

GXP XPLORER® v2.1
RELEASE ENHANCEMENTS

BAE SYSTEMS

v2.1

**KEY ENHANCEMENTS ARE IN
THE AREAS OF VISUALIZATION,
DATA PROCESSING SERVICES,
WORKFLOW OPTIMIZATION,
AND CATALOGING**

** Indicates availability in GXP Xplorer v2.1 patch*



GXP Xplorer® v2.1 provides powerful functionality that focuses on advanced search capabilities, an intuitive user interface, and improved displays to visualize and disseminate the data.

This release provides a new user interface and introduces refined search tools to locate the most relevant data quickly from the initial search through product completion. It introduces the use of data from GXP Xplorer within the SOCET GXP® Multiport® using the GXP Xplorer Connector, and premieres the WebView module to view, analyze, annotate, and disseminate geospatially referenced image reports from a Web browser.

The screenshot displays the GXP Xplorer interface. On the left, a sidebar contains navigation and search tools. The main area is split into a 'SEARCH RESULTS' panel on the left and a map on the right. The search results panel is titled 'SEARCH RESULTS' and has a 'DATA TYPE' dropdown menu. It lists several categories with checkboxes and counts:

- BARO (2)
- Maps and Charts (8476)
 - Global Navigation Chart (1.5M) (219)
 - Jet Navigation Chart (1.2M) (1097)
 - Joint Operations Graphic - Air (1.250k) (4309)
 - Low Flying Chart (1.500k) (325)
 - Low Flying Chart - Day (325)
 - Miscellaneous Maps and Charts (various) (200)
 - Topographic Line Map (1.250K) (1048)
 - Tactical Pilotage Chart (1-500k) (1278)
- Imagery (404)
 - CIB (1)
 - DFPDB (2)
 - JPEG (7)
 - NITF (145)
 - SOCET GXP Support File (180)
 - TIFF (69)
- Documents (9)
- Terrain (16964)

The map on the right shows a satellite view of the North Atlantic Ocean and surrounding landmasses. Numerous circular markers are overlaid on the map, each containing a number. The markers are color-coded and have varying sizes, representing different data types and their spatial distribution. The numbers visible include 1283, 846, 1327, 1064, 171, 364, 586, 923, 155, and 98.

Search and refine features focus on the most important search details, and sharp icons provide an array of actions for working with different data products.

Clustering

Clustering on the map displays result markers in groups to easily view the overall data coverage and avoid overlapping individual markers.

- Highlight a cluster to view a summary of products in the cluster as a bar or pie graph
- Zoom in to separate a cluster and zoom out to form a cluster
- Toggle to control whether clusters or individual markers display on the map
- Quickly identify product void areas for additional collection requirements

Color-coded marker icons and footprints

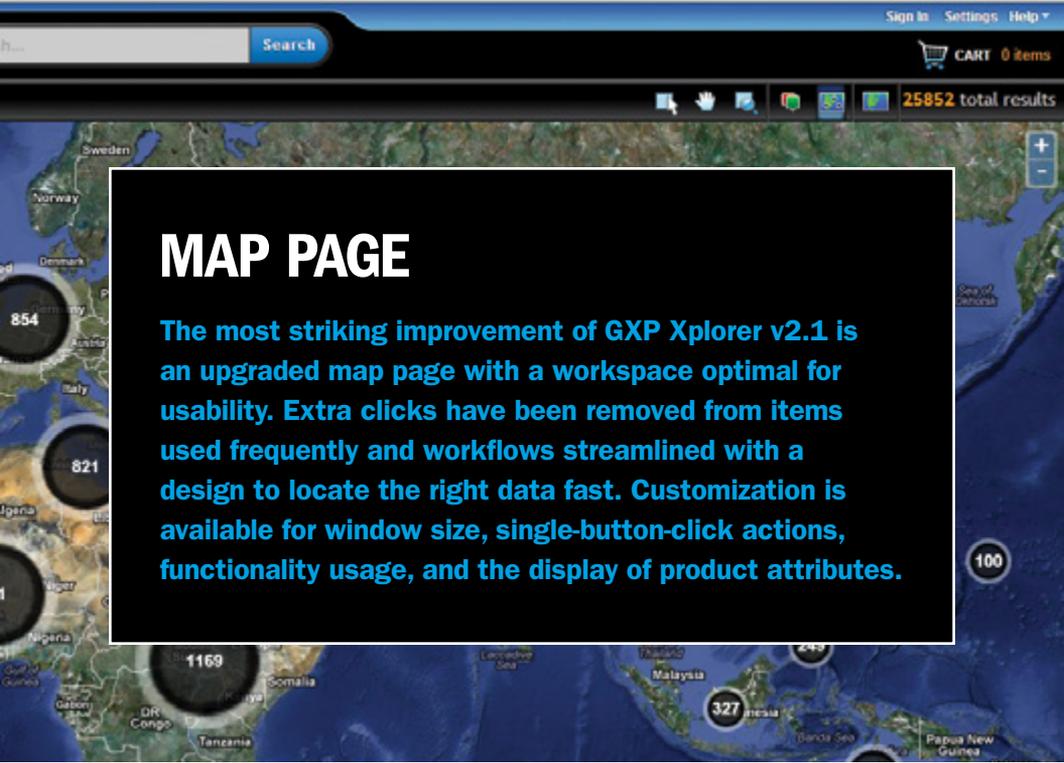
The color-coded icons represent different data types for quick visual identification.

- Standard colors for each major data type
- Product footprints are also colored by data type

Time Slider

Display results arranged on a timeline.

- Zoom in and out, and scroll along the timeline to focus on specific time/date ranges
- Products appear on and disappear from the map as they enter and leave focus on the timeline
- Expanded view available for additional detail and resolution



MAP PAGE

The most striking improvement of GXP Xplorer v2.1 is an upgraded map page with a workspace optimal for usability. Extra clicks have been removed from items used frequently and workflows streamlined with a design to locate the right data fast. Customization is available for window size, single-button-click actions, functionality usage, and the display of product attributes.

Flexible attribute search

Expandable drawers provide access to the search criteria – define the attributes to display or hide.

- Standard types are easily selectable for searches
- Detailed attributes are hidden until needed
- Search temporally, such as the last 24 hours, or by custom range on a variety of available time and date fields
- Free-text search finds character strings or words in documents and in the textual attributes stored within product files
- Advanced search exposes a full range of searchable attributes
- Choose the attributes and values to be searched
- Order the attributes with most frequently used at the top of the list
- Use filters after the search to refine the results

Heatmap*

View areas considered hot or cold based on the number of products that cover a particular area.

- Product coverage density for the entire map in one simple view
- Dynamic color gradients make it easy to see hot spots and product density changes by location – brighter red indicates more products
- Filter the heatmap by time to identify when product creation is happening or slowing down; view product acquisition and creation spikes after an event

Grid*

Display a grid overlay for analysis and searching.

- Overlay a labelled grid on the map with customizable grid cell size such as 1-degree to analyze coverage
- Search only within selected grid cells to step through results systematically

PRODUCT GALLERY

New features of the map make it easy to locate and select the right product. The Product Gallery displays information for a selected product and adds it to a filmstrip. The filmstrip provides an at-a-glance view and functionality to flip through selected results for comparison and final selection. A customizable attributes page exposes only the product details requested.

View product thumbnail and any desired attributes

View a resizable large thumbnail of the product selected to avoid downloading an image to determine its usability.

- Display side-by-side thumbnail with the attributes associated with the product
- Details provided for each result
- Customize every attribute displayed (or not displayed) based on personal preference and mission need
- Multi-select plus a single-click action bar allows for batch actions as easily as on a single file
- Hide the Overview drawer to work only with the filmstrip

Filmstrip for comparing results

View thumbnails of each product.

- Products selected are added to filmstrip
- Skim through filmstrip visually to locate the correct image
- Easily add or remove products

Customizable one-click actions

Available for single- or multi-file selection functions.

- Add to cart
- Direct File Open (without downloading)
- Stream
- Chip
- Reformat
- Ortho process*
- RSet generation
- Email

Undockable pop-out windows

Move the Product Gallery into its own window, even on another monitor.

- Remains synced with main screen
- Expand to full size to maximize the thumbnail
- Work within the map and Product Gallery without closing and re-opening, or obscuring valuable workspace

LIST PAGE FOR ALL-SOURCE DATA

Locate reports and unstructured text files as well as geospatial products quickly without searching through markers on the map with the List page. View results in a list or table display in addition to a map, and sort and filter them as necessary.

Search capability

Choose whether geotagged or non-geotagged data displays, or include both to maximize the number of results returned.

- Select the federated catalogs to search
- Filter by type, time and date, a particular area of the world, keywords, and any detailed advanced metadata
- Documents and other unstructured files are cataloged and indexed so that all of the textual information can be searched
- Refine the results with additional filters and facets, hierarchically by type and subtype, and by structured attributes such as Cloud Cover or Ground Sample Distance (GSD)
- Results are returned in order of relevance or proximity*
- Spelling corrections are suggested*
- Perform Boolean searches using simple syntax with AND, OR, and NOT
- Save a Favorite Search as an RSS feed for notification when new products come in matching the query

Detailed table view for power users

Change between a thumbnail (list) view or table view display to locate products easily.

- List view displays the product along with relevant attributes
- Table view provides the attributes, including any additional attribute columns selected to display
- Sort on a specific column
- Sort again by that same column to invert the search
- Export the table as a comma separated value (CSV) file to open in Microsoft® Excel or other applications*
- Print the detailed search results in a tabular format*

Optional mini-map window provides geotagged results

View the location of the selected product on the mini-map.

- Footprint displays for geotagged products
- Pan and zoom the mini-map to identify the surrounding area
- View multiple geotagged items in the mini-map
- Click the marker on the mini-map to jump to the map page with the particular result highlighted*

Product Gallery

The screenshot shows the GXP Explorer interface with a search results panel on the left and a main map area. A 'Product Gallery' window is open, displaying a grid of image thumbnails. The selected product, 'Kuluil Airport.tif', is shown in a larger view with the following details:

- Classification:** Unclassified
- Creator:** W/Regar 315-836-2017
- Date Collected:** 2013-05-16T10:31:43Z
- Date Produced:** 2009-10-14T19:26:36-0502
- Description:** test.tif
- File Date:** 2010-05-07T12:55:36-0502
- File Path:** C:\Users\jaggon\Documents\members\Report\Kuluil Airport.tif
- File Size:** 2.25 MB
- Filename:** Kuluil Airport.tif
- Keywords:**

The screenshot shows the GXP Explorer interface with a search results panel on the left and a main map area. A list of search results is displayed, with the selected product, 'Kuluil Airport.tif', highlighted. The list includes the following items:

- camp1.tif** (1.5u.tif) - 2013-05-16T10:31:43Z
- 01uvr_sdr32img.tif** (20k.tif) - 2013-05-16T10:31:38-0502
- Kuluil Airport.tif** (2.20 MB) - 2013-05-16T10:31:38-0502
- Kuluil Airport.tif** (99k.tif) - 2013-05-16T10:31:38-0502
- 01uvr_img.tif** (101k.tif) - 2013-05-16T10:31:38-0502
- 1_30img.tif** (257.kb) - 2013-05-16T10:31:38-0502
- 1_301van2D.tif** (1.46 MB) - 2013-05-16T10:31:38-0502
- 00_0010000.tif** (1.41 MB) - 2013-05-16T10:31:38-0502
- Kuluil Palace Overviews.tif** (99k.tif) - 2013-05-16T10:31:38-0502

List Page

REFINE THE SEARCH

Search results are grouped by categories, displaying the individual product categories for selection and the breakdown of the results in each area. Additional refinements bring the most important results to the forefront.

Results are organized into categories

Search results are grouped by category with count subtotals for each category.

- Categories are hierarchical by product type and commonly-searched attributes such as accuracy and viewing angles
- A special algorithm computes Predicted National Imagery Interpretability Rating Scale (NIIRS) for images when NIIRS is missing
- Make knowledgeable data choices based on the categories of results available

Filter results for updated display

Quickly filter results by turning results categories on and off.

- Select or deselect a check box to update the results shown on the map and Time Slider
- Watch markers appear and disappear on the map as categories are selected
- Save a filtered search as a Favorite to capture the filter refinements

Search within current results*

Refine the results by additional search criteria.

- Search for keywords or phrases within the current set of results
- Use phrases and logical operators similar to a free-text search

Advanced text search*

Suggest alternates, such as spelling and synonyms.

- Check and auto-correct misspelling of text search entries
- Suggest similar words and synonyms for concept searches

WORKFLOW OPTIMIZATION

GXP Xplorer focuses on ease-of-use, and exposing data and attributes to locate relevant products quickly.

Intuitive workflow

Buttons are grouped by workflow. Commonly used buttons and actions are easily accessible to streamline the query and retrieval process.

- Common search topics immediately available
- Results display in a single window
- Additional Details option available to avoid clutter
- User settings and preferences are remembered for later sessions

Dynamic customization

User display settings are saved for later sessions.

- Select the specific map background and style
- Undock Cart and Product Gallery windows to open the map space
- Resize each pane in the viewable area
- Expand or hide Search drawers

Jump to place

Type a coordinate or a place name to jump to that location on the map and zoom in.

- Out-of-the-box support for country and city names using Nominatim and OpenStreetMap
- Street addresses and more place name data can be added
- Connect to your organization's place-name gazetteer if available
- Save frequently used places as Favorite Locations
- Jump to Favorite Locations with selection from the pull-down menu

Plug-in data processing services

Process or condition a data product before using it with plug-in data processing services.

- Plug-in architecture enables the simple addition of new services
- Image reformat
- Image RSet creation
- Image orthorectification
- Triangulation*
- Data Mosaic*
- Terrain Merge*
- Clip data such as LiDAR and video*

Display live data feeds and layers on map display*

Access public data layers to provide additional detail.

- Aggregate multiple feeds from other data sources such as Web Feature Service (WFS) and shapefiles
- Enable or disable layers dynamically
- Provides a visual integration of reference information to make data decisions

CATALOG ENHANCEMENTS

Cataloging informs GXP Xplorer of the data location and properties of the data. The GXP Xplorer v2.1 cataloging process is robust and optimized to include cataloging more data types, and custom product types. These enhancements facilitate interacting with other media sources including social media to provide the best available intelligence products.

Smarter search results

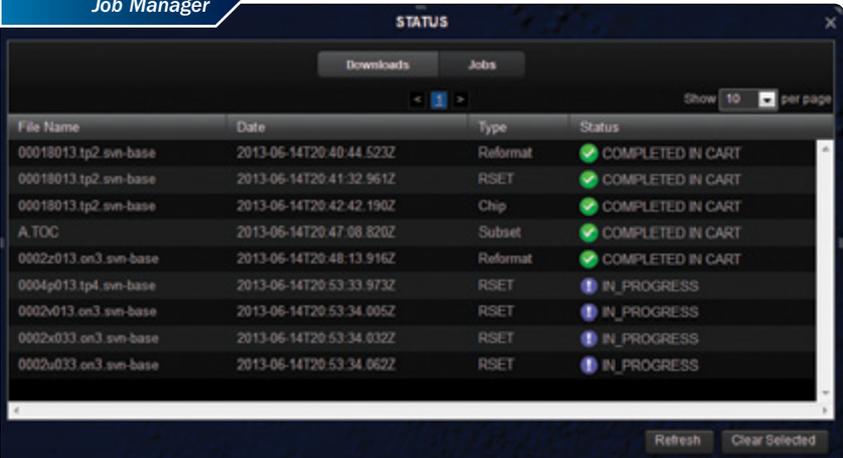
Improved search process and enhanced search results.

- Better tools to monitor the crawling and cataloging process*
- More results display on a page to eliminate paging through large amounts of data
- Sort results based on proximity to center of search area*
- Search multiple areas of interest at once*
- Search by imported target deck*
- Search within circle, polygon, or buffer from selected features*
- Find stereo pairs*

Additional data types supported*

Support for user-defined custom data types.

- ENVI SPIRIT HSI files
- JPEG with XMP APP1 metadata
- SOCET GXP supported file types
- Multiple geotag files



The screenshot shows a 'Job Manager' window with a 'STATUS' tab. It contains a table with columns for File Name, Date, Type, and Status. The table lists various jobs, some completed and some in progress. At the bottom, there are 'Refresh' and 'Clear Selected' buttons.

File Name	Date	Type	Status
00018013.tp2.svn-base	2013-06-14T20:40:44.523Z	Reformat	COMPLETED IN CART
00018013.tp2.svn-base	2013-06-14T20:41:32.961Z	RSET	COMPLETED IN CART
00018013.tp2.svn-base	2013-06-14T20:42:42.190Z	Chip	COMPLETED IN CART
A.TOC	2013-06-14T20:47:08.820Z	Subset	COMPLETED IN CART
0002r013.on3.svn-base	2013-06-14T20:48:13.916Z	Reformat	COMPLETED IN CART
0004p013.tp4.svn-base	2013-06-14T20:53:33.973Z	RSET	IN_PROGRESS
0002u013.on3.svn-base	2013-06-14T20:53:34.005Z	RSET	IN_PROGRESS
0002v033.on3.svn-base	2013-06-14T20:53:34.032Z	RSET	IN_PROGRESS
0002w033.on3.svn-base	2013-06-14T20:53:34.062Z	RSET	IN_PROGRESS

MULTI-FILE SERVICES

Frequently, the data products do not meet the finished product requirements; they are either in the wrong format or require additional computation.

The upgraded data processing within GXP Xplorer v2.1 allows the product to change to a different format, combine it with valuable reference data, and work in batch mode when multiple files require similar modifications and augmentations.

Batch processing

Select multiple files and view groups of thumbnails simultaneously in the Product Gallery.

- Choose subsets within the Product Gallery to perform additional batch actions
- Chip multiple files in a queue
- Start reformatting jobs instantaneously
- RSet every image at once
- Download everything selected
- Add everything into the Cart for later

Image mosaic and terrain/feature merge*

Combine multiple adjacent imagery tiles into a singular image product.

- Merge one or more terrain files with a given imagery product for additional detail
- Orthorectify and mosaic images on-the-fly for viewing

Advanced data chipping*

Create data chips (subsets) in new ways.

- Chip based on geographic coordinates
- Chip multi-data-layer files
- Chip, zip, and send

Upload in a group

Upload multiple files at once.

- Tag the files geospatially with the same footprint
- Update other metadata

Improved Jobs panel

View the jobs in progress.

- Uploads, downloads, RSets, reformats, large chips, etc.
- Color coded to distinguish different job types
- Start, pause, and cancel any job in the list

ADMINISTRATIVE, PROGRAMMATIC, AND PLATFORM ENHANCEMENTS

Administering server software can be challenging, especially for the enterprise. We investigated the challenges and added enhancements to minimize the configuration and maintenance of the server, and integration of other applications.

Administration

The new Configuration Management Tool enables server administrators to rapidly update properties of the server, ranging from security posture, to map background styles, to database customizations. Actions that previously required tediously sifting through and editing property files now are done quickly.

- Update ports and plug-ins
- Integrates with a wide range of custom authentication models, including Lightweight Directory Access Protocol (LDAP)
- The *Installation Quick Start Guide* provides clear installation procedures

Distributed computing*

GXP Xplorer v2.1 caters to the needs of the site by adding cores to specific areas of the workflow, such as cataloging or searching.

- For high-volume/throughput sites, distribute GXP Xplorer processing among multiple servers for extra speed

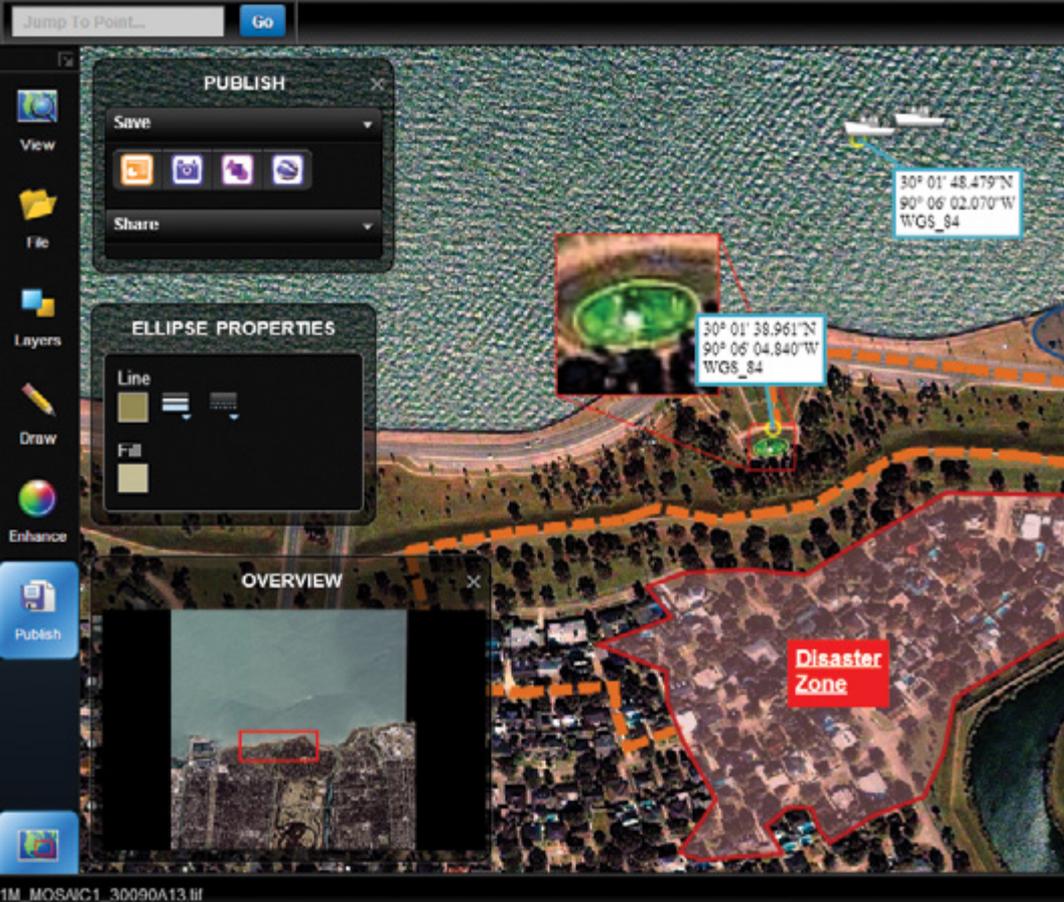
Application Programming Interface (API)

- Plug-in data processing services
- Plug-in additional data sources
- Add custom data types and properties (metadata)
- Modify the GXP Xplorer Web client using an API*

Platform

Multiple platforms supported with new enhancements.

- Google Chrome, Internet Explorer 9, and Mozilla Firefox 20 (plus ESR releases 10 and 17) Web browsers are now tested and supported
- Updated to Google Maps v3 map server
- Out-of-the-box Web Map Service (WMS) capabilities, including country boundaries and names
- Add your Compressed ARC Digitized Raster Graphics (CADRG) and other maps with easy-to-use scripts
- GXP License Manager v8.4 for easier access to licensing files



1M_MOSAIC1_30090A13.tif

Integrated with GXP Xplorer

Load images from GXP Xplorer into WebView to view full-resolution detail in a Web browser.

- GXP Pixel Streaming automatically converts to a displayable image format from the native image without reformatting to a new file
- See the real pixels without desktop software

See and improve your image

Manipulate image properties like brightness, contrast, sharpness, and more.

- Zoom in and out, pan around, and focus on an area of interest
- Software automatically selects the optimal presentation of the image via auto-corrections
- View WFS overlays on top of image for additional detail

WEBVIEW MODULE

WebView provides exploitation actions necessary to produce intelligence products and reports directly in the Web browser instead of having to download and work with the data locally.



Analyze, exploit, annotate

Annotate the imagery to create reports.

- Place icons and color code them as needed
- Write text annotations
- Use magnifying glass call-outs
- Measure and annotate distances
- Draw polygons, circles, buffers, etc.
- Generate error rings and overlays
- Load in shapefiles to burn into the result
- Perform geospatial measurements in Lat/Long, UTM, or MGRS

Disseminate the results

Publish reports to PowerPoint®, GeoPDF®, and more.

- Send results back into GXP Xplorer for others to use

GXP XPLORER MOBILE

The GXP Xplorer Mobile app provides remote access to a connected GXP Xplorer server over a standard data connection or via WiFi. Developed for both Android 3.2+ and iOS 5.0+ tablets, the GXP Xplorer Mobile app enables basic operations in the field and relays notable tactical information in near-real-time.



Connects to a GXP Xplorer for up-to-date information

Users connect to a GXP Xplorer server to view data markers and properties.

- Select a GXP Xplorer server via selection menu
- Combine results from multiple GXP Xplorer servers into a single view
- Display news and results from data sources other than GXP Xplorer*
- Integrates with custom user authentication models

Data search

Filter the data display.

- Locate imagery and documents containing keywords using free-text searches
- Know exactly where each product is located on the map
- Organize temporally to find products that matter now

Display results

View thumbnails of images and documents in a gallery or switch to the Details view to see the properties for a particular product.

- View markers with optional footprints on either a satellite or street map
- Automatic clustering of markers when too many results are close together

Get the data

Download products into device-viewable formats for use even without connectivity.

- Download entire product
- Chop large products to minimize bandwidth requirements
- Continue working while long downloads are in progress
- Stream images to device using GXP Pixel Streaming*

Report back

Upload reports for use by others connected to the GXP Xplorer server.

- Snap a photo of an object or area of interest
- Add notes and a title
- GPS coordinates added automatically to the picture

Disconnected operations*

Reports created while not connected are stored until the data connection returns to be resynchronized with the server.

- Cache the map ahead of time for the area of interest
- Download any products prior to leaving the area

Upgraded reporting*

Attach video, audio, and other files.

- Choose the location for the report instead of using the current GPS location
- Customize the reporting fields to match a particular workflow

GXP XPLORER CONNECTOR

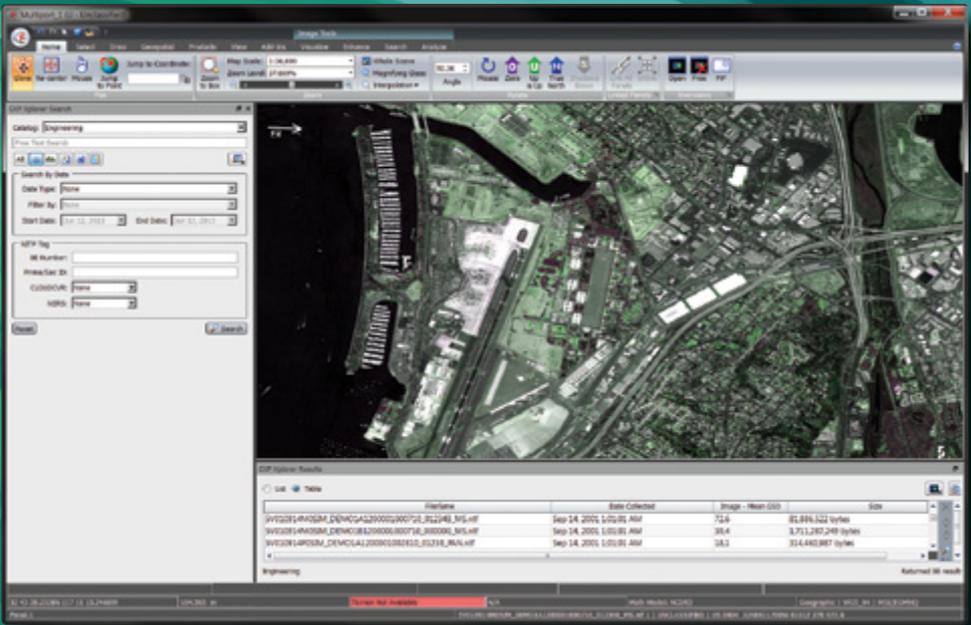
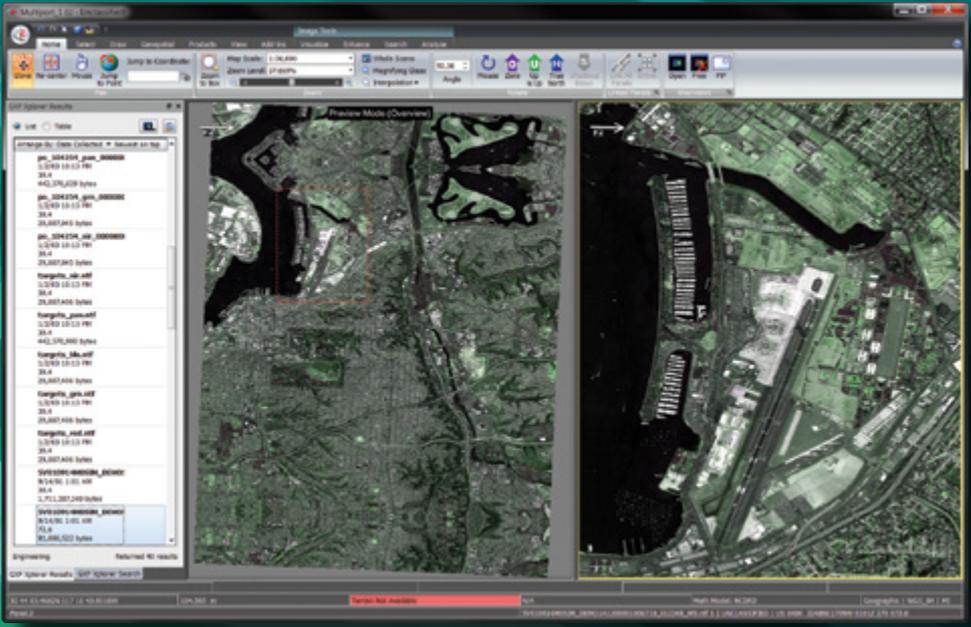
The GXP Xplorer Connector provides powerful integration between GXP Xplorer and SOCET GXP. Preview and exploit local network and wide area network data holdings with dynamic delivery to SOCET GXP. Improved integration enables streamlined workflows and enhanced data discovery.

Find GXP Xplorer data within SOCET GXP

Work directly in the SOCET GXP Multiport and automatically find relevant reference imagery from GXP Xplorer.

- Display relevant and nearby products and reports based on the image or geographic area being analyzed
- View footprints and select products from GXP Xplorer catalogs
- Display a list of the products and their properties in GXP Xplorer next to the SOCET GXP Multiport
- Filter the products list by properties such as Target ID and Cloud Coverage
- Sort the GXP Xplorer data by the most relevant information
- Open GXP Xplorer images in SOCET GXP alongside the working image in the Multiport

GXP Xplorer can display automatically during image analysis in the SOCET GXP Multiport



Load reference images from GXP Xplorer side-by-side in the SOCET GXP Multiport

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