reflect Time 1 that was selected in preferences.
 - Copy and paste autolabel and edit to reflect Time 2.
 - Time 1: <\$Time Over Target, Time1\$>
 - Time 2: <\$Time Over Target, Time2\$>


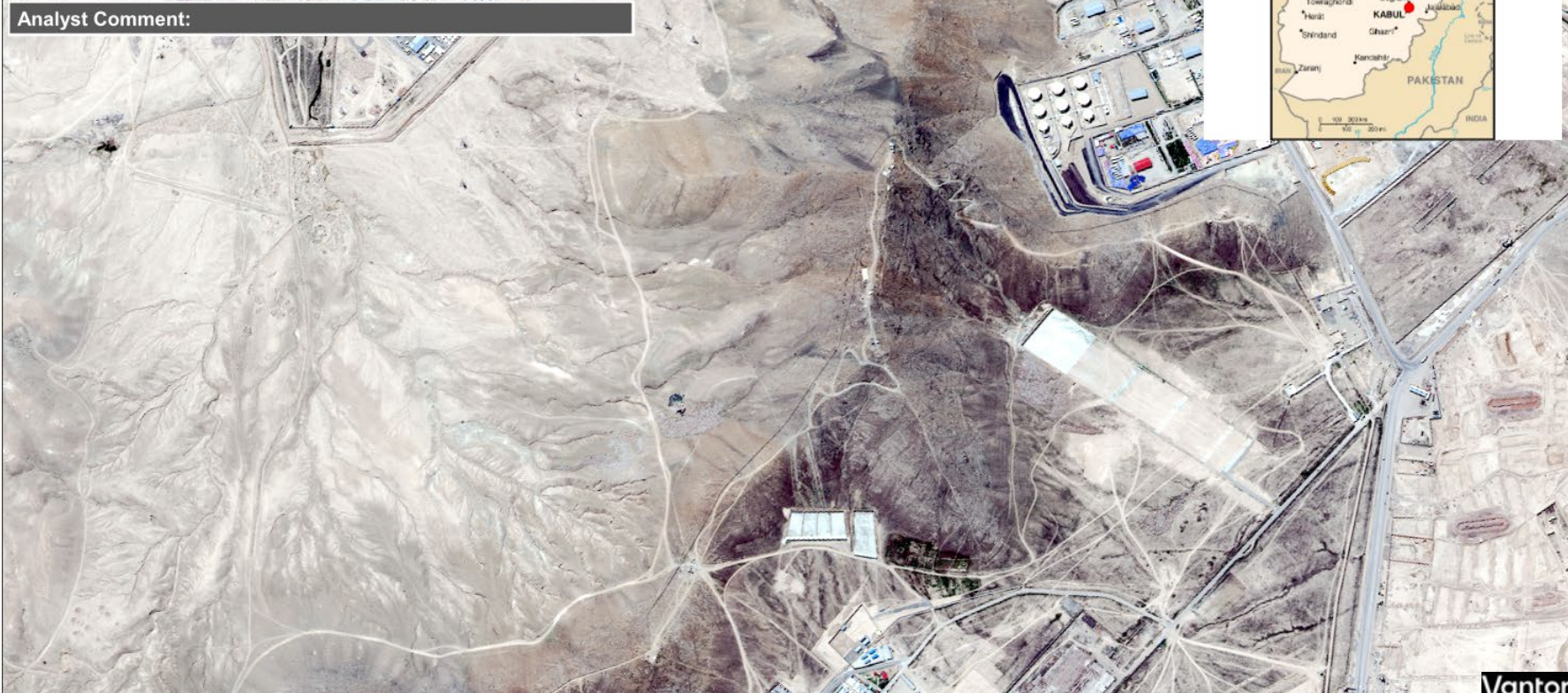
New Time Zone Autolabel support...3

- Templated Example:

 **Title:**
Facility Name: BE: CC: AF
Date: **TOT: 0622Z/1022L** Country Name: AFGHANISTAN
Center Coordinates: GEO: Lat: 34.5718 Lon: 069.2901 MGRS: 42SWD26602559

UNCLASSIFIED

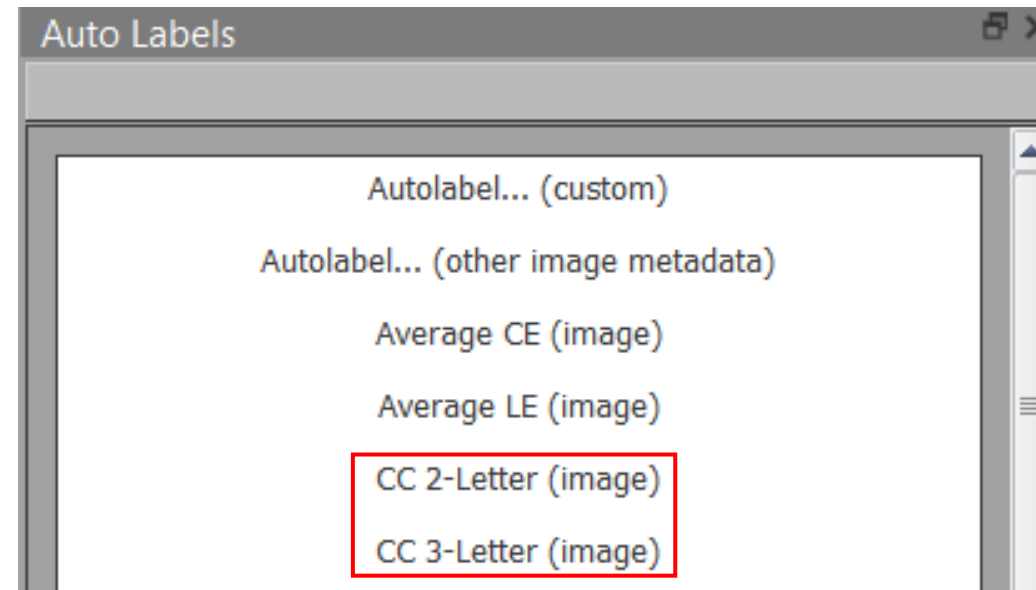
Analyst Comment:



Wantor


New Country Code Autolabel support

- Autolabel location:




New Country Code Autolabel support ...2

- Templated example:

 **Title:**
Facility Name: BE: **CC: AF/AFG**
Date: TOT: 0622Z/1022L Country Name: AFGHANISTAN
Center Coordinates: GEO: Lat: 34.5718 Lon: 069.2901 MGRS: 42SWD26602559

UNCLASSIFIED

Analyst Comment:



The main image is a satellite photograph showing a large, fenced-in facility with several buildings and a road network, situated in a rugged, mountainous, and arid landscape. An inset map in the top right corner shows the location of the facility in Afghanistan, with a red dot marking the site near Kabul. The map also shows neighboring countries: Turkmenistan, Uzbekistan, Tajikistan, Pakistan, and India. A compass rose is located to the left of the inset map.

Wantor

Copy/Paste graphics update

- We now allow a graphic to be pasted where the system/active cursor is located in a panel.
 - This is helpful so that you can paste items where you would like them to be located versus in the center of the panel and saves extra time moving items around.
 - Copy/Paste hotkeys and right select menus are supported.

Additional new features

- Streaming 3D Tile support was added.
 - Users can now stream 3D Tiles from GXP Xplorer Platform into SOCET GXP and retrieve the same level of precision as if they loaded the entire file directly in from a file share.
 - Enables a lightweight way of viewing and exploiting the data.
- Added support for Vantor's collocated .XML in order to initialize the sensor model.
 - Vantor is discontinuing the use of their sidecar files that we used to initialize their sensor model.
- Additional JavaScript API functions were added.
 - Please contact GXP Support for the full list.
- Improved debug logging.
 - We removed erroneous messages that make it difficult for users and our support team to differentiate from a real error versus a warning.

GXP InMotion v4.6.0.5 release enhancements



New Time Zone Autolabel support

- The format can be copied from SOCET GXP or typed in a text box manually to display the appropriate Country Code.
- Autolabel Formatting:
 - Select “Time Over Target” from the Autolabel list.
 - *This will default to Zulu time until edited*.
 - Edit Autolabel:
 - Time Over Target: <\$Time Over Target, Time1\$>
 - The autolabel will now reflect Time 1 that was selected in preferences.
 - Copy and paste autolabel and edit to reflect Time 2.
 - Time 1: <\$Time Over Target, Time1\$>
 - Time 2: <\$Time Over Target, Time2\$>
- These were incorporated for MIE4NITF support.

New Country Code Autolabel support

- The format can be copied from SOCET GXP or typed in a text box manually to display the appropriate Country Code.
 - These were incorporated for MIE4NITF support.
 - 2 Letter formatting: <\$CC 2-Letter\$>.
 - 3 Letter formatting: <\$CC 3-Letter\$>.
- These were incorporated for MIE4NITF support.

Infrastructure updates.

- Added support to use all KLV streams.
 - This update allows GXP InMotion Desktop to utilize more than one KLV stream to initialize a sensor model and display metadata.
 - Some video data might have 2 or more KLV streams associated with them, but they don't contain metadata and are an empty shell.
 - We removed the environment variable and now allow GXP InMotion bring in all the KLV metadata by default.

Thank you

Evan Miller

GXP Product Development

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