

SOCET GXP[®]

eXtreme Analysis[™]



eXtreme Analysis™

Experience the power of one intuitive software package for advanced image analysis, mapping, geospatial production/photogrammetry, data sharing, and 3-D visualization.

Become an



eXtreme Analysts™ (XA™) have the best of both worlds — image analysis (IA) and geospatial analysis (GA) integrated into a single application — SOCET GXP®.

The XA uses SOCET GXP's automated functionality, access to shared databases, and interoperability to manage geospatial information effectively. No more switching between multiple products or spending excessive time completing laborious tasks.

What is SOCET GXP?

SOCET GXP — the first full-spectrum geospatial information management software

SOCET GXP is a versatile geospatial-intelligence (GEOINT) tool that uses imagery from commercial, satellite, and tactical sources to identify and analyze ground features. With SOCET GXP, users can automatically measure, annotate, store, and retrieve ground features in a series of images to expedite geospatial production, image analysis, and map creation. The data can be used to monitor changes over time, manage utilities and communications networks, facilitate infrastructure design and development, and coordinate operational missions.

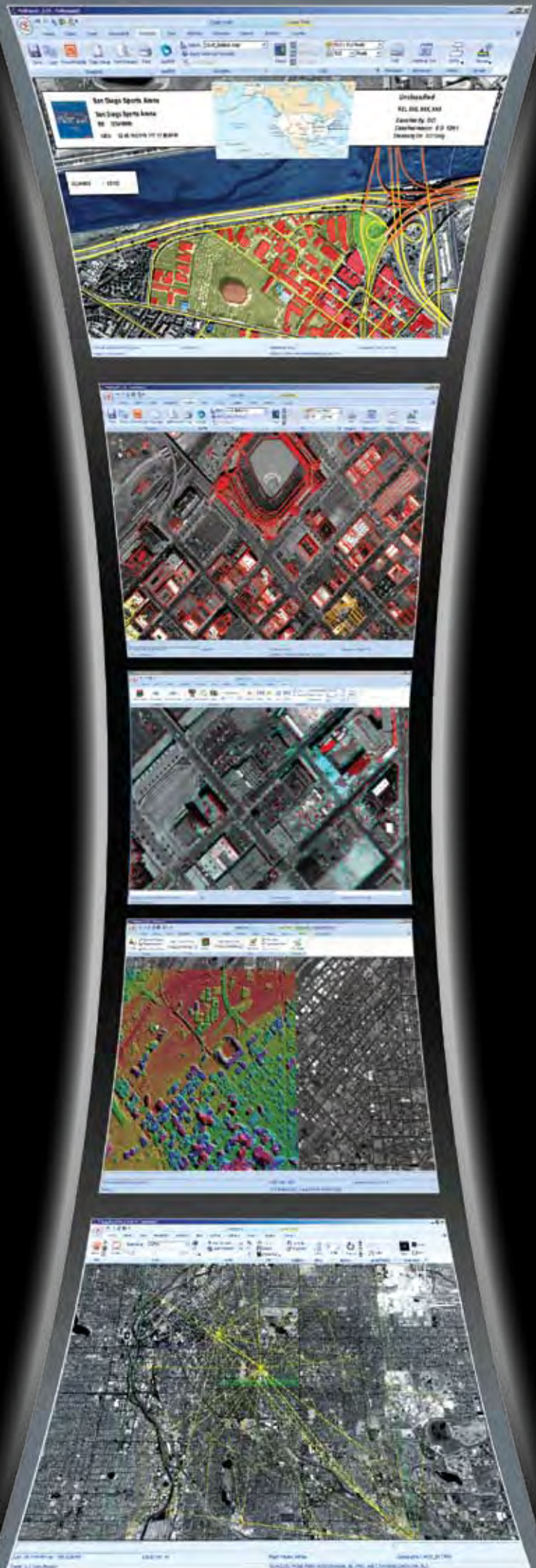
Based on the Microsoft® Office Fluent™ user interface, which features the customizable Ribbon, SOCET GXP is designed to simplify workflows. The intuitive interface provides a visual conduit into advanced functionality and extended capabilities. SOCET GXP automates the complicated processes associated with geospatial product creation, which allows users to build and export finished map products as simple as PowerPoint® slides and GeoPDF® files, and establishes the basis for future feature extraction and analysis. In addition, the workspace can be organized according to individual or site preferences for maximum ease of use.

SOCET GXP enables interoperability and collaboration among users and decision-makers at all levels, and provides direct connectivity with Google Earth™ and the ESRI® geodatabase to create, store, and share geographic information. The data can be used by organizations and commands to satisfy long-term operating and maintenance requirements.

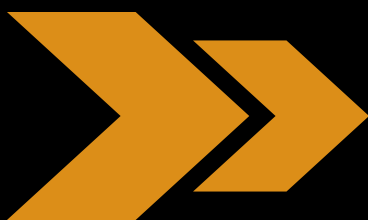
System architecture and building applications

Based on more than 20 years of research and development, the SOCET GXP system architecture is built to provide high-performance image processing from commercial hardware. It has a common software baseline, look, and feel for both UNIX® and Windows® operating systems. A robust API eases integration of the application into larger system architectures and provides a solid prototyping tool and third-party development platform. This gives customers and systems integrators the capability to create complex commercial and government off-the-shelf solutions for specific programs and missions.

BAE Systems has created a product with important discriminators in terms of functionality and efficiency, backed by a strong support and training team. SOCET GXP's technically advanced functionality serves government and civil customers' needs for photogrammetry, rapid mapping, 3-D visualization, image exploitation and analysis, precision targeting, intelligence, simulation, and mission planning.



IA



SOCET GXP establishes the union of image analysis and geospatial production in one software package

Today, IA and GA production, which include second-phase product generation, are becoming integrated. With SOCET GXP, the XA is empowered to complete IA and GA tasks using a single application. Accurate products can be created quickly with automated tools.

Image analysis workflows require current and archived images to build on-demand products. Often, time constraints require rapid product generation. Second-phase product generators, typically geospatial analysts, provide value-added processing — and in many cases increase the accuracy of image data — by generating updated terrain, orthophotos, and feature vectors.

SOCET GXP's rigorous, automated processes let all users exploit imagery with ease, traditionally a task reserved for the GA. With the click of a button, tools such as Ortho On-the-Fly™ reduce measurement errors associated with sensor orientation and terrain topography. The Google Earth interface provides seamless integration, dynamic viewing, and editing between the two applications. Furthermore, digital terrain elevation data can be loaded automatically to simplify terrain-dependent processes.

SOCET GXP is built to consolidate multiple tasks into one intuitive system. It represents a milestone in software development — both IA and GA requirements can be accomplished with the same product. Current software strengths, together with extensive user feedback, were used to develop SOCET GXP. Its exceptional analysis and processing capabilities, based on smart algorithms and core features from BAE Systems' proven legacy products, SOCET SET® and VITec ELT®, make it a desirable long-term solution.



GA

SOCET GXP offers automated functionality that simplifies complex geospatial production workflows

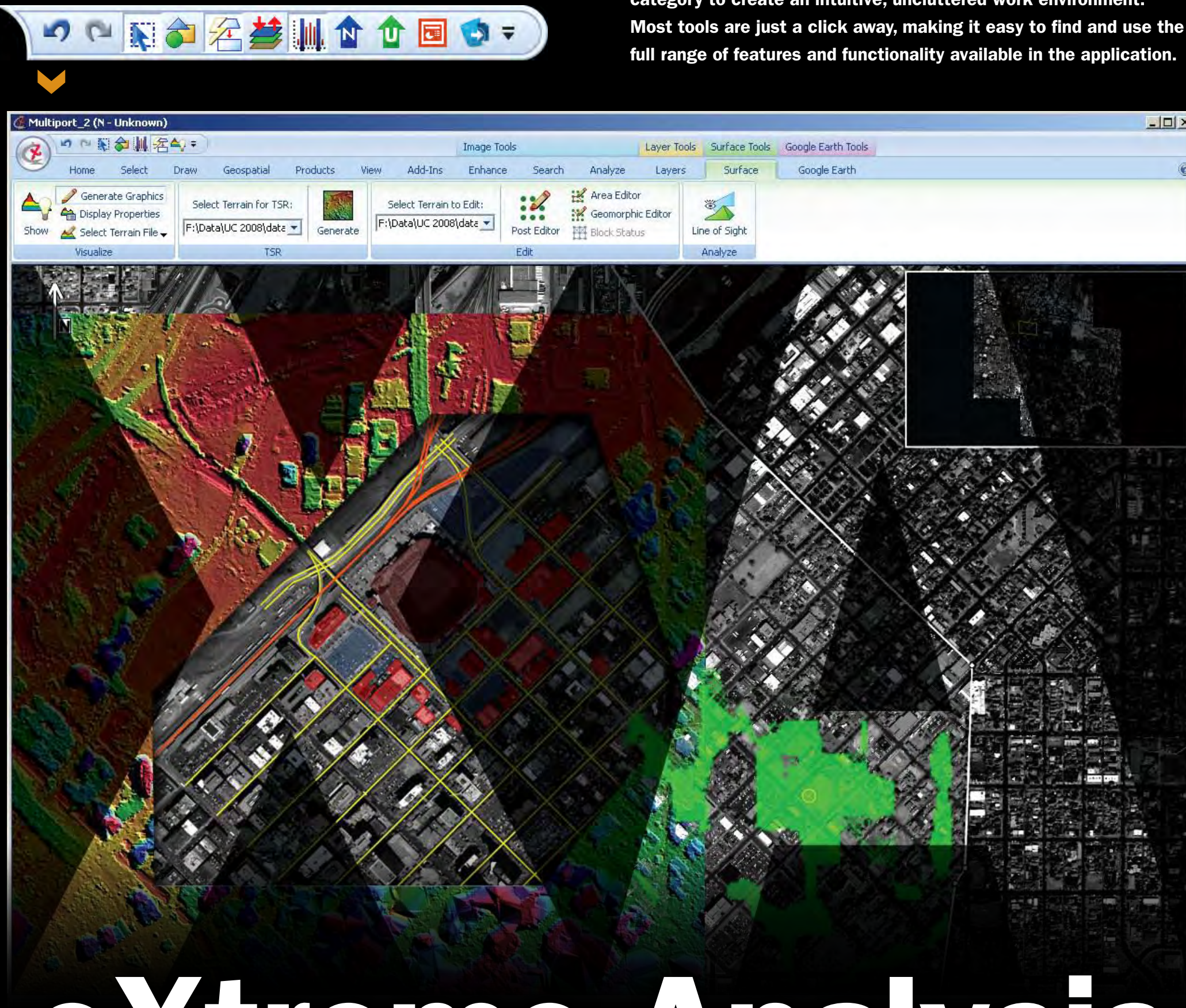
Geospatial analysis and production have never been easier. Built-in shortcuts and pushbutton functionality shorten workflows that previously required proficiency with several specialized software packages. Moreover, frequently used features can easily be added to the customizable Quick Access Toolbar. Traditional menus and toolbars are replaced with tabs that display commands relevant to each task. Contextual tabs appear only when needed, revealing expanded capabilities and advanced functionality — features are never turned off or hidden by default. As SOCET GXP evolves and fresh functionality is developed, new tools can be added without crowding the workspace or draining system resources.

SOCET GXP is a powerful application with the capability to ingest imagery from an unprecedented number of commercial, satellite, and tactical sources, making the product accessible to a greater number of users. In SOCET GXP, most mapping data is processed in its raw form, which simplifies the workflow and accelerates product generation.

In addition, the job services Web page allows users to monitor batch processes, such as automatic terrain generation and orthorectification, that are distributed across a networked environment. These processes can be run on separate computers or during off-hours to complete mission-critical tasks.

From finding beach landing sites for combat troops to helping land the Mars Rover, SOCET GXP offers the XA a suite of automated tools for in-depth analysis and product generation, while reducing dependency on multiple tools.

The customizable Ribbon user interface organizes tasks by category to create an intuitive, uncluttered work environment. Most tools are just a click away, making it easy to find and use the full range of features and functionality available in the application.



eXtreme Analysis

Usability

- Custom hotkeys
- Finishing tools
- User-defined preferences
- Workspace Manager
- Image Layers window
- Panel-in-Panel overview window

Ingest

- NTM, commercial imagery
- Shapefiles, geodatabase
- Terrain
- Style sheets
- Video play and capture
- Google Earth KML files
- Geospatial data discovery

Analysis

- Swiper/porthole
- Two-color compare
- Hyperspectral and multispectral processing
- Pan-sharpening
- Graphics and annotations
- Ortho On-the-Fly tool
- Line of Sight tool
- 3-D flythrough
- Targeting with CGS
- Quick Align and Glove Align tools
- Customizable lookup tables
- AutoDRA
- Terrain shaded relief

Accuracy

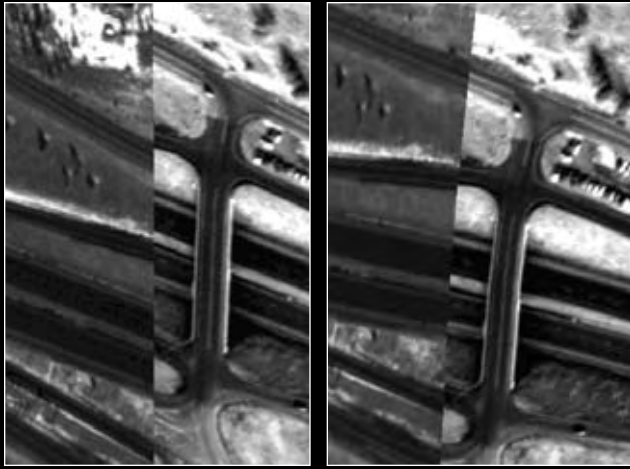
- Resection, registration, and multi-sensor triangulation
- Automatic tie-point measurement
- Control Point Editor tool
- Full error propagation
- CE and LE reporting
- Advanced graphical analysis

Extended capabilities

- Automatic terrain generation
- Interactive terrain editing
- Terrain Operations tool
- Automatic and interactive seamlines
- Large-area-coverage mosaic
- Sheet Cutter tool
- True orthophotos

Product generation

- GeoPDF
- Google Earth
- Mosaic Manager module
- Feature database production
- Templates
- Metadata Editor tool
- Shapefiles, geodatabase
- Terrain



Ortho On-the-Fly

The Ortho On-the-Fly tool orthorectifies and mosaics raw images in real time to produce continuous, accurate imagery of an expansive area. This can be used for immediate product generation or future analyses. Orthorectification removes geometric errors or displacements in an image caused by the orientation of the sensor or variations in the terrain elevation. The result has a consistent scale, allowing accurate measurements of position, distance and direction. Ortho On-the-Fly enables first responders and analysts in the field to view and analyze orthorectified imagery without delay, or revert to the raw data. Raw images are still available for extended processing such as automatic terrain generation, 3-D feature extraction and mensuration, and stereo visualization.



Image analysis

SOCET GXP's accuracy, quick visual analysis, and effortless change detection capabilities streamline image exploitation



Spatially Enabled Exploitation module

Vector-supported image analysis

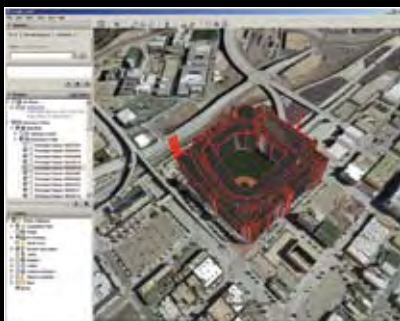
- Extract information from imagery and save it for future analysis.
- Store graphics and features with their ground coordinates and attributes.
- Connect to a database, create features, or query existing features.
- Answer critical questions using spatial, attribute, and temporal queries.
- Rely on accurate vectors to detect changes over time.



Product creation tools

Build professional finished products

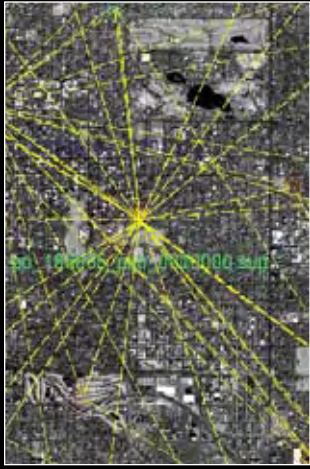
- Access multiple image sources and information databases.
- Transmit data, imagery, reports, and kneeboard products to the field quickly.
- Export products to PowerPoint, GeoPDF, and Google Earth.
- Create 3-D flythrough scenes to simulate real-world scenarios.
- Generate comparison products, special targeting products, and maps using the Finishing Tool.



Google Earth interface

Convenient, popular tool for 3-D color visualization and discovery

- Scan over large areas of imagery for situational awareness and change detection.
- Google Earth view synchronizes with SOCET GXP location and updates dynamically.
- Export features, annotations, and imagery from SOCET GXP to Google Earth.



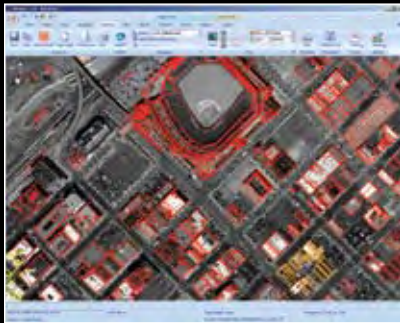
Triangulation

SOCET GXP triangulation employs fully weighted least squares to adjust the parameters of a satellite or airborne sensor model to improve the accuracy of coordinates and measurements derived from the associated imagery. It simplifies the complex triangulation process by providing automatic tie-point measurement, default sensor parameterization and weighting, and advanced graphic analysis. Ordinarily, triangulation uses control points in the adjustment of sensor models. SOCET GXP can use control points and control imagery, such as DPPDB* and CIB®, orthophotos, and terrain. Triangulation in SOCET GXP provides full error propagation allowing CE and LE reporting from measurements on triangulated imagery.

Geospatial analysis

SOCET GXP automates geospatial analysis and production to simplify tedious processing tasks.

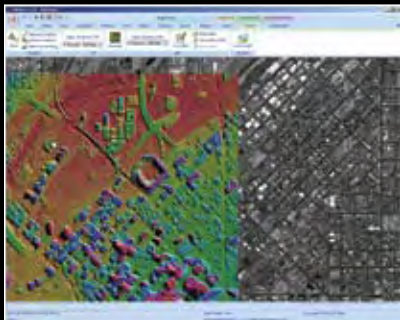
GA



SOCET for ArcGIS® module

Interface between SOCET GXP and ArcMap® applications

- Offers SOCET GXP stereo viewpoint in ArcGIS® environment.
- Use ESRI or SOCET GXP 3-D tools for feature collection and editing in ArcMap®.
- Define advanced style sheets and feature queries.
- Apply stereoscopic imagery to ensure precise 3-D measurement.
- Auto-attribute features from image source metadata: date, time, CE, LE, and sensor.
- Create highly accurate 3-D-enabled GIS databases for viewing and editing.



Terrain extraction functionality

Automatic terrain generation, visualization, and editing

- Create high-quality digital terrain models from a wide range of imagery.
- Default settings allow novice users to start working immediately.
- Next-Generation Automatic Terrain Extraction (NGATE) high-resolution surface modeling uses new algorithms to generate dense, accurate surface and elevation models; reduces editing time.
- 3-D graphical visualization, including contours, profiles, points, and mesh.
- Interactive terrain editing including points, geomorphic lines, and polygons.



Mosaic Manager module

Automated large-area-coverage orthomosaic production

- Create orthomosaics, orthomosaic sheets, tiles, or individual orthophotos using georeferenced imagery and terrain data.
- Automated seamline generation, feathering, and image balancing for nearly seamless output products.

* SOCET SET Digital Point Positioning Data Base (DPPDB) format production module [which uses MIL-PRF-89034, March 1999 format specifications] and SOCET SET Controlled Image Base® (CIB) format production module [which uses MIL-PRF-89041, May 15, 1999 format specifications].

Transition from SOCET SET to SOCET GXP

In keeping with BAE Systems' vision that analysis tasks are merging into a single market, SOCET SET's photogrammetric strength is being integrated into one end-to-end software package, SOCET GXP, which gives users increased flexibility, accuracy, and efficiency. The SOCET GXP architecture is scalable and highly configurable so that customers can buy specific functionality for their requirements. Like SOCET SET, SOCET GXP offers the same appearance, performance, user experience, and software baseline for both UNIX and Windows for ease of use among multiple workstations. By providing all of the required functionality in one product with a single user interface, BAE Systems empowers organizations to consolidate resources and increase productivity. As users transition to SOCET GXP, they can convert SOCET SET licenses for equivalent functionality in SOCET GXP.



Support

BAE Systems believes that support and training are critical components of your software purchase. The company's dedicated in-house and field support engineers have real-world experience working with GXP products and other geospatial software tools. A combination of practical, hands-on experience along with advanced software development, QA, and testing skills gives the GXP support team a broad base of knowledge to troubleshoot and resolve the most challenging issues. Advanced customer relationship management software and locations in several time zones ensure effective, rapid support. Consulting services are also available.

Training

Whether you need to train a project team, or require one-on-one instruction, BAE Systems offers flexible options for your organization. The company can tailor a curriculum based on your learning requirements. Classes can be held on-site at your location or at one of ours. On-site training typically includes an initial course at the time of software installation to let new users hit the ground running. This program can be supplemented at a later date with refresher training, designed to raise users' skills to a higher level and to help familiarize them with the features of a new release or add-on modules.

Capabilities

- Image analysis
- Geospatial analysis
- Change detection
- 3-D visualization and flythroughs
- Targeting
- Video analysis
- Triangulation
- Terrain generation and edit
- Orthomosaicking
- ESRI and Google Earth connections
- Application development

Customers

- Defense forces
- Intelligence agencies
- Homeland security
- Systems integrators
- National and local mapping agencies
- State, local, and regional governments
- Private photogrammetry, mapping, and surveying companies
- Transportation departments
- Natural resources management consultants
- Universities, colleges, and research institutes
- Airports and airport consultants

About BAE Systems

BAE Systems is the premier global defense and aerospace company, delivering a full range of products and services for air, land, and naval forces, as well as advanced electronics, information technology solutions, and customer support services. With 97,500 employees worldwide, BAE Systems had 2007 sales that exceeded \$31.4 billion.

Geospatial eXploitation Products™ (GXP)

Creating geospatial intelligence

BAE Systems is a global provider of commercial and government off-the-shelf software for image analysis, geospatial production, mapping, 3-D visualization, and photogrammetry. GXP develops powerful software tools that are used to deliver highly accurate geospatial and intelligence data. BAE Systems has been a trusted supplier of imagery, geospatial products, and services to the defense and intelligence communities and commercial markets for more than 40 years. Its software, services, and innovations improve operations and long-term planning to ensure that decision-makers have the information they need — when every minute counts.

Based in San Diego, GXP provides direct worldwide sales and support. In some areas, this is done in conjunction with a select team of distributors to facilitate greater coverage and to provide effective customer service. GXP offers its customers top-quality technical support and training to optimize their return on investment.

For more information on BAE Systems and GXP products:

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