



JIFX
Joint Interagency Field Experimentation



NPS JIFX 19-2 Update

Director's Note

The 19-2 version of Joint Interagency Field Experimentation has concluded. Conducted at the Naval Postgraduate School's Field Laboratory on Camp Roberts' McMillan Airfield, this event included over 300 registered participants. While the primary theme of this event was Defense Support to Civil Authorities, a variety of autonomous systems and other technologies were examined. Each technology was the subject of a cyber-assessment as well as being evaluated by government Subject Matter Experts.

Highlights of the event include a visit by the new President of the Naval Postgraduate School, Vice Admiral, US Navy (retired) [Dr. Ann Rondeau](#). The Admiral spent 3.5 hours on the ground speaking with participants and learning about the emerging technologies and the potential military capabilities they may enable. [Brigadier General Chris Stockel](#), US Army, the Commanding General of the 351st Civil Affairs Command spent a day at JIFX and had his unit send a soldier to attend the rest of the week. The situational awareness and data fusion systems that incorporated diverse data overlays were of particular interest to the CA experts. Rounding out the VIP visitors, the new Commander of the Camp Roberts Maneuver Training Center, [Lieutenant Colonel Robert Horvath](#), US Army, also visited the event.

This event included experimenters from very small companies (Drone for Hire) and larger companies, such as Nvidia and Planet, that are not normally thought of as defense related enterprises. Of course there were traditional defense contractors engaged as well, with companies like Lockheed Martin, to include representatives from the "skunk works" division, participating.

The government had its own innovators engaged as well, with experiments from the Air Force Research Laboratory (AFRL), the Army's Research, Development, and Engineering Command (RDECOM), and the National Geospatial-Intelligence Agency (NGA) conducting experiments alongside their civilian counterparts.

All 4 services were represented in the evaluator/observer population with Combatant Commander representatives from Southern Command, Special Operations Command, North American Air Defense – Northern Command, Transportation Command, and Strategic Command actively engaged.

Other government evaluator/observers ranged from the special operations community (Air Force Special Operations Command, Navy Special Warfare, and Army Special Operations Command) to the National Guard Bureau to the Defense Innovation Unit. Interagency participation included folks from the Department of State, the Department of Energy, and the National Guard Bureau.

From the ivory tower of academia, the Naval Postgraduate School's faculty and students were joined by representatives from the University of Hawaii – Applied Research Laboratory, Carnegie Mellon University, and the University of Missouri – Kansas City.

The event, the first under the direct sponsorship of the [Rapid Reaction Technology Office](#), included several novel features. First, information was provided to all participants regarding other RRTO venues, as well as other potential venues that might be a good fit for the technology and its technological readiness level. Second, evaluator/observers were asked to provide specific feedback regarding the suitability of each technology for participation in other Department of Defense activities (Thunderstorm & Stiletto, TSOA, Black Dart, Trident Spectre, etc.). These recommendations will be shared across the government and with individual experimenters as appropriate. Finally, information regarding the event and technologies was pushed into the .mil domain via a targeted digital dissemination campaign that produced nearly 900 interactions during the event.

Come join us for 19-3, back at Camp Roberts 29 April – 3 May. See the web site for details AND follow us @JIFX_official on twitter.

Upcoming Events

JIFX 19-3: 29 April – 3 May 2019 JIFX 19-4: 5 – 9 August 2019

<http://www.nps.edu/fx>

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Experiments at JIFX 19-2

<p>Unmanned, Semi-Autonomous, and Autonomous Systems Design, Deployment and Operations</p>	<p>A-02: Autonomous Drone Perimeter Security, Easy Aerial Inc. A-05: EOTACS, UAV Solutions A-06: EOTACS, Aeryon Defense A-07: EOTACS, Altavian A-08: Naval Postgraduate School A-09: EOTACS, Planck A-10: EOTACS, Shield AI</p>
<p>Intelligence, Surveillance, and Reconnaissance</p>	<p>I-01: NGA iViz Portable GIS, NGA</p>
<p>Decision Support, Situational Awareness, and Visualization</p>	<p>K-01: Mobile Mapping for Situational Awareness of Disaster Management, Takor Group K-02: Thermal/Optical Imager/Scope for Wildfire Fighting Operations, Torrey Pines Logic, Inc. K-04: Risk Assessment in a Disaster Relief Analytic Framework, Engineer Research & Development Center - IL K-06: Common Operating Picture for Event Response Situation Awareness, Air Force Research Lab (AFRL) K-07: 3D Terrain Modeling Tool for Predictive Analysis, VATC K-08: Real-time Disaster Response Planning with GIS and CAD, USACE ERDC CERL</p>
<p>Humanitarian Assistance, Disaster Response, Defense Support to Civil Authority</p>	<p>L-03: Long Range Acoustic Device, LRAD Corporation L-04: EventKit, NGA L-06: Harvest Hope, Lockheed Martin and NVIDIA L-07: Complete Operating Picture(COP) based on prevention, action, remediation(PAR) data layers, Drone For Hire L-08: Wildfire Fighter Tracking & Emergency Alerting, Microwave Monolithics L-09: Augmented Reality GIS Layers for Humanitarian, Disaster Relief, and Wildfire Fighting Operations, EdgyBees, Inc L-10: Pixia Advanced Imagery Services, NGA-GEOINT SERVICES L-11: GEOINT Services EventKit, NGA L-12: Voyager Search, NGA- GEOINT Services L-13: Supporting Humanitarian and Disaster Relief with Daily Satellite Imagery, Planet</p>
<p>Force Protection Equipment and Wearable Technologies</p>	<p>Q-01: NGA mobile application support to JIFX, National Geospatial-Intelligence Agency</p>

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Experiment Highlights

- JIFX 19-2 explored the use of unmanned systems in Defense Support to Civil Authorities (DSCA) missions. Specifically, experiments were organized around a wildfire scenario and culminated in an integrated experiment conducted in conjunction with a California National Guard fire fighting training.
- Experiments included UAS thermal imaging capabilities to detect fires and track fire progress, dynamic integration of map data with UAS video feeds, asset (“blue force”) tracking, rapid processing and dissemination of satellite imagery, and integration of multiple data sources into common operating pictures.
- During the integrated experiment, the Camp Roberts Fire Department conducted several small controlled burns in sequence to represent a rapidly moving wildfire and established their incident command center in the JIFX Technical Operations Center. Aeryon used their airborne IR camera to identify spot fires ahead of the simulated fire-line and provided a live video feed to both on-scene commanders and incident command at the TOC. Drone for Hire positioned a mobile suite of environmental and weather sensors to monitor local conditions at the fires, while Long Range Audio Device (LRAD) was used to improve communication between fire crews, and a mobile common operating picture that included weather information, airborne and ground asset locations and status, and map annotation was generated at the TOC for evacuation areas and routes. Each vehicle responding to the fires was outfitted with improved tracking devices, messaging systems, and backhaul data communications.
- In the TOC experimenters from the Air Force Research Lab (AFRL) brought together over ten different types of data feeds generated from a mix of other government, industry, and academic experiments into a single integrated system that allowed the command team to rapidly customize visualization and reporting to help the commander make more informed decisions. The National Geospatial-Intelligence Agency (NGA) provided a suite of mobile apps to help inform on-scene crews and facilitate reporting back to the TOC, and Planet provided baseline Digital Globe map and terrain products and coordinated satellite tasking to re-image the simulated fire area during the event.



The National Geospatial-Intelligence Agency participated in five experiments.



Naval Postgraduate School prototype of a proposed aerial delivery system called Snowflake-X

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