

2018 Tech Showcase Demo List

All demos scheduled 9 a.m. – 2 p.m., except as noted.

GETM, iSpy, and CGSWeb

Briefing: UNCLASSIFIED

Rm # 1C-08

The iSPy web-based ELT provides rapid access to imagery and tools for analysis and exploitation with no SW install (other than a browser).

The CGSWeb web-based point mensuration tool offers easy integration with other services and shortens targeting timelines.

The GETM (Geospatially Enabled Target Materials)-Joint Targeting modernization program creates efficiencies in target material production and maintenance, and improves integrity of target intelligence across JT cycle.

Speech-to-Text and Project Maven

Briefing: SECRET//FVEY

Rm # 1E-36

NGA is planning to bring speech-to-text for enhanced PED (STEP) into an operational environment. This tool has the potential to advance the motion GEOINT tradecraft by automating processes that save time and resources within the analyst's workflows. Additionally, NGA will showcase Project MAVEN, an advanced program designed for object detection in full-motion video.

Exploit and Report Builder (new enterprise SOM tools)

Briefing:

Rm # 1E-38

Cedalion's Report Builder brings together traditional NGA intelligence reporting and the capture functions of new structured observation management (SOM) into one application. Analysts have the ability to produce intelligence reporting (remarks) while capturing SOM observations in a new modernized user interface. Analysts will find familiar capabilities in the new Report Builder application, including image/target lookup, attachments, and report attributes. Additionally, users are able to capture SOM observations utilizing mission views (SOM schemas).

eExploit SOM Companion is a web-based SOM capture tool that utilizes Flexible Content Management Services as an engine to drive large analytics. Analysts have the ability to capture SOM observations in a new modernized user interface. Analysts will find efficient form templates to pre-populate fields, as well as two-way integration with RemoteView and Map of the World. SOM Companion is continuing to develop and constantly adding new features, per user input.

Office Hours Initiative

Briefing: TS//SI//TK//NOFORN

Rm # 3C-01

Think you see a trend in your data? Are those vehicles that are arriving significant? The Office Hours Initiative is now live at NGA West to help non-coders learn how to ask questions about their data using only a webpage and the push of a button.

QAC 1.0 Demonstration

Briefing: UNCLASSIFIED

Rm # 5C-26

The Quality Assurance Capability (QAC) is an open-source software tool designed to perform topology and attribution checks on the quality of GEOINT data quickly, via a web interface, while reducing the number of false positives. The QAC 1.0 currently addresses the MGCP and TDS data domains. The inclusion of data checks for the aeronautical, geomatics, and maritime domains is planned by the QAC 3.0 release in second quarter of fiscal year 2020.

Foundation GEOINT Capability Analytics (FCGA) Demonstration: Aero Dashboard

Briefing: UNCLASSIFIED

Rm # 5C-27

FGCA integrates data, develops and implements Foundation GEOINT content analysis and business intelligence workflows, and collaborates across Source to document, analyze, and understand the Foundation GEOINT supply chain. FGCA's efforts assisted Airfield Feature Data production in aeronautical navigation by addressing unique business intelligence questions concerning analysts' production. This automated process allowed managers to make evidence-based decisions using near-real-time production statistics through a web-based dashboard.

Foundation GRiD and FG3D

Briefing: (SECRET//REL TO FVEY)

Rm # 4B-43

The Geospatial Repository and Data (GRiD) Management System is an advanced 3D geospatial repository and service providing the Enterprise solution for the storage, discovery and dissemination of all 3D point cloud and elevation data. GRiD is transforming to also provide the Enterprise solution for the creation, storage, discovery, and dissemination of high-resolution 3D surfaces and modeled surface content for the National Systems for Geospatial Intelligence (NSG). GRiD data types include 3D Light Detection and Ranging (LIDAR) and EO-passive point cloud data; two dimensional (2D) and 2 1/2 dimensional (2.5D) associated geospatial products (i.e. bare earth and reflective surface digital elevation models (DEMs); and 3D synthetic modeled content capable of serving in a Level of Detail (LoD) construct. Its content is form-fit to be executed in run-time correlated immersive 3D experiences (e.g. gaming, engine-rendered, NGA authoritative elevation, and vector-modeled content—all in an interactive 3D virtualized environment).

Print on Demand (POD)

Briefing: UNCLASSIFIED

Rm # 1B-59

This demo will showcase Print on Demand Web Service and Forward Based GEOINT Georeferenced Data. STM supports hardcopy printing and the digital dissemination of NGA's Standard Maps and Charts. The presentation will include a demonstration of custom services available through STM.

IC GIS Portal

Briefing: TOP SECRET//SI//TK//NOFORN

Rm # 3D-184

The IC GIS Portal is a collaborative geospatial content management system for the federal government and mission partners. Focused on a community-wide approach with low barriers to entry, the portal spans multiple agencies and supports a range of users, from GIS experts with desktop workflows, to all-source analysts using web-based capabilities for the first time. Users can create, secure, and manage geographic assets and connect end users with useful apps for their mission objectives.

Map of the World

Briefing: TOP SECRET//SI//TK//NOFORN

Rm # 1E-37/39

MoW provides centralized, seamless access to geospatial-related content online, and on-demand. It provides users across the national System for Geospatial Intelligence (NSG) with a single, geospatial environment allowing them to intuitively identify, retrieve, display, and manipulate the content they choose for any area of the Earth online at any time. By providing a central focal point for interrogating content, the MoW enables the integrated display of Foundation GEOINT and intelligence across IC disciplines. It does so by linking natural and manmade features on, above, and beneath the Earth to intelligence objects through observations and judgments from throughout the NSG. As an interactive, customizable user experience, MoW provides enterprise-level base and mission views, allowing users to visualize content with the content they access via MoW, and otherwise tailor MoW displays in a variety of ways to provide content and visualization solutions.

The Innovative GEOINT Application Provider Program (IGAPP)/GEOINT Application Store (GAS)

Briefing: UNCLASSIFIED

Rm # Lobby Entry Hall

The IGAPP/GAS demonstration will jointly showcase the NGA GEOINT APP Store (GAS) and the apps provided to the NSG (and in specialized case, the ASG) through GAS. IGAPP is the major provider of software applications available in the GAS (more than 60 applications). The combined team will be available to sign up users for a GAS account, describe the offerings available, and generally assist users in learning about the tools available to customers.

Utilizing Geospatial Technologies to Predict Catastrophic Glacier Lakes Outburst Floods

Briefing: UNCLASSIFIED

Rm # 2C-17

This proposal aims to implement a geospatial and multi-disciplinary analysis to identify flood parameters after a glacial lake outburst flood (GLOF), which affects the local community in the remote Chilean Patagonia. A holistic application of geospatial methods can also enable prediction of future events, which can lessen the severity of damage experienced by local communities, while providing them tools to evolve from a reactive to a proactive approach.

Project Angora
Briefing: UNCLASSIFIED
Rm # 3E-21

Project Angora uses the natural language processing Python libraries SpaCy and Sense2Vec to count and characterize objects in unstructured text data fields, transforming unstructured data to a query-able, structured format. This project allows analysts to conduct more meaningful analytics on large volumes of manually entered data, and will allow transformation of unstructured historical data to structure data at scale.

Project Hitchhiker
Briefing: UNCLASSIFIED
Rm # 3E-21

Project Hitchhiker couples the enormous quantities of data available on NGA's EV-WHS and NOME platforms with the state-of-the art Mask-RCNN instance segmentation/feature extraction framework to automatically extract road features from high-resolution satellite imagery. This project not only allows for rapid identification of new road infrastructure, but provides immediate output layers analysts can use to support their work.

Project Gimlet
Briefing: SECRET//NOFORN
Rm # 1D-64

Project Gimlet explores analytic methodologies for use of GPS-derived data to conduct pattern-of-life analysis.

GEOINT Research and Retrieval (GSR)
Briefing: TOP SECRET//SI//TK//FVEY
Rm # 4A-12

GSR provides user access to NGA, DoD and IC GEOINT content. The tool currently searches 19 content stores (databases), providing users with more mission-relevant content. The agile-developed tool was built with an open API, providing a unified set of ingest, search, and retrieval services for rapid integration of new services as well as ease of integration with existing analyst tools and workflows. It will replace current NGA search services including Enterprise Search and NDS.

EventKit
Briefing: UNCLASSIFIED
Rm # 5B-35

(U) A web application that simplifies the process of finding geospatial data and processes them into standalone data files, formatted for use in geographic information systems (GIS) or visualization applications. EventKit significantly decreases the time and complexity of finding, processing, and deploying geospatial data for use in geospatial visualizations. The application enables analysts to transition from data searching to GIS analysis in the shortest time possible, making it an ideal tool for event response.

xTerrain**Briefing: UNCLASSIFIED****Rm # 5B-35**

xTerrain is a high-performance terrain and raster analysis system that simplifies the number of steps performed and decreases processing time for geospatial Enterprise users to perform typical terrain assessments. This is accomplished by making data available via web services and leveraging high-performance computing resources to quickly generate analytic results. Users can focus more of their time on analytic questions and less on the process of acquiring data and configuring it to run on their local machine.

Using Small UAVs for Next Generation GEOINT**Briefing: UNCLASSIFIED****Rm # 1E-37/39**

Small Unmanned Aerial Systems provide an inexpensive, user-friendly, safe, and repeatable system for remote sensing. These autonomous platforms allow users to rapidly collect and disseminate FMV, EO, IR, and LIDAR data. These data are used to create geo-referenced 3D models for mission planning and rehearsal, security purposes, and disaster relief operations.

NGA Academic Research Program (NARP)**Briefing: UNCLASSIFIED****Rm # 1E-37/39**

The National Geospatial-Intelligence Agency Academic Research Program (NARP) consists of several initiatives designed to establish the foundation for all areas of geospatial intelligence research through grants to leading investigators, academics, as well as a Visiting Scientist Program.

AutoMIG**Briefing: SECRET//REL TO USA, FVEY****Rm # 1E-37/39**

AutoMIG seeks to improve metric accuracy by automating image access and measurement of Multi-Image Geopositioning (MIG) solutions. This enables computing photogrammetric solutions at a speed and scale not previously achieved. Independent verification of positioning accuracy is currently underway and preliminary results against survey control will be presented.

WATCHMAN**Briefing: SECRET//REL TO USA, FVEY****Rm # 1E-37/39**

A tool that leverages deep neural networks to automate the process of object/target detection (e.g. a truck-mounted crane) within an image. The tool will aid the analyst workflow by automatically identifying an object of interest, then providing reports to the analyst. This process will save time for analysts and provide a capability to triage their work, moving the most pertinent information to the forefront.

Global-Enhanced GEOINT Delivery: Pixels & Beyond

Briefing: UNCLASSIFIED

Rm # 1E-37/39

G-EGD is the primary imagery source for NGA's foundation mapping mission, warfighters, and over 40 US government programs. But G-EGD does much more than disseminate imagery. Stop by and see the latest improvements in automated object detection and alerting tools, vector data functionality, browser-based spectral exploitation, the Vivid 2.0 global, high-resolution mosaic, and plans to increase the accessibility of commercial imagery and derived information on classified domains.

Virtual Reality Tours of the Next NGA West

Briefing: UNCLASSIFIED

Rm# 1E-35

Next NGA West (N2W) and the Research office are teaming up to show how future technologies can be used to give virtual reality tours of the new N2W facility while it is under construction.

Photo Booth

UNCLASSIFIED

Rm # 1E-35

Stop by the photo booth where the N2W team will take pictures to be posted on the internal Next NGA West website.

NGA QIC

Briefing: UNCLASSIFIED

Rm # 2B-44

The NGA In-Q-Tel Interface Center (QIC) is NGA's resource to quickly enhance and evaluate ready-soon technology emanating from the venture startup community. The QIC has several ongoing pilots that leverage machines, dynamic content, and analytic models to provide real-time services and insights. Capabilities hosted on NGANet to be demonstrated include: big data analytics and visualization; automated machine learning to harness insights; sense making of huge volumes of text-based documents; and a web-based visualization and collaboration platform

The MEANS

Briefing: UNCLASSIFIED

Rm # 1E-37-39

Modern Environment for Analysis of Networks (MEANS) is a lightning fast, highly customizable web-based platform for conducting robust road-based network analysis anywhere in the world without the need for expensive licenses or specific software. MEANS will allow novice users throughout the IC to answer basic routing analysis questions "out of the box" while providing the tools for more advanced, or "power users", to answer more complex analytical questions.

SatTrak

Briefing: TS//SI//TK//FVEY

Rm # BD-34

SatTrak is a web-based, 3D, Space Situational Awareness (SSA) application designed to expedite analytic workflows for GPoA initiatives related to space, counterspace, cyber and C4I (command, control, communications, computers and intelligence) by consolidating space-centric toolsets and reporting. SatTrak ingests NGA's DishTrak structured data, correlates antennas to satellites and enables analysts to perform satellite nodal network analysis on a mass scale.

NGA's GEOINT Reach Down Service

Briefing: UNCLASSIFIED

Rm # Lewis and Clark

A transparent bi-directional cross-domain implementation will allow the discovery and retrieval of GEOINT content hosted at its source or lowest classification networks. Example: Analysts on NGANet are able to use corporate applications and tools to discover and retrieve content from MGA SBU.

NGA Campus West Tours

NOC Tours

Rm # 4E-127 / This tour is TS//SCI

Tour One: 10:30-11:30

Tour Two: 11:30-12:30

Sign up at opening session is required.

Museum Tours

Building 25 / This tour is UNCLASSIFIED

10:00-3:00

The idea of the NGA museum is to give a better understanding of NGA by allowing witness to some of the key events and viewing some of the artifacts of artistic, historical, and scientific significance, all related to NGA history.

ACADEMIC PRESENTATIONS

University of Missouri-Columbia

Rapid Search and Detection of Chinese SAM Sites with Deep Neural Networks Using Component-Based Detection

Rm # 1C-02 Bill Brown

St. Louis University

Bldg. 36 Lobby Entry Hall

1. Hyperspectral/Thermal, LiDAR, and Multispectral Unmanned Aerial Systems (UAS) and Sensor Integration

Over the past three years, the Saint Louis University (SLU) remote sensing lab has been involved in the design, construction, testing, and demonstration of small, highly autonomous, Unmanned Aerial Systems (UAS). A variety of multi-rotor UAS platforms (quadcoptors, hexacoptors, and octocoptors) are employed to collect remotely sensed data using a diverse set of sensors (hyperspectral, thermal, LiDAR, multispectral, RGB) as a part of diverse research objectives of the students within the lab.

2. Augmented Reality with Microsoft Hololense

The Remote Sensing Lab at SLU has developed a prototype augmented reality application to better demonstrate and communicate agricultural research and operations. The goal of this collaboration is to provide experiential opportunities for K-12 students to better understand the value of emerging research and technology to improve coverage and accuracy of agricultural insights around plant health and climate change. The AR application overlays drone-collected data visualizations directly onto images of research fields. Agricultural research data was collected at the Bradford Research Center in Columbia, Missouri over one full growing season throughout 2016. Agricultural research data includes visual imagery, thermal imagery, and plant health indicators.

3. Research and Application for Small UAV/UAS Remote Sensing

Rm # 1B-57 Lobby Room A

Fusion of images collected from UASs integrated with multiple sensors have become popular in recent years because data fusion improves object detection and image classification by combining advantages of rich spectral, spatial, structural and thermal information contained in diverse sensor systems. The SLU lab is currently examining the contribution of relatively low-cost UAS platforms integrated with application specific sensors in order to improve productivity and efficiency within fields such as precision agriculture, water quality, and urban forestry.

Lake Land College

1. Developing Avian Protection Plan with Risk Assessment

Rm # 1C-02 Bill Brown

Creation of an Avian protection plan in collaboration with a local power co-op to reduce utility related deaths using eBird.org and open-source GIS software.

2. Creating a Historic National Heritage Corridor in Illinois: Rediscovering the Old National Road, America's First Highway

Rm # 1C-02 Bill Brown

Utilizing historic 1930s raster imagery, geospatial data from multiple state and federal agencies, along with created data sets, the path of the Old National Road was fully uncovered for potential restoration as an historic national Heritage Corridor. Questions of how to proceed with the restoration project, and the different obstacles that the project faced were answered through the use of this spatial data.

Edwardsville High School

Proposed Music Festival Grounds Site Selection Project in Metro-East St. Louis Area

Rm # 1C-02 Bill Brown

(U) Edwardsville High School students worked on this project using Madison and St. Clair data given to them by Southern Illinois University-Edwardsville.