

» INTERNATIONAL COMPETITION » NEW CONCERNS ABOUT PRIVACY

SUMMER 2012

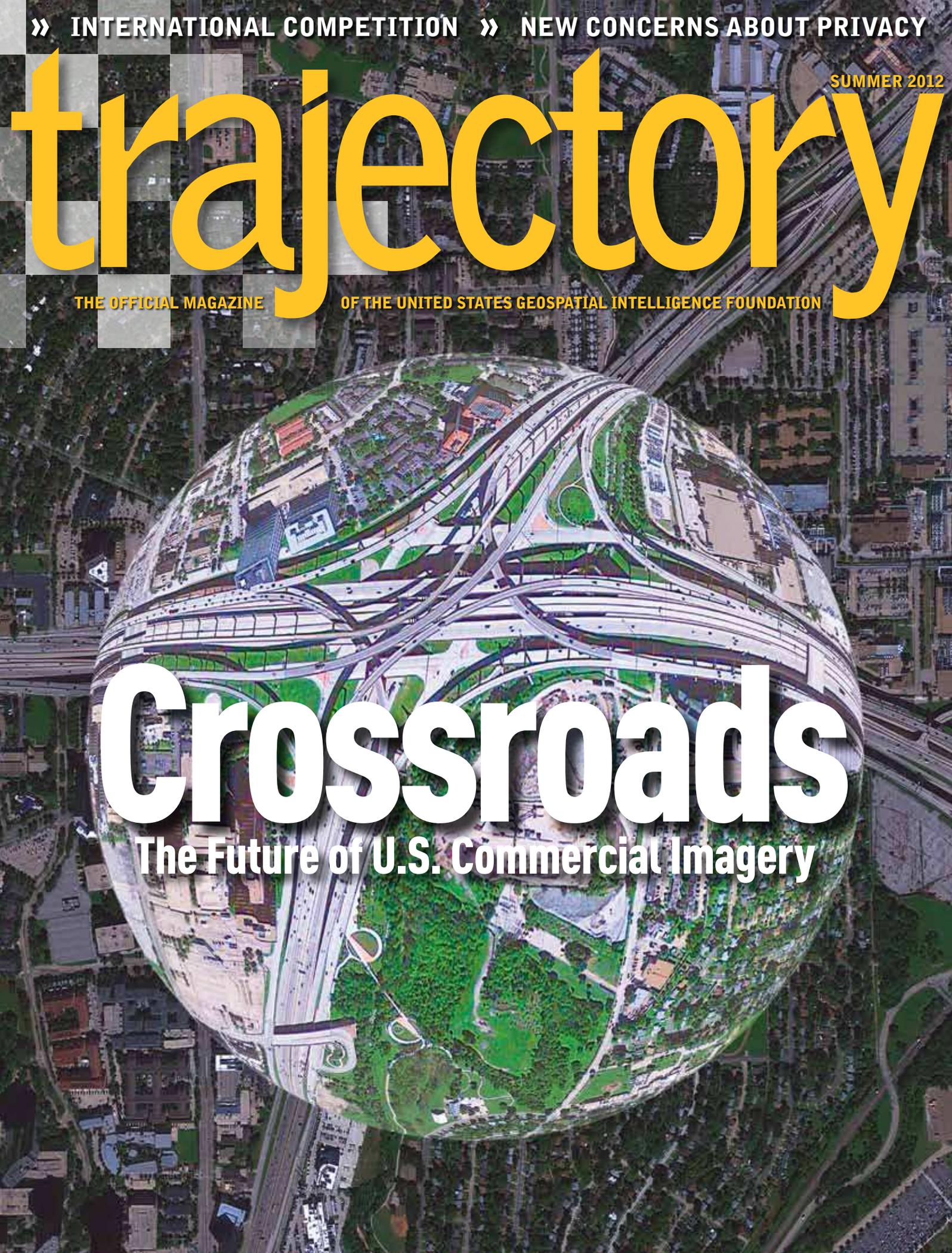
trajectory

THE OFFICIAL MAGAZINE

OF THE UNITED STATES GEOSPATIAL INTELLIGENCE FOUNDATION

Crossroads

The Future of U.S. Commercial Imagery

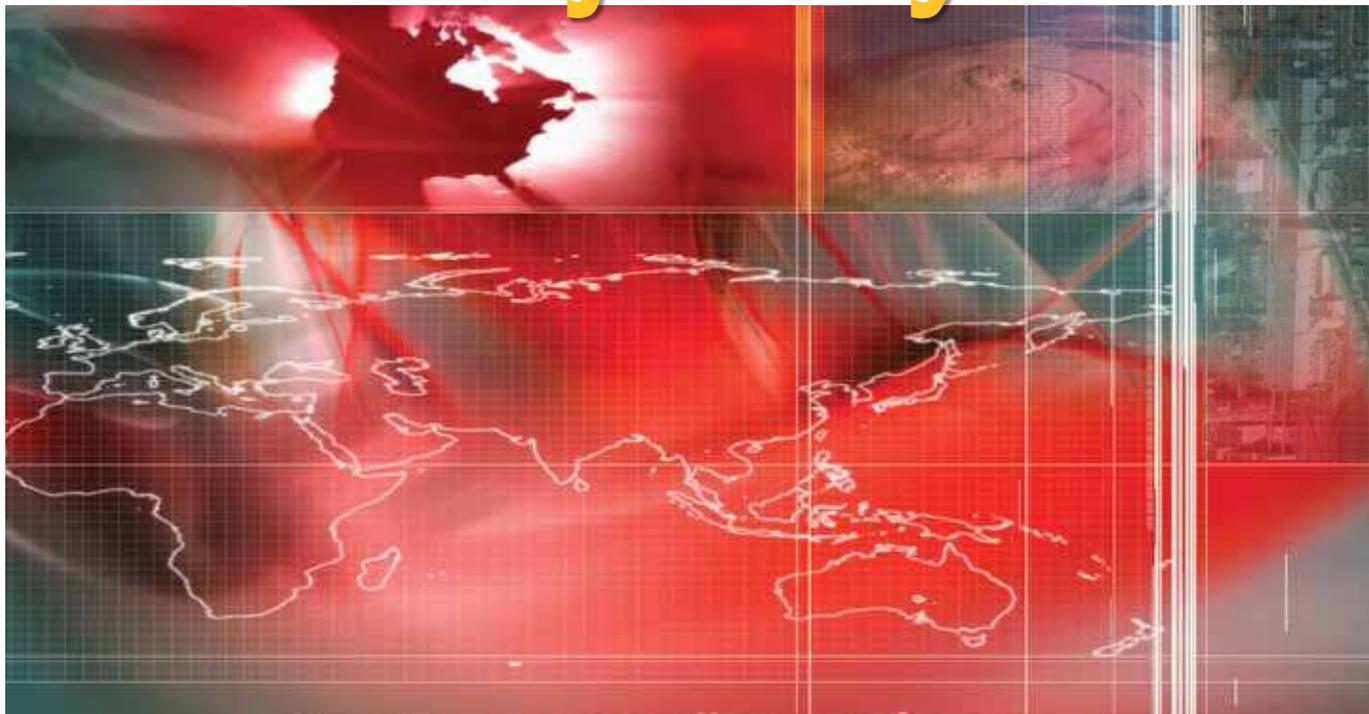


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Cover image of Dallas, Texas, courtesy of GeoEye. Image has been altered with permission for editorial purposes.

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VIDEO

"What can you do with geography?" National Geographic video featuring Keith Masback of USGIF.



PODCAST

Exclusive interview with Kevin Pomfret, director of the Centre for Spatial Law and Policy.



PANEL

Recap of the Space Enterprise Council's panel on the importance of commercial imagery.

TRA-JEC-TO-RY NOUN \TRƏ-'JEK-T(Ə-)RE\

1: the curve that a body (as a planet or comet in its orbit or a rocket) describes in space

2: a path, progression, or line of development resembling a physical trajectory <an upward career trajectory>

Sitting at 39,000 feet over Newfoundland, I am observing the trajectory of my flight to Amsterdam via the map displayed on the screen in front of my seat. (I guess I really am a geo-nerd.) As I write this, I'm en route to Amsterdam to chair the Defence and Intelligence Symposium embedded in the larger Geospatial World Forum, USGIF's first official foray outside the United States.

We are fresh off a fantastic week in St. Louis where we hosted a near-capacity crowd at our annual NGA Tech Showcase West. NGA Director Tish Long joined us for our Chairman's Event lunch to kick off the week, and Dr. Bobby Laurine and his folks provided a unique opportunity for our industry partners to learn about the NGA mission in St. Louis. Over the course of two days, attendees were



able to walk about the classified workspaces at the 2nd Street and Arnold facilities, and learn directly from the workforce via 70 capability demonstrations. I don't know of any other events like this within DOD or the IC, and we look forward to replicating the showcase at other locations in the future.

USGIF is also looking forward to seeing the success of this new magazine unfold. For about three years, USGIF had a mutually beneficial partnership with a DC-area publishing company to bring you our official magazine. As our organization matured, we decided to launch our own publication to more appropriately reflect our leadership position in the GEOINT Community.

We are incredibly excited about the launch of *trajectory*. As you have come to expect from USGIF, it promises to be a first-class publication. Our widely popular *got geoint?* blog will be rolled into the new trajectorymagazine.com

website, as we strive to better synchronize our events, web presence, magazine, and social media outreach. Overseeing much of these efforts will be the newest addition to the USGIF team, Kristin Quinn, who is also *trajectory*'s managing editor.

Kristin is an experienced journalist, and we're thrilled to have her join us from Gannett, where she edited *Training and Simulation Journal* and frequently contributed to *C4ISR Journal*. She penned this month's cover story on the state of U.S. commercial remote sensing, providing a superb perspective on this important and somewhat controversial topic. Complementary articles on international remote sensing and spatial law and policy round out this edition's features. The rest of the magazine is filled with departments and sections designed to bring you the latest information you need to know if you are a student or professional in our Community.

We will always be on the lookout for story ideas, so please feel free to email your thoughts to trajectory@usgif.org. Also, you can follow the magazine on Twitter at [@trajectorymag](https://twitter.com/trajectorymag), and download the *trajectory* app for a richer, more interactive experience on your tablet device. We will also always have exclusive, up-to-date web content.

USGIF is on a remarkably exciting path forward. *Trajectory* will chronicle our progress, and the progress of the entire GEOINT Community. So buckle in, sit back, and enjoy the ride!

KEITH J. MASBACK | PRESIDENT, USGIF

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trajectory

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NEWS UPDATES AND HIGHLIGHTS FROM GOT GEOINT?



MAPSTORY LAUNCHES

MapStory (mapstory.org), the brainchild of USGIF Board Member Chris Tucker, launched in mid-April after nine feverish months of Tucker and a team of techies pushing it live.

MapStory provides a place for geo fans of all backgrounds to become storytellers by creating, sharing, collaborating, and ultimately improving our understanding of global dynamics, worldwide, over the course of history.

“MapStory was really designed to let us organize together as a community all the knowledge about the world spatially and temporally.”

Chris Tucker, Founder, MapStory

“MapStory was really designed to let us organize together, as a community, all the knowledge about the world spatially and temporally,” said Tucker. “So you are really using a map and the timeline metaphor to organize everything we know that has happened on earth, from Pangaea until now, over the past 1.5 billion years.”

Tucker also sees MapStory as an amazing educational tool able to benefit any visual learner. The site hopes to develop a global community of experts to “crowd source” socio-cultural data and present it in a visually compelling way.

SKYSATS

SKYBOX IMAGING RAISES ADDITIONAL \$70M

Skybox Imaging, an early-stage provider of satellite imagery, video, and big data analytics, announced it has raised \$70 million in Series C financing led by Canaan Partners and Norwest Venture Partners. They join

existing investors Khosla Ventures and Bessemer Venture Partners, bringing the total amount raised to date to \$91 million.

Skybox plans to use the capital to complete development and launch of its first

two high-resolution imaging microsatellites, SkySat-1 and SkySat-2. It will also use the funds to grow its team of software engineers and data scientists. SkySat-1 is slated to launch in late 2012.



This Geostellar image represents the precise solar power potential of every rooftop in this section of downtown Washington, D.C.

GEOEYE PARTNERS WITH SOLAR ENERGY COMPANY

GeoEye announced a strategic relationship with Geostellar, a solar energy company. GeoEye will supply high-quality Earth imagery, digital surface models and other mapping data to help Geostellar expand its service. GeoEye also intends to take a small equity position in the company.

Geostellar has built an analytics platform that automatically determines how quickly a given property owner can recoup an investment in solar energy. The company’s platform models roof slope, shadows, weather patterns, local utility rates, and solar energy subsidies to automate what has historically been a highly manual process. Geostellar has built solar maps in Washington, D.C., Boston, Indianapolis, Philadelphia, Pittsburgh, and New Jersey, where government agencies have made aerial imagery freely available. However, it needed a strategic partner to help collect and process massive amounts of Earth imagery to catalog the solar power potential of every commercial and residential property in the United States. GeoEye will apply image processing capabilities developed by GeoEye Analytics to provide the data required to develop solar maps for every key metropolitan market in the United States.



A new app called Fragile Earth displays the impact of climate change on the planet—from coastal erosion and drying lakes to melting glaciers and recent natural disasters.

THE GEOINT OF GETTYSBURG

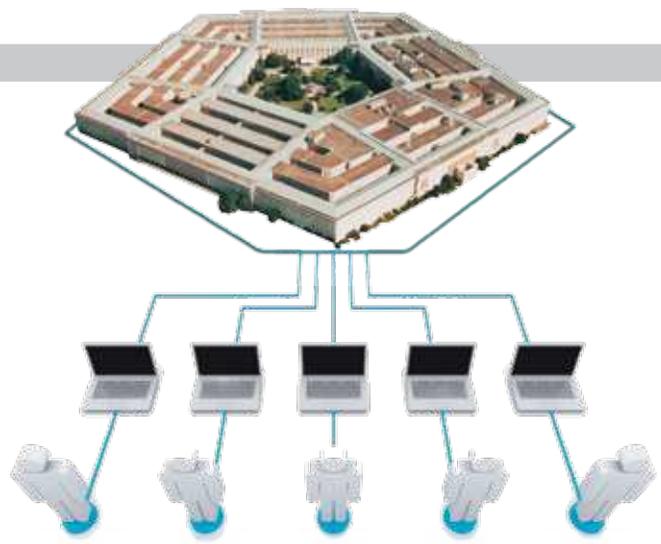
In honor of the 150th anniversary of the Civil War, the International Spy Museum is offering a 138-page educator guide titled, "From Ballroom to Battlefield: The Role of Intelligence in the Civil War."

The guide includes lesson plans and resources on the "secret history" of the Civil War, from codes and ciphers to using music as a deception. Max Baber, USGIF's director of academic programs, and Jayaram Reddi, who worked on the project as a USGIF intern and is now an NGA analyst, contributed a "GEOINT of Gettysburg" lesson, in which students employ GEOINT to assess strategic positions of various military elements in the Battle of Gettysburg.

Baber and Reddi spent a morning touring Gettysburg with a licensed battlefield guide to gain a richer understanding of how the battle evolved.

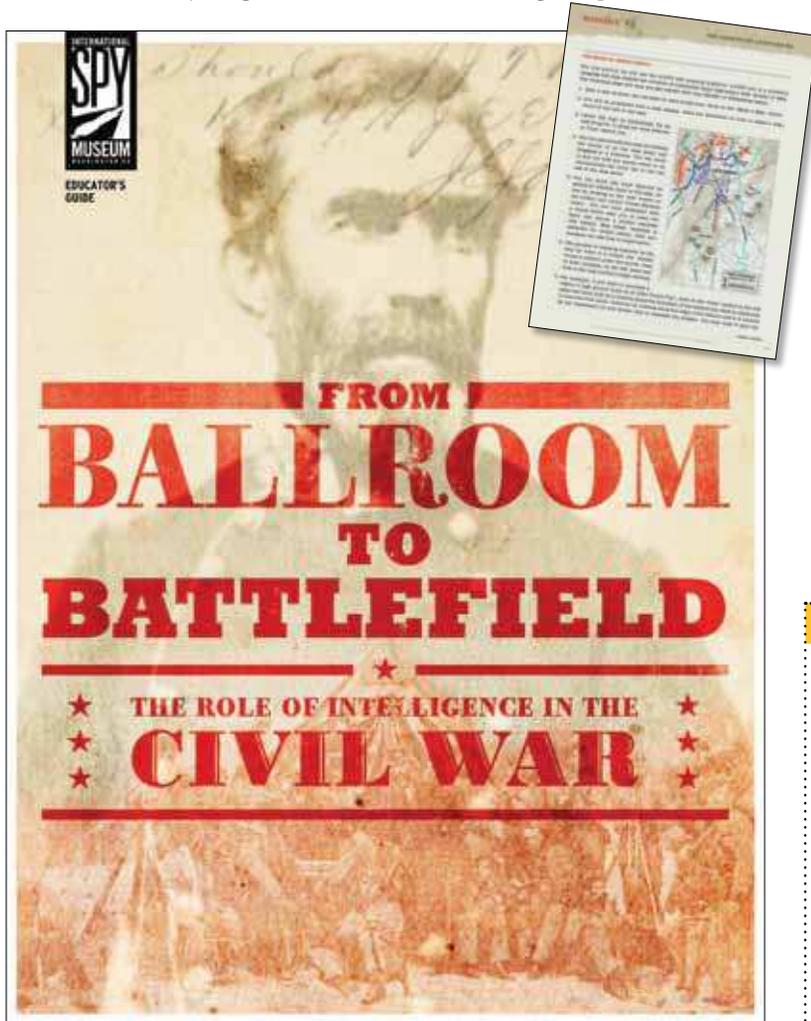
The lessons allow students to use an interactive web-mapping system to identify and graphically annotate locations on the Gettysburg battlefield, and learn the significance of topography on troop movements and battlefield positions at Gettysburg.

"We want to attract top students into the GEOINT profession, and using this exercise to raise awareness of the genuinely amazing world of geospatial intelligence helps students think about preparing for a GEOINT career as they consider collegiate options," Baber said.



DOD PROMOTES TELEWORK

The Department of Defense (DOD) has announced a new policy that will promote more teleworking across the civilian workforce. Changes to the existing telework policy were prompted by the Telework Enhancement Act of 2010, officials said, and will help DOD achieve greater flexibility in managing its workforce. The new policy requires DOD leaders to promote telework within their respective components, make every effort to overcome artificial barriers to program implementation, authorize telework for the maximum number of positions without compromising mission readiness, and integrate telework into continuity of operations activities.



GEOCURRICULUM

NEK AND TERRAGO PARTNER

NEK Advanced Securities Group Inc. (NEK) has partnered with TerraGo Technologies to incorporate its geospatial collaboration software into NEK's Intelligence Services Group curriculum for the defense and intelligence industry.

The NEK Intelligence Services Group develops, designs, and executes intelligence training to support criminal and terrorist network analysis. The curriculum will include courses highlighting TerraGo geospatial collaboration software, and demonstrate how warfighters can leverage TerraGo GeoPDF solutions to extend, exchange, and exploit geo-referenced maps, imagery, audio, video, geofoms, web services and other intelligence in connected or offline environments.

aint? got geoint? got geoint?

\$1.4B

The global UAV market is expected to grow from \$6.6 billion to \$11.4 billion annually in the next 10 years.



SMALL BUSINESS ADVISORY WORKING GROUP

WHEN USGIF'S SMALL BUSINESS ADVISORY WORKING GROUP started up in July 2011, it had a simple mission—find new ways to bring small business members together to collaborate and share best practices.

“We are focused on interactions with the end customer as well as larger companies like Lockheed Martin and Booz Allen Hamilton, who often bring small businesses into the equation,” said working group co-chair Gary Adkins, president and CEO of Fredericksburg,

Va.-based Applied Geospatial Solutions International Inc. “We want to create an environment and avenue to make small business members aware of activities and opportunities, especially those involving potential customers.”

Group membership is open to any USGIF member who falls within the U.S. Small Business Administration's definition of a small business. The group's mission is to provide USGIF small business members a voice within the Foundation and the overall GEOINT Community, as well as a means to connect with potential business partners within industry and government.

The group meets on the second Thursday of every month, from 11 a.m. to noon at the USGIF headquarters in Herndon, Va. Recent meetings have featured guest speakers such as USGIF Board Member Chris Tucker, Lockheed Martin's TW Scott, and Brian Loggins of Booz Allen Hamilton.

“Each month we are seeing steady growth, which is encouraging since it's the members who truly lead the group,” said Adkins, who co-chairs the

group with USGIF's Exhibitor and Member Services Manager Bill Allder III. “Currently, we have 15-20 people attend our monthly meetings either in person or via teleconference. We generally talk about our progress and collaborate on strategies to improve access and exposure for small business USGIF member companies.”

Going forward, the group plans to hold quarterly luncheons called the Small Business Engagement Series. At the first luncheon, held in April, the group hosted Sandra Broadnax, director of NGA's Small Business Program Office, and Tonya Crawford, NGA's director of Acquisition and Contracts.

“They talked about how small businesses can best interact with the NGA,” Adkins said. “This was an excellent interaction opportunity and included a Q&A session where the 40 people in attendance were given the opportunity to gain valuable insight into working with the NGA. The events serve as wonderful networking and educational opportunities.” ■ BY PETER FRETTEY



LUNCH AND LEARN

NGA's Tonya Crawford (top) and Sandra Broadnax (center) were guest speakers at a recent members-only presentation luncheon hosted by USGIF's Small Business Advisory Working Group.



YOUNG PROFESSIONALS GROUP GIVES BACK TO THE COMMUNITY AT FRYING PAN FARM PARK

At first glance, Frying Pan Farm Park in Herndon, Va., appears green and clean—not the first place one would consider for hosting a trash collection effort. But, in just two short hours, the USGIF Young Professionals Group (YPG) excavated more than 100 pounds of garbage and recyclable material from the park. About 15 volunteers, including groups from USGIF Member companies MDA and SAIC, gathered at the park on Saturday, April 14, which proved to be a warm, sunny day. They were there to participate in the Potomac River Watershed Cleanup Day as a YPG service project.

The group combed the trails that line the neighborhoods surrounding the park, as well as the streets that make up the park's perimeter. Their loot included some interesting discoveries, such as an intact deer skull that had become embedded in a creek bank, 60 aluminum cans, and 70 cigarette butts.

Park patrons might be surprised to learn how much garbage was hiding in the brush along their favorite trails and near their homes. As the YPG volunteers sorted their findings between general garbage and recyclable items, a wagon full of families touring Frying Pan Farm Park passed by. The children and their parents cheered and shouted, “Thank you!” to the volunteers for helping keep their community beautiful.



USGIF AND ATIA TO HOST TECHNICAL WORKSHOP

USGIF'S TECHNICAL COMMITTEE and the Advanced Technical Intelligence Association (ATIA), formerly the MASINT Association, will co-host a technical workshop Sept. 11-12 in the Denver, Colo., area. This two-day workshop will feature both an unclassified and a TS//SI//TK-classified day, as well as a special edition of GEOINTeraction Tuesday.

This technical work-

shop, part of the USGIF Workshop Series, aims to engage USGIF and ATIA Members in the Rocky Mountain and Inter-Mountain West. The intent is to provide opportunities to present and discuss technical topics, to have an opportunity to network, and to learn more about USGIF.

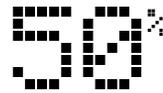
With the large number of geospatial intelligence organizations in proximity to Denver, this event should appeal to and at-

tract a diverse audience. Furthermore, there will be presentations by USGIF and ATIA Members, senior National Geospatial-Intelligence Agency officials from Denver, the U.S. Commercial EO Working Group, and leaders from other agencies and organizations in the Front Range area.

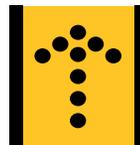
For more information about this event, please visit usgif.org/events/workshop-series.



NATIONAL GEOGRAPHIC EDUCATION FOUNDATION'S HILL DAY



OF YOUNG AMERICANS CANNOT LOCATE NEW YORK ON A MAP



SHOWCASE

Be sure to visit NGA Tech Showcase East June 5-6 during GEOINT Community Week.

AT A CONGRESSIONAL briefing in November 2011, USGIF President Keith Masback, formerly the Army's first Director of Intelligence, Surveillance, and Reconnaissance Integration, discussed how geography is at the heart of integrated intelligence.

USGIF has helped the National Geographic Educational Foundation craft and communicate its message as it strives to educate Congress about the "Teaching Geography is Fundamental Act."

Geography is the only one of the nine core subjects under 2001's No Child Left Behind Act that has not received federal funding. To create jobs, curb the unemployment rate, and ensure that the U.S. retains its standing as the world's largest and most influential economy, the National Geographic Educational Foundation is educating Congress on why we should fund geo-literacy and provide American students with the necessary expertise to fill and retain new, skill-driven jobs in the geospatial technology industry.

Masback emphasized in his briefing that the current lack of geography education and understanding is a critical national security issue. Based on a straw poll of USGIF's more than 200 member companies, government organizations, and academic institutions, employers in the Washington, D.C., area alone have more than 1,000 job vacancies requiring geospatial skills.

"If we are not preparing young Americans to do this, then we are not going to be able to fill those jobs, we aren't going to develop the intelligence analysts we need, and we aren't going to be able to adequately provide for our national security," Masback said.



ONLINE EXCLUSIVE: Keith Masback participates in National Geographic video, "What can you do with geography?"



BEYOND ACADEMICS

University of Missouri students participate in cutting-edge GEOINT research

As an active participant in USGIF's efforts to develop its Geospatial Intelligence Accreditation Certification Program, the University of Missouri has a history of firsts. The university's Center for Geospatial Intelligence (CGI) was the first academic organization to join USGIF, the first to have both undergraduate and graduate USGIF-accredited GEOINT programs, and the first to exhibit at the annual GEOINT Symposium. This history of firsts illustrates the university's long-standing commitment to remaining current with GEOINT tradecraft and trends.

In obtaining GEOINT certification, students in Mizzou's accredited program have the opportunity to work on cutting-edge research projects in a 6,800-square-foot, \$2.5 million, state-of-the-art research and development facility dedicated specifically to GEOINT research and development. The CGI has developed a reputation for its work in satellite and airborne remote sensing, advanced image processing, automated feature extraction and target recognition, large dataset visualization, high-resolution 3D virtual environments, and intelligent database and information retrieval.

"The CGI has annual research expen-

ditures of approximately \$3 million, so there are lots of opportunities for students to work on a diverse array of projects with a host of different sponsors and applications," said Curt Davis, founder and director of the CGI.

In addition, the CGI has a strong track record of placing both undergraduate and graduate students with internships at NGA where they are able to obtain TS/SCI clearances. Many of these students go on to work at NGA after graduation.

"Our proximity to NGA in St. Louis helps here," Davis said. "In the last five years, we have sent roughly 35 interns to NGA, and 85 percent go on to work for NGA."

Likewise, a number of successful graduates have secured positions with well-known USGIF industry partners. In fact, the USGIF Geospatial Intelligence Accreditation Certification Program was created exactly for this reason. Preparing students for real-world experiences is essential in this community, and the program at Mizzou is doing just that. Organizations hiring students with GEOINT certification from a USGIF-accredited school can be certain the recruit has the knowledge to get the job done.

According to Davis, few other programs expose students to such extensive research.

"This is one reason why our projects really distinguish us from any other institutions," he said. "And, we employ many of the students in the program because it is a natural fit. Not only does it expose students to cutting-edge GEOINT research, it provides an opportunity to work side-by-side with outstanding faculty mentors."

■ BY PETER FRETTEY



EDUCATION

To learn more about USGIF's Accreditation Certification Program, visit usgif.org.

SNAPSHOT OF CGI'S CURRENT PROJECTS



HUMAN GEOGRAPHY MODELING for the National Geospatial-Intelligence Agency's (NGA) InnoVision Directorate:

This project focuses on basic and applied research to define physical and cultural layers of information influencing how people react to events. It then maps them into social literature-based models for manipulation and display in a graphical temporal framework. This framework allows modeling of the dispositions and actions of groups of humans given particular scenarios.



BOEING SUBCONTRACTOR PRODUCTION work for NGA's Global Geospatial Intelligence contract:

The program uses government-funded and open-source technologies to speed up the production, analysis, and delivery of time-sensitive intelligence imagery. "This is a contract that would normally only be in industry, so the fact that we have graduate and undergraduate students employed is somewhat unique," Davis said.



GEOLOCATION OF GROUND PHOTOS using terrain silhouettes on the Defense Advanced Research Projects Agency's (DARPA) Visual Media Reasoning program:

"The goal of this project has been to analyze ground photos or videos without any location-based information, and utilize background topography (including city skylines) to create digital elevation data sets," Davis said. "Even if we cannot obtain a precise geolocation, we reduce location to the point a human analyst can physically go in and pinpoint the location."



LAND MINE DETECTION work for the U.S. Army:

This program focuses on developing night-vision algorithms to assist with landmine and IED detection from a distance—a significant step to ensuring troop safety.

PROPOSED
CUTS TO NGA'S
ENHANCEDVIEW
PROGRAM
REVIVE THE
COMMERCIAL
IMAGERY
DEBATE

At a Crossroads

JOSHUA HARTMAN RECALLS THE DEBATES that led up to the adoption of an integrated commercial and national intelligence satellite strategy, also known as “2+2,” as nothing short of religious. • “And I mean it in the truest sense of religion,” said Hartman, who served as a senior advisor to the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics from 2007 to 2009. “There were advocates of commercial imagery who enjoyed the value they got from it and thought it hadn’t been given as much exposure as it should have been, meaning its application had been limited so far. They were pushing to expand it as much as possible.” • Meanwhile, advocates from the classified world had been building satellite systems for decades, and felt the government should continue investing in National Technical Means (NTM) for the best interest of national security. They argued that although commercial imagery is more cost-effective, there are certain requirements in the area of resolution only NTM can ever tackle.

BY KRISTIN QUINN

“We just threw a bunch of money at the problem, and we need to really understand what the true requirements for commercial imagery are.”

Joshua Hartman, former senior advisor to the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics

Kevin O’Connell, president and CEO of Innovative Analytics & Training, as well as a seasoned national security and intelligence analyst, believes the narrative surrounding commercial imagery has been incorrect for a long time.

“We keep posing these as competitors to the national system,” he said. “They are not and never were intended that way.”

When the “2+2” strategy—a sort of compromise—was announced in 2009, it was determined that the National Reconnaissance Office (NRO) would continue to develop and build classified satellites, while the Department of Defense (DOD) and Intelligence Community would increase use of imagery available through U.S. commercial providers. The strategy was thought to end the commercial imagery debate once and for all.

But the discussion is alive once again with proposed cuts to the

National Geospatial-Intelligence Agency’s (NGA) EnhancedView program. So what’s at stake this time around? In one camp sits leaders in the defense and intelligence communities tasked with bowing to unprecedented budget cuts, while still striving to keep the country safe. In the other camp sits the U.S. commercial remote sensing industry, with growing concerns about the fate of their companies, their credibility on Wall Street, and the potential damage to innovation and the industrial base.

To meet the commercial component of “2+2,” the 10-year, \$7.3 billion EnhancedView program was awarded in 2010 through a public-private partnership with NGA and the two major U.S. commercial imagery providers, GeoEye and DigitalGlobe. The purpose of EnhancedView is to provide timely, high-resolution, wide-area imagery to NGA, as well as to the overall Intelligence Community, DOD, federal agencies, and U.S. allies. With a 10-year commitment from the federal government, GeoEye and DigitalGlobe each moved forward with plans to build new satellites to meet NGA requirements, courted Wall Street investors, and collectively raised more than \$1 billion in capital.

Now, with both companies midway through satellite builds, the austere budget environment has forced the government to re-evaluate the 10-year contract. In a document titled “Defense and Budget Priorities,” released Jan. 26 as a preview to President Obama’s defense budget request for FY 2013, commercial imagery is listed among many programs at risk for cuts as the DOD aims to reduce its spending by \$259 billion over the next five years. Although the NGA budget and therefore the proposed EnhancedView cut are classified, some analysts predict the program could suffer a cut as deep as 50 percent.

At press time, the once amicable competition between GeoEye and DigitalGlobe reached a stalemate, each having offered and rejected a takeover of the other in the wake of impending cuts.

ON THE OFFENSIVE

Although it’s still too early to know to what extent EnhancedView will be cut or where the bulk of the cut will land, both GeoEye and DigitalGlobe have launched an offensive strategy. The continued viability of their companies is at stake in this existential situation.

On May 4, GeoEye made a public offering to purchase DigitalGlobe for approximately \$792 million, or \$17 per share—\$8.50 in cash and \$8.50 in GeoEye stock. Matt O’Connell, president and CEO of GeoEye, said a combined company, which would create the world’s largest fleet of high-resolution commercial imagery satellites, stands to deliver exceptional value to the nation, while still benefiting the taxpayer and allowing the government to reduce funding. However, during an investor call following the announcement, Matt O’Connell maintained that the proposal wasn’t based on a specific level of budget cuts in any particular year, and instead focused on synergies between the two companies.

“It’s not that we see something near-term,” Matt O’Connell said during the investor call. “It’s that if you put these two constellations together, you have a world-class team and can rationalize the number of satellites that you build over the mid- to long-term.”

DigitalGlobe promptly rejected what it called a “hostile” proposal May 6, describing it as substantially undervaluing its company. According to a DigitalGlobe press release, GeoEye had made previous unsolicited proposals beginning February 7.

DigitalGlobe said it had also previously proposed to purchase GeoEye, in a transaction under which DigitalGlobe stockholders would own approximately 60 percent of the company, while GeoEye stockholders would own approximately 40 percent. DigitalGlobe said it terminated such discussions with the belief that “the U.S. government process would be favorable” to DigitalGlobe, and that such discussions may distract the government in its decision-making.

Walter Scott, founder of DigitalGlobe and now the company’s chief technology officer, spoke with *trajectory* via phone a few weeks prior to GeoEye’s May 4 proposal. Scott said if Enhanced-



COURTESY DIGITALGLOBE



View cuts are based on who provides the best value, he is confident the outcome will be in his company's favor.

"We're providing north of three-quarters of the high-resolution imagery globally," Scott said. "The amount of money the U.S. government is spending with both companies is roughly the same. So, you can do the calculations and figure out the rough value there."

DigitalGlobe said it countered Geo-

Eye's May 4 proposal with the same 60/40 offer, which GeoEye again rejected. The May 6 release stated DigitalGlobe plans to once again halt discussions and await the government's budget decision.

Matt O'Connell, who also has years of experience in Wall Street finance, spoke with *trajectory* in person a few weeks prior to GeoEye's May 4 proposal. He compared the amount of capital both companies have leveraged on

EnhancedView to a mortgage, meaning that regardless of what happens to the program, the company will still have to create a return for its investors.

According to a former senior DOD official who declined to be named, EnhancedView is no different from any other large contract that gets modified or cancelled as a result of changing circumstances.

"These are publicly traded companies that made corporate decisions

DISASTER RELIEF

Commercial satellite imagery has proven crucial in times of crisis for disaster relief efforts, from the aftermath of Hurricane Katrina to the recent tsunami in Japan.

“The clock can’t be turned back. The time to have done that would’ve been before the EnhancedView contract, not in the middle of a satellite build.”

Jeff Tarr, president and CEO, DigitalGlobe

to pursue the program,” the former official said. “There were great financial rewards to be accrued for the companies and their investors over the lifetime of the program had it gone forward as planned, but that was not without risk. Now, that risk has come to the fore and has, predictably, had a direct impact on stock prices. But there are no guarantees in government contracting, and for anyone to suggest that in this particular case there were unique assurances is naïve at best, and disingenuous at worst.”

Matt O’Connell also pointed to the risk of international companies swooping in on one of the publicly traded U.S. companies, and referenced recent rumors that Paris-based Astrium is interested in doing so.

“The two companies’ [GeoEye and

DigitalGlobe] stocks have traded down to the point where we are both valued at the depreciated value of our last satellites,” he said. “At that price, it’s probably cheaper for the French to come in and buy one of us than to buy one of their own satellites.”

AN UNCERTAIN FUTURE

Although the scenario Matt O’Connell outlines is hypothetical, it does paint an alarming picture of what could happen to the country’s global advantage if commercial imagery goes by the wayside.

In November 2011, Kevin O’Connell and Bob Weber, also of Innovative Analytics & Training, released “Alternative Futures: United States Commercial Satellite Imagery in 2020,” which Kevin O’Connell describes as the best public rendering to date of the policy and regulatory regime on commercial imagery.

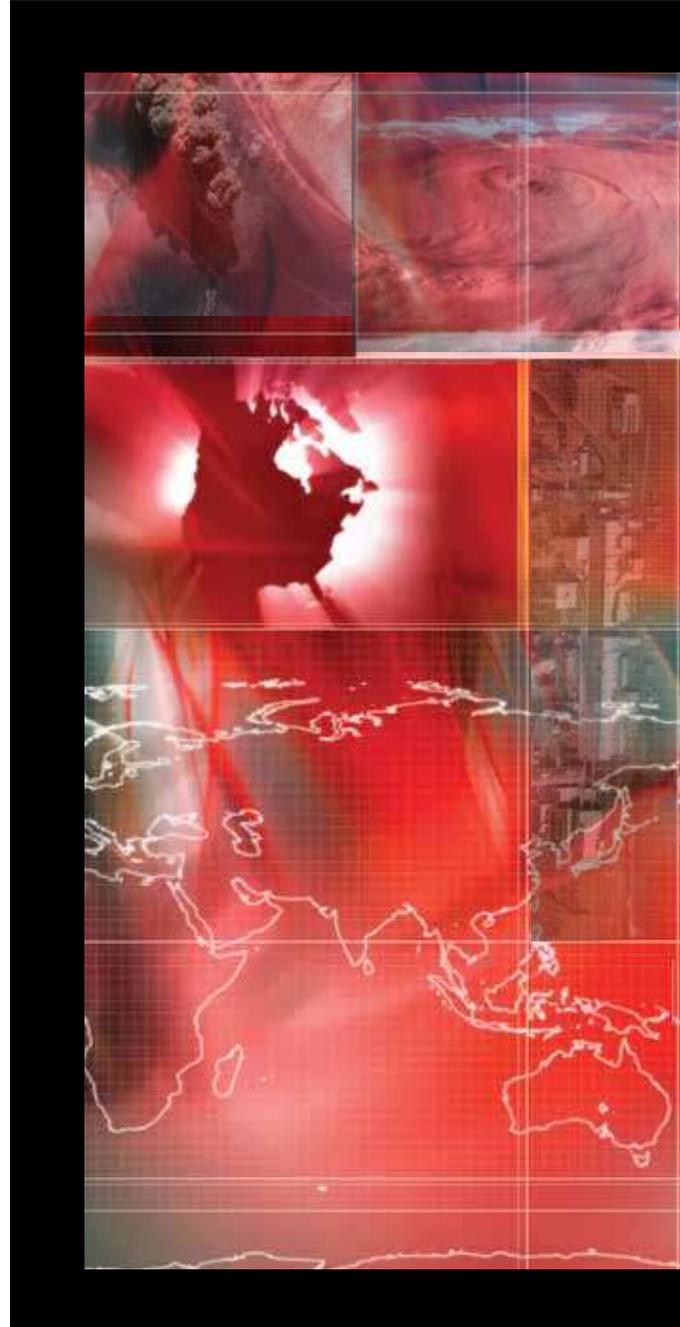
The white paper, which was sponsored by the Department of Commerce and submitted to the government for review prior to release, outlines three possible futures for U.S. commercial imagery in the year 2020.

In the first possible future, U.S. commercial imagery relies on a steady stream of government funding, as well as increased sales to commercial customers, and is a thriving business. In the second future, U.S. commercial imagery providers continue to rely on government funds, which have increased only marginally, and are forced to look outward for additional clients. The third future portrays the industry as a business failure following a sharp downturn in federal funding.

Kevin O’Connell said while he doesn’t attempt to make predictions from his own study, he has briefed and discussed it far and wide among stakeholders in government and industry.

“Most people think we’re going down path two or three, or some variation thereof,” he said.

ITT Exelis Geospatial Systems, a subcontractor on the EnhancedView contract, recently delivered the imaging payload for GeoEye-2, and is now in the process of building the imaging payload for WorldView-3, according to Kyle Schmackpfeffer, director of Commercial Optical



Sensing Systems. Schmackpfeffer said ITT Exelis is concerned about the impact cuts to commercial imagery would have for suppliers at their tier and below.

“It would have an impact on our business,” Schmackpfeffer said. “Those customers’ revenue and cash flow will be impacted and their projections of need for future capability will go down. What they would potentially seek to do is get more out of the assets they currently have flying.”

THE VALUE OF COMMERCIAL

“THE IMPORTANCE OF COMMERCIAL IMAGERY plays into almost everything that NGA does,” said John Goolgasian, who runs the Foundation GEOINT Group at NGA.

Goolgasian said his team is composed of mostly cartographers, who make maps and charts for use on land, in the air, and at sea, as well as for science and research.

“We are almost exclusively using commercial imagery for all products that we create from a foundation GEOINT aspect,” Goolgasian said.

He added that commercial imagery also plays an important intelligence role as the group creates more products that are used by coalition warfighters and first responders. Commercial imagery is also used to develop information for the Multinational Geospatial Co-Production Program, a 29-nation coalition that works from a unified global production plan to produce standardized data worldwide, Goolgasian said.

CW4 Hector Cuevas, Chief of the GEOINT Branch of Special Operations Command-Africa, said the command relies heavily on commercial imagery when working with host nations.

“We literally use commercial imagery every day,” Cuevas said. “And when we don’t have it, it impacts our operations and our support mechanisms.”

Cuevas recalled a situation where his team had to send a partner nation to a location without updated imagery. Although the command could see the location using NTM, they couldn’t share the classified imagery, and the terrain was difficult to convey through a presentation without a proper image. As a result, the partner nation ran into a checkpoint and was ambushed. Cuevas said this example paints a clear picture that without access to commercial imagery, the command’s credibility from an engagement perspective stands to be compromised.

Goolgasian said commercial imagery really came into its primetime for readiness response during the aftermath of Hurricane Katrina. Since then, it has been used for dozens of disaster relief efforts, including the oil spill in the Gulf of Mexico and to monitor the Fukushima nuclear facility following the earthquake off the coast of Japan.

“When we first started using commercial imagery, I don’t think we had a complete understanding of where we’d be today,” Goolgasian said. “As we’ve found more areas where it plays a role, I think we’ll continue to see that going forward.”

These concerns have not gone unrecognized, and are now being explored through government-mandated and independent studies. At press time, NGA was digesting the results of a classified commercial imagery study conducted by the Office of the Director of National Intelligence (ODNI) and the Office of the Under Secretary of Defense for Intelligence (USD(I)). The study, mandated by the White House Office of Management and Budget (OMB),

is intended to measure the contributions of commercial imagery against stated requirements. Additional studies were also under way at press time in an attempt to understand what the true impact of commercial imagery cuts would be to the industrial base.

Cutting a 10-year service-level agreement only two years in may also have some broader unintended consequences, such as damaging the government’s future potential to leverage public-private partnerships.

Matt O’Connell said the situation is confusing to him from a financial standpoint.

“It’s clear there is going to be less public capital available in America,” he said. “The government has to cut back. As public capital is declining, the needs don’t decline. Private capital becomes more necessary.”

He continued that EnhancedView has been regarded worldwide as a great example of a public-private partnership, and that one of the largest private equity funds on Wall Street has invested heavily in GeoEye.

“And now they’re looking at this saying, ‘Wow, maybe we shouldn’t invest in any more public-private partnerships with the U.S. government,’” Matt O’Connell said.

A BALANCED APPROACH

It’s easy to see why commercial imagery has become an easy target for budget cuts, with funding that has grown exponentially throughout the last decade. Budget cuts are expected to hit hard across the entire spectrum of defense and intelligence, not just EnhancedView.

But to an extent, Hartman believes a balanced approach to the EnhancedView cuts is feasible.

“When we built the [EnhancedView] budget we didn’t do a very good cost estimate on what our requirements were,” Hartman said. “We just threw a bunch of money at the problem, and we need to really understand what the true requirements for commercial imagery are. It doesn’t mean that we get rid of the EnhancedView contract. It



ENHANCEDVIEW



YEARS



BILLION DOLLARS

INDUSTRIAL BASE

Many from industry believe commercial imagery is at the precipice of a boom similar to what GPS experienced following government investment in the technology. GPS applications are now used widely to support agriculture, aviation, public safety, disaster relief, transportation, recreation, surveying and mapping, and more. The results of these studies, which were still under way at press time, may reveal whether cuts to commercial imagery threaten to cut the industry's similar growth path off at the knees.

THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA) OFFICE OF SPACE COMMERCIALIZATION was conducting a study through end-user surveys to examine the impact on competitiveness in the U.S. commercial imagery market if licensing restrictions for resolutions are lowered. Some in industry argue that strict resolution limits hamper the ability of U.S. companies to compete internationally, and are wary of this study as a consolation prize to allow U.S. companies to sell higher-quality imagery in the global market if the U.S. government does make significant cuts to the EnhancedView program. NOAA declined to comment on this perception of its study.

THE DEPARTMENT OF COMMERCE'S BUREAU OF INDUSTRY AND SECURITY was conducting an industrial base survey (using the USGIF member database to distribute surveys) in order to analyze the size and market behavior of the U.S. industry that uses commercial imagery. Despite speculation that this study is intended to inform the ODNI/USD(I) study, a Department of Commerce spokesperson confirmed that this is an independent study.

GOOGLE was conducting an industrial base study that goes a step further, to quantify the significance of commercial imagery in a variety of industries downstream, such as education, climate science, agriculture, and urban planning, that rely on resources from Google Maps and Google Earth.

means that we cut things.”

Hartman said in his opinion, a 15 to 20 percent cut to the overall contract would be warranted to better reflect true requirements, but predicts the actual number will land somewhere around 25 to 30 percent.

“It is fair to say that all programs

According to Lt. Col. Jim Gregory, a DOD spokesman who provided a statement on behalf of ODNI and USD(I), FY 2013 budget submissions by the DOD and Intelligence Community include efficiencies to save taxpayers hundreds of millions of dollars over the next five years, while still

valued in support of national security and U.S. government missions,” Gregory said via email.

He added, “We remain committed to ensuring the health and stability of our space industrial base.”

But concern for the industrial base is growing in Congress. In November 2011, eight members of Congress sent a letter to Secretary of Defense Leon Panetta and Director of National Intelligence James Clapper, expressing their support for EnhancedView.

“We seek your support to ensure that the Department and Intelligence Community confront this difficult decision in a balanced and objective manner and ensure that the capability needed in the future is not irreparably lost,” the letter states.

Rep. Mike Rogers, R-Mich., chairman of the House Permanent Select Committee on Intelligence, said he recognizes commercial imagery as an important and cost-effective imaging architecture that will continue to play a role in national security.

“As part of its review of the President's budget request, the Committee is analyzing the potential impact the proposed cuts would have on U.S.

“In support of its critical domestic space industry, the U.S. government will use commercial space products and services in fulfilling governmental needs, invest in new and advanced technologies and concepts, and use a broad array of partnerships to promote innovation.”

President Obama's National Space Policy, June 2010

within the U.S. government are being reviewed,” said Karen Finn, an NGA spokeswoman. “NGA is a supporter of commercial imagery because it contributes heavily to our geospatial work in so many ways and it is very useful because it gives us the ability to share it with our domestic and international partners when needed.”

increasing the capacity and quality of the government's access to commercial imagery. He added that the joint ODNI/USD(I) study is intended to assess the mission, budget, and industrial base impacts of the proposed EnhancedView cuts.

“Commercial imagery has been and will continue to be important and

intelligence activities,” Rogers said via email. “Additionally, we are looking into the impact the cuts would have on the U.S. commercial imagery industry. The Committee will take these impacts into account in formulating its position on the cuts in the annual intelligence authorization bill.”

CAN AUSTERITY FOSTER INNOVATION?

Sen. Mark Udall, D-Colo., said he is “deeply concerned” about what he described as a “very large” proposed cut to commercial imagery in the FY 2013 budget, especially since the cut was proposed prior to the completion of the OMB-directed study.

This has been a common complaint from many in support of Enhanced-View—given that so many studies led up to the adoption of the “2+2” strategy, but none were conducted prior to the proposed cuts.

Other industry experts and analysts point to the inconsistency of the proposed cuts with President Obama’s National Space Policy, released in June 2010, which states that the

government will “use commercial space products and services in fulfilling governmental needs, invest in new and advanced technologies and concepts, and use a broad array of partnerships to promote innovation.”

Udall said via email, “It is my understanding that current U.S. policy is to take actions to maintain the leadership and competitiveness of U.S. commercial imagery providers. So, if this administration is veering from that policy, I want to understand why.”

Kevin O’Connell said he sees an opportunity in this constrained budget environment to take new approaches to innovation and space policy. In order for the government to take maximum advantage of industrial innovation, he said, it needs to do a better job of asking for innovative products and services. Kevin O’Connell views these trying budgetary times as an opportunity for the government to consider its entire space architecture, as well as relationships between national security, civilian, and commercial space systems.

“We have two companies that look

a lot like the NRO,” Kevin O’Connell said. “The government is creating the wrong incentives in the market and does not have a true commercial strategy.”

For example, he said, the NRO, NASA, and NOAA all have synergies, but the conversations that currently take place between the organizations aren’t enough.

“The budgetary downturn could be the time for the big idea in how to manage space differently,” Kevin O’Connell offered. “If politicians and decision makers chose to go that way.”

The debate surrounding commercial imagery has been raging on and off in Washington throughout the past decade. Although the “2+2” strategy allegedly solved this controversy, here it is again. It has always been, and will continue to be, a wild ride. This problem, how best to utilize and fund U.S. commercial imagery, isn’t likely to be solved in 2012. The economic ramifications are significant, but the national security implications are far more serious. ■



UPDATE

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THE \$4B Global Pie

'COOPETITION' IN THE COMMERCIAL DATA MARKET
HAS COMPETITORS WORKING TOGETHER
TO CREATE NEW OPPORTUNITIES

BY BRAD CAUSEY

W

hile the United States government stands at a crossroads in an attempt to determine the amount of financial support it is willing and able to invest in EnhancedView—its domestic commercial remote sensing (CRS) program—the international CRS community is blazing a path into the marketplace of tomorrow. Companies and countries across the globe are forging new business relationships and strategic partnerships that have industry experts in agreement: A whole new level of intense global competition is just beginning.

“I like to call it ‘coopetition,’”

said Joerg Herrmann, senior manager at Astrium GmbH, Germany. “It’s like in sports—sometimes you play on the same team, sometimes you play on different teams.”

In this new marketplace, opportunity abounds. Former competitors are creating alliances and working together to create new solutions and carve out bigger slices of the growing commercial data market pie—the value of which is expected to grow from \$1.3 billion in 2010 to \$4 billion in 2020, according to Adam Keith, director of earth observation at Euroconsult, an international consulting and analyst firm specializing in satellite applications.

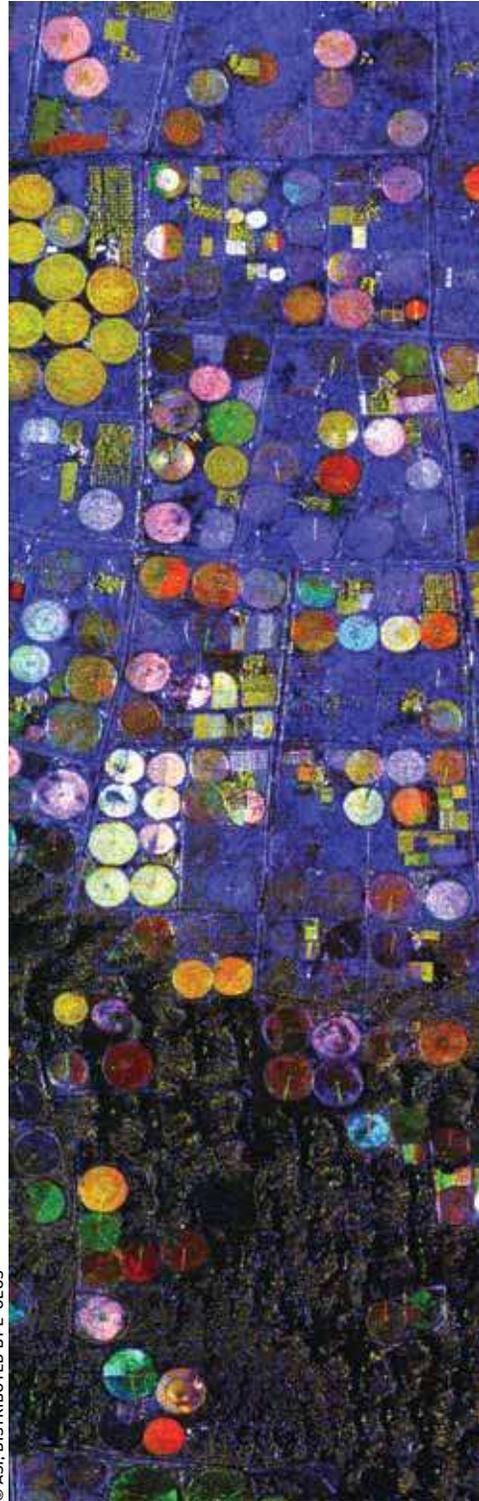
today for both DigitalGlobe and GeoEye,” said Dennis Jones, president of The Jones Consulting Group. “They have the largest constellation of satellites, both electro-optical and radar, they have a global ground infrastructure, they have global channels which they sell into, and they have global partners.”

Astrium GEO-Information Services, a subsidiary of EADS, is headquartered in Toulouse, France, but has offices around the globe, including Europe, North and South America, Asia, and Australia.

With the recent launch of Pléiades-1 in December 2011, Astrium now offers 50-centimeter resolution with

“The basic equation is that value should be greater than cost. Many times people in the Earth-observation sector forget about this equation.”

Marcello Maranesi, CEO, e-GEOS



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COMMERCIAL SATELLITES TODAY

35

OPTICAL AND RADAR

60

PREDICTED FOR 2017

What impact would cuts to U.S. commercial imagery programs have on this bright future? It depends how deep the cuts are, but the equation still raises concern. Increasing international competition, minus domestic investment, equals a weakened position for U.S. companies. The bottom line: U.S. leadership in the global CRS industry is at risk.

NO. 1 IN EUROPE

In the last five years, the five leading commercial satellite companies, including DigitalGlobe and GeoEye, have signed more than 250 distribution agreements with service channels, companies, and organizations globally, Keith said. The ability to diversify internationally has been a key element for the strategic advancements of these companies.

“Astrium GEO-Information Services is the No. 1 competition out there

a 20-kilometer swath. Once its twin, Pléiades-2, is launched later this year, it will be phased 180 degrees from Pléiades-1, providing the capability to revisit any point on the globe daily.

“I think all three companies, especially since Pléiades has been launched, are directly competing,” Keith said.

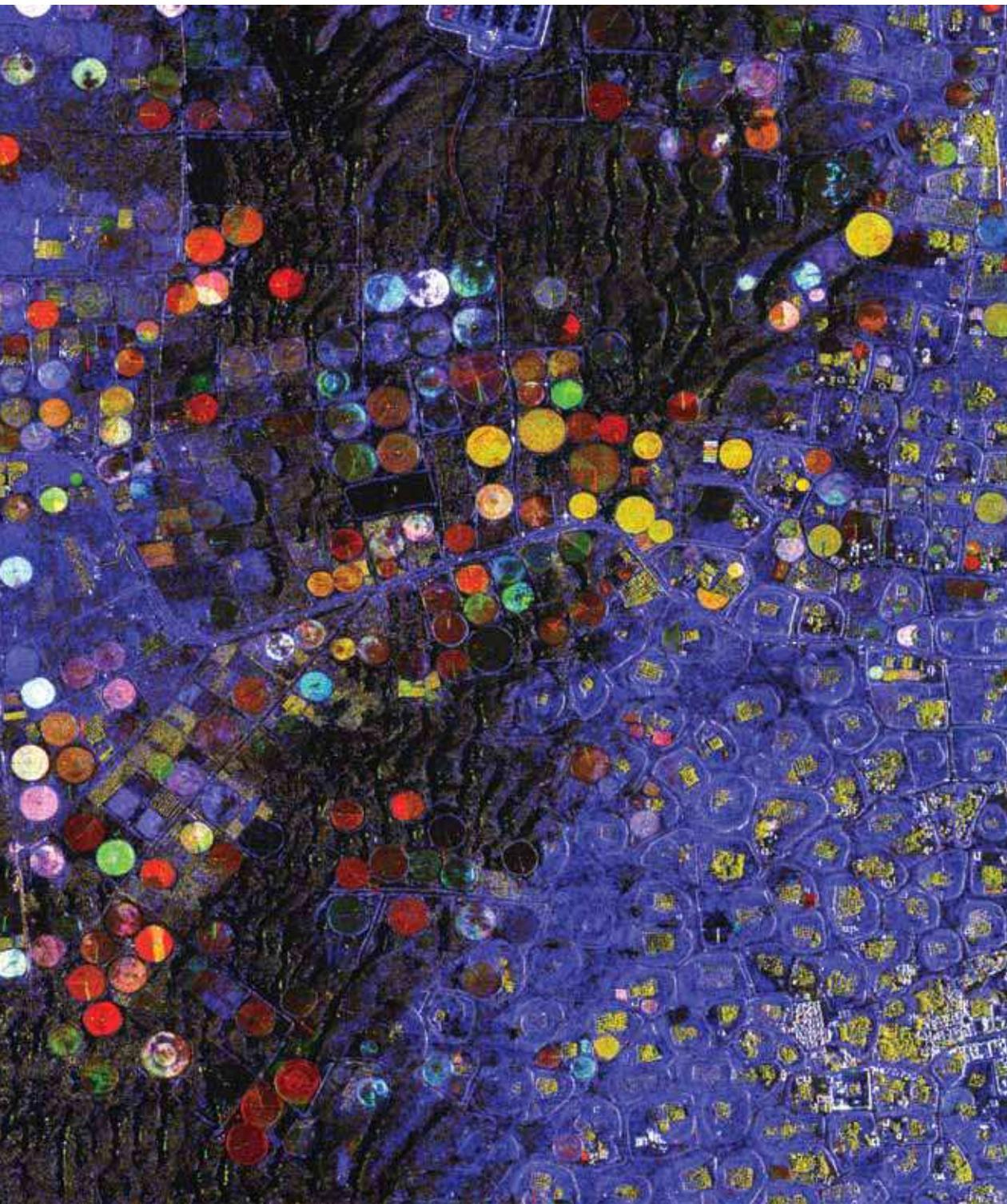
“There is a tendency to think that everything the U.S. does or has done with satellite technology, other people have simply just copied,” said Bob Weber, senior research analyst with Innovative Analytics & Training and former director of international affairs and policy at the National Geospatial-Intelligence Agency (NGA).

“In Europe, in Japan, in South Korea, in Israel—modern space-faring nations have been doing this stuff in their own way for a long time.”

When you look at the international landscape and how certain things have

evolved, you cannot underestimate the importance of national sovereignty as a driver, Weber said.

This past November, in an address to the French space agency, CNES, on its 50th anniversary, former French President Nicolas Sarkozy said, “Space is a high priority for us because there is no French sovereignty if we ignore



RADAR ART
COSMO-SkyMed
Multitemporal image,
El Oued, Algeria. Image
courtesy of e-GEOS.

what is at stake in space. It would be crazy not to give this industry the resources it needs to develop.”

DRIVEN BY DEMAND

The intelligence requirements of international defense agencies will be one of the strongest growth drivers in the coming years, according to a

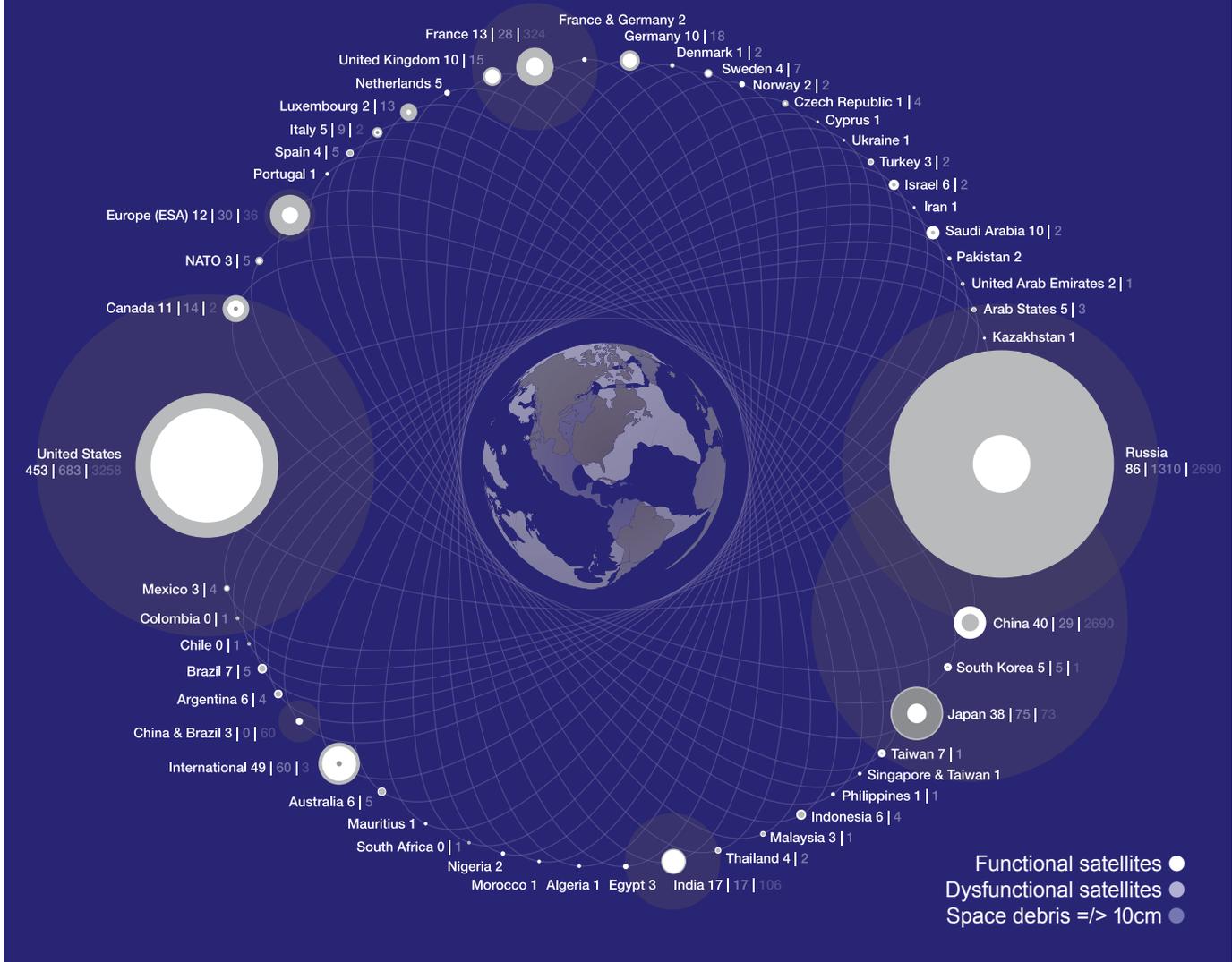
recent Euroconsult report.

“There are very few countries out there that have the autonomous image collection capabilities to respond to their image intelligence requirements,” Keith said. “Nearly every country has a defense agency, and if they have a defense agency, then they require data. So the potential to sell

data internationally for defense image intelligence is massive.”

In 2011, there were 35 satellites, optical and radar, offering commercial data solutions, said Keith. By 2017, he predicts there will be 60. As more and more competitors enter the commercial high-resolution data market, the cost of these satellites—

CONSTELLATION EARTH



MICHAEL PAUKNER | SUBSTUDIO*DESIGN.MEDIA

ROLL CALL

According to the latest data collected by the Union of Concerned Scientists, there are 994 operational satellites orbiting the Earth at present. Earth observation and remote sensing satellites account for 9 percent. Communication is the largest category at 59 percent.

to manufacture, to launch, and to operate—becomes a significant factor in determining future success and return on investment. The top-of-the-line systems from DigitalGlobe and GeoEye, and now Astrium with the Pléiades, are like the Ferraris of the industry, Keith said. “Very high-end, very high-accuracy, very high-resolution,” he added.

But not all applications require that level of horsepower, and some commercial data consumers are simply looking for an option that is good enough, if not the cheapest. Why pay for a Ferrari if a Subaru will do?

In Japan, the NEC corporation is developing an advanced satellite with new system architecture for observa-

tion (ASNARO), which aims to supply the needs of future overseas markets with a small, high-performance, low-priced satellite, according to the technical abstract on the company’s website.

“I think the breakout point of this industry comes when you knock the cost of the spacecraft down below \$100 million,” Weber said. “When you’re in the tens of millions, you’re starting to talk about some real change that’s fundamental.”

Reports differ on the development cost for ASNARO-1, from \$30 million initially to \$70 million more recently. According to Euroconsult, the two Pléiades satellites, including launches, are expected to cost a total of \$1 billion.

IS THERE AN APP FOR THAT?

The next giant leap in the geospatial industry’s evolution may not be skyward.

“Forget about the satellites for now,” Weber said. “I’m not kidding. Let’s at least spend as much time, if not more, shaping the future path of this country with what we do on the ground as what we put into the sky.”

He added that industry has been talking about developing a “killer app” since the ’80s, yet no such application has arisen thus far. “You never know, location-based intelligence might be one of these things,” Weber said.

Marcello Maranesi, CEO of Italy-based e-GEOS, said the industry needs to do a better job of understanding the real value of products, services,

and applications for the end user.

"The basic equation is that value should be greater than cost. Many times people in the Earth-observation sector forget about this equation," Maranesi said. "Today, if I look from a user point of view, there is still a lot of demand which is not satisfied by the technology available and also because the price is not the right one."

He continues, "We need to escape from customized acquisitions; we need to escape from customized products; we need to go to industrialized, fully engineered operational services, sold many times to different customers who will share the price of service. This will enlarge the volume of the business and the marketplaces."

CAUTIOUS OPTIMISM

"With this competitive situation, there is certainly a trend in terms of price pressure which will make capabilities more affordable," Herrmann said. "And to some extent that may lead to

industry consolidation. We are doing our best to survive and even grow in an increasingly competitive marketplace."

Herb Satterlee, CEO of MDA Information Services, said that since Google Earth and Microsoft have made high-resolution satellite imagery easily available to the average person, the perspective on the planet has literally changed. There is a lot more recognition by the casual user that commercial imagery is interesting and important, he said.

"The commercial markets haven't grown as fast as the government markets for the big data providers," Satterlee said. "But I think there is a tremendous amount of growth remaining there. I don't think the U.S. government, in anybody's view, is going to abandon DigitalGlobe or GeoEye."

Keith describes the entire industry as very government-oriented.

"Whether in the funding of the systems or as a customer, the government is a big necessity," he said.

"Without the government, it is still very difficult for commercial operators to exist. However, the reality is that GeoEye and DigitalGlobe existed before the large U.S. contracts; they're going to exist afterward."

"Forget the satellites for now. Let's spend as much time shaping the future path of this country with what we do on the ground as what we put in the sky."

Bob Weber, former director of international affairs and policy at NGA

More companies and stronger competition in the global commercial remote sensing community will benefit many, as competition incentivizes innovation and drives down costs. ■■



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Pigeonholed

PRIVACY POLICIES THREATEN
ADVANCES IN TECHNOLOGY

BY JIM HODGES

Imagine a three-legged stool. Geospatial technology and the business cases that support and benefit from it represent the first two legs. But the stool's third leg—spatial law and privacy policy—is short, and so the stool wobbles.

It probably always will. Technology is progressive; the law is conservative and generally reactive—and sometimes tedious. However, unless the geospatial industry becomes more involved in issues such as privacy, it probably won't like the steps policymakers, judges, and regulators take to balance the stool.

In March,

the Federal Trade Commission (FTC) released its privacy report that advised Congress to “consider enacting baseline privacy legislation” and described industry’s “privacy by design” attempts as falling short. The report was released almost 16 months after it was drafted and submitted for public comment.

The average life of a computer technology generation ranges from 16 to 24 months.

“I think there’s a danger, a risk that the technology won’t be fully utilized if the legal and policy framework doesn’t catch up,” said Kevin Pomfret, director of the Centre for Spatial Law and Policy, an organization that advocates for the geospatial community.

Perhaps then one could make the

club owner Antoine Jones was set free after he had been sentenced to life in prison for drug trafficking. The case was built on seizing 97 kilograms of cocaine and \$850,000 in cash after the FBI placed a GPS-enabled tracking device on his car for 28 days.

The court ruled that the FBI should have obtained a warrant for the device, prompting the FBI to turn off 3,000 tracking devices attached to other suspects’ property.

But the decision was of little assistance to a multifaceted geospatial industry that seeks answers to help further innovation. Even the justices’ written opinions in the Jones case acknowledged the shortcomings of the ruling.

“I think that ruling says that there is a lot more to come,” said Joanne

“I think there’s a danger, a risk that the technology won’t be fully utilized if the legal and policy framework doesn’t catch up.”

Kevin Pomfret, director, The Centre for Spatial Law and Policy

analogy that geospatial technology without guiding law and policy is similar to driving a car without a map, navigation, street signs, or any sense of direction.

WHO’S IN CHARGE?

For now, regulatory guidance is the province of the White House, primarily through the FTC and Commerce Department, as well as Congress and the courts. It may prove futile for the FTC to recommend that Congress “consider enacting baseline privacy legislation” during an election year, one in which the economy has top billing.

The courts have already weighed in with rulings that may set precedents that are detrimental to the industry. In the January 2012 decision for U.S. v. Jones, Washington, D.C., night-

Gabrynowicz, who is the director of the National Center for Remote Sensing, Air and Space Law at the University of Mississippi School of Law. “That case said that a person has an expectation of privacy in his or her public movement.”

The narrow ruling did not address other tracking means, such as using a cellphone’s global positioning system technology. Stay tuned, Gabrynowicz predicted; that case will likely be coming soon.

While court decisions are usually narrow, FTC guidelines indicate an attempt at broader regulation. This may appeal to industry, but there’s difficulty in assessing geospatial data that can be used for commercial means.

“It’s defining the problem and asking the right questions,” Har-



LOCATION DATA PRIVACY

Can you have a legal expectation in your public movement and still enjoy the location-based services offered by your smartphone?



BUG BYTES

Researchers found an unencrypted file in the operating systems of the iPhone and iPad, which kept location data entries for nearly a year. Apple acknowledged a “bug” and vowed to fix it.



GPS TRACKING

For failing to obtain a warrant to use a GPS-enabled tracking device on a suspected drug dealer’s vehicle, the FBI lost the case. What precedent does this case set for GPS-enabled services provided by your smartphone?

lan Onsrud, a professor with the Department of Spatial Information Science and Engineering at the University of Maine, told one of his classes.

The industry could help, but it would have to go beyond the scope of most business cases, perhaps to include an education element.

“It’s a dynamic landscape,” Gabrynowicz said. “People are becoming aware. I think we’ve come through a period of time in which people have been oblivious to how much they can be followed or tracked. They are less naïve, and if you are a company, I think you should understand that the citizenry is becoming more well-informed, and you need to be more aware than you were five or six years ago.”

UNSPOKEN BENEFITS

Determining where a particular person is at any time is the most controversial aspect of geospatial capabilities, given the attention it draws from advocacy groups. Is “Big Brother” watching, or could location be used to protect and serve? The true question is whether privacy protection is more important than being able to locate someone in the case of an emergency.

Supreme Court Justice Samuel A. Alito Jr. wrote in U.S. v. Jones: “New technology may provide increased convenience or security at the expense of privacy, and many people may find the tradeoff worthwhile.”

But the privacy issue had already flared less than a year before U.S. v. Jones, when British researchers found an unencrypted file in the mobile operating systems of the Apple iPhone and iPad, which kept location data entries for nearly a year. After media reports went worldwide and a lawsuit was filed, Apple acknowledged a “bug” but said it was used to find cell tower and Wi-Fi network locations and not to track users. The company then vowed to fix the “bug.”

There were no arguments heard for using location as a benefit, save for the claim that it helped in making phone calls.

Social Security information,

medical records, and even religious affiliation are relatively easy to define when it comes to privacy. But location parameters can be as narrow or as broad as desired, and even more importantly, temporal information can be here and now—or span the course of several months.

Gabrynowicz offered an example. “A person went to a psychiatrist’s office, then picked up his kid at school, and then he went to a liquor store,” she said. “Any one of those things by itself doesn’t tell you a whole lot about him, but put together, it can say, ‘This is a guy who has a kid, who drinks, and goes to a shrink, and has a problem.’ You can put that together and infer things that are very hard to do with just a single data point.”

The military is connecting such data points through the Army’s Human Terrain System, a relatively new sociocultural program that adapts to technological evolution to gather information on people in war zones. The concept is a similar

to human geography and predictive analytics: If you know someone went here and here, then you might infer where they are likely to go next. While this strategy fares well for military applications, it still makes civilians skeptical.

Another topic for debate is how location information is gathered, whether by mobile devices, security cameras, satellite imagery, or aerial imagery.

“I think there’s a bunch of different risks that are being pigeonholed into one or two legal constructs without a lot of thoughtful discussion about what privacy or risk really are,” Pomfret said. “That’s because it’s all so new.”

LARGELY UNPRECEDENTED

“All,” in this case, means the coupling of technology and law. Though satellite imagery dates back to the Cold War—Pomfret was an imagery analyst with the CIA before turning to the law—precedents covering its commercial use are minimal.

What case law does exist tends



SPATIAL LAW

To hear a podcast with Kevin Pomfret about spatial law and policy, visit trajectorymagazine.com.

to be outdated, and adapting it to new technology requires both an understanding of that technology and how it relates to elements of the legal precedent. Some experts suggest that while the geospatial community has become more proactive, it should do more, and not leave law and policy creation solely to the advocacy groups. The industry should seek to drive the discussion when it can, rather than merely answer questions in courts, congressional hearings, and governmental regulatory discussions.

That proactivity could be made along the lines of “this is what a location-enabled society could look for,” Pomfret said. “You could always know where you are, always know where your loved ones are. If someone needs to get to you in an emergency, someone could find you. There’s power in location.”

From such education, favorable policies can be developed through the understanding that the technology can be harnessed for the public good. ■



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AN EADS COMPANY



YOUNG PROFESSIONALS GROUP



Young professionals are a vital part of the Defense, Intelligence and Homeland Security communities. However, this group often lacks outlets to come together in a learning and social environment.

As our community continues to grow, it is important to increase involvement of the next generation as they will become the future leaders of our industry.



The USGIF Young Professionals Group ...

- Provides a path toward professional growth
- Offers valuable knowledge and insight from USGIF members
- Enables a more comfortable networking environment for you and your peers
- Builds relationships with those who can assist you in your career development
- Encourages fresh perspectives and new ideas
- Increases access to tools and information within the community at large



INTERESTED IN BECOMING INVOLVED?

To be added to our YPG distribution list for information on upcoming events and programs, or to send us your ideas, please contact YPG@usgif.org or visit usgif.org/community/YPG for more information.



Where Our National Security Begins...

www.usgif.org



BEYOND THE STATUS QUO

ACCENTURE APPLIES NEW THOUGHT PROCESSES TO IMPROVE EFFICIENCY

Accenture, USGIF's newest strategic partner, strives to go beyond simply advising the federal government, to help improve the way the government functions.

"Our federal clients trust Accenture to help them change the way government works because we work, think, and contract differently," said Matthew Fahle, senior executive for Intelligence Community Programs.

Accenture is a global management consulting, technology services, and outsourcing company head-

quartered in Dublin, Ireland. Operating in 54 countries and employing more than 246,000 people worldwide, the company, which launched in 2001, generated \$25.5 billion in revenue last year.

Accenture Federal Services, in Arlington, Va., provides services to U.S. government agencies that handle national security, including the departments of Defense and Homeland Security. Accenture supports every cabinet-level department and 20 of the largest federal organizations. Accenture also supports the National Geospatial-Intelligence Agency as well as other

defense and public safety components of the National System for Geospatial Intelligence.

According to John Goodman, managing director of Accenture Federal Services, the Office of the Deputy Assistant Secretary of Defense recently awarded the firm a two-year management consulting contract to improve forecasting techniques and show how forecasting accuracy can reduce excess inventory and improve supply chain cost and performance. Additionally, the U.S. Navy Financial Improvement Program once again awarded Accenture a contract to implement standard business

practices designed to help the Navy decrease the cost of performing financial operations.

To help its defense and intelligence clients improve the way they work, Fahle said Accenture does three things—provide decision-makers with processes to better manage the enterprise and generate savings, implement solutions that dramatically improve operational performance, and provide the military and civilian workforces with the strategic thinking, skills, and support they need to successfully perform their missions.

"By shattering the status quo,

achieving profound efficiencies, and relentlessly delivering results, we help our federal clients achieve what matters most—powering the services that touch Americans, businesses, and the nation every day,” Fahle said.

To stay at the forefront of innovation, Goodman said the company is focusing on major trends in information technology, including cloud, mobility, and social computing.

“For example, we’re working on how organizations can realize greater connectedness to customers, stakeholders, and employees by rethinking how IT integrates social computing into the fabric of the enterprise,” Goodman said.

Fahle added that Accenture is also keeping a close eye on agile development and the rapid deployment of infrastructure.

“How do you put capabilities in the analysts’ or in the warfighters’ hands in a matter of weeks rather than taking months and years to deploy new capabilities?” he said.

In 2005, Accenture Federal Services joined USGIF to bring its commercial experience to the geospatial intelligence tradecraft. Recently, the company upgraded its membership to Strategic Partner status in order to participate more fully in the Foundation’s outreach programs. Goodman said Accenture looks forward to supporting public discussion groups and lectures, as well as participating in panels designed to share best practices.

“Our interest in becoming a strategic partner is tied directly to our continued interest in supporting the community,” Goodman said. “Our commitment to the geospatial intelligence tradecraft has never been stronger, and we are continuing to focus our business to improve today and tomorrow’s tradecraft, all while improving services to the warfighter, first responder, and analysts at a lower cost.” ■ BY MEREDITH LANDRY



“Our federal clients trust Accenture to help them change the way government works because we work, think, and contract differently.”

Matthew Fahle, senior executive for Intelligence Community Programs

FROM HANDWRITTEN TO HANDHELD

I N FEBRUARY 2006, Denise Thornton, along with her husband, Doug Thornton, founded the Beacon of Hope Resource Center at their rebuilt home in New Orleans. Thornton’s mission was to share what she learned through her personal recovery and rebuilding process with others affected by Hurricane Katrina.

In addition to serving hot meals, providing phone and Internet service, and hosting seminars on issues such as mold remediation, Thornton set out to track property conditions and the overall recovery process in her neighborhood. She conducted property condition surveys by hand, using dry-erase markers and later entering the information into Excel spreadsheets.

Since 2006, Beacon of Hope has expanded to include numerous neighborhood resource centers, or “beacons,” throughout the city. Responsibility for property condition surveys now falls under the organization’s neighborhood development program.

Beacon of Hope’s property condition surveys are essential to its purpose in many ways, such as addressing blight, identifying residents who need assistance, coordinating volunteers, creating green space, promoting economic development, and encouraging re-population. The nonprofit is now evolving from paper to digital data collection, a process made possible through a partnership with USGIF.

MAKING THE CONNECTION

In 2010, USGIF’s Young Professionals Group (YPG), which unites defense and intelligence professionals age 35 years and younger or with less than five years’ work experience, reached out to Beacon of Hope to explore the possibility of collaborating during the GEOINT 2010 Symposium in New Or-

leans, for the YPG’s first service project.

Laura Mellem, Beacon of Hope’s neighborhood development program manager, said she was thrilled to have a set of volunteers to assist with mapping. In November 2010, 40 YPG volunteers spent a day collecting data on 852 parcels in the Fillmore Gardens neighborhood. After seeing the data collected by the YPG, the Fillmore Gardens Neighborhood Association launched a vacant property campaign to address ongoing issues with vacant and blighted properties since the hurricane.

During the service project, Jason Stopa, a Beacon of Hope project manager, mentioned that the nonprofit often had a wait time to turn around large-scale maps following data collection.

They would either have to pay for maps to be printed or borrow time from the city planning commission in order to produce maps for presentations.

A few weeks later, Beacon of Hope received what it called “an early Christmas present,” in the form of a large-format printer donated by Hewlett-Packard and USGIF.

“This has allowed us to print as much as we want, what we need, and when we need it,” Stopa said.

Julie Baer, a former YPG member and GeoEye government affairs associate who now teaches English in Malaysia on a Fulbright Scholarship, attended the GEOINT Symposium for the first time in 2010 and also took part in the YPG service project.

“Participating in the project was a lesson in the power of mapping to quickly and effectively tell a story,” Baer said. “Words tell us the heart-wrenching stories of the destruction, pictures show us the devastation and lasting damage, but maps can pinpoint and reveal the way forward for assessing and rebuilding after disasters.”



PROJECTS

To learn more about the YPG, its service projects, or how you can help Beacon of Hope, contact Carrie Drake, USGIF event operations & community relations manager, at carrie.drake@usgif.org.



MEMBERSHIP INFO

To learn more about USGIF membership, contact membership@usgif.org.

“Words tell us the heart-wrenching stories of the destruction, pictures show us the devastation and lasting damage, but maps can pinpoint and reveal the way forward for assessing and rebuilding after disasters.”

Julie Baer, Fulbright Scholar



A WAY FORWARD

USGIF continued to assist Beacon of Hope with finding a way forward in its data collection. Following the service project, Mellem and Stopa attended the GEOINT Symposium free of charge at the invitation of USGIF President Keith Masback. They set out with the mission to find a way to conduct property condition surveys using an iPhone.

Beacon of Hope had been using city of New Orleans parcel files in order to track property conditions. However, the files contained significant errors, including addresses that no longer existed—a problem that is exacerbated to an extreme in the Lower Ninth Ward.

“It was hard to even imagine identifying which properties we were looking at because of so many errors in the parcel file,” Mellem said.

At the time, Esri was just rolling out its ArcGIS iPhone app, and while the

app itself was free, Beacon of Hope needed to purchase the ArcServer EDN license to access the app. USGIF donated \$2,000 to Beacon of Hope in September 2011 for a one-year license to conduct a pilot project using the ArcGIS app.

“Using the iPhone app, you don’t have to identify the address you’re standing in front of because the GPS tells you where you are,” Stopa said.

In January 2012, Beacon of Hope conducted its first property condition survey using the iPhone app to map 7,600 parcels in the Lower Ninth Ward, which has had the least amount of rebuilding. The surveys revealed that 30 percent of the properties given funds to rebuild through the State of Louisiana’s Road Home program had yet to do so.

“This research will help us conduct an outreach to see what a lot of the roadblocks are in the Lower Ninth Ward,” said Tina Marquardt, Beacon of

BEACON OF HOPE

This property condition survey map of the Lower Ninth Ward in New Orleans, created by Beacon of Hope, was made possible through donations from USGIF, Esri, and Hewlett-Packard.

Hope’s executive director.

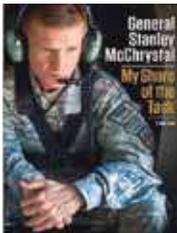
The app also allows for collecting digital images of the properties in order to provide a visual of the level of blight.

Marquardt attributes much of the neighborhood development program’s growth during the last year and a half to its partnership with USGIF.

“Beyond a dollar amount, USGIF has been a great resource for us,” Marquardt said. “It’s a really meaningful way to partner with organizations in New Orleans. A lot of people want to come and volunteer here, and the physical volunteering is great, but I think they really invested in a more long-term recovery effort.”

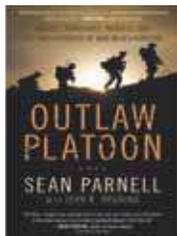
Beacon of Hope plans to move ahead with the full support of its board of directors to continue using the ArcGIS app. The next step will be to launch digital data collection efforts in other neighborhoods that were previously surveyed using paper data and are due for an update. ■ BY KRISTIN QUINN

READING LIST



MY SHARE OF THE TASK:

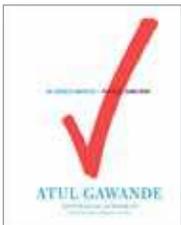
A MEMOIR, by Gen. Stanley McChrystal, former commander of the U.S. and international forces in Afghanistan, and the former leader of the Joint Special Operations Command, is scheduled for release Nov. 13. The memoir is said to traverse McChrystal's career from his first day at West Point to his last day in uniform, and examine what defines true leadership.



OUTLAW PLATOON: HEROES, RENEGADES, INFIDELS, AND THE BROTHERHOOD OF WAR IN AFGHANISTAN,

by Sean Parnell with John Bruning, retells the U.S. Army 10th Mountain Division's heroic stand in the mountains of Afghanistan. What started out as a routine patrol through the lower mountains of the Hindu Kush became a brutal ambush. Parnell, who was named leader of the

40-man infantry unit at age 24, tells the story of the 16 months of close combat that followed, during which the platoon became his family.



CHECKLIST MANIFESTO:

HOW TO GET THINGS RIGHT, by Atul Gawande, explores how a checklist, the most simple of techniques, can be the best solution to preventing egregious error. Gawande, also an acclaimed surgeon, explores examples of checklist success, from the introduction of the method by the U.S. Air Force decades ago for training pilots on sophisticated aircraft, to eliminating deadly infection at a Michigan emergency room, and into other areas such as disaster response and investment banking.

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FOOD TRUCK FRENZY

THE GOURMET FOOD TRUCK trend has exploded in popularity in recent years, and the nation's capitol surely wasn't left behind—there's even a D.C. Food Truck Association. Here's a roundup of the newest mobile lunch spots to watch out for in summer 2012.



SOUVLAKI STOP, unveiling its first truck soon, claims it will be the first D.C. food truck to serve traditional Greek food. Menu highlights: souvlaki sandwiches, Greek salads, dolmades, and, of course, baklava.



REBA'S FUNNEL CAKES, "the nation's capitol's first official funnel cake truck," has been spotted serving at all hours. Menu highlights: traditional funnel cakes, delight bites, fruit fun-doe, and a wide variety of toppings.



BURRITOS ON THE RUN launched in April. Menu highlights: burritos, burrito bowls, tortilla chips, and red or green salsa.

WHAT STARTED OUT AS A ROUTINE PATROL BECAME A BRUTAL AMBUSH.



USGIF EVENTS CALENDAR

JUNE

- 4-8**
GEOINT Community Week
Northern Virginia
- 4**
USGIF Workshop Series: Future of U.S. Commercial Remote Sensing
Hyatt Regency Reston
- 5**
GEOINTeraction Tuesday
Walker's Grille, Alexandria, Va.
- 5-6**
NGA Tech Showcase East
NGA Campus East
- 5-7**
Ground Warfighter Geospatial Intelligence Conference
TASC Heritage Conference Center

- 7**
USGIF Tech Day
Hyatt Regency Reston
- 8**
USGIF Invitational
1757 Golf Club, Dulles
- 9**
GEOGala
Hyatt Regency Reston
- 21**
YPG Networking Event
SAIC, Tysons

JULY

- 10**
GEOINTeraction Tuesday
Maggiano's, Tysons

SEPTEMBER

- 11-12**
USGIF & ATIA Technical Workshop
Denver, Colo.

- 11**
GEOINTeraction Tuesday
Denver, Colo.

OCTOBER

- 8-11**
GEOINT 2012 Symposium
Gaylord Palms, Orlando, Fla.

PEER INTEL

SAIC Inc. has hired **JOHN JUMPER** as CEO. Jumper served in the U.S. Air Force for nearly 40 years, most recently as Air Force chief of staff from September 2001 to November 2005. SAIC also named USGIF CEO & Chairman of the Board **STU SHEA** to the position of chief operating officer. **TONY MORACO** was appointed as Shea's successor as president of SAIC's Intelligence, Surveillance and Reconnaissance Group.

President Obama has nominated two military officers to serve in key positions in the Intelligence Community. Army **LT. GEN. MICHAEL T. FLYNN** has been nominated for reappointment to the rank of lieutenant general and reassignment as the next director of the Defense Intelligence Agency. Flynn is currently serving as the Office of the Director of National Intelligence's (ODNI) assistant director of national

intelligence for partner engagement. Army **MAJ. GEN. THEODORE C. NICHOLAS**, who is currently serving as the deputy director of the Signals Intelligence Directorate at the National Security Agency, has been nominated for appointment to the rank of lieutenant general and reassignment into Flynn's current job at ODNI.

BETTY SAPP was named future director of the National Reconnaissance Office (NRO), which will make her the first woman to lead the NRO. Sapp will move up one slot from her position as principal deputy director at the NRO to replace Director **BRUCE CARLSON**.

LISA PORTER announced she is stepping down from her position as director of the Intelligence Advanced Research Projects Activity (IARPA), which she has led since its inception in 2008. This announcement comes on the heels of **REGINA DUGAN'S** departure from the

Defense Advanced Research Projects Agency (DARPA) for a senior executive position with Google. It's worth noting that Porter, whose résumé includes experience as associate administrator for NASA's Aeronautics Mission Directorate, and as a senior scientist at DARPA, has been mentioned as a potential successor to Dugan.

The SI Organization Inc. has named retired Air Force **LT. GEN. JOHN T. "TOM" SHERIDAN** as vice president of its National Security Space business. Sheridan retired in August 2011 as the Commander, Space and Missile Systems Center, Air Force Space Command, Los Angeles Air Force Base, Calif. He also served as the Air Force Program Executive Officer for Space, managing the research, design, development, acquisition, and sustainment of satellite, launch, and command and control systems. In his new role with the SI, Sheridan will be responsible

for leading a line of business that will support national security space programs for the Intelligence Community, the military, and NASA.

Lockheed Martin Corp. promoted **STEPHANIE HILL** to president of information systems and global solutions-civil. She was previously corporate officer and vice president, corporate internal audit. Lockheed also promoted **ERICH SANCHACK** as Hill's successor. Sanchack has held program management positions with the corporation's engineering and technology function and information systems and global solutions business.

LISA DONNAN has joined TASC Inc. as vice president and customer executive for strategic capabilities and technology, a new position in the company's Growth Office. Donnan was previously an officer and executive president at Command Information Inc.

USGIF accreditation of university *Geospatial Intelligence* certificate programs supports our nation's vital national security interests by assuring that students are prepared for careers within the growing GEOINT enterprise. Earning a *Geospatial Intelligence* certificate from a USGIF accredited institution provides students with the skills required to address national security challenges and assures employers potential hires are of the right caliber.



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SOTERA

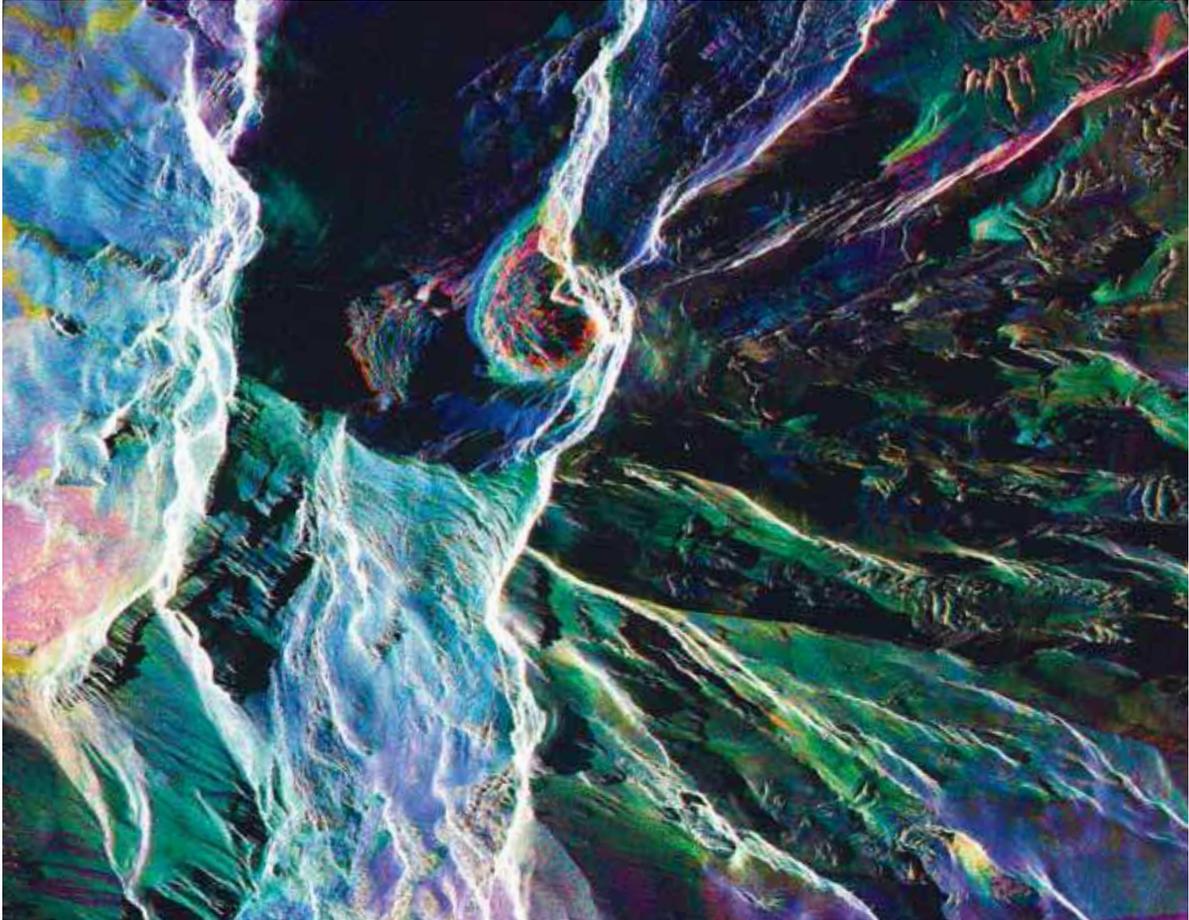
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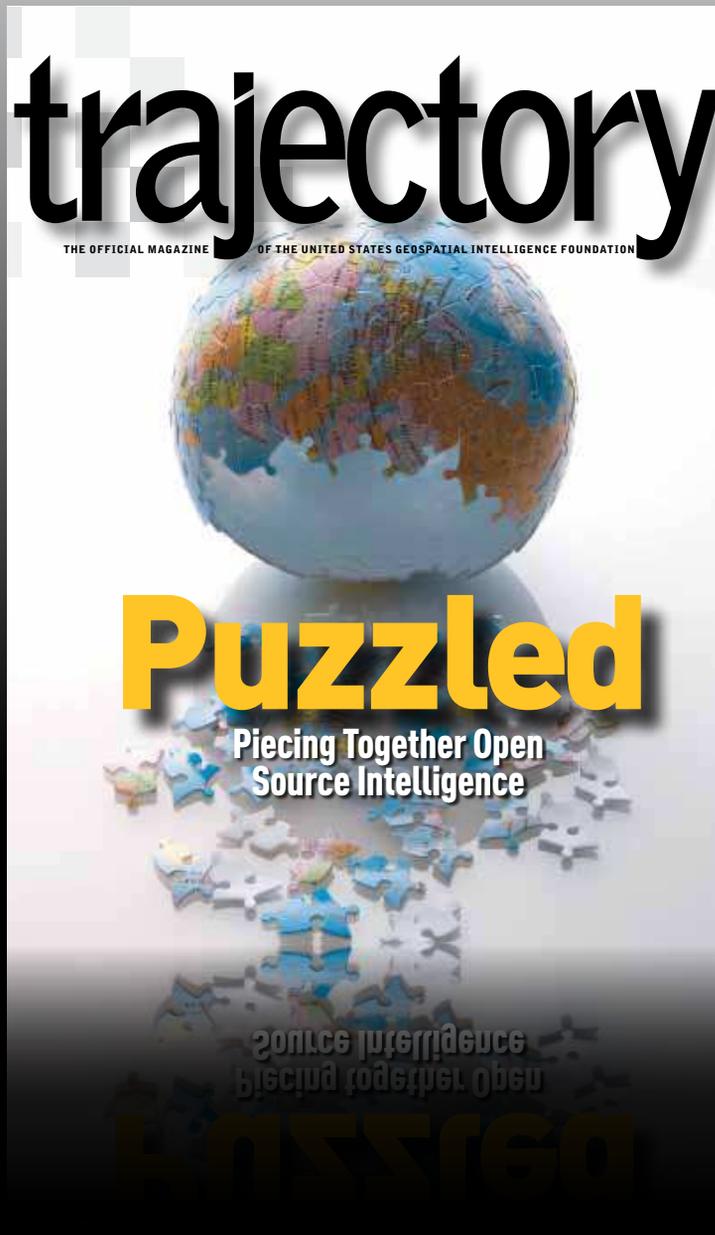
Policy Change Detection

This color composite radar image of the volcanic eruption of Alaska's Mount Redoubt was created from three high-resolution acquisitions recorded by Astrium/Infoterra's satellite TerraSAR-X. Unlike optical satellites, radar can penetrate through thick foliage, clouds, or, in this case, ash to detect changes to the surface. This image was acquired in 2009—the same year the U.S. government lifted its 3-meter resolution restriction on commercial radar satellites. Prior to 2009, the U.S. government was concerned high-resolution radar satellites were too accurate and would reveal too much; thus they remained the exclusive domain of the government and the military. No such restriction existed in Canada, Germany, and Italy—all of which now have high-resolution commercial radar satellites in orbit. High-resolution commercial radar satellite imagery, like the image above, must be purchased from a foreign operator—there is no U.S. company with a high-resolution commercial radar satellite in orbit at present.



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