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## Security Systems and Geospatial IT Sharing

December 10 - 14, 2007 **by Susan Smith**

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*GISWeekly* examines select top news each week, picks out worthwhile reading from around the web, and special interest items you might not find elsewhere. This issue will feature Industry News, Top News of the Week, Acquisitions/Agreements/Alliances, Announcements, People, New Products, Around the Web and Events Calendar.

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Best wishes,  
Susan Smith, Managing Editor

### Industry News

#### Security Systems and Geospatial IT Sharing

by Susan Smith

Intelligence data of all sorts is often mission critical and requires geospatial IT sharing in order to be used most effectively. However, sharing is not something that comes naturally to those who are working on public safety and national security.

Robert Scott III, industry manager for security solutions at Intergraph Corporation, spoke with GISWeekly about the company's public safety systems and large scale security solutions use at



the upcoming 2012 Olympics in Beijing, Vancouver and London.

Intergraph's public safety systems use maps and the location of events for responding to 911 calls and the location of all response assets such as police, firemen, and emergency management personnel. Computer-aided dispatch (CAD) systems have been used for response in airports and other large and populated facilities for some time.

Many of the same public safety technologies can be extended to allow for large-scale events such as the Olympics or event security. Large-scale events with an enormous international public presence and thousands of spectators are prime targets of terrorism, as has been seen in the past with the tragic outcomes of the 1972 Munich massacre and the 1996 Atlanta bombing.

"We're looking at utilizing this new security ability to begin interfacing into existing access control systems, so for example, badge readers for access control and a ground based sensor that's already being utilized for tracking the aircraft traffic on the tarmac are already in place," explained Scott. "The security system using sensor-based intrusion detection will enable users to watch outside the perimeter to see someone too close to the fence, for example. Someone near that person could be sent to assess whether they pose a threat."

The use of sensors, cameras and a geospatial map with icons and features representing all those devices linked to geospatial technology can identify the location of a target within an area of interest. Once the location has been established a camera can be pointed at the target and the user can determine whether or not there is a need to respond to it.

With security solutions, Intergraph uses their GeoTechnology to display "targets," and determine if security personnel are in a security posture. Devices are used to detect a threat or intruder, which can display this as a feature on the GIS.

"Using some of the traditional GIS capabilities, I can then put out areas of interest," said Scott. "I want to put a polygon out there so that if something goes in there--I don't care what it is--I want to be alerted, something to happen: a tone to go off, a video camera to display the possible danger. We're using the geospatial technology to start giving situational



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awareness of where I might have threats, where I have activity and where I have response resources that can go mitigate that."

An [article](#) in *Contingency Today* by Scott described the security expectations of the 2012 Olympic Games in London, led by the Olympic Security Directorate, developed and organized by the Metropolitan Police Service (MPS). The Directorate is responsible for coordinating all security efforts for the 60-day event, expected to draw thousands of spectators, athletes, coaches, media personnel, and event officials from over 202 countries.

## The Technology

Intergraph GeoTechnology applications include Incident Detection which focuses on the ability for software to interface to third party systems that do detection like a fence sensor, radar, or access control device which can issue an alert or a detection.

"On the security side, when a 911 call comes in, people usually call in because there is an issue," said Scott. "A lot of times in a home system you get false alarms because you forgot to turn off the system to go outside. In an environment like an airport, or city, you don't have enough response forces to send out every time a detector goes off. Camera systems traditionally used for surveillance can produce video that can be linked with detection technology. It will detect activity if you get a camera on it."

Intergraph's I/AlarmPlus module that integrates multiple system messages into a single alarm monitor, providing personnel with a common operational picture.

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"We're interfacing to those existing systems, into the core capability which we've been building for years. This is the dispatch response side which is all map based. We are starting to blend all those technologies to make them more effective. However, some of those technologies are old analog technologies, and a lot of our customers are beginning to upgrade to newer digital which we can interface with more readily, control their standards using XML data exchanges and service oriented architectures, to try to more easily look at all these things. It's an ongoing process."

Since the 2006 Winter Olympics, technology has grown rapidly, according to Scott. "Back then we were using more of the geospatial from our planning and our mapping side, where we could depict where things were

happening. It wasn't as tightly integrated with detector and assessment technologies. Step one

was being able to dispatch to be able to manage incidents. Step two - by getting in phone calls and looking at videos I could mark the map and say here's where things are happening. Now I'm automating that interface to where the software will automatically put information on the map based on a target."

## Legacy data and systems

The design of GeoTechnology is flexible in that it enables users to utilize products that address specific solutions. Because most situations are mission critical, noted Scott, Intergraph must make sure data gets moved around a system and that requires a good framework that can take in data from various sources.

"We usually have a data ingestion area where you're bringing data from different sources and you're publishing it inside of the mission critical piece," Scott pointed out. "My job as geospatial analyst may be to ingest data from open source, be it web based, image data, vector data, floor plan data and I want to do plume analysis. I want to do it isolated from the mission critical system, because I don't want to bring data in that could put the mission critical system at risk, by bringing bad data or a virus, etc. We are looking at ways now to make that more open but we have to protect the internal system."

"Anything that's in an image data format, whether it's LiDAR data, satellite, aerial photography, any of those sources that meet standard data sources, can be ingested readily, then geolocated, put on a common projection system, datum, etc. We can manipulate it once we bring it in."

Intergraph is also looking at Google Earth and Microsoft Virtual Earth to see how they benefit the workflow, and GeoPDF for dissemination of information.

The customer base is comprised of security and public safety professionals whose primary mission is to understand how to take care of the population. They need tools that only allow them to see what they're allowed to see, strictly a "right information to the right person at the right time" scenario which really drives the multiple levels of the user environment.

Intergraph's Security Solutions have three primary market areas, and then events follow in the subset of one of them:

- 1) Border security at the national level, from U.S. borders to foreign borders and how these kinds of systems can help.
- 2) Transportation security, the realm of airports and transit systems.
- 3) Anti-terrorism force protection, meaning military base security.

Scott said Intergraph has the capability to manage the entire security posture from detection, assessment, and response. "If there's an event, we basically manage the response, such as firemen and security. We work with technologies such as access control and badging systems to integrate with to make that decision faster. They might have geospatial technology to map out where their access points are, information that we can use. Because some of the third party technologies such as E-Team and WebEOC can be preintegrated into a system, it is getting easier to handle catastrophes when they occur."

What used to be called an analytical and static environment (GIS) has now become what Intergraph terms "spatial information management" where the map becomes the visualization tool with dynamic and real-time data integrated into it. This produces what military and security personnel often call a "common operational picture."

With the convergence of technologies, Scott concluded that "The good news is it's all about spatial: where is it, and what's it doing there."