

# GXP Xplorer®

Geospatial eXploitation Products



Powered by the  
GXP Xplorer® Platform

**BAE SYSTEMS**



# GXP Xplorer®

Powered by the GXP Xplorer Platform

GXP Xplorer software represents a revolutionary data management solution that makes it easy to rapidly locate, retrieve, and share geospatial data files.

Combined with the GXP WebView® and GXP InMotion™ solutions, GXP Xplorer software provides an effective platform for not only accessing mission-critical content, but for exploiting both still imagery and video feeds, and creating intelligent analysis and reporting to ensure optimum strategy moving forward.

## Rapid access to critical data

Utilizing dynamic discovery techniques, GXP Xplorer software crawls your enterprise network searching for relevant files in existing data systems, on shared network drives, and in an analyst's local shoebox. Geospatial, temporal, free-text, and advanced metadata searches are performed across multiple data stores with a single query without the need to switch between systems.

This solution identifies files without moving them, creates an online catalog for rapid retrieval, and even alerts users to new content. The catalog, which is searchable through the GXP Xplorer Web Client, GXP Xplorer Mobile application, and the SOCET GXP® Workflow Improvement Module (WIM), delivers geotagged search results graphically on a map and textually within an attribute list.

Enabling rapid access to critical data, GXP Xplorer software ensures that you are maximizing the value of all of your geospatial resources. Relevant data and imagery can be visualized, downloaded, processed, or opened directly into other applications for additional analysis and exploitation.

*The GXP Xplorer software solution has received the SAFETY Act designation from the Department of Homeland Security as a qualified anti-terrorism technology. This special designation was awarded based on extensive operational testing, performance achievement, quality assurance, security assessments, audit and accountability, and a variety of other key metrics.*



## Reduce costly data search efforts

Statistics show that analysts spend up to 50 percent of their time locating imagery and data across disparate systems, networks, and geographic locations.

GXP® solutions streamline process workflows, increase productivity, and enable a more effective final product, saving both time and money for your organization!



**50%** of total project time is spent searching for data

# Data discovery

The GXP Xplorer dynamic discovery agent crawls directories across the enterprise to find data products of interest. A cataloger agent reads properties and relevant details from inside the files to create a searchable repository, making every data product discoverable via these ingested attributes.

## Discoverable structured and unstructured data types

- » Imagery
- » Terrain and LiDAR
- » Features and shapefiles
- » Maps and charts
- » Raster-derived products
- » Vector-derived products
- » Videos
- » Documents, reports, and presentations
- » Slides
- » Spreadsheets
- » Custom types
- » Microsoft® Office products and GeoPDF®

## Change detection capabilities

- » Listens for file system changes in all selected directories
- » Discovers new files, deletions, and changes
- » Keeps catalog updated in near-real-time
- » Notifies and flags file duplicates

## Multiple data stores

GXP Xplorer software connects intelligence data store catalogs and reference data to provide a comprehensive operating picture without moving from one application to another to locate data. The different source results are uniquely marked for identification of source.

The GXP Xplorer solution also has an open architecture and an Application Programming Interface (API) with support for plug-in connections to data store catalogs. This architecture is standards-based to ensure simple connection to third-party applications as mash-ups to monitor, geotag, and visualize social media and world events. API documentation is provided through the use of the Swagger™ framework.

## Data store catalog connectors

- » Product and national libraries
- » Map and chart libraries
- » Tactical data stores
- » Video catalogs
- » Activity Based Intelligence (ABI) data catalog
- » Target databases
- » Geographic Information System (GIS) and feature databases
- » Open Geospatial Consortium (OGC®) content stores

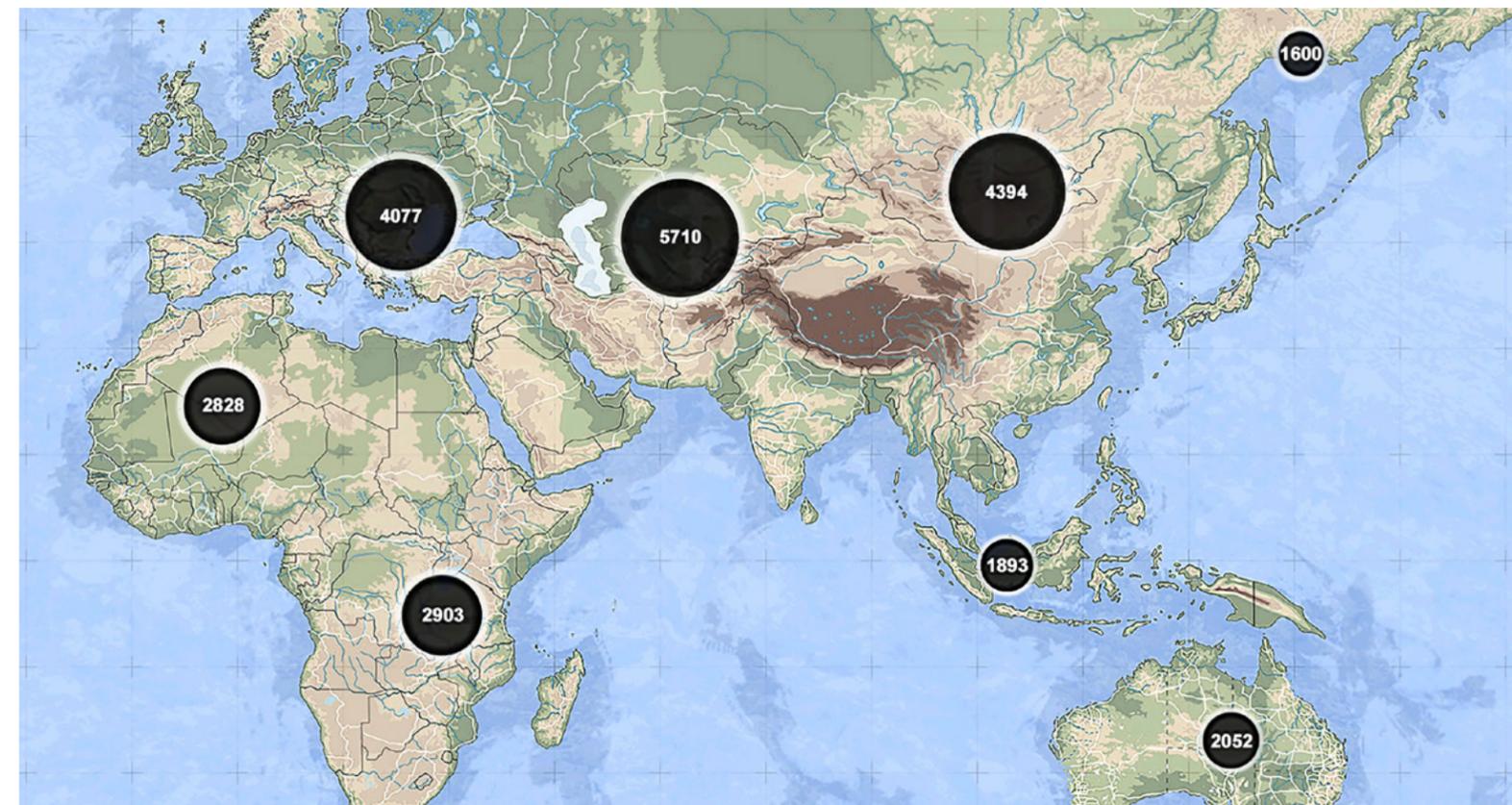
## Catalog in place

GXP Xplorer software reads and catalogs data in their current location, which eliminates the need to move or copy large volumes of data across the network while enabling organizations to leverage existing data storage investments.

Files can also be moved automatically to a user-defined location during the cataloging process, allowing for a seamless organization of geospatial and other data scattered across the enterprise domain.

## Catalog features

- » Directories and types of data can be tailored to the catalog
- » Data validation rules can be customized to exclude undesirable products
- » Cataloger can be configured to utilize multiple CPUs for high performance
- » Image thumbnail creation can be disabled or deferred
- » Status of catalog process tracked in a control panel
- » Text inside all files is indexed and searchable
- » Geotags are extracted from structured files to pin products to the map
- » Ground coordinates are extracted from textual files to pin to map
- » Notifications are delivered when bad files fail to ingest
- » Multi-file products, including shapefiles, are consolidated into single catalog items
- » Stale data is eliminated and purged based on configurable aging rules



# Visualize your data

## Visualize structured and unstructured data searches

Users can search, download, and take data with them, accessing the enterprise catalog either from their desk or remotely, using a Web browser or mobile device. Textual searches are designed for all-source and other intelligence analysts who search for data non-geospatially.

### Simple search

- » Search both structured and unstructured information within the data
- » Search by:
  - Product type
  - Keywords
  - Geospatial areas
  - Product attributes (e.g., author, cloud cover, target ID, image type, image resolution, image quality, sensor name)
  - Time and data ranges
  - Free-text
- » Overlay grid for systematic searches by grid cell
- » View results by relevance and proximity

### All-source searches

- » Search text for words and strings with wildcards such as \* and ?
- » Include Boolean options such as AND, OR, and NOT
- » Receive spelling corrections and similar word suggestions for concept searches
- » Filter, sort, and refine search results to find the correct data
- » View, print, and export configurable list or table of products, attributes, and thumbnails
- » View location through optional mini-map

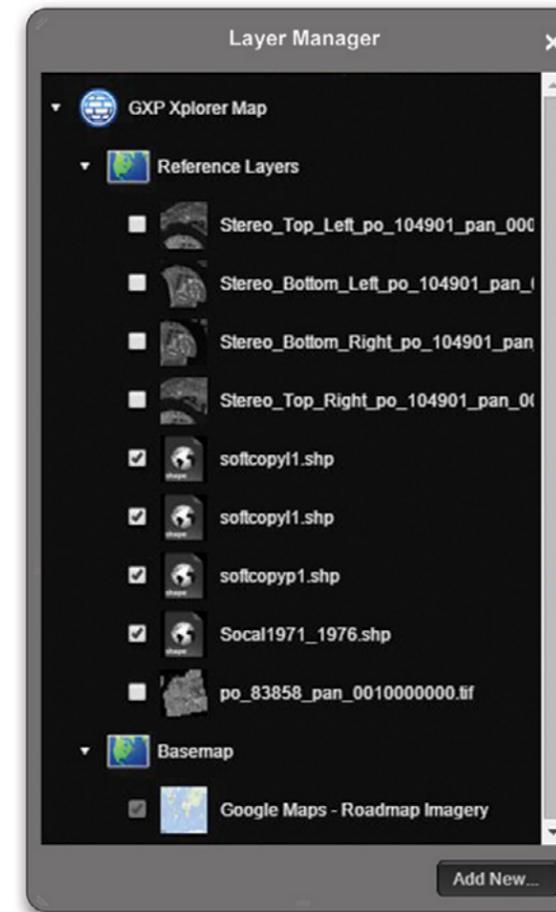
### Customize your experience

Set global preferences for:

- » Basemaps
- » Web Services
- » Reference Layers
- » Map Grid Display
- » Auto Search
- » Image Download
- » Toolbar options

### Visualize results

- » Select maps such as Google Maps™ mapping service, Fusion Maps, Web Map Service (WMS) or Web Map Tile Service (WMTS) maps
- » Cluster results for a condensed view of overall coverage
- » Break clusters into individual color-coded product markers or coverage footprints
- » Summarize results by type and quantity
- » Filter results hierarchically by type and sub-type
- » Filter results by product attributes such as Ground Sample Distance (GSD), accuracy, and content
- » Filter map markers in real-time and group products on a slider with the Time Slider
- » Compare selected results in a filmstrip in the Product Gallery
- » Display reference data feed services to help make data selection decisions



## Layer Manager

Available with both GXP Xplorer and GXP WebView software, our Layer Manager capability enables users to easily toggle, manage, and position a variety of geospatial content layers.

### Content layers

- » OGC Services
- » Esri® ArcGIS® Services
- » Google Maps mapping service
- » OGC WMS
- » Cataloged shapefiles
- » Cataloged imagery

### Layer control

- » Right-click on a layer to manage the layer: Move to Top, Move Up, Move Down, Move to Bottom, Rename layers, designate a layer as a Basemap, Remove layers
- » Select check box to enable/disable layers

*Imagery courtesy of the National Oceanic and Atmospheric Administration (NOAA).*



# Convert data awareness to finished products

Save time with automated alerts, federated search, and enhanced data processing.

## Alerts and notifications

GXP Xplorer software automatically performs common searches and delivers results to the analyst, eliminating the inefficiencies of repeated manual searches.

### Notifications

- » Name and save search parameters for subsequent use as a Favorites search
- » Share saved Favorites searches with colleagues
- » Generate and subscribe to RSS feeds
- » Receive notifications when new data becomes available (RSS-subscribed users only)
- » Standing Order option automatically delivers new results of a selected Favorites search via FTP

- » KML export of search criteria shares saved searches between GXP Xplorer software and Google Earth™ mapping service

### Collaboration

- » Collaborate via the Web, email, download, and mobile applications
- » Email a link that zooms GXP Xplorer software to the product location and attributes
- » Email products as attachments from within the GXP Xplorer UI
- » Send products to an FTP site
- » Subscribe to popular feeds provided by a colleague
- » Receive notifications, view products, and report submissions in the GXP Xplorer and GXP Xplorer Mobile applications

## Federation

Decrease the need for data duplication and increase collaboration across an enterprise by performing federated searches simultaneously on geographically dispersed data. Federation connects multiple GXP Xplorer servers together – enabling a search from one GXP Xplorer Web Client to return results from all federated GXP Xplorer servers.

### Catalog sharing

- » Sites can easily disseminate their data and products to other connected GXP Xplorer Platform Catalog servers
- » Search and download data from federated GXP Xplorer servers
- » Connects permitted users that may be unaware of each other's data
- » Extends to the external non-GXP Xplorer data stores that are connected to a GXP Xplorer Server
- » Users are presented with login screens when necessary

### Synchronization

- » Deliver both files and catalog metadata automatically from one GXP Xplorer Server to another
- » Dynamically copy an existing GXP Xplorer Server as a failover to prevent operational interruptions
- » Configure for direct feed of selected data from a primary GXP Xplorer Server to connected GXP Xplorer servers

## Data processing

GXP Xplorer data processing services convert data into usable finished products. Users can change the format of the product; combine it with valuable reference data; clip, combine, or create derived products; and work in batch mode when multiple files require similar modifications.

- » Convert data to selected formats before download
- » Chip an image into its native format or into PowerPoint® in JPEG format
- » Orthorectify imagery
- » Generate Reduced Resolution Data Sets (RSETS) from image files
- » Mosaic images and other data
- » Clip video to area or event criteria
- » Batch operations act on multiple products

### Jobs

- » Detailed information about every data processing job
- » Status indicates when job is complete
- » Jobs run in the background

### Update

- » Update the attribute metadata for a product
- » Change or add geospatial footprints
- » Perform batch updates

Imagery courtesy of NOAA.



# Control access with precision security

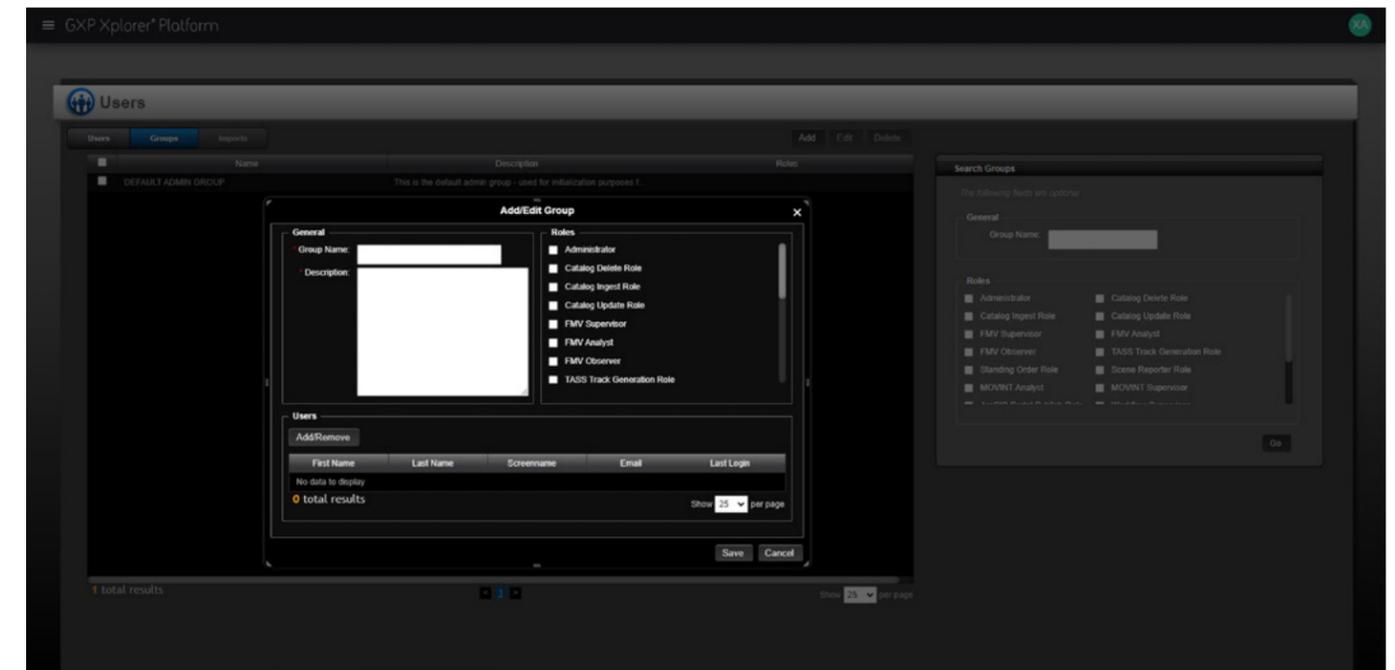
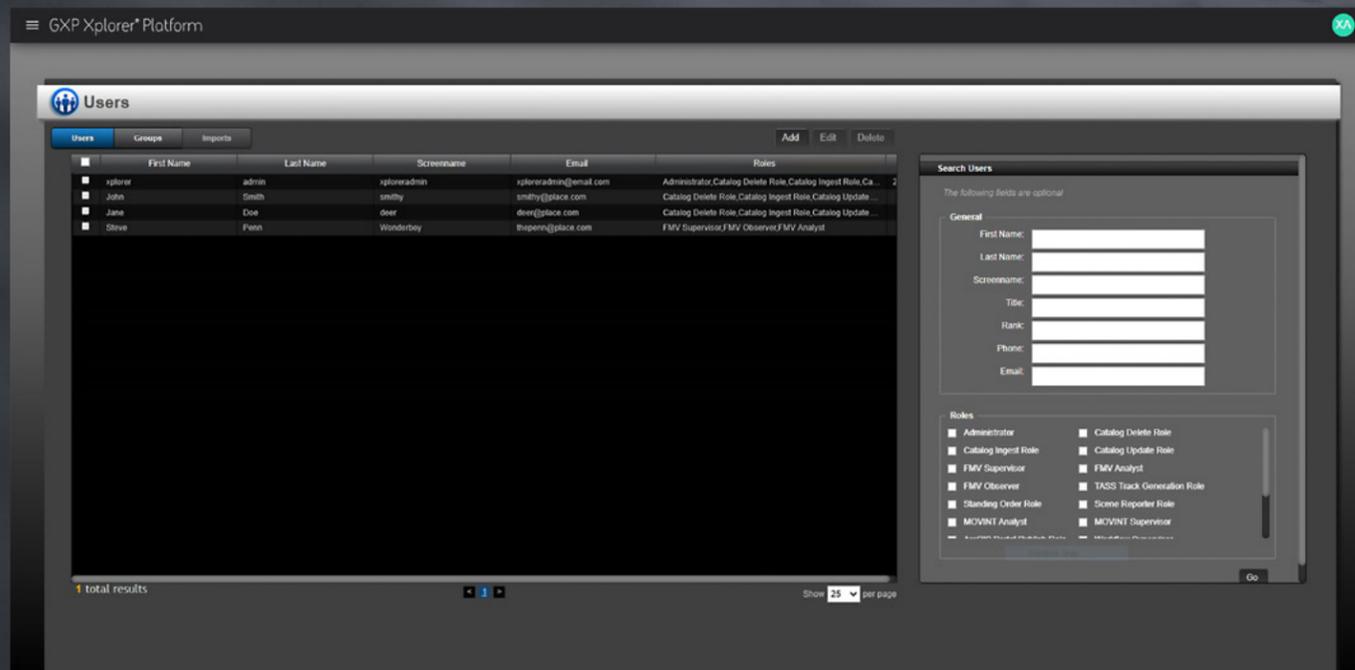
GXP Xplorer software supports many diverse security protocols while allowing administrators to update these protocols based on evolving site requirements.

## A secure connection

- » Operate the GXP Xplorer Web Client over a Hypertext Transfer Protocol Secure (HTTPS) connection
- » Employ secured certificate authentication
- » Integrate with an organization's existing user authentication, such as Passport or Lightweight Directory Access Protocol (LDAP)
- » Remove anonymous access and require user login
- » Assign user roles to upload products to the catalog, update details of a specific product, or delete products out of the catalog
- » Manage GXP Xplorer user credentials
- » Customize password policies

## Controlled access

- » Allow access to data through Discretionary Access Control (DAC)
- » Hide data, prevent manipulation, and restrict editing based on user roles
- » Compartmentalize data based on accessibility
- » Log transactions including logins, searches, downloads, uploads, edits, and deletions



# Adaptable and extensible architecture

Powered by the GXP Xplorer Platform, the open-architecture standards within GXP Xplorer software allow developers to integrate GXP Xplorer capabilities with other applications.

Imagery courtesy of Maxar.

Upper Left Corner: 18 32' 53.2"N 72 20' 22.5"W  
 Upper Right Corner: 18 33' 0.31"N 72 20' 22.5"W  
 Lower Right Corner: 18 33' 0.31"N 72 20' 13.25"W  
 Lower Left Corner: 18 32' 53.2"N 72 20' 13.25"W  
 Center Point: 18 32' 56.75"N 72 20' 17.88"W

Text Annotations:  
 POLYGON((-72.33958465935378 18.548112322908192,-72.33958465935378 18.550084889394654,-72.3370138267122 18.550084889394654,-72.3370138267122 18.548112322908192,-72.33958465935378 18.548112322908192))

GXP Xplorer software provides a flexible architecture comprised of services and plug-ins to rapidly add new data formats with simple configuration to support and accept data feeds from third-party tools.

## Extensible

- » Flexible ingest services
- » Flat metadata model that can be extended by developers
- » Plug-in metadata extraction for custom data types
- » Plug-in data processing services
- » Plug-in data store connections
- » Customizable Web user interface
- » Supports multiple external interfaces
- » Ozone Widget Framework (OWF) ready

## Scalable

- » Server virtualization
- » Distributed processing capable
- » Heterogeneous federation

## Open interfaces

- » REST/JSON/KML/RSS
- » OGC
- » DIB Connector
- » Geospatial Imagery Access Services (GIAS)
- » NATO STANAGs 4559
- » Use of metadata standards including Dublin Core

## Interoperability

- » Stream imagery and rigorous metadata directly to SO CET GXP software to eliminate the need for download
- » Upload products directly from SO CET GXP software into the GXP Xplorer catalog

Imagery courtesy of Maxar.

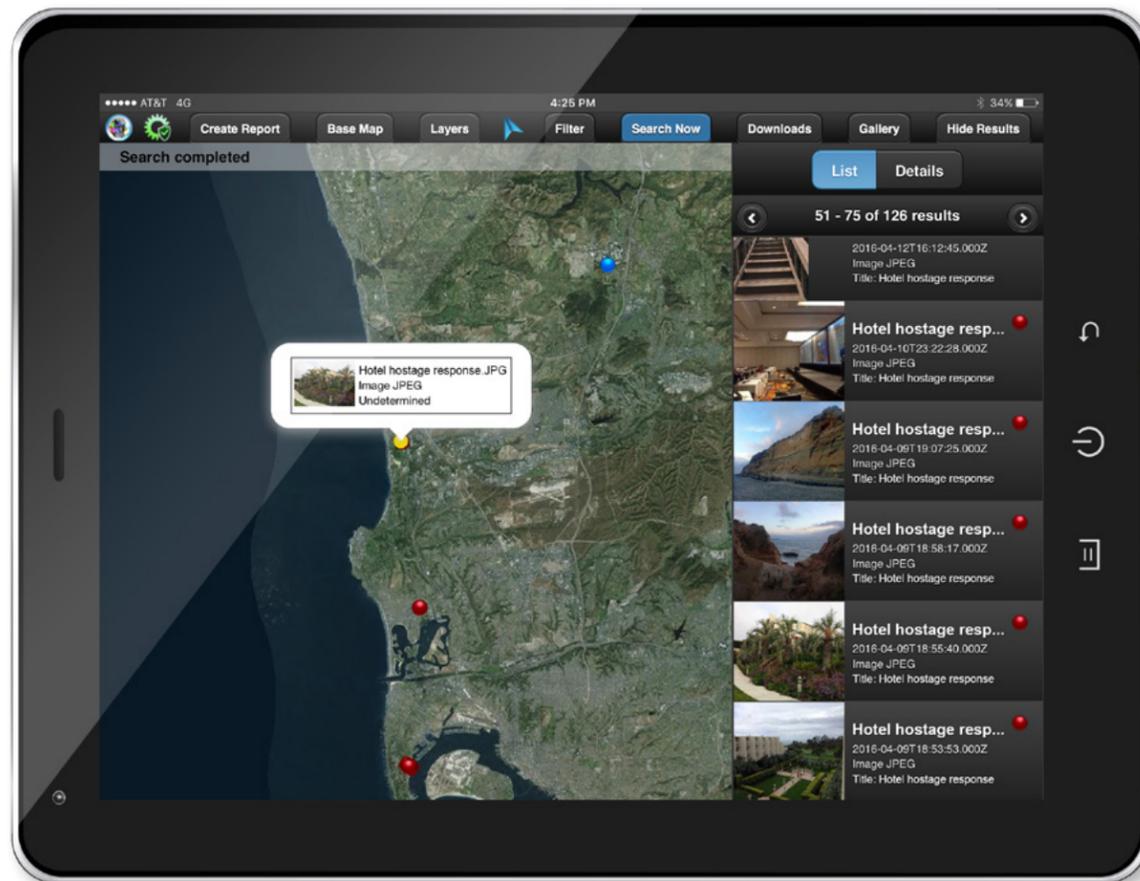
**Product Gallery**

Acimuth of Obliquity	354.76
Begin Date	2008-02-09T18:31:40.000Z
COMRAT	V039
CSDIDA Sensor ID	AA
Date Collected	2008-02-09T18:31:40.000Z
Derived Sensor	WV01
End Date	2008-02-09T18:31:40.000Z
Error Bias	11.03
Error Random	0.14

# GXP Xplorer Mobile

Your entire data catalog accessible on-the-go

GXP Xplorer Mobile applications deliver critical geospatial assets both to and from the field. Built for field operations to view server products, and create and upload data and reports, GXP Xplorer Mobile applications relay key tactical information between everyone connecting to the GXP Xplorer Server.



Imagery courtesy of Esri.

## GXP Xplorer Mobile

Designed for enhanced field visibility of geospatial content, GXP Xplorer Mobile provides remote access to GXP Xplorer servers using a cellular data connection or Wi-Fi. Field personnel can obtain up-to-date imagery and documents, create reports from the field, and upload critical imagery and video back to the server. Data can be located and viewed from multiple sources, enabling real-time collaboration between both enterprise and mission partners.

## GXP Xplorer Snap

Using GXP Xplorer Snap, individuals on the scene can quickly snap pictures of interest, enter a title and description, and submit for further review. Images are automatically geotagged, time-stamped, and uploaded to the GXP Xplorer Server, where they are cataloged and made accessible to everyone in your enterprise. GXP Xplorer Snap transforms every field device into an eye on the target, allowing you to crowd-source information and share timely intelligence across your organization.

# Worldwide support and training

GXP Customer Technical Solutions offers flexible training modules and support options for your organization, whether you require training for an entire project team or simply need supplemental one-on-one instruction.

Our worldwide training centers deliver complimentary customer training with curriculum tailored specifically to your learning requirements. Onsite training, which is available at the time of initial installation to introduce you to the functionality of GXP Xplorer software, can be supplemented at a later date with refresher courses or advanced workflows.



## BAE Systems, Inc.

BAE Systems, Inc. is the U.S. subsidiary of BAE Systems plc, an international defense, aerospace and security company which delivers a full range of products and services for air, land and naval forces, as well as advanced electronics, security, information technology solutions and customer support services.

BAE Systems, Inc. provides support and service solutions for current and future defense, intelligence, and civilian systems; designs, develops and manufactures a wide range of electronic systems and subsystems for both military and commercial applications; produces specialized security and protection products; and designs, develops, produces, and provides service support of armored combat vehicles, artillery systems, and munitions.

## GXP software solutions

Supporting development of the most advanced geospatial intelligence, BAE Systems GXP software enables rapid discovery, exploitation, and dissemination of mission-critical geospatial data. From key military, security, and incident response operations, to a variety of commercial development and research initiatives, GXP provides a comprehensive suite of solutions to inform effective decision making and ensure a safer world.

GXP software solutions support image, video, and all-source analysts at defense and intelligence agencies, as well as commercial organizations, around the world including:

- » Defense forces, intelligence agencies, and homeland security (including all major branches of the military)
- » Private security and first responder personnel
- » Photogrammetry, mapping, and surveying agencies
- » Systems integrators
- » State, local, and regional governments
- » Transportation departments
- » Natural resource management consultants
- » Universities and research organizations

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