



## Intergraph® in National Mapping Agencies (NMAs)



**GeoSpace is a specialist national mapping solution provider and an authorised distributor of Intergraph® Security, Government and Infrastructure (SG&I) products.**

National mapping agencies (NMAs) collect and maintain massive geographic information databases for the entire country, and fundamentally drive the spatial revolution from data collection to its use. The role of NMAs is changing to meet new demands. They no longer just create and publish a map series; their data are now key enablers of commerce and improvement to the efficiency and effectiveness of government services and private industry functions:

- From property tax assessment to scientific research; and
- From natural resource management to urgent first responders trying to make quick assessments and alleviate the damage in a disaster response.



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## The GeoSpace solution

NMAs require a portfolio that provides the industry's leading:

- Data capture;
- Desktop GIS;
- Remote sensing; and
- Photogrammetry software,

as well as the synthesis of these technologies in server-based products specialising in:

- Data management;
- Spatial data infrastructure;
- Workflow optimization; and
- Web editing and mapping.

For NMAs, there is an increasing need for vertical market applications, bringing the sensor closer to the workflow. This means the ability to provide both rapid updates and processing on the data. Ultimately, the government agency is then able to disseminate and deliver that content over the Internet to other government agencies, or via public facing web portal.

## Sensors

With accelerated changes on the earth's surface, the need to deliver up-to-date geographic information to users has exponentially increased. Whether from a space borne, airborne or terrestrial sensor, "snapshots of geography" can be captured and subsequently used to create and extract valuable geographic information.

The first part of the workflow is the collection of content, which makes use of:

- Leica airborne sensors;
- Reference stations; and
- The TPS/GPS systems.

The content is then processed and managed with Leica and Intergraph® software.

## Desktop GIS

Map producers around the world share a common mission - providing quality, accurate map products in a timely manner to support the requirements of the industries and customers they serve.

This can include:

- Hardcopy and softcopy map products;
- The generation of cartographic databases; and involves the exploitation and distribution of these products over the web.

The scope and context of the maps produced may vary, however, the underlying foundation required to support high-end cartographic production is similar for all NMAs.

### Intergraph®:

- Provides next generation, end-to-end map production solutions for NMAs;
- Is committed to providing the highest quality and most efficient mapping production solutions available;
- Takes advantage of cutting-edge technology, such as seamless cartographic databases, generalization and multiple-representation databases; and
- Uses GeoMedia technology, so that Intergraph's mapping and cartographic production solution includes applications to collect and manage geospatial data, and ultimately produce high-quality cartographic products.

## Data Management

Handling mapping needs at the national level can be challenging and managing, storing and delivering geospatial data is an ongoing concern. Many considerations need to be addressed, but can be mitigated with:

- Faster transfer speeds;
- Centrally located repositories of data; and
- Compression of image datasets.

As new barriers come into play for data dissemination, the increase of technology is breaking down these barriers faster than those that hinder it.

- Hardware enables capturing more data at a faster rate, but transfer and storage is becoming easier with the harmony between hardware and software applications.
- Volumes of geospatial data require more storage, but the indexing and database management is becoming more powerful and seamless.

### Intergraph® Geospatial Server:

- Enables an organization to centralise, share, and use geospatial information efficiently and effectively, fully geo-enabling the entire enterprise; and
- Has been developed with the insight of mapping industry professionals experienced across working groups, research projects, and SDI implementations that span local, national and regional scale.

This comprehensive SOA-based enterprise solution will manage the full spectrum of data at an NMA, all while providing:

- Workflow optimization;
- Superior analysis;
- High-performance web-enabled maps and applications; and
- Standards-compliant services.

## Data dissemination

National mapping agencies now have the ability to provide access to data through portals and web services for ease of sharing information. And the gap is closing between collection of geospatial data from sensors and the subsequent project management, storage and retrieval of this information. The time involved is dropping from days or weeks, to near real time dissemination.

End users of NMA information now have incredibly rapid access to current data stores including:

- Imagery;
- Feature data;
- LiDAR; and
- GPS.

### NMAs can now:

- Provide internal and external access to repository.
- Enable access to data along with hundreds of others at the same time.

### Intergraph® Geospatial Server allows:

Users to perform in-depth searches on the catalog, while powerful retrieve and disseminate capabilities enable data consumption in a variety of client applications.

### Intergraph® enables:

Dissemination of extensive archives to multitudes of end users with high performance, and without putting extra pressure on existing enterprise systems or requiring extensive hardware resources.

Point clouds can be created from imagery and can be distributed across multiple processing nodes with multi-user access in a fraction of the time it once was.