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User Ally

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NRO

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International Commercial Imagery ★ Battle Terrain Awareness ★ UAV Imagery
Common Geopositioning Services ★ National Air and Space Intelligence Center

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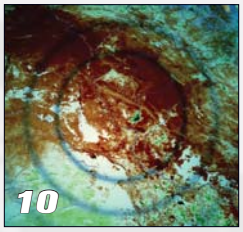
FEATURES



Targeting With Precision
Common Geopositioning Services was designed to provide a common standard for warfighters who require timely and accurate coordinates for precision targeting.
By Erin Flynn Jay

Near Real-time from Above
The need for a tactical airborne mapping system that can create and exploit geospatial accurate imagery and resultant products in near real-time has dramatically increased.
By Sheldon Piepenburg

Command Profile
The National Air and Space Intelligence Center is the source of air and space intelligence for the Department of Defense and produces integrated, predictive air, space and specialized intelligence to enable military operations, force modernization and policymaking.

Commanding the Terrain of Battle
The Army Battlespace Terrain and Reasoning Awareness-Battle Command program captures integrated terrain and weather information for mission planning and execution.
By Karen E. Thuermer

Worldwide Imagery
Amid the booming U.S. military and intelligence demand for geospatial imagery, a number of internationally based companies are stepping forward as major potential players in the field and a source of innovative new technologies.
By Tom Marlowe

COVER / Q&A

Brigadier General Jeffrey C. Horne
Deputy Commander
Joint Functional Component
Command for Space
U.S. Strategic Command
Deputy Director for Mission Support
National Reconnaissance Office

DEPARTMENTS

INDUSTRY INTERVIEW

John K. Graham
President
Security, Government & Infrastructure
Intergraph

HOW DO YOU ADVANCE VIDEO INTELLIGENCE DIRECTLY TO THE WARFIGHTER?

See Intergraph's Motion Video Exploitation Solutions at Intergraph 2009

Discover how Intergraph's end-to-end solutions can transform raw UAV video footage into actionable intelligence at Intergraph 2009, the world's largest event dedicated to helping you solve today's challenges and shape tomorrow's opportunities with Intergraph technology. You'll hear more about Intergraph's Motion Video Exploitation solutions, which empower you to detect changes in your video assets, enhance imagery, and integrate with multiple georeferenced sources – resulting in comprehensive, current, and actionable intelligence that supports the warfighter's mission.

Register Today! Go to **www.intergraph2009.com/register** to register for Intergraph 2009, to be held June 15-18, in Washington, D.C., at the Gaylord National.

INTERGRAPH®

Read more about Intergraph's motion video exploitation solutions on page 44 in an interview with John Graham, president of Intergraph's Security, Government & Infrastructure division.

John K. Graham
President, Security, Government & Infrastructure
Intergraph

Q: Can you give us an overview of your company's new Motion Video Exploitation product?

A: Intergraph's Motion Video Exploitation solution leverages motion video resources, giving analysts the unprecedented ability to collect, extract, analyze and maximize video assets. This breakthrough technology enables change detection, image enhancement and integration with multiple georeferenced sources to yield current, actionable intelligence in a highly dynamic intelligence landscape.

I believe a geo-fused context of situational awareness is lacking in the marketplace. Intergraph's Motion Video Exploitation solution, based on our premier GIS platform, GeoMedia, solves that problem by providing total integration of a wide variety of geospatial data, including video.

As you know, Intergraph has long been an innovator of data geo-fusion. Combining many and disparate forms of geospatial data into a single, integrated view has been the hallmark of the GeoMedia product line. Now we are merely extending our data integration capabilities to accommodate the newest and most rapidly proliferating form of geospatial data: motion video. As a leader in geospatial data integration, this is a natural extension of our technology and our capabilities.

Q: What issues and needs in the fields of geospatial and imagery analysis did you seek to address in the development of this product?

A: Many of the video products on the market today provide a narrow "soda straw" field of view—a view that lacks the peripheral vision necessary to give an essential sense of position and setting. Intergraph is uniquely qualified to solve this problem by incorporating video data into other geospatial forms of data: satellite imagery, vector data, geospatial intelligence data, raster map data, terrain data and others. We are enabling our customers to make better decisions and provide actionable intelligence by combining video data with the other geospatial data sources available today.

Intergraph's Motion Video Exploitation solution will enable our customers to analyze video data in ways that were not previously possible. With intuitive, DVR-like controls, the analyst will be able to fully control the analytic environment. As a leader in the forensic video analysis arena of law enforcement, our patented algorithms for video enhancement and stabilization will give the user unique and powerful ways to extract the very best intelligence possible from the video.

Q: What new and unique capabilities does this provide the military and intelligence analyst?

A: Let's revisit the soda straw analogy. It's difficult to make tactical and strategic decisions when you're viewing only a narrow field of information. Intergraph can provide a view of the data moving across a raster map, across imagery, and even through 3-D models. This gives tactical and strategic planners a tremendous advantage in seeing the video displayed over the actual terrain and incorporated with the latest geospatial intelligence data.

What's over that hill? Satellite imagery can answer that question easily. What line of sight would a sniper have from this location? Terrain analysis can give you that information. Viewing the video over a 3-D model gives the analyst a unique perspective that is invaluable in many different ways. By combining all of these capabilities into a single software solution, Intergraph provides a new analysis environment that is adaptable to the user's choice of hardware configurations.

Intergraph is providing a fresh new approach to video analysis technology. Integrating our experience in video forensic analysis with our experience in geospatial data fusion, we are providing our customers with a video analysis environment unlike any other on the market. In short, the Intergraph Motion Video Exploitation solution transforms motion video information into data with real context and meaning: actionable intelligence.

Q: What technological challenges did you have to overcome to make this product possible?

A: About 50 percent of the analyst's time is spent watching a live video feed, and the other 50 percent is spent viewing archived data. So one of our earliest challenges was to provide a solution that allowed for near real-time viewing and post-capture analysis with the capability to georeference mosaic images from a specified section of the motion video feed. Producing mosaic images, such as GeoTIFF, aids in the planning of future missions and opens up the possibility for change detection and other types of image analysis to be applied to video contents. The analyst might ask, "Was this pile of garbage here yesterday?" There's no need to watch hours of video that is not germane to the question; just review the static image and quickly determine the answer.

Another key technological challenge was to integrate support for creating, storing and retrieving annotations during video analysis. Annotations have not only a geospatial location, but a temporal location. It is often just as important to know when an event occurred as to know where it occurred. The annotations must be stored permanently, be searchable by geospatial and temporal location, and be available enterprisewide. The sharing of information from archival storage is vital in strategic and tactical planning. Is there a temporal pattern associated with a specific event? The ability to query archival annotation holdings on an enterprisewide basis is crucial in answering these types of questions. ✯