

GXP® Solutions for Joint ISR

Empowering Joint Intelligence, Surveillance, and Reconnaissance (ISR) operations across all mission types and environments



In today's dynamic and complex geopolitical landscape, Joint ISR operations are critical for achieving mission success and maintaining global security. GXP® software solutions deliver cutting-edge capabilities to address the unique challenges within the Joint ISR domain, such as data silos, communication barriers, and the need for rapid, precise intelligence dissemination. By providing a unified platform for data fusion, advanced analytics, and secure information sharing, the GXP Ecosystem empowers defense, intelligence and international bodies to effectively coordinate their ISR activities, respond swiftly to emerging threats, and maintain a strategic advantage in an ever-evolving security environment.

Multi-domain information superiority

GXP enhances and empowers intelligence teams across all mission types and environments while enabling swift, informed decision-making augmented by Artificial Intelligence/ Machine Learning (AI/ML)-powered automated workflows:

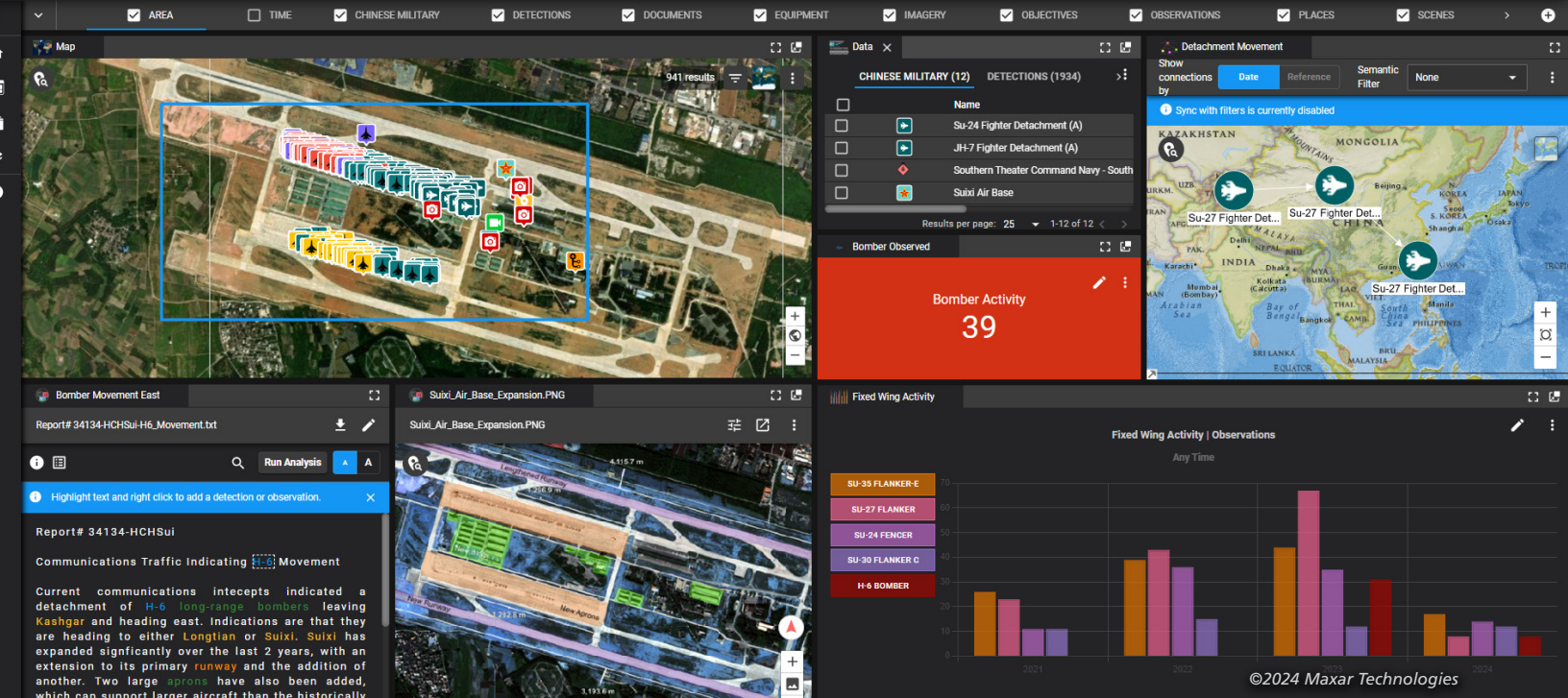
- Land: Aiding in ground operations, GXP enables ground forces to identify enemy positions and movements; plan ingress and egress routes; identify suitable helicopter landing zones and overwatch observation points; and overlay significant activities over imagery and mapping.
- Air: GXP supports surveillance operations by exploiting real-time imagery, video, Electronic Intelligence (ELINT), and Moving Target Indicators (MTI) from airborne and space-based ISR assets, used within Processing, Exploitation and Dissemination (PED) cells.
- Sea: GXP leverages Synthetic Aperture Radar (SAR) imagery, Radio Frequency (RF) signals, and Automatic Identification System (AIS) data to enhance naval operations by monitoring maritime activities, detecting and identifying hostile vessels, and tracking ship movements.
- Space: Contributing to the monitoring of known and unknown satellites, GXP enables mensuration on non-earth imagery, integrates advanced AI/ML algorithms, and supports rapid analysis and dissemination of imagery and text data.



Analyze satellite imagery with FMV video data for real time C4ISR mission support.

Supported mission types

- Processing, Exploitation and Dissemination (PED) of multiple data types.
- Target acquisition and battle damage assessment.
- Strategic intelligence.
- Operational mission planning and support.
- Border security.
- Counterterrorism and counterinsurgency operations.
- Maritime domain awareness.
- Peacekeeping and stability operations.
- Training and advisory missions.
- Humanitarian Assistance and Disaster Relief (HADR).



Secured federated architecture

In the landscape of Joint ISR operations, the need for a secured federated architecture has never been more critical. GXP addresses the inherent challenges in creating a secure and cohesive federated architecture, thereby ensuring seamless integration and interoperability across diverse ISR platforms. By leveraging advanced and robust access control mechanisms, our software safeguards sensitive data against unauthenticated and unauthorized access.

With an open API that meets industry standards, system integrators can easily incorporate GXP capabilities into larger joint ISR capabilities, promoting an open and collaborative environment. This enables real-time data sharing and collaboration among allied forces, enhancing situational awareness and decision-making.

Additionally, the GXP Ecosystem is designed for maximum supportability, accommodating small deployable capabilities, operational fixed and virtual infrastructures, and cloud deployments, while providing flexibility and scalability to meet the dynamic needs of modern ISR operations.

Deployment options

Bare Metal



Cloud Native



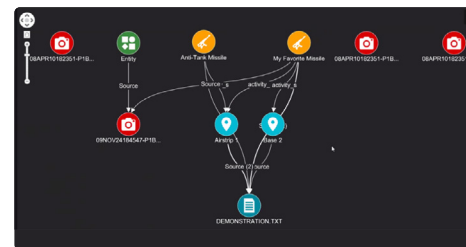
Virtualized



Containerized



Disconnected



Network graph illustrating how observations can be linked to various equipment, military groups, and installations.

Supported data types include:

- Panchromatic Imagery (PAN).
- Synthetic-Aperture Rader (SAR).
- Wide Area Motion Imagery (WAMI).
- Multispectral Imagery (MSI).
- Full Motion Video (FMV).
- Moving Target Indicator (MTI).
- Hyperspectral Imagery (HSI).
- Electronic signals.
- Feature data.
- 3-D and point cloud.
- Third-party databases.
- Reports (Microsoft®, Adobe® PDF).



Interoperability and interconnectivity

The ability to gather, analyze, and share ISR data is crucial for national security and maintaining a strategic edge. The GXP Ecosystem is deeply integrated in existing IMINT PED systems used by military branches within Department of Defense organizations globally. This integration enables efficient federated and collaborative ISR missions, supporting operations from small workgroups to large enterprises.

GXP software is trusted and deployed by 60% of NATO member countries, operating effectively on national and coalition networks. Its native interoperability with Coalition Shared Data (CSD) through STANAG-4559 interfaces allows partners to leverage existing data and create collaborative mission environments.

Sharing intelligence information across multiple domains, partners, and allies involves challenges related to data security, privacy, and interoperability. BAE Systems also offers cross domain solutions for a secure, automated, and scalable method for exchanging data between different security domains. These solutions enforce strict access control policies while ensuring the confidentiality, integrity, and availability of data. Customized to meet specific needs, they integrate seamlessly with existing systems and platforms, enhancing situational awareness, accelerating decision-making, and improving operational effectiveness.



3-D terrain data and image analysis capabilities enable a comprehensive solution for accurate observation collection, terrain analysis, and image exploitation.

GXP delivers speed-to-decision by:

- Eliminating data silos created by ISR platform and sensor-specific software.
- Delivering complete situational awareness of the collection environment, targets of interest, and desired outcomes.
- Automating workflows with human/machine teaming to screen imagery, video, documents, and products for a decisive information advantage.
- Accelerating intel sharing with a coherent picture of all collection activities.
- Identifying collection gaps through visualization of data footprints by location over time.
- Simplifying data management with rules for retention and accessibility.

GXP addresses a wide range of challenges across the Intelligence, Joint ISR, and Targeting lifecycles

Challenge: Using multiple tools to analyze disparate data types from different ISR platforms creates data silos and leads to inefficient analytic workflows.

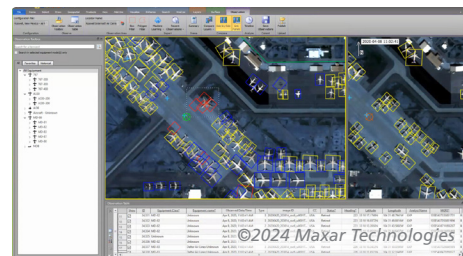
Solution: GXP software is sensor and platform agnostic while supporting a wide range of data types and formats to facilitate cross-cue. In addition, GXP applications are tightly integrated and aided by workflow and mission tools, maximising efficiency in multi-source analysis and Quality Assessment/Quality Control (QA/QC).



AI/ML object recognition and classification built into SOCET GXP® and GXP Xplorer® to streamline the analysis workflow.

Challenge: Organizations are spread across different locations while working on the same missions, making sharing data and intelligence difficult and time-consuming.

Solution: GXP software is based around a centralized catalog with Discretionary Access Controls allowing organizations to share and collaborate securely, confidently, and efficiently.



AI-enhanced workflows for Structured Observation Management (SOM) and change detection in the GXP Ecosystem.

Challenge: How can information be effectively shared across different services, domains, international bodies, and varying security classifications in Joint ISR operations?

Solution: GXP software, integrated with BAE Systems' cross-domain solutions, enables seamless and secure information sharing by bridging gaps between diverse systems, ensuring real-time data accessibility and maintaining stringent security protocols across all levels.

Challenge: There is not enough analyst time to exploit all available data.

Solution: GXP has a variety of proven machine learning capabilities that allow analysts to analyze more data, detect entities of interest that might have otherwise been overlooked, and complete tasks faster. Automated workflows incorporate critical feedback loops without breaking existing analyst workflows.

Challenge: Identifying changes in activity is extremely difficult.

Solution: GXP maintains a suite of tools geared towards change-detection to assist users in quickly identifying and highlighting the most vital intelligence to commanders. Tools for Structured Observation Management (SOM) are natively built into the solution, enabling observations to be converted into data which can be measured, tracked, and exploited to fuel predictive analyst and fusion products.

GXP Solutions are utilized by both all-source and image analysts at organizations across the world:

- Defense forces, intelligence agencies, and homeland security.
- Universities and research organizations.
- Systems integrators.
- State, local, and regional governments.
- Photogrammetry, mapping, and surveying agencies.
- Transportation departments.
- Natural resource management consultants.

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