Military and intelligence agencies are faced with more available data than ever before. And never before has there been a greater focus worldwide on security and emergency preparedness than since the terrorist attacks of September 11, 2001. Today geospatial intelligence agencies must meet the expectations of people who are dealing with natural phenomena, economy, and frightening global events, as well as collect and analyze relevant information that helps reduce the discord of the world in which we live. With the continued evolution in technology, such as database design, geospatial applications, hardware, and speed and method of transmission, now is the time for providing a fully user-interactive and intuitive geospatial intelligence solution.

For more than 35 years, Intergraph has met the challenges of military and intelligence agencies with proven solutions, including products, processes, and experienced professionals. Intergraph Security, Government & Infrastructure (SG&I) continues its role as a worldwide...
geospatial solutions provider with its innovative technology and products focused specifically on the workflows of geospatial intelligence agencies.

Integrating geospatial data and workflows with scalable enterprise technology, these solutions help military and intelligence professionals meet their operational goals and enable data sharing across the enterprise. Geospatial intelligence agencies around the world rely on Intergraph to provide advanced geospatial solutions for every facet of their operations.

**Facing the challenge**

In today’s geospatial intelligence community, a typical enterprise is comprised of segregated and isolated systems for accessing and utilizing geospatial intelligence. The lack of interoperability among these systems burdens the enterprise with additional costs on activities involving data viewing, analysis, maintenance, collaboration, exploitation, and intensification. There is great diversity in geospatial information sources accessible to the enterprise, including feature data, imagery (static and motion video), surface (elevation) data, and other related information such as online documents and text messages. Access to these data sources must overcome data access barriers such as proprietary file formats and network bandwidth – without jeopardizing security.
The lack of a single automated, robust data management system for all data types inhibits the sharing and the utility of geospatial information. Data access must be dynamic in order to provide the richest, most relevant “picture” of the geospatial environment. Today’s operational environment demands real-time, seamless integration among the many available types of data, which are often distributed over many source locations.

Addressing homeland security

Given today’s focus on the mission of homeland security within the geospatial intelligence community, there is an urgent need for real-time collaboration among decision makers. Collaboration is not only required within the enterprise, but also outside the enterprise with other organizations and agencies at federal, state, and local levels.

A common relevant operating picture (CROP) is essential to collaborative decision making. A CROP in this environment requires that feature, image, surface, and text data from all relevant organizations and agencies be brought together in real time, while automatically resolving differences in format, scale, and temporality in order to provide geospatial assurance.

Taking advantage of advanced geospatial intelligence solutions

Intergraph SG&I provides a wide array of solutions to enable military and intelligence organizations to combine data from different sources into a single environment for better decision making. These include geospatial intelligence solutions for the integration and exploitation of available data, generation of raster data products that may be interchanged with other agencies and countries, and processing of classified and commercial imagery into intelligence formats.

Building solutions enterprisewide

These solutions combine technology and services to deliver user-ready capabilities for the geospatial intelligence community. Beginning with a “base” architecture, which may then be tailored to the needs of the users,
these solutions can stand alone or be combined with another solution to form a robust enterprisewide system. Adhering to open industry standards for interfaces and data models ensures that these solutions easily integrate with legacy data and existing applications.

**The right data at the right time**

The Geospatial Intelligence Data Management (GIDM) solution facilitates the development of the CROP by making diverse datasets quickly available in a seamless and integrated view. Intergraph’s GIDM solution is a “logically centralized” approach to data management that assures that analysts across the enterprise have access to the right data at the right time, freeing them to focus on analysis. Diverse geospatial data is cataloged, stored, and managed so that users at the desktop, on the Web, or using wireless devices gain access to the most current data in an integrated manner.

**Integrating and exploiting available data**

The Imagery Exploitation (IE) solution, fused with multi-source geospatial data, facilitates the development of the CROP in a fluid and intuitive manner, enabling the related front-line processes such as analysis and intensification. TerraShare™, a complete remedy for searching wide holdings of imagery and fusing it with geospatial intelligence data, provides dedicated CROP exploitation more intuitively and cohesively.

TerraShare, a modular client-server system that facilitates the management of multiple types of data throughout the production process – from acquisition to exploitation to distribution – provides efficient images, maps, and elevation data, eliminating the need for the operator to remember image names or specifications.

Intergraph’s full range of products includes high resolution digital imagery using Intergraph’s (DMC®) Digital Mapping Camera. The DMC system is a turnkey digital aerial camera system designed to support aerial photogrammetric missions that demand high-resolution and accuracy. Designed from the ground up as a digital
replacement for film-based photogrammetric mapping cameras, the DMC features breakthrough technologies enabling successful projects from small-scale mapping operations to precision, high-resolution corridor engineering projects.

**Generating interchangeable raster data products**

The Spatial Analysis and Intensification (SA&I) solution creates information and knowledge from a variety of data sources. Intergraph provides spatial data services for a variety of functions, including analyzing data more efficiently through advanced spatial queries, filters, and processes across data types and services, and without translation; extracting information through data collection, enhancement, and intensification in 2D and 3D; performing temporal queries of vector data to provide historic insight into events and trends; supporting generalization, network analysis, and feature synthesis, as well as data validation and clean-up tools by way of persistent topology; and quickly migrating hardcopy products into useful database-stored vector information with the aid of semi-automated raster-to-vector conversion tools.

**Sharing the common relevant operating picture**

The Dissemination, Communication, and Collaboration (DCC) solution architecture facilitates the development of the CROP in a cohesive and fluid manner, enabling related front-line processes such as analysis, exploitation, and intensification. It is truly a union of commercial off-the-shelf (COTS) products, Open Geospatial Consortium (OGC™) interfaces, data models, and data management utilities, enabling:

**Dissemination**

- Traditional methods such as hardcopy maps and charts
- Softcopy products to CD, DVD, or specific file format
- Wireless (PDA and Tablet PC)
- Web-based delivery

**Communication**

- Ensuring your data possesses visual properties that support the understanding of the story
- Visualization through appropriate symbolization across data types
Collaboration

- Network meeting and remote desktop tools allow you to collaborate in the exploitation and analysis of vector, elevation, imagery, and intelligence data.
- White-boarding and redlining enable data administrators to work with data collectors to review the results of data collection prior to committing changes.
- Handheld and wireless tools allow field personnel real-time collection of data.

The Intergraph Solution

Intergraph Security, Government & Infrastructure (SG&I), headquartered in Huntsville, Alabama, serves a broad range of clients, including local, regional, and national governments; businesses, both public and private; and security and public safety organizations. Intergraph SG&I focuses on providing software and services to enable our clients to make the right decisions at the right time using the right information.

Why geospatial intelligence industry leaders choose Intergraph

Geospatial intelligence agencies around the world depend on Intergraph for advanced solutions that allow them to:

- Facilitate a common relevant operating picture (CROP), which is essential to collaborative decision making.
- Improve planning and decision making with the industry’s best analysis and display capabilities.
- Share data across the enterprise and around the world.
- Merge geospatial data with information technology (IT) and business process improvement tools.
- Access data and integrate it into the workflow – no matter where the data resides or what format it takes.
- Take advantage of Intergraph’s XML Web services and use Web technology to meet information requirements.
- Empower mobile personnel to collect data, access information, and send updates to the enterprise database.
- Maximize products and services from Intergraph’s third-party partners to create a complete industry solution.
- Create an enterprise database with direct support from Oracle®, Microsoft SQL Server®, and IMB® DB2®.

TerraShare is an enterprise infrastructure for geospatial data management and earth imaging production. TerraShare integrates storage infrastructure with end-user production and exploitation tools that enable individuals and organizations to effectively address their geospatial data management, access, and distribution needs.