Public Safety Operations
An Executive Summary

Powered by the **GXP Xplorer® Platform**

GXP
Geospatial eXploitation Products™

BAE SYSTEMS

The GXP OpsView and GXP OnScene software solutions 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.

Public safety operations

In the dynamic and fast-paced world of public safety and incident response, maintaining geospatial awareness of personnel and equipment on the ground is critical to operational success and the safety of everyone involved in the operation. BAE Systems' Geospatial eXploitation Products™ (GXP®) Group provides a streamlined workflow that enables responders to hit the ground running and coordinate for maximum efficiency and speed when executing public safety operations.

Prepare
Quickly find imagery, overlay critical content, and use powerful, highly accurate analysis tools to plan for action

Share
Use the battle-proven enterprise and cloud solution to easily publish content to the field and report while on scene

Respond
Execute a safe, effective response with real-time updates and maximum situational awareness

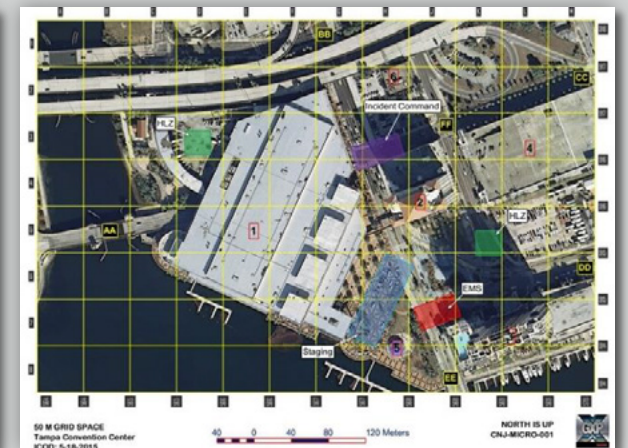## The information you need when you need it

With GXP Xplorer® data discovery and management software, users can quickly locate the imagery required to accurately assess an emergency situation. Assets, along with real-time position and environmental conditions, can then be shared across various response units and agencies, regardless of their geographic location. In addition, full-resolution imagery in any format can be instantly streamed from a standard Web browser with GXP WebView® software. Finally, operational plans and critical field data can be distributed in real time to field personnel with the GXP OpsView solution and the GXP OnScene mobile application.

Geospatial products created with SOCET GXP® software 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. Users can disseminate geospatial products to command posts and officers in the field to provide an incident-specific Common Operating Picture (COP) increasing situational awareness, and maximizing safety and operational success.

Any location, including the BAE Systems San Diego campus, can benefit from visual planning using the latest in aerial overhead imagery.

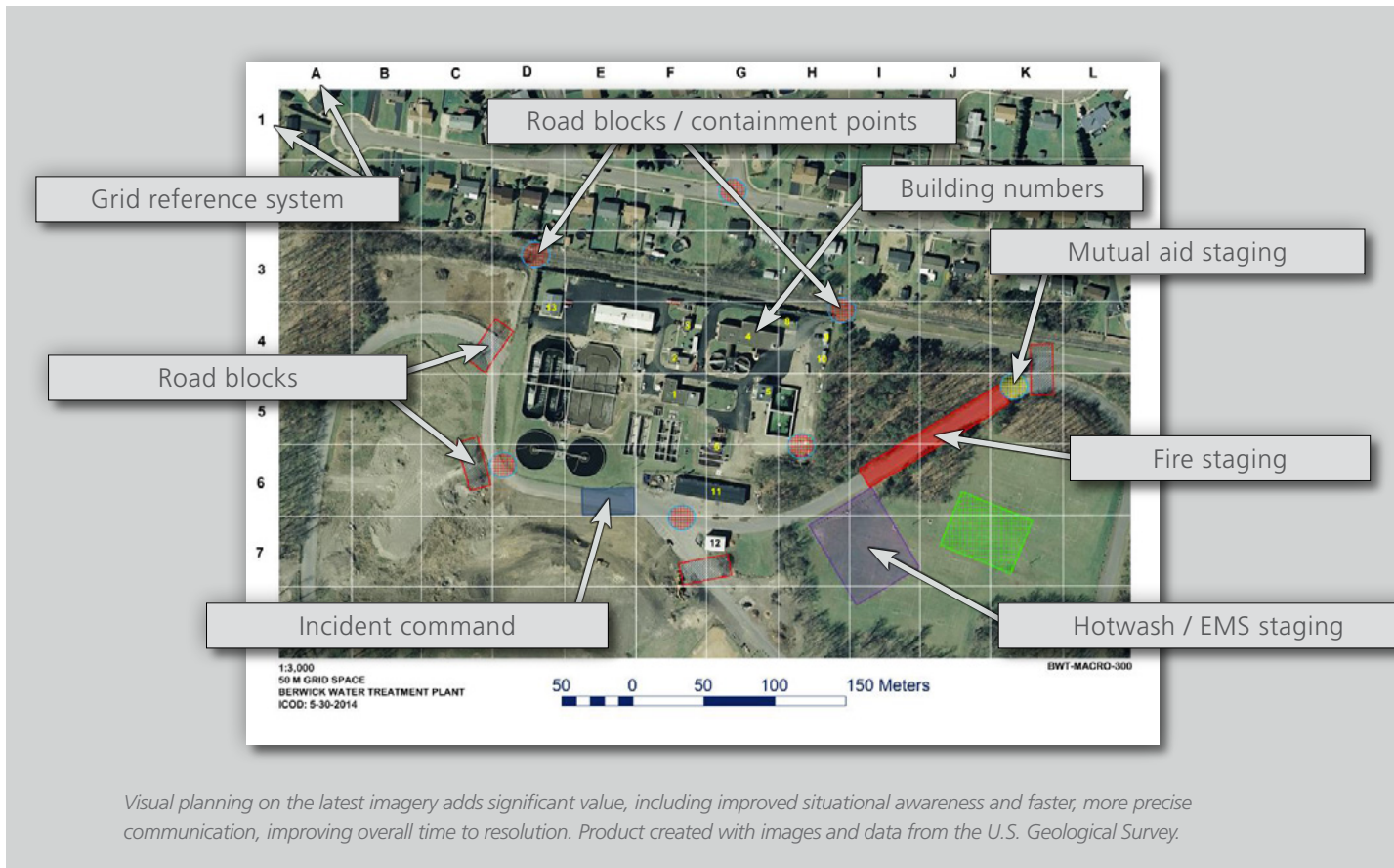*Products created by EagleView Technologies, Inc.*

Applying a grid along with colored annotations makes any location, including complex harbor campuses, easier to understand and navigate.

Collaborative Response Graphic (CRG)

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

Visual planning on the latest imagery adds significant value, including improved situational awareness and faster, more precise communication, improving overall time to resolution. Product created with images and data from the U.S. Geological Survey.
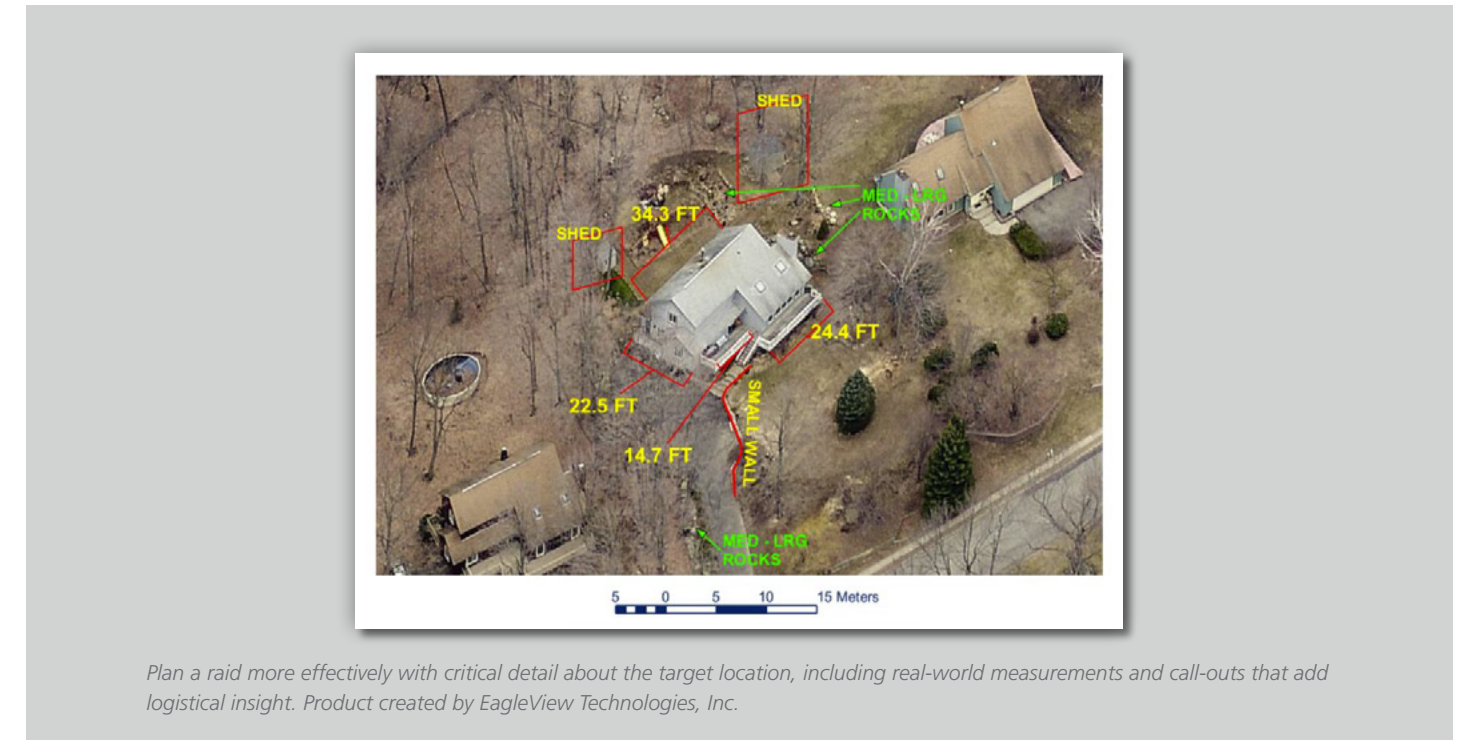
A grid, along with essential information such as entry points and resource locations, can be overlaid on aerial imagery with the SOCET GXP CRG tool. Users can then quickly snapshot the CRG to an easily distributable format to share situational awareness at all levels of the operation.

Essential information overlays

- » 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
- » Include National Incident Management System (NIMS) and Incident Command System (ICS) compliant symbology
- » Annotate detailed air operation 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

With SOCET GXP capabilities, users can identify and assess critical features that may have an impact on public safety operations, and its advanced image processing algorithms enable rapid detection of critical details in an area of interest. Users can 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.

Plan a raid more effectively with critical detail about the target location, including real-world measurements and call-outs that add logistical insight. Product created by EagleView Technologies, Inc.
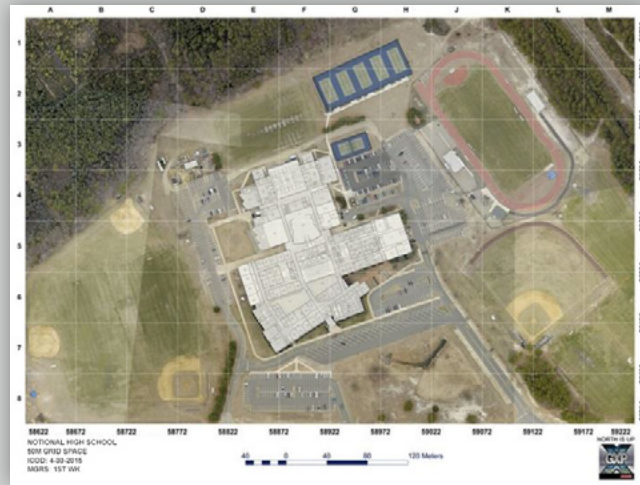
The SOCET GXP image comparison tools make identifying changes in old vs. new imagery simple. In the following product, the before and after images allow for a side-by-side assessment of the results of a natural gas explosion. The "after" image shows significant damage to a structure. The ability to quickly identify areas of change provides yet another layer of information that can be used when responding to an incident.

View changes easily with an imagery swipe tool that shows a flipbook-style before and after at a common location. Products created with images and data 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.

Map out a school or venue ahead of time to be better organized and more efficient, should the unthinkable happen.

Create a quick-reaction product for disaster locations, enabling mutual aid responders to better organize and communicate in high-intensity situations.

Products created with images and data from the U.S. Geological Survey.
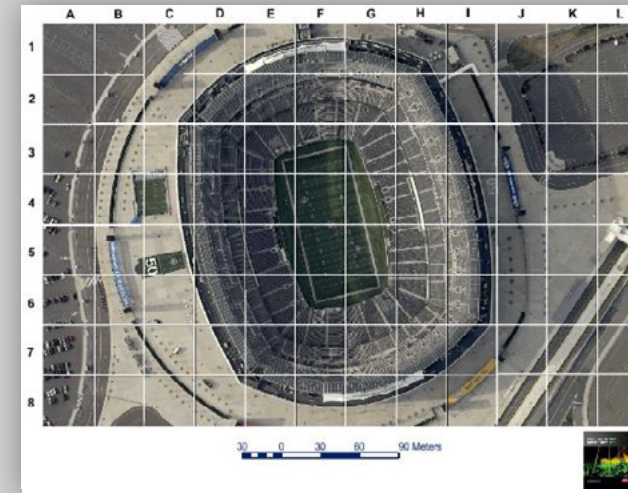
Emergency action plans

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.

Plan for critical operations ahead of time, mapping out key paths and hallways, and identifying destinations visually on the map for simple, fast consumption. Products created by EagleView Technologies, Inc.

Daily operations

The most critical step for an agency is the ability to incorporate GXP solutions 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 software.
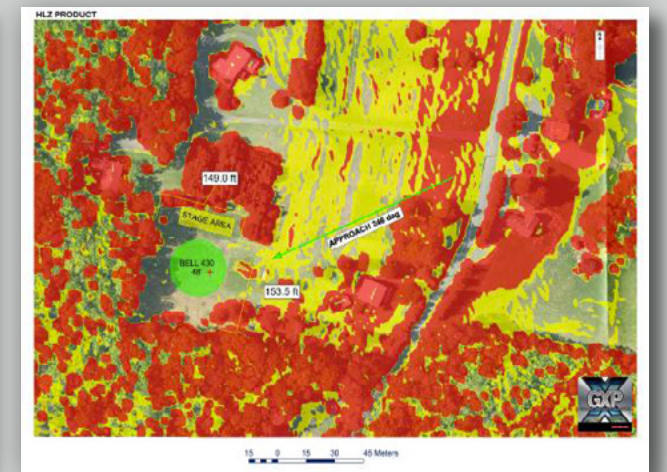

Secure stadiums and event venues with the visual planning concept to better organize movement on location.

Ports, harbors, and other maritime locations become much more navigable with labels and overlays.

Missing person searches are more organized and efficient with a quick-reaction search grid over the latest site imagery.
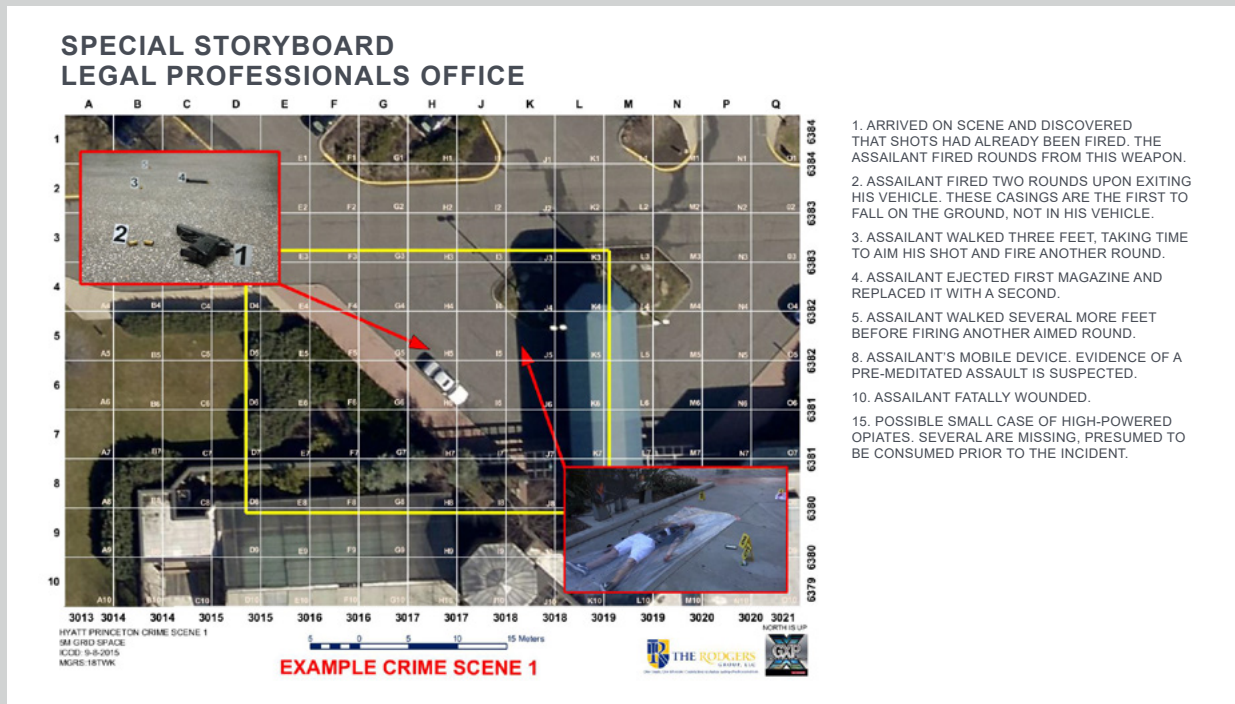
Create and visualize Helicopter Landing Zones (HLZ), based on actual terrain data for the site, to better prepare for arrival and logistics.

Products created with images and data from the U.S. Geological Survey.

Special storyboard

Once an incident has ended, the SOCET GXP solution 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.

Tell a more compelling, visual story of what happened with a special story board that describes the events with geospatial precision. Product created by EagleView Technologies, Inc.
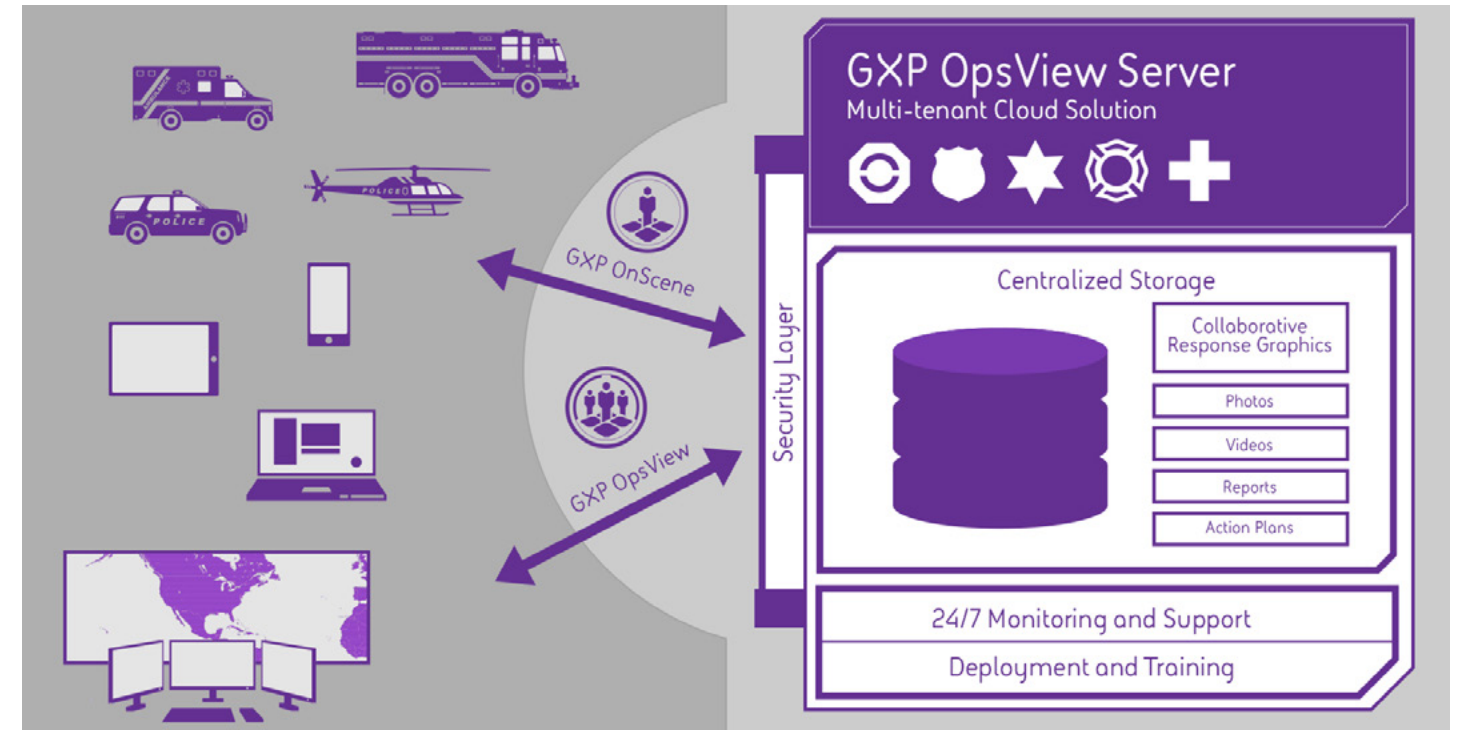
Interoperability

Precise GXP products can be distributed in many formats for use on a wide variety of platforms, further enhancing situational awareness among first responders 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 NITF and GeoTIFF

GXP OpsView

Sharing smart maps and other critical data drives mission success. The GXP OpsView software solution augments the 21st century Command Center, leveraging this state-of-the-art COP concept employed by our nation's elite Special Operations Forces (SOF) to enhance first responder communication, situational awareness, and operational execution in the field.

CRGs are stored, managed, and distributed to first responders using BAE Systems' GXP OpsView and GXP OnScene solutions. GXP OpsView capabilities allow authenticated first responders to rapidly access all the site-specific CRGs in their potential response area, regardless of their agency or emergency discipline. The geospatial metadata embedded in each CRG can then be leveraged through GXP OpsView software to allow first responders to be tracked on top of the graphic and share their positions with other first responders in real time.
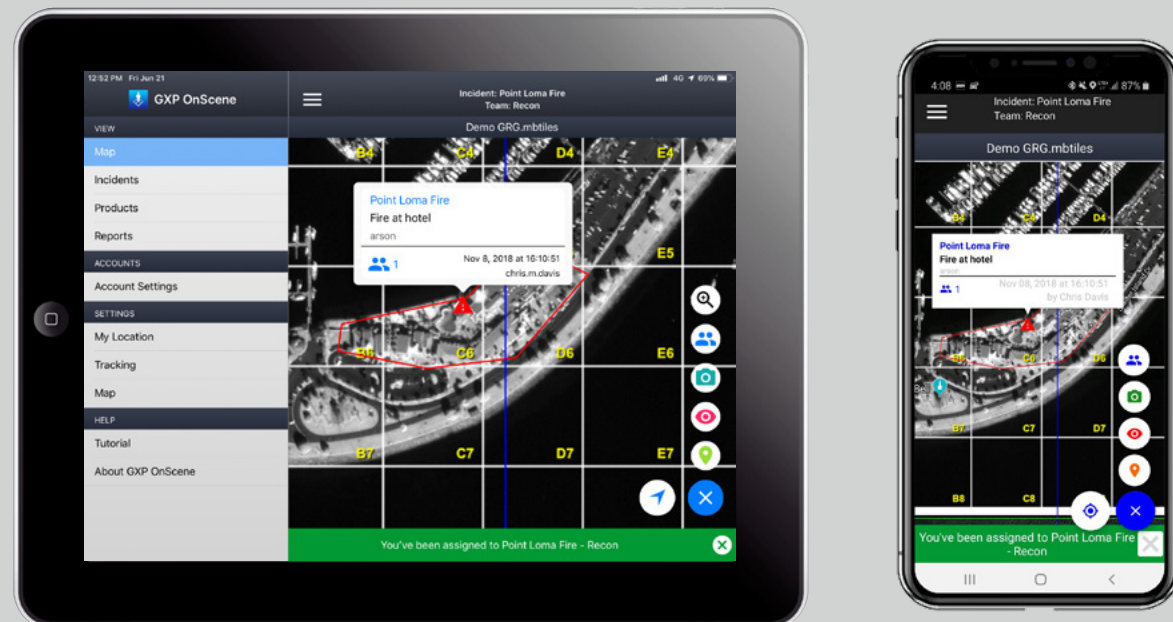
This solution has been validated thousands of times in the real world under the most stressful combat conditions. BAE Systems Inc., working in cooperation with the Critical Response Group Inc., is deploying this same solution across the United States to protect our schools, hospitals, and critical infrastructure. Our unique relationship allows us to combine the technology and lessons learned by the USSOF community with the expertise of domestic law enforcement and first responder professionals. In addition to enabling secure access to CRGs of critical infrastructure, the GXP OpsView solution serves as a "live map" that visually depicts the location and movement of first responders in real time through any smart device.

GXP OpsView safety solution key benefits

» **US Special Operations Forces technology** to help multi-agency first responders manage complex critical incidents

» **Improved speed, responsiveness, and situational awareness** for all stakeholders

» **Collaborative Response Graphics** allow first responders to operate effectively in unfamiliar locations with a common view

» **Secure integrated communications and real-time location sharing** extensible across agencies and disciplines

» **Centralized solution** with secure storage, monitoring, and dissemination of critical content to any computer, mobile device, vehicle mobile data terminal, and command center

» **Disconnected operations** with GXP OnScene Mobile App ensure offline information availability

» BAE Systems' GXP OpsView software is integrated with the **Android Tactical Assault Kit™ (ATAK™)** mobile application

» **24/7 support, maintenance, and training** evolve with best practices

GXP OnScene

Leveraging the power of the GXP OpsView solution and SOCET GXP advanced image exploitation capabilities, the GXP OnScene mobile application 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 field operators in real time. The GXP OnScene application also works directly with SOCET GXP software 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 OpsView catalog and shared or used for further analysis.

GXP OnScene mobile application runs on Android™ and iOS phones or tablets, providing real-time location sharing, photo and video reporting, incident management, communication, and navigation capabilities from the field. Products created with GeoEye.

GXP OnScene capabilities enable:

» 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
» Clear communication between Ground and Air operations
» Rapid identification of an officer's location
» Crime deterrence
» Markers on the map
» Turn-by-turn Navigation integration
» Live "rolodex" of online users
» Teaming and Tasking notifications

It takes a community

GXP OpsView, GXP OnScene, SOCET GXP software, and other GXP solutions powered by the GXP Xplorer 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.

Applications for GXP solutions

» Law enforcement agencies
– Emergency action plans
– Critical infrastructure protection
– Crime scene investigation
– SWAT operations
– Aviation support

» County Prosecutor
– Special storyboards
– 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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BAE Systems, Inc.

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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