



NOAA UAS Program Briefs the Federation of Earth Science Information Partners (ESIP)

ESIP follows NOAA's Environmental Data Management Workshop bringing Inter-Agency data management expertise together.

The Federation of Earth Science Information Partners (ESIP) 2017 theme is Strengthening Ties Between Observations and User Communities. The theme is based on one of the goals in

the 2015 - 2020 ESIP Strategic Plan, which provides a framework for the Federation's activities over the next three years. The 2017 theme will be woven into meeting sessions, collaboration-area activities and community outreach, with the goal of improving dialog between Earth sciences data producers, distributors and end-users.

In response to a growing interest in the use of drones, unmanned aerial systems or UAS, in the Earth sciences, the Drone Cluster is focused on understanding, communicating and furthering the development and use of drones as tools for science research. While there are currently various challenges around using UAS, the existing and anticipated advantages mean that firstly the domain is swelling with innovation, and secondly that UASs are expected to become a standard piece of field equipment for scientists. The Cluster is exploring Drones with the ESIP community in two ways: (1) as tools for Earth science applications and research, and (2) as instruments with unique data management and standardization challenges. As a new cluster we are welcoming all participants and input as to how we can best operate within ESIP.

The NOAA UAS Program briefed the 2017 ESIP presenting real-world solutions to environmental challenges UAS. UASs have provided the capability to capture data for applications including imaging, photography, video and film, precision agriculture, construction, security and public safety, mapping and surveying, inspections, research and conservation, communications, parcel delivery, humanitarian efforts and more. These operations were explained and demonstrated at this one-of-a-kind gathering. The conference covered UAS strategies, platforms and payloads, data collection, safety, security, privacy, the current regulatory environment, international lessons learned, and the impact drones are having on Geographic Information Systems (GIS), Big Data, the Internet of Things (IoT).

John "JC" Coffey presented the NOAA UAS Program's strategic vision and execution from requirements capture to "transition to operations" with NASA and USGS counter-parts. NOAA's recent UAS successes in the focusing on hazardous weather, maritime and Polar surveys included:

- SHOUT's use of Global Hawk for Hurricane Research & Satellite Gap Mitigation
- Puma UAS deploys onboard from US Coast Guard Cutter's (Icebreaker) Healy and Polar Star for marine monitoring, search & rescue and oil spill detection with ONR, AeroVironment.
- Development of partnership with UAF, US Navy, USCG, Conoco Philips for ScanEagle flights in the Arctic.
- NWS' River Forecasting Center Rapid Response with UAS for Yukon River Watch supporting the Targeted Autonomous Insitu Sensing and Rapid Response (TAISRR) CONOPS.
- SBIR Phase III "Transition to Operation" of Aurora Flight Science's Centaur for Grav-D survey. UAS use for satellite calibration and validation.
- Other platform coordination including Aerosonde, and Flexrotor.

Coffey highlighted that, "We have been advocating for making every UAS an environmental sensors and because of the low C-SWAP of these sensors we are gaining momentum. And we have a significant opportunity to do this, as we work towards a standardized UAS C3 Application Program Interface (API) for airspace integration and real-time data distribution."

Is this is an issue of potential concern?

This item has high visibility

Geographic Location (Relevant region, city location) Bethesda, MD

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