

SHOW DAILY

BROUGHT TO YOU BY USGIF'S TRAJECTORY MAGAZINE

Unlocking Analytic Success

GEOINT 2018 PANEL SHARES SECRETS TO LEVERAGING AI: GOOD DATA, GREAT PEOPLE

By Matt Alderton

If attendees learned just one thing at GEOINT 2018, it's that we're living in an algorithmic world. At past Symposia, artificial intelligence (AI) and machine learning were regarded as emerging trends; this year, they arrived as operational imperatives. And yet, there remains a conspicuous gap between where data science is today—a state of collecting data—and where it needs to go tomorrow: a state of understanding it.

As a discipline, GEOINT is ideally positioned to lead the transition, panelists agreed Wednesday during “Analytics Driving Action,” the final main stage session of this year's event.

“We're now rightfully ... going from sensing to sense-making, and I have every expectation that this community will be just as revolutionary on that front as it has been historically,” said the panel's moderator, Dr. Erin Simpson, director of strategic analysis at Northrop Grumman.

Joining Simpson on stage were four panelists: Dr. Sarah Battersby, research scientist at Tableau Software; Auren Hoffman, CEO of SafeGraph; Jeff Jonas, founder, CEO, and chief scientist at Senzing; and Dr. Karen A. Miller, scientist at Los Alamos National Laboratory. Together, the panel spent 45 minutes discussing not the promise of AI and machine learning, but rather the path to executing it.

That path has two forks, panelists suggested: data and people, both of which must be followed to their shared terminus—a future in which data is seamlessly and successfully integrated into both the public and the private enterprise.

DEVELOPING DATA

The first fork concerns the data itself, which typically is organized around the four “Vs” of volume, velocity, variety, and veracity.

Typically, organizations become obsessed with volume and velocity. For Hoffman, however, perhaps the most essential “V” is veracity.

“The most important thing about data is that it's true. ... The better

> see *Success* p. 16



Panelists at “Analytics Driving Action” shared their insight into using data to drive meaningful decisions.

“The most important thing about data is that it's true. ... The better the data, the more true the data, the more data you have, the less important the algorithms are.”

—AUREN HOFFMAN, CEO, SAFEGRAPH

USGIF
geoint 2019
SYMPOSIUM
Save the Date
June 2-5
San Antonio, Texas

HENRY B. GONZÁLEZ
CONVENTION CENTER



Innovative approaches Differentiated results

BAE Systems is utilizing innovative technologies to produce impressive results. From cognitive and advanced analytics services to cloud and cyber security, we are providing superior solutions for all phases of the geospatial lifecycle.

Join us

We're looking for intelligence analysts, software developers, engineers, network administrators, and cloud optimization professionals to join the GEOINT team. Learn more at www.baesystems.jobs.

www.baesystems.com/geoint-symposium

BAE SYSTEMS

table of contents



Lt. Gen. Charles Brown Jr. discusses USCENTCOM's data sorting needs during his keynote address.

14 USCENTCOM SEEKS DATA SORTING ASSISTANCE

Lt. Gen. Brown named help with the data deluge and faster targeting as the command's primary needs from industry

DEPARTMENTS

04 | FROM THE FLOOR

KELYN Technologies, Percipient.ai, Rafael Advanced Defense Systems, TCarta

06 | GOVERNMENT PAVILION

NGA looks to GEOWorks; Increasing GEOINT enterprise collaboration; Unifying Army GEOINT data; DIA's data integrity; GEOINT for first responders



FEATURES

08 | HOME FOR A HERO

Building Homes for Heroes surprised an injured military member's family with a mortgage-free home at GEOINT 2018

09 | PENN STATE RESEARCH TEAM RECOGNIZED WITH LT. MICHAEL P. MURPHY AWARD

Team recognized for graduate research comparing GEOINT education in the U.S. and UK

11 | KEEP SWIMMING, BE GOOD AND KIND, MAKE DECISIONS

PDDNI Sue Gordon opens up about leadership, the reason she once left the workforce, the "Me Too" movement, and her dog

13 | NGA SOLICITS INDUSTRY ANALYTIC INNOVATION

NGA introduce XaaS, or Anything as a Service, an initiative to improve agency analytics with industry technology.

15 | DEVELOPING MORE GEOINT TALENT IN ST. LOUIS

Industry and NGA leaders gather for discussion hosted by USGIF's St. Louis Area Working Group

17 | RENEWING SWEDISH DEFENSE

Brig. Gen. Ilis-Alm shares the nation's plans to build up defense and surveillance

VISIT US ONLINE

Don't forget to visit www.trajectorymagazine.com for more news from the GEOINT 2018 Symposium! Read web exclusives, download all five PDFs from this year's Show Daily, and watch full-length videos of keynote addresses, Government Pavilion presentations and discussions, executive interviews, booth tours, features, and much more.

FROM THE FLOOR

EXHIBIT
HALL
HIGHLIGHTS

The Antigua Topographic Bathymetry Model, produced in support of Hurricane Irma disaster relief and environmental monitoring, comprised of 2-meter resolution, satellite-derived bathymetry and 50-centimeter Vicon point cloud data.

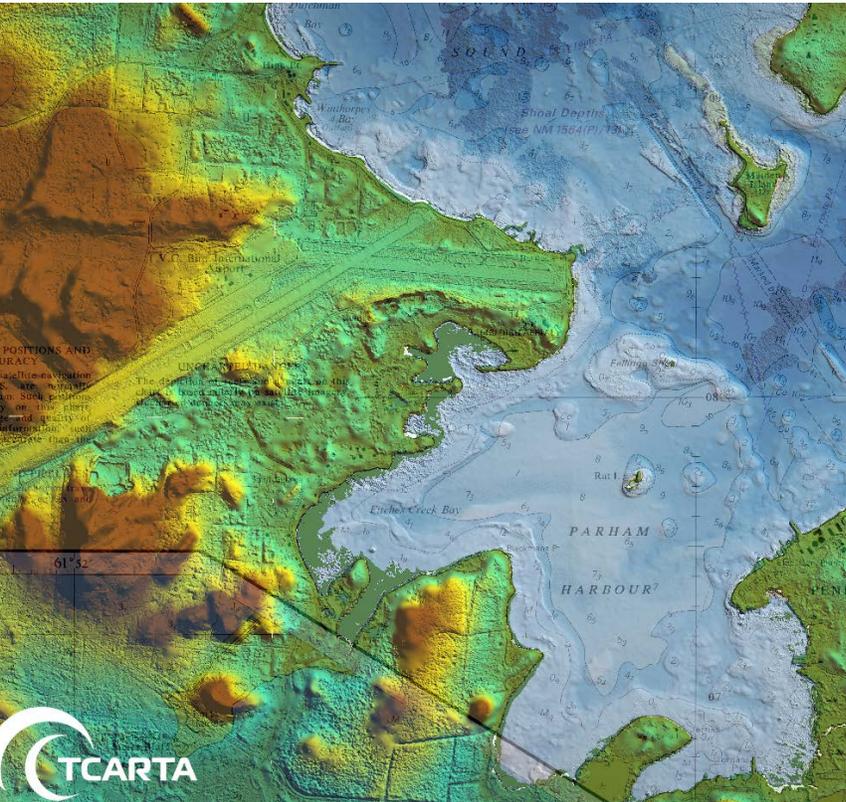


IMAGE COURTESY OF TCARTA

SENSING OCEANS AND LAKES

TCARTA SHOWCASED REMOTE SENSING BATHYMETRY DATA CAPABILITIES AT GEOINT 2018

By Phillip Swarts

After Hurricane Irma hit the islands of Antigua and Barbuda in 2017, TCarta noticed something that could have long-term repercussions.

“We found some pretty significant results in terms of shifting sea beds and changes to shipping channels and harbors,” said Ross Smith, a geospatial data specialist at TCarta.

“Bathymetry,” the study of the depth of water in the ocean or lakes, is a capability the company showcased at GEOINT 2018.

Smith said TCarta—which was founded in 2008 and has offices in Denver, Colorado, and Bristol, UK—specializes in remote sensing bathymetry data, and can provide the geospatial data for missions ranging from disaster relief to military operations.

“We definitely stay on the forefront of new technologies,” Smith said. “We work very closely with some global leaders. We’re very flexible and we’re very willing to work with specific entities and their exact specifications for a project.”

Both Smith and the company’s president and director of products, Kyle Goodrich, were on hand to showcase the company’s work in the exhibit hall, including its recent award-winning efforts following Hurricane Irma.

ACTIVATING ARTIFICIAL INTELLIGENCE

PERCIPIENT.AI ANSWERS NGA’S CALL FOR BIG DATA SOLUTIONS

By Matt Alderton

At last year’s GEOINT Symposium, National Geospatial-Intelligence Agency (NGA) Director Robert Cardillo said his agency was drowning in a “data deluge.”

“We’re ... in a world that has moved from data scarcity to data abundance, from hunting for that one perfect image to creating coherence from a flood of images and the services that follow,” Cardillo said. “We’ll either sink, or we’ll swim, or we’ll ride the rising tide.”

To ride the rising tide, Cardillo acknowledged, NGA needs new tools and technologies that

can help it turn an onslaught of geospatial data from a challenge into an opportunity.

Percipient.ai answered Cardillo’s call by developing Mirage, a computer vision and machine learning platform it demonstrated at this year’s GEOINT Symposium.

“Director Cardillo has talked about the crisis that NGA is facing with the amount of data it has. I experienced that crisis firsthand when I was commanding forces in Afghanistan, where our inability to process and exploit data cost us coalition lives,” said Balan Ayyar, Percipient.

ai’s founder and CEO and former U.S. Joint Task Force commanding general in Afghanistan. “What we’re developing is the ability for artificial intelligence to take multi-source intelligence, including geospatial intelligence; auto-recognize the type of data that’s coming in; and apply the right algorithms to that data to accelerate and elevate the data analysis that takes place with that data from a really well-informed and well-trained NGA analyst.”

Mirage can process not only satellite imagery, but also full-motion video from ground- and

air-based platforms. The resulting capability—virtually instant analysis of unstructured data for person, object, and activity recognition—won’t replace human analysts, Ayyar said, but rather will make them more effective.

“Our products are all about supporting the intellectual capital NGA has built around its tradecraft so that analysts can move through data very quickly and get to the elements of it that they’re interested in,” Ayyar concluded. “What used to take analysts hours will now take them seconds and minutes.”



IMAGE COURTESY OF RAFAEL

PROVIDING DEFENSE SOLUTIONS WORLDWIDE

ISRAEL-BASED RAFAEL ADVANCED DEFENSE SYSTEMS EXHIBITED AT THE GEOINT SYMPOSIUM FOR THE FIRST TIME

By Jim Hodges

Perhaps best known for its Iron Dome air defense system that has protected Israel since 2011, and for its extensive range of munitions, Israeli company **Rafael Advanced Defense Systems** exhibited at the GEOINT Symposium for the first time and is also a new USGIF Organizational Member. Its product line shows that the company, founded in 1948, a year after Israel won its independence, has become a one-stop shop providing defense solutions for clients around the globe.

Rafael brought to Tampa **IMILITE**, a multi-sensor interpretation system for defense; **IMISIGHT**, which offers imagery insights for enterprise customers; and **LIGHTSPEED**, a mapping solution.

The product selection indicates an understanding of dealing with volume in the big data era.

“We are focusing on imagery intelligence solutions,” said Rom Timor, Rafael’s imagery intelligence solutions manager, who led the company’s contingent at GEOINT 2018. “All of our solutions and products are aimed to extract meaningful information out of a huge amount of imagery data using advanced algorithms and automated processes.”

Rafael’s mission in Tampa was ambitious.

“Our goal [was] to expose our high-end solutions to relevant participants and to identify business opportunities and potential collaborations.”

ENTERING A NEW ‘DIMENSION’

KELYN TECHNOLOGIES ENABLES 3D VIEWING WITH PERFORMANCE WORKSTATIONS

By Matt Alderton

The world is a three-dimensional place. So why do so many geospatial analysts spend their days viewing two-dimensional imagery?

Once upon a time, it was because high-quality 3D images weren’t available. Thanks to modern-day stereoscopy, however, the biggest hurdle to three-dimensional GEOINT is no longer inferior 3D imagery. Instead, it might be inferior workstations at which to view it.

So posits **KELYN Technologies**, a value-added reseller that focuses primarily on data storage and management. A woman-owned small business serving the U.S. government, the Colorado-based company exhibited for the first time at the GEOINT Symposium, where it showcased a performance workstation optimized for 3D viewing by geospatial analysts. The workstation features the 3D PluraView—a high-resolution stereoscopic monitor from Schneider Digital—as well as an integrated cloud-based storage solution.

“You’re naturally going to have a lot of storage needs when you look at 3D content because 3D content—especially at 4K resolution—has very high storage requirements,” explained Kevin Cronin, vice president of KELYN Technologies. “That’s why we tie in the monitor with the storage, so you can very quickly load and visualize large quantities of 3D data.”

Visitors to KELYN Technologies’ booth had the opportunity to test out one of two 3D-viewing workstations set up onsite, where the company ran software from company partner BAE Systems.



At its first GEOINT Symposium, KELYN Technologies showcased 3D PluraView, a high-resolution stereoscopic monitor from Schneider Digital.

IMAGE COURTESY OF KELYN

Government Pavilion Stage Highlights

RECAPS ON NGA'S GEOWORKS, THE GEOINT ENTERPRISE, ARMY GEOINT, DIA DATA, AND FIRST RESPONDER R&D

“NGA is certainly not going to invent its way out of this issue. We’re not going to develop it ourselves.”

—DR. ANTHONY VINCI, CTO, NGA

Leaders from government, military, industry, and academia shared insights and business opportunities Tuesday afternoon at the Government Pavilion Stage in the GEOINT 2018 exhibit hall.

NGA HOPES GEOWORKS WILL AID INDUSTRY OUTREACH

BY PHILLIP SWARTS

After announcing a new data sharing platform yesterday, National Geospatial-Intelligence Agency (NGA) leaders are adding more incentives for companies to check it out. GEOWorks, introduced by NGA Director Robert Cardillo in his keynote Monday at GEOINT 2018, is a new way for the agency to share its geospatial information for public use.

“We’re trying to put as many tools out there for solutions like this to be brought in to the federal government because we recognize the solutions that are being developed by the AI community are more than likely commercial solutions for which there is a government use as well,” said Christy Monaco, NGA’s chief ventures officer.

Monaco, who helped oversee the roll out of GEOWorks, said NGA will hold a lottery among companies that use the platform:

one lucky winner will get to have a sit-down meeting with Cardillo.

While currently restricted to U.S. companies, Monaco added GEOWorks would soon be opened up to American allies.

Dr. Anthony Vinci, NGA’s chief technology officer, said the agency is trying to make it easier for industry and other partners to work with the government to meet the challenges of the future.

“How do we actually get to a future where GEOINT is done using AI automation augmentation technology? We’re not going to get there alone,” Vinci said. “NGA is certainly not going to invent its way out of this issue. We’re not going to develop it ourselves.”

NEEDS AND OPPORTUNITIES FOR A COLLABORATIVE GEOINT ENTERPRISE

BY MATT ALDERTON

Lt. Gen. John Bansemer is tired of bridge metaphors that pervade conversations about collaboration and teamwork. Although no one can argue the utility of a bridge, what works well as physical infrastructure, he argued, is inferior as business infrastructure.

“Building a bridge gets me to one destination,” Bansemer,

Dr. David Alexander, DHS S&T First Responders Group



assistant director of national intelligence for partner engagement at the Office of the Director of National Intelligence, said. “I’d rather have a traffic circle with a whole bunch of off-ramps.”

How to construct that traffic circle within the global GEOINT enterprise—encompassing NGA; its customers across intelligence, defense, and civil missions; and its partners, including foreign governments, industry, and academia—was the subject of the “Operationalizing the Global Enterprise: Challenges and Opportunities” panel discussion.

Moderated by NGA Associate Director for Enterprise Dustin Gard-Weiss, the conversation looked at collaboration through numerous lenses thanks to a diverse panel of experts that included Bansemer and four of his peers: Dr. David Applegate, associate director for natural hazards at the U.S. Geological Survey; Gary Dunow, chief of the International Support Team for Europe and Canada at NGA; Nicole Gibson, partner/principal at PwC; >>

Panelists discussed challenges and opportunities for operationalizing the global GEOINT enterprise.



continued from pg. 6

Nicole Gibson, PwC



and Maj. Gen. John Howard of the New Zealand Defence Forces, who is deputy director for commonwealth integration at the Defense Intelligence Agency (DIA).

Collectively, the panelists challenged several assumptions they said are preventing the global GEOINT enterprise from operating at peak potential. It's assumed, for instance, that partners must be equal; instead, panelists argued the benefits of asymmetric relationships. Likewise, it's assumed that big partners make the best partners; instead of size, panelists emphasized diversity. And finally, it's assumed that sharing creates security risks; so does not sharing, the panel proposed.

Concluded Gard-Weiss: "We're all a part of this global GEOINT enterprise together. We each have a responsibility to realize its potential ... and to bring our enterprise and operations together in a way that will make that potential real."

ARMY GEOINT AIMS TO UNIFY DATA ACROSS SERVICE

BY PHILLIP SWARTS

The Army is attempting to unify its geospatial data so everyone is working off the same information, according to the service's top GEOINT official.

"Right now when you go out and you give Army programs the ability to do whatever they want, you have chaos out there," said Joseph Fontanella, Army Geospatial Information Officer and director of the Army Geospatial Center (AGC). "At least for a common operational picture, we want a common foundation."

In a presentation titled, "Unified Action Partner Geospatial Interoperability," Fontanella said the Army wants to ensure foundational information is the same across all GEOINT maps, and that every office and unit is using the same tools such as elevation data and satellite images.

"We try to set the conditions to ensure that this seamless sharing of geospatial data services take place," he said. "The bottom line is the [AGC], working with the headquarters department of the Army and NGA, is going to work to capture, document, and align these geospatial interoperability requirements."

Fontanella said he wants the information to be easier to share with industry as well, and that the Army is moving away from proprietary standards that aren't as accessible to others for its GEOINT systems.

But setting standards for geospatial data isn't all Fontanella

is trying to do—he wants to guarantee Army units know how to follow those standards.

"One of the things we've learned over the years is it's not just enough to have a standard," he said. "What has to go along with that is a series of profiles to help each of our programs and our partners implement those standards correctly."

ENSURING DATA INTEGRITY AT DIA

BY JIM HODGES

Artificial Intelligence and machine learning are being spoken of as the next big steps in analytical problem solving. They may well be, but Terry Busch, DIA's chief data officer, posits there is another step necessary before going down that road.

"It doesn't sound so sexy and exciting, but if you want to do all your AI stuff, you want to do all your machine learning stuff, your data has to be good," he said. "It has to be normalized. It has to be perfect."

Busch's job is ensuring the aforementioned data integrity.

"Getting to big data was easy for us because it was geospatially oriented," he said.

"The big question has become, 'Is big data geo?' ... Most of the data out there in the world has some locational attribute to it."

DIA has forged a partnership with the NGA to ensure stronger geospatial data moving forward.

"Since NGA owns the geospatial roadmap, they're really our thought leaders in this space," Busch said.

Many of the big data challenges involve establishing confidence in data validity and putting it into context, especially as datasets are fused to form intelligence products.

"We always say you can't do big data without visualization," Busch said. "One of the things we always tell people is just look at it on a map. Nothing gives context to data

more than putting it on a map, seeing it in real space."

GEOINT & SITUATIONAL AWARENESS FOR FIRST RESPONDERS

BY JIM HODGES

When Dr. David Alexander lists the contents of the Department of Homeland Security's (DHS) First Responders Group (FRG) portfolio, it's like he's reading a catalogue of disaster: hurricanes, floods, earthquakes, wildfires, and more.

"Location and geospatial are pervasive across the predominance of our research and development," said Alexander, chief geospatial scientist for the FRG under DHS Science & Technology (S&T).

That's because any disaster response begins with situational awareness. DHS S&T group has a program office that looks at UAVs, and another that works with combining satellite and terrestrial images. Both require GEOINT to succeed. So do any other plans for local, state, or national emergency response.

DHS S&T connects researchers with academia and industry, Alexander said. The key to the group's success is getting those minds together to find solutions. The effort includes a 28-nation partnership with DHS that helps allocate research dollars for investment in technology development for disaster response.

"The best way a first responder can provide those life-saving missions is if they have trust and confidence that they are protected and fitted properly for their mission," Alexander said. "It could be through new equipment, uniforms, gloves and other technologies beyond geospatial."

He also stressed that local responders are the first line of defense for homeland security's mission. Such grants can influence both the effectiveness of disaster response efforts and first responder safety, as well as help in training and setting standards. ☺

Home for a Hero

BUILDING HOMES FOR HEROES SURPRISED AN INJURED MILITARY MEMBER'S FAMILY WITH A MORTGAGE-FREE HOME AT GEOINT 2018

By Kristin Quinn

Miriam Gonzalez, mother of U.S. Air Force Captain Gabriel Gonzalez, was presented with a mortgage-free home on his behalf.



Building Homes for Heroes (BHFH), an organization that builds mortgage-free homes for military members injured in combat, hosted a surprise ceremony for a hero Monday afternoon at GEOINT 2018 in collaboration with Engility Corporation.

U.S. Air Force Captain Gabriel Gonzalez, a Tampa area resident, was announced as the home recipient. His mother, Miriam Gonzalez, was present on his behalf.

Gonzalez is a graduate of the University of Miami and

joined the Air Force in 2009. He was injured in June 2017 while serving in Iraq, suffering severe injuries that compromised his mobility and speech. Gonzalez is currently recovering from his injuries at Tampa Polytrauma Rehabilitation Center. Among other honors, he has been awarded the Air Medal, Aerial Achievement Medal, Air Force Commendation Medal, and Air Force Achievement Medal.

Since 2013, Engility has donated more than \$175,000 to BHFH.

“Almost a third of our workforce is veterans. And two out of four of our fundamental values for our company are determination and grit, and humble service,” said Lynn Dugle, Engility’s CEO, president, and chairman of the board. “[BHFH] honors people who have given that humble service. They have sacrificed for others, and they’ve shown that determination and grit. It’s a perfect match for our company to step in and do our part because these truly are our heroes.”

In addition to this reveal ceremony, Engility is planning a series of employee activities throughout the year to benefit BHFH. 🌟

“[BHFH] honors people who have given that humble service. They have sacrificed for others, and they’ve shown that determination and grit.”

—LYNN DUGLE, CEO, ENGILITY

Lynn Dugle, CEO of Engility, discussed the company’s work with Building Homes for Heroes.



Those interested in donating to the home for Captain Gonzalez and his family may do so by visiting www.engility.co/BHFH.

Penn State Research Team Recognized with Lt. Michael P. Murphy Award

TEAM RECOGNIZED FOR GRADUATE RESEARCH COMPARING GEOINT EDUCATION IN THE U.S. AND UK



Stephen Handwerk, associate teaching professor of GEOINT at Pennsylvania State University, Nancy Coleman, vice president of corporate communications for Maxar, and USGIF CEO Keith J. Masback presented the award to Steiner and Sterns on the Government Pavilion Stage in the GEOINT 2018 Exhibit Hall. Hoesman was unable to attend and receive the award in person.

On Tuesday at GEOINT 2018, the 2018 Lt. Michael P. Murphy Award in Geospatial Intelligence was presented to Justin Hoesman, special agent in training for the National Nuclear Security Administration; Daniel W. Steiner, owner of Orion Mapping; and Ericka L. Sterns, deployment manager for a telecommunications company.

“Dan, Ericka, and Justin were selected for the 2018 Lt. Michael P. Murphy Award for their outstanding performance as team leads for a graduate research seminar regarding ‘Comparative GEOINT Education Between the U.S. and UK,’” said Stephen Handwerk, assistant teaching professor of GEOINT at Penn State.

The Murphy Award is named for Navy SEAL Lt. Michael P. Murphy, a distinguished Penn State alumnus. Murphy was killed June

28, 2005, by enemy forces during a reconnaissance mission in Afghanistan. For his selfless leadership and courageous actions, he was posthumously awarded the Medal of Honor. The Murphy Award recognizes achievement by a Penn State graduate who is serving or has served in the U.S. Armed Forces or the Intelligence Community.

A summary of the winning team’s work can be found in the article, “Individual Core Geospatial Knowledge in the U.S.: Insights from a Comparison of U.S. and UK GEOINT Analyst Education,” which was published in USGIF’s 2018 State and Future of GEOINT Report.

Hoesman is a former reconnaissance marine and scout sniper with multiple combat deployments. He also has 12 years of experience as a federal

security and intelligence professional performing sensitive multi-intelligence collections and counterterrorism operations. He completed his master’s degree in homeland security GEOINT at Penn State in 2017.

Steiner served in the U.S. Army for seven years with assignments in Germany; Ft. Stewart, Ga.; and as a combat engineer company commander in the 24th Infantry Division (Mech) during Desert Shield and Desert Storm. He earned his bachelor’s degree from the United States Military Academy at West Point and is enrolled in the Penn State master’s degree program in geographic information systems with a GEOINT focus.

Sterns resides in Rochester, N.Y., and earned a bachelor’s degree in GIS from the State University of New York College at Cortland. She is currently pursuing her master’s degree in GEOINT at Penn State, which she will complete in August.

“We at USGIF are proud to have been engaged with our partners at Penn State, the DigitalGlobe Foundation, and others since the inception of this award, given in honor of Lt. Michael Murphy,” said USGIF CEO Keith J. Masback. “His selfless actions in support of his team serve as an inspiration to everyone in the GEOINT Community. We must never forget that every day, here at home and around the globe, men and women are in harm’s way depending on accurate, timely geospatial intelligence to safely accomplish many diverse missions.”

The generosity of USGIF, the DigitalGlobe Foundation, and faculty, staff, and friends of Penn State contributed to endowing the Murphy Award. 🌐



Support EdGEOcation

Donate Today

With Your Support USGIF...

- Provides an Intro to GEOINT for K-12 classrooms
- Sponsors STEM events and judges science fairs
- Develops and delivers geospatial learning materials
- And much more

CFC #88693

usgif.org/donate

#Give4GeoEd

Keep Swimming, be Good and Kind, Make Decisions

PDDNI SUE GORDON OPENS UP ABOUT LEADERSHIP, THE REASON SHE ONCE LEFT THE WORKFORCE, THE “ME TOO” MOVEMENT, AND HER DOG

By Melanie D.G. Kaplan



Principal Deputy Director of National Intelligence Susan M. Gordon spoke Tuesday during a 250-person luncheon hosted by the Tampa Bay chapter of Women in Defense in conjunction with GEOINT 2018, covering topics as diverse as decision-making, the “Me Too” movement, and her love of dogs.

The third child of a naval officer, Gordon said she learned

two important things from her parents: Do your best, and try to make a difference every day. “I’ve done that,” she said.

Quoting the fish Dory from the children’s film “Finding Nemo,” Gordon, second-in-command at the Office of the Director of National Intelligence, advised attendees to “just keep swimming.” She said it’s important to study for every job you have and know that you’re not stuck with the information you possess when you start.

During her talk, Gordon shared her five favorite leadership lessons.

1. Be good: “We talk about networking and mentoring, but none of it will make a difference if you’re not really good, no matter what job you have.”

2. Learn how to make decisions: “I don’t think we’re risk-averse, I think we’re decision-averse. We wait until we have more data, but we are losing our battle while we’re waiting for the

world to turn. Decision-making, even if it’s wrong, impels progress. Learn how to do it every day”

3. When someone you respect asks you to do something, say yes: “Multiple times, I’ve found someone on the other end of the line asking me to do something I had no idea how to do or no interest in doing. You’ll never be disappointed. Your boss may say it’s a risk you don’t want to take, and friends may advise you against it, but trust yourself more than you trust the system.”

4. Remember, you might be the jerk: “As good as you are, we all get in our own heads, especially national security people. We are an intentional community—we intend to do good work. But when people question what you’re doing, don’t just say what you intend three more times; consider the possibility that they’re not idiots and that you’re the jerk.” >>

PDDNI Sue Gordon met with attendees after speaking at the Women in Defense luncheon.



continued from pg. 11



5. Be kind, because everyone is fighting the great battle:

“In the ‘Me Too’ movement, I think the perpetrators are bums, and I feel for the victims. But we’re not talking enough about the organizations that allow bad behavior to go on. Sure, Matt Lauer was a jerk, but what was NBC thinking? From this day forward, don’t make anyone have to choose between pursuing the mission they love and being treated decently, because that’s how it starts. People say, ‘I want this, so I’ll put up with that.’ Let’s stop that. You do not have to choose. The effect of having an environment that allows mistreatment versus an environment that doesn’t tolerate it is the difference between one that is performing and one that isn’t, and we can’t afford not to perform.”

Gordon discussed work-life balance and told the audience that today she feels fulfilled in everything she does, but that wasn’t always the case. When she was an intelligence officer, she worked all day, went home to see her kids, and returned to the office from 10 p.m. to 2 a.m. Once, when her husband

“I realized I couldn’t be a great mom and a great intelligence officer, so I walked in and gave my two-weeks notice and gave up half my family’s income to do the thing I thought I needed to do.”

—SUE GORDON, PDDNI

was away, she got a call from her 9-year-old daughter saying that her 13-year-old son had run away. By the time she got home, he’d come back, but she found his letter that said he’d run away because he felt so badly about getting an 89 on his math test.

“I realized I couldn’t be a great mom and a great intelligence officer, so I walked in and gave my two-weeks notice and gave up half my family’s income to do the thing I thought I needed to do,” Gordon said. She acknowledged it was scary to leave work because she was afraid she wouldn’t be a “cool kid” any more. But in time she learned, “You are what you are.”

Gordon lit up when an attendee asked about her dog. Astro is a 1-year-old, 100-pound Greater Swiss Mountain dog who she said helps ground her. To have balance in a profession that can consume you, she advised, keep something to yourself. “The idea that I go home every night to Astro and Jim (her husband) is awesome.” 🐾

The Women in Defense luncheon gave attendees an opportunity to speak with PDDNI Sue Gordon.



NGA Solicits Industry Analytic Innovation

NGA INTRODUCES XAAS, OR ANYTHING AS A SERVICE, AN INITIATIVE TO IMPROVE AGENCY ANALYTICS WITH INDUSTRY TECHNOLOGY

By Melanie D.G. Kaplan

At GEOINT 2018 on Tuesday, a team from the National Geospatial-Intelligence Agency's (NGA) Analysis Directorate talked to industry representatives about an initiative the agency dubs XaaS, or Anything as a Service.

Developed to improve the quality and quantity of analysis, drive modernization, introduce automation into the workflow, and encourage innovation, XaaS is expected to spark industry partners to share their best technology. Improving technology with the help of industry will allow NGA analysts to spend less time looking at pixels and more

time on higher-order problems.

"The GEOINT data marketplace is really flourishing," said Melissa Planert, who moderated the panel. "We are happy to partner with anyone, small or large, experienced in government or not, who is willing to lend their best technology to what are very hard problems for us to solve."

NGA wants industry's most creative and unorthodox solutions—including those that haven't yet been contemplated.

"We want you to surprise us," Planert continued. "We don't know what the art of the possible is."

Additional panelists included Sean Hannan, Tony Kearney,

Brent Lines, Yvonne Mahabir, and Alberto Valverde.

"We can't do this alone anymore," said Kearney, a senior analytic advisor. "We have an overload of data."

Kearney said he works with analytic offices to help analysts translate "the problems we're trying to solve into language that industry partners can understand."

Ideally, NGA wants industry data to be available in as many formats as possible and flexible over time.

"The idea is to scale it up or down, to different countries, and as different worlds dictate,"

"The GEOINT data marketplace is really flourishing."

—MELISSA PLANERT, NGA

said Valverde, a commercial services lead.

Some of XaaS, said Mahabir, a business planning officer, means bringing industry skills into the agency. And sometimes, she said, "We would prefer that industry take on the solution for us." 🌐

GEOINT 2018 Carahsoft Partner Pavilion

Visit more of our partners on the show floor!

	#1718		#338
	#1704		#437
	#413		#1509
	#511		#1001
	#1127		#1045
	#1629		#951
	#800		#1708
	#1724		#1622

Join us at our Carahsoft 2018 GEOINT Networking Reception!

April 24, 2018 | 5-8:30pm
Tampa Marriott Waterside Hotel and Marina

USCENTCOM Seeks Data Sorting Assistance

LT. GEN. BROWN NAMED HELP WITH THE DATA DELUGE AND FASTER TARGETING AS THE COMMAND'S PRIMARY NEEDS FROM INDUSTRY

By Phillip Swarts



Lt. Gen. Charles Brown Jr. explained that USCENTCOM has more data than it can analyze, and sorting that data is a high priority.

If there is one improvement in geospatial intelligence Air Force Lt. Gen. Charles Brown Jr., the deputy commander for U.S. Central Command, would like to see, it's a greater ability to process and analyze vast amounts of incoming data.

"We have more data than we can actually analyze right now," Brown said during his GEOINT 2018 keynote Wednesday. "I think there's more data available now than we've ever seen and it presents a massive challenge for us."

"We have more data than we can actually analyze right now. I think there's more data available now than we've ever seen and it presents a massive challenge for us."

—LT. GEN. CHARLES BROWN JR., DEPUTY COMMANDER, USCENTCOM

USCENTCOM, which oversees combat operations in Iraq, Syria, and Afghanistan, collects enough video annually to fill 325,000 feature-length movies, the general said.

"What is the golden nugget in this—that information that's out there that you're going to be able to execute on or make a decision on?" he asked. "I think we're really missing opportunities, or we're in decision paralysis."

Brown said the "process, exploit, disseminate," or PED aspect of GEOINT,

isn't quite as strong or mature as other areas, and he's working to develop the "Theater Exploitation and Manager Concept" to turn geospatial information into action.

"[The concept] establishes a framework to allow us to—in procedures—do some prioritization and optimization of our PED enterprise," he said, adding that it "matches the PED capabilities that we have and prioritizes those and optimizes those against the requirements defined by either the Joint Task Force Commander or the Combatant Commander."

Just like the military will prioritize where to task intelligence gathering, including the gathering of GEOINT, Brown said USCENTCOM is trying to prioritize the sorting and analysis of that data.

"We're tasking different imaging agencies and different parts of the enterprise to have a set of responsibilities to match up with our priorities in order to execute whatever task we're working through," Brown said. "The goal is to actually get this into doctrine, so it actually becomes a way of doing business, not just for CENTCOM, but across the enterprise for all the Combatant Commands."

One key area in which Brown said he'd like to see GEOINT implemented more effectively is target selection.

"It'd take us roughly about 90 days to develop a target," he said. "If we can get that to where we can develop targets much quicker, that gives us more options to put more pressure on our adversaries."

GEOINT's necessity was demonstrated earlier this month when the U.S. and its partners carried out strikes in Syria to deter the use of chemical weapons, he said.

"We couldn't do all the things we did without the GEOINT ahead of time, and the GEOINT afterward to assess how we did," Brown said.

But he also cautioned the importance of developing GEOINT systems to be adaptable. Future fights won't be the same as operations in Iraq and Syria.

Brown said his biggest advice for industry was to never stop innovating.

"We don't know what we don't know ... the requirement we have today will not be the requirement we have tomorrow," he said. "Someone once told me the largest room in the world is the room for improvement." 🌐

Developing More GEOINT Talent in St. Louis

INDUSTRY AND NGA LEADERS GATHER FOR DISCUSSION HOSTED BY USGIF'S ST. LOUIS AREA WORKING GROUP

By Phillip Swarts



Stakeholders discussed the push to find new talent in St. Louis, Mo., the location of NGA's new western campus.

The National Geospatial-Intelligence Agency (NGA) has had a facility in St. Louis for decades. But as the agency builds a new campus in North St. Louis, Mo., city and industry leaders have a renewed interest in finding new ways to develop more GEOINT talent in the region.

At GEOINT 2018, a wide variety of stakeholders gathered for a discussion on “Strengthening the St. Louis Workforce,” hosted

looking to expand their GEOINT offerings.

“As we learn more about the skill sets that are in high demand, this helps us shape our programs,” said Mark Brickhouse, geospatial advisor at the university. “An opportunity like this convention really helps us with ... being able to meet with industry, having people come up to us and talk about what they want to hire, who they need. We’re in the process of shaping investments in faculty, staff research, infrastructure, and software.”

Andy Dearing, CEO of Boundless, has chosen to base his company in St. Louis. But small companies don’t have the luxury of spending lots of time and money developing a talented workforce, he said, meaning they need to work closely with their city and its schools.

“We see a lot of great development talent in the region. We see a lot of great geography talent in the region,” Dearing said. “But now ... doing that in machine learning and AI and all these other things that you hear about, we’ve got to get a head of that curve.”

“Geography and mapmaking as it used to be is not where it’s going to be going forward,” he continued. “How do we get ahead of that curve? And for organizations like us, we want to develop that talent in St. Louis, to have a hub around that ... I think St. Louis is ripe for small businesses, for entrepreneurs.” 🌐

“Geography and mapmaking as it used to be is not where it’s going to be going forward. How do we get ahead of that curve?”

—ANDY DEARING, CEO, BOUNDLESS

Success *continued from cover*

Dr. Sarah Battersby, research scientist, Tableau Software, emphasized the importance of looking critically at machine learning algorithms.



“Make sure you’re giving people the appropriate training, the appropriate tasks, and really giving them the resources to think about the implications of what they’re doing.”

—DR. SARAH BATTERSBY, RESEARCH SCIENTIST, TABLEAU SOFTWARE

the data, the more true the data, the more data you have, the less important the algorithms are,” he said, adding that data should always be viewed with skepticism instead of certainty. “It’s really important that you don’t trust the data. ... Even data as simple as weather data is often wrong.”

A favorite illustration among data scientists comes from the University of Washington, where researchers in 2016 deliberately trained a machine learning algorithm to give unreliable results.

“They took a bunch of images and they had a machine learning algorithm classify them: Is this a wolf or is this a dog?” Battersby explained. “They had actually gamed the system and made sure that all of the backgrounds for the wolves were snow.”

The algorithm learned to classify images according to the scenery in the background instead of the animal in the foreground. As a result, it classified images as “wolf”—regardless of the animal—any time there was a light-colored background.

“They showed [the algorithm] to machine learning grad students and said, ‘How well did this do? Do you trust it? Would you use this model?’” Battersby continued. “A

third of the machine learning grad students said, ‘Yeah. That seems like a good model.’ ... That’s a problem.”

While Hoffman, Battersby, and Miller emphasized veracity, Jonas made the case for variety. He asked the audience to consider, for example, a hypothetical organization whose business is protecting the supply chain. They want to leverage analytics to find bombs in their cargo, but their only piece of data is a manifest.

“No one writes ‘bomb’ on a manifest; you will never find a bomb,” Jonas said. “The remedy is widening the observation space. ... If you want to get really high-quality outcomes, you’ve got to blend more diverse kinds of data.”

HARNESSING HUMAN CAPITAL

Of course, even the best data is only half of the equation. To achieve analytic excellence, panelists said, organizations must focus equally on the people who manage and use data.

“We’re using these automated methods to create more information, but that new information still needs analysis,” Battersby said. “So when we think about what the future holds, it’s really embracing both the technical challenges of how we do things and how we do them better, and then what is the human capital that’s needed to take advantage of what we’re doing. Because we’ve really dropped the ball if we don’t think about how humans are going to help us make sense of what it is that we’re processing.”

On that note, panelists picked up a baton passed by National Geospatial-Intelligence Agency Director Robert Cardillo and venture capitalist

Scott Hartley, who in their GEOINT 2018 keynotes spoke about blending art with science.

In the world of data, that means facilitating a happy marriage between people who can build models and people who can inform them.

“There’s no substitute for domain expertise,” Miller said. “You really have to understand the nuance of the problem at hand and how that maps onto whatever model you’re building.”

For data-driven organizations of all flavors, the way forward is evident in the panel’s conclusion, which focused on recommendations for a planned “AI Center of Excellence” within the Department of Defense.

“What would be the one piece of advice ... you might offer to folks who are designing and standing up that new AI center?” Simpson asked.

“If I were to pick one thing, I would say focus on the human capital first,” Battersby said. “Make sure you’re giving people the appropriate training, the appropriate tasks, and really giving them the resources to think about the implications of what they’re doing.”

In other words: The future of data can’t be about algorithms exclusively; it has to be about anthropology, too. 🌐



Auren Hoffman, CEO, SafeGraph, claimed data integrity should be prioritized over algorithms.

Renewing Swedish Defense

BRIG. GEN. ILIS-ALM SHARES THE NATION'S PLANS TO BUILD UP DEFENSE AND SURVEILLANCE

By Jim Hodges

Sweden avoided both World Wars, seeks peace through the United Nations, and bases its posture on history.

Nevertheless, with threats from within fostered by a liberal immigration policy and from nearby Russia, the Swedes are open for defense business, said Brig. Gen. Hans Ilis-Alm, national representative from Sweden and the chairman of Coalition Forces for USCENTCOM.

Rather than speak from a technical posture in a Wednesday keynote at GEOINT 2018, Ilis-Alm presented a viewpoint of the world order from the perspective of a small country. With a population of 10 million and a 50,000-person defense force, Sweden qualifies.

"We've had 200 years of peace," Ilis-Alm said. "In many aspects we withdrew from military interaction and formed a belief in non-alignment as the universal recipe to stay out of conflicts. ... We have certainly invested in the idea of eternal peace and the rule of law since the end of the Cold War."

Sweden, for instance, is not a member of NATO. However, history also shows how nations must adjust in a changing world.

"During the 1930s, we had an incident in which the government used military troops to put down strikes, where several of the trying workers were killed," Ilis-Alm said. "This is still influencing the public debate in Sweden on how to use military to support civil society."

However, Sweden accepted 300,000 immigrants and asylum seekers from the Middle East and Africa in the past four years. On April 7, 2017, an asylum-seeking truck driver mowed down shoppers on a Stockholm street, killing five and injuring 15.

"We are therefore rebuilding our capacity for homeland defense."

—BRIG. GEN. ILIS-ALM, NATIONAL REPRESENTATIVE, SWEDEN & CHAIRMAN OF COALITION FORCES, USCENTCOM

"It was a true wakeup call in which, in many ways, it made Swedes realize that no country is exempted from the effects of violent extremism," Ilis-Alm said.

They also realized that about 30 percent of those immigrants were unemployed, compared to three percent of Swedes. In addition, security forces determined 3,000 were considered extremists.

The Swedes are rethinking military involvement with civil law enforcement and are seeking tools, including information sharing with other nations, to help prevent further such attacks.



Brig. Gen. Hans Ilis-Alm discussed defense and intelligence from a Swedish perspective.

"We need to develop assets to conduct cost-effective surveillance of these individuals," Ilis-Alm said. "We know it's very resource-demanding [to monitor] people we suspect of being dangerous to our society. ... Since terrorism is a transnational issue, the increased intelligence cooperation between countries is vital."

The country's concerns with Russia have deeper roots in Swedish history. Sweden and Russia fought wars for the better part of 1600s and 1700s, and the Swedes lost Finland to Russia in 1809.

"This is something that has really shaped our perception of Russia and still does," Ilis-Alm said.

Russia's flexing its military muscles in Georgia in 2008, Ukraine and Crimea in 2014, and in Syria today has Sweden looking closer at its northern border and at the Baltic Sea.

"In strategic terms, we don't see Swedish territory as being an isolated and primary goal for any Russian aggression," he said. "However, Swedish territory would play an important role for both parties, NATO and Russia, in case of a conflict in the Baltic Sea area."

Were that to happen Sweden could be at risk as a Russian target, he added.

"We are therefore rebuilding our capacity for homeland defense," Ilis-Alm said. "And we'll most likely develop and acquire weapons systems and anything else to fight with greater strategic and operational depth than has been the traditional Swedish concept."

Beyond kinetic weaponry, "Adequate intelligence and awareness of what is ongoing here and abroad is of crucial and vital interest to us." 🌐

trajectoryXyzt

September 19-20, 2018

The Barker Hangar, Santa Monica, CA

SPEAKERS

trajectoryXyzt is a two day, multifaceted experience that brings energized, expert thinkers together with the companies and initiatives moving the use of geospatial intelligence forward. This initial forum will challenge, support, explore, and expand the presence of "GEOINT" in most every facet of contemporary society. Autonomous vehicles, location marketing, crop projections, natural resource monitoring, weather forecasting, insurance verification, traffic monitoring and control ... trajectoryXyzt



Auren Hoffman
CEO of SafeGraph, and former CEO at LiveRamp



Jeff Jonas
CEO, Founder and Chief Scientist of Senzing, and former IBM Distinguished Fellow



Robbie Schingler
Co-founder and Chief Strategy Officer of Planet



Dr. Walter Scott
CTO of Maxar, and Founder of DigitalGlobe



Jackie Space
Co-founder of BMNT

Founding Sponsors



trajectoryXyzt.com