Public Safety Operations

An Executive Summary

Powered by the GXP Platform™

GXP®
Geospatial eXploitation Products™

BAE SYSTEMS
INSPIRED WORK

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BAE Systems, Inc. is the U.S. subsidiary of BAE Systems plc, a global defense, security and aerospace 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.

The Geospatial eXploitation Products™ (GXP®) business provides licensed software capabilities and geospatial technology R&D. GXP's ability to draw on internal data production and technology expertise has allowed it to deliver superior products to the user community. GXP often finds ways to improve software implementation through user conferences and regional workshops, where important feedback and insight is gathered from customers.

GXP commercial software, including GXP Xplorer®, GXP WebView®, SOCET GXP®, and SOCET SET® provide customers with comprehensive image and video analysis, data management, and geospatial production capabilities. These products serve government and civil customers' needs for photogrammetry, mapping, geographic information systems (GIS), image exploitation, precision targeting, geospatial intelligence, 3-D visualization, simulation, and mission planning.

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Public safety operations

In the dynamic and fast-paced world of public safety operations, maintaining geospatial awareness of personnel and equipment on the ground is critical to operational success and the safety of those involved in the operation. BAE Systems' GXP solutions provide a streamlined workflow that enables responders to hit the ground running and coordinate for maximum efficiency and speed when executing public safety operations.

Find

Quickly find imagery of an area, regardless of the geographic location of the data store.

Analyze

Use powerful, highly accurate analysis tools to exploit the imagery and plan for action.

Disseminate

Easily publish and disseminate reports for shared situational awareness in the field.

The information you need when you need it

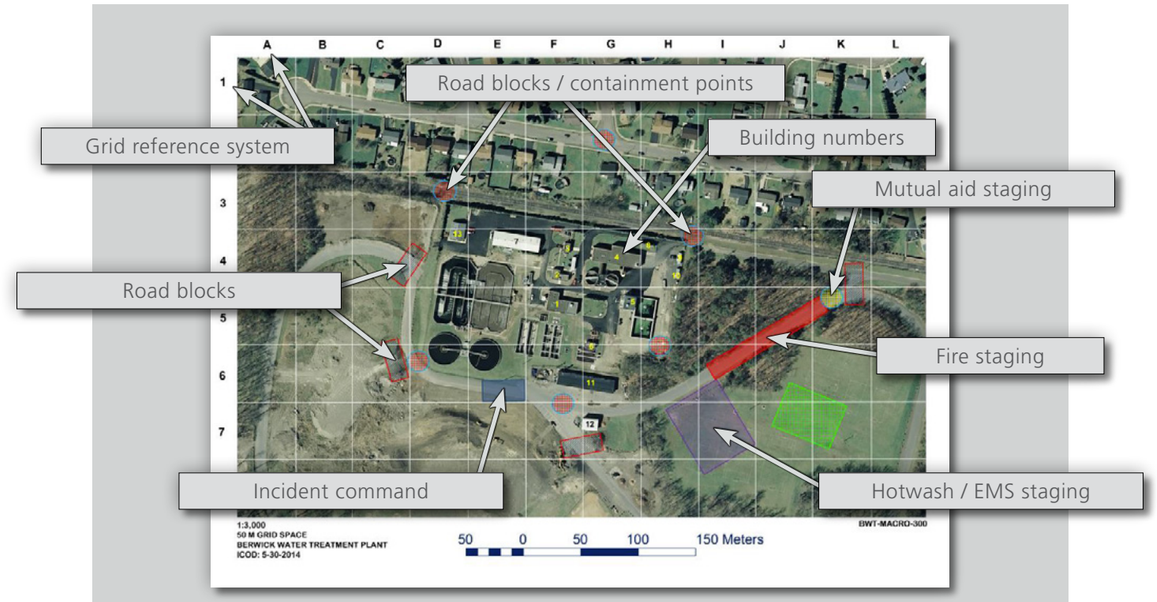
Quickly locate imagery required for an incident with GXP Xplorer. Share assets, location, and conditions across response units and agencies, regardless of the geographic location. Stream full-resolution imagery in any format instantly from a standard Web browser with GXP WebView. Share critical information and plans in real-time with resources in the field.

Geospatial products created in SOCET GXP allow for interoperable communication between all personnel involved in an incident. By acting as a reference for officers, geospatial information allows for effective and efficient communication. Disseminate geospatial products to command posts and officers in the field to provide an incident-specific common operating picture increasing situational awareness, and maximizing safety and operational success.

Imagery Credits: Products created with EagleView Technologies, Inc. Used with permission.

Common Response Graphic (CRG)

SOCET GXP desktop software enables users to create a Common Response Graphic (CRG) that allows responders to systematically operate in a large geographic area while clearly communicating relevant information back to the command staff.



Imagery Credits: Products created with images and data available from the U.S. Geological Survey.

Overlay a grid and essential information such as entry points and resource locations on aerial imagery with SOCET GXP's CRG tool. Quickly snapshot the CRG to an easily distributable format to share situational awareness at all levels of the operation.

Overlay essential information

- Label buildings and parking lots with numbers
- Label street names
- Designate an operational perimeter
- Stage resources
- Depict assignments such as sniper placement, K-9, bomb squad, road blocks, and more
- Ground truth circles depicting the effective range of specific apparatus or assignments
- National Incident Management System (NIMS) and Incident Command System (ICS) compliant symbology
- Annotate detailed air operations plans such as approach angles and landing zones
- Overlay blueprints with color coded hallways
- Provide detailed terrain information such as contours, slope, and terrain aspect
- Indicate preplanned major events such as concerts, sporting events, marathons and more
- Overlay pictures of wanted suspects for use while serving warrants

Situational awareness

Identify and assess critical features that may have an impact on public safety operations. SOCET GXP's advanced image processing algorithms make detecting critical details in an area fast and easy. Highlight, measure, and create mission planning graphics that greatly increase the operator's ability to make a more educated decision before and during an evolving operation.

Imagery Credits: Products created with EagleView Technologies, Inc. Used with permission.

SOCET GXP's image comparison tools make identifying changes in old vs. new imagery simple. In this product, the before and after images allow for a side-by-side assessment of the results of a natural gas explosion. The "after" image shows significant damage to a structure. The ability to quickly identify areas of change provides yet another layer of information that can be used when responding to an incident.

Imagery Credits: Products created with images and data available from the U.S. Geological Survey.

Data from anywhere

Most GIS systems do not allow for a user to quickly import data from drones, helicopters, or other aerial platforms that can be registered to a control image and disseminated quickly to those on the ground. With GXP solutions, data such as blueprints, CAD drawings, and frames from a news video can be used to quickly create a product giving an overview of the operation as it unfolds on the ground.

Imagery Credits: Products created with images and data available from the U.S. Geological Survey.

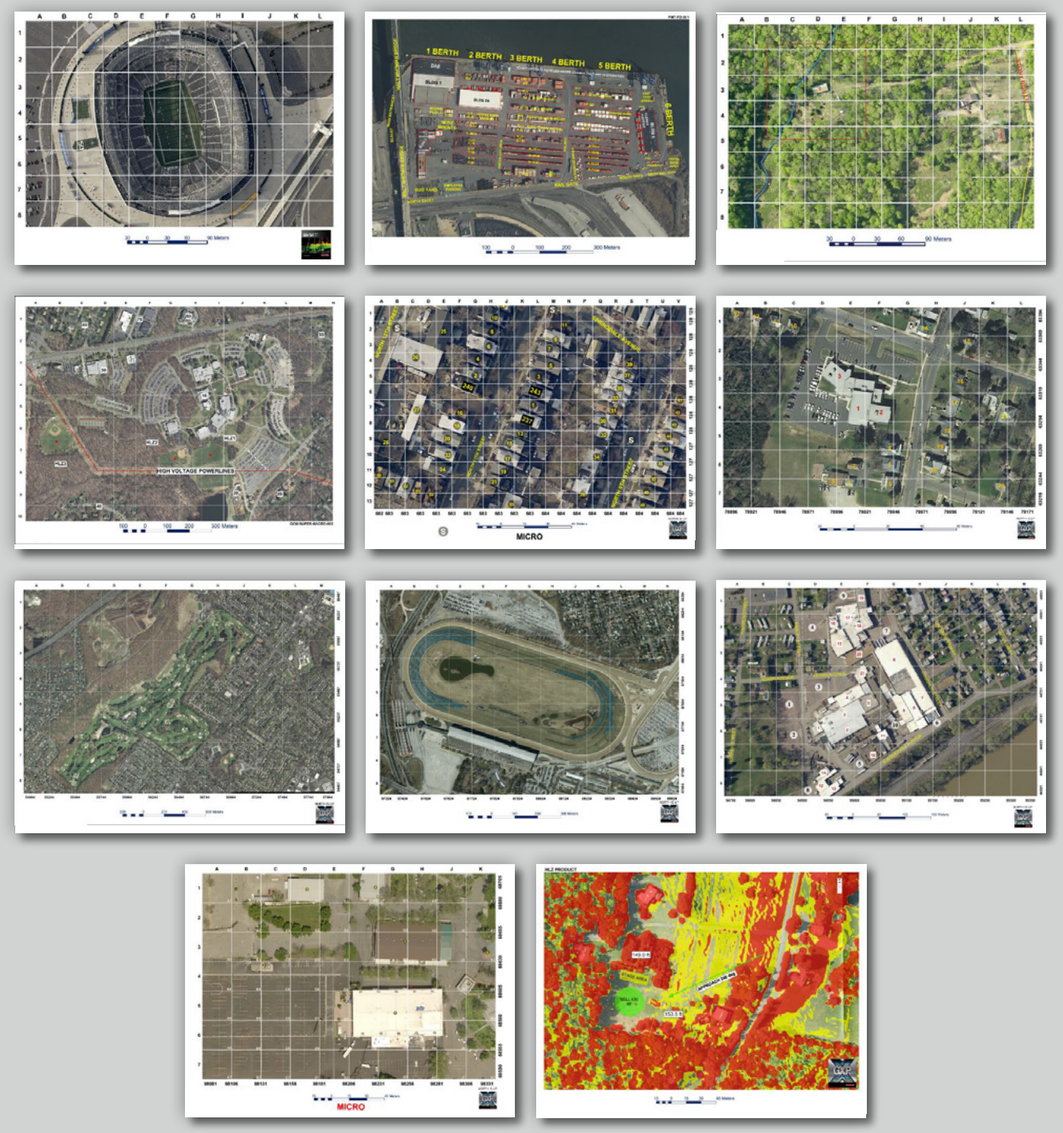
Emergency action plans

Most schools or identified pieces of critical infrastructure likely have a binder on a shelf somewhere that contains detailed response information if an incident were to occur. Law enforcement agencies can quickly take that detailed response information and overlay it on top of a CRG, taking potentially hundreds of pages of information and simplifying it to a single graphic that enables responders to communicate and execute specific initial tasks.

Imagery Credits: Products created with EagleView Technologies, Inc. Used with permission.

Daily operations

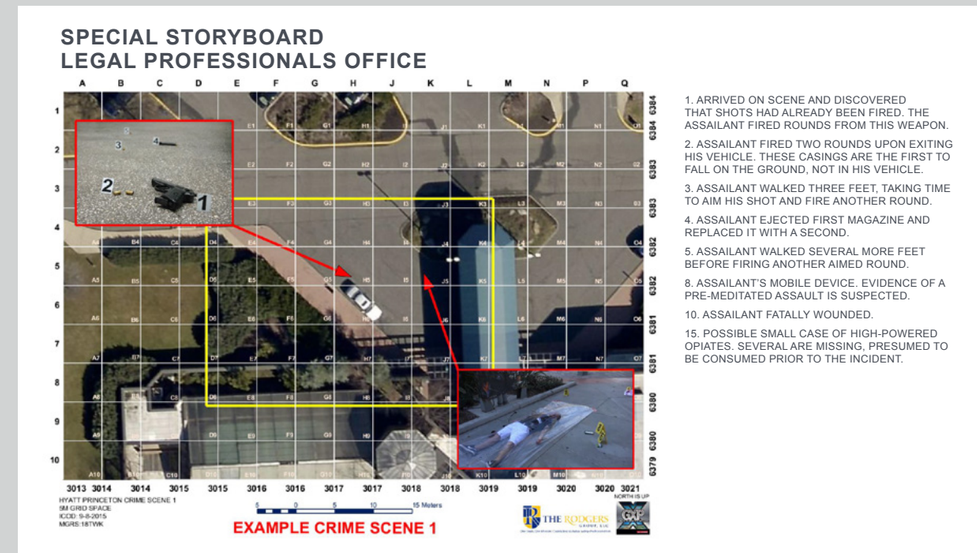
The most critical step for an agency is the ability to incorporate the GXP Platform into their everyday jobs. Geospatial products have hundreds of uses that officers can employ on any given day. Drug searches, serving warrants, meth labs, crime statistics, and crime deterrence are a few examples of how a CRG can be effectively employed. Below are a few examples of products produced in SOCET GXP.



Imagery Credits: (1, 2, 3, 4, 6, 7, 9, 11) Products created with images and data available from the U.S. Geological Survey. (5, 8, 10) Products created with EagleView Technologies, Inc. Used with permission.

Special storyboard

Once an incident has ended, SOCET GXP can be used to enhance the crime scene investigation process and provide critical tools for legal professionals to use in a courtroom. These professionals must sift through hundreds, if not thousands, of pages of information and pictures and try to convey that information to a jury in a manner which they understand. Most people are visual learners and legal professionals can take advantage of geospatial products to help convey a clear image to the jury by creating special storyboards.



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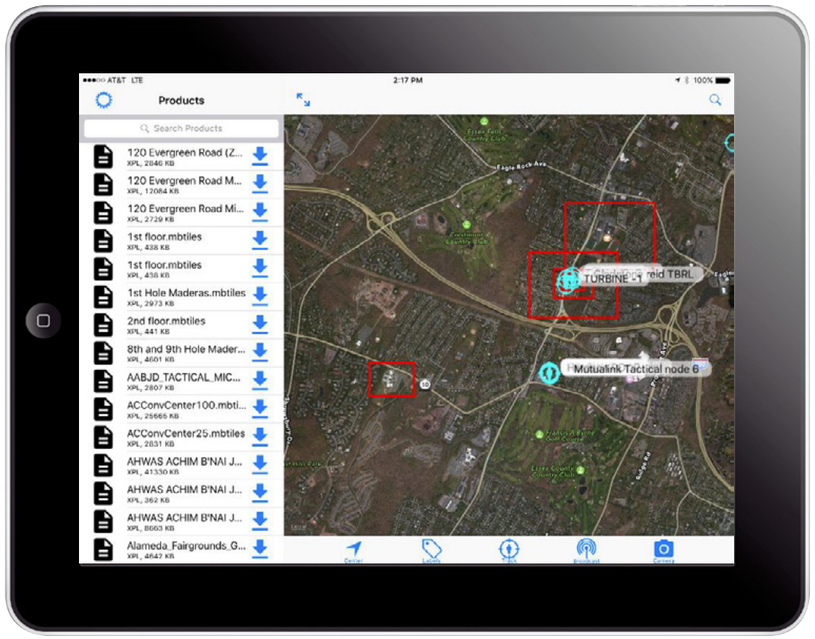
Interoperability

The GXP Platform allows for the creation of precise geospatial intelligence products that can be distributed in many formats for use on a wide variety of platforms, further enhancing situational awareness among firefighters and command staff.

- GeoPDF® (Easily share PDF documents that can be viewed in any PDF reader)
- .MbTile (Supports GXP OnScene and other mobile mapping apps)
- .KMZ / .KML (Google Earth™ / ArcEarth Support)
- Garmin Compatible .KMZ (routes and custom maps)
- .GPX Routes (All GPS devices)
- Esri® Shapefile
- Esri Geodatabase (SOCET for ArcGIS®)
- Multiple industry standard formats such as .NTF and Geotiff

GXP OnScene

Leveraging the power of the GXP Platform and SOCET GXP's advanced image exploitation capabilities, GXP OnScene displays a tactical, customizable CRG overlay on top of up-to-date, personalized maps for ease-of-communication and enhanced interoperability. The location of personnel is displayed on the map using device GPS, providing responders with situational awareness and allowing the command center to coordinate and direct personnel in real-time. GXP OnScene also works directly with SOCET GXP to create reports and products with integrated geospatial reference for use during investigations and for post-incident reports. Products can be stored in the GXP Xplorer catalog and shared or used for further analysis.



GXP OnScene enables

- Distribution of preplanned operations and response plans
- Collection and sharing of data from the field
- Next generation command and control
- A unified command staff to make clear decisions
- Clear and concise direction to officers on the ground
- Publishing and sharing of maps in real-time
- A clear way to communicate between Ground and Air operations
- Rapid identification of an officer's location
- Crime deterrence

It takes a community

The GXP OnScene Hosted Solution and the GXP Platform are built from the ground up to provide real-time intelligence in a number of circumstances whether it be for a police department, a fire department, or for critical infrastructure protection. Get started today and learn how GXP products can minimize the cost and enhance the effectiveness of your mission.

GXP Platform applications

- Law enforcement agencies
  - Emergency action plans
  - Critical infrastructure protection
  - Crime scene investigation
  - SWAT operations
  - Aviation support
- County Prosecutor
  - Special story boards
  - Courtroom presentations
  - Crime scene recreation
  - Map-based data management
- Fire / Rescue department
  - Emergency action plans
  - Wildfire risk assessment
  - Flood plain mapping
  - Riverine operations / water rescue
  - Dive team support
  - Search and rescue operations
- Office of emergency management
  - Disaster planning
  - Disaster response
  - Disaster recovery
  - Interoperability amongst various agencies
- City planning and development
  - Survey grade mapping
  - Triangulation of aerial imagery
  - 3-D visualization
  - Field force automation
- Utilities
  - Assign detailed tasks
  - GPS routing
  - Custom maps
  - Receive real-time updates from the field
  - Map based collaboration
  - Feature extraction and database
- And many more!

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