Program Overview

The Naval Postgraduate School (NPS) Joint Interagency Field Experimentation (JIFX) 19-2 event was the initial event for the USSOCOM Expeditionary Organic Tactical Airborne Intelligence, Surveillance, and Reconnaissance (AISR) Capability Set (EOTACS) performance evaluations. The event consisted of a evaluation/data collection team from NPS, observers from USSOCOM, and four commercial UAS platforms from Altavian, Aeryon, Planck Aerosystems, and UAV Solutions.

The evaluations consisted of the following assessments: cyber, acoustic, ground, and flight. The cyber assessment was conducted by JVAB and consisted of assessments of the overall UAS, data exfiltration, RF/cyber, onboard data storage, and forensics. The cyber assessments for each manufacturer take about two hours to complete and most were finished on Monday, February 4th. The acoustic assessments were completed by a NPS researcher and took about an hour to complete for each platform. The acoustic assessments created wave files for each platform, which will later be analyzed for time series, spectrogram and frequency spectrum. The ground assessment was performed by the NPS data collection team to verify the manufacturer's UAS specific dimensions and logistic information. Finally, the flight performance assessment consisted of vehicle flight performance assessments. The flights were primarily focused on range testing however each company was also given a chance to demonstrate additional and unique capabilities outside of the scheduled assessments.

We were able to provide complete assessments for Altavian, Aeryon, and Planck at JIFX 19-2. UAV Solutions did not have an acoustic assessment or speed check complete due to incomplete flight forms and equipment shipping delays.

The data collection of each platform was conducted by the NPS evaluators following the EOTACS Data Schema v1.9 as coordinated with USSOCOM stakeholders. V1.9 is based on a NAVAIR process for manned aviation and it includes several UAS-specific items, as well as the significant addition of cyber assessment data. The full data schema will be published along with the results over the next few weeks. Coordination will also begin for updating to v2.0 for use during the 19-3 cycle, which is being developed in conjunction with MILTECH, NSW (San Diego), DTIC, the Army Unique Mission Cell, and the NPS CRUSER program in order to establish a consistent data structure to facilitate the efficient transfer of data between programs and network domains. In addition to the development of v2.0, future work will focus on automating data collection and transfer processes, such as pre-populating cyber waiver requests, etc.

For more information about this program, please visit www.nps.edu/fx or contact the Aurelio Monarrez, NPS Faculty Associate of Research at amonarre@nps.edu.

Recommended Updates for Future Events

Going forward we plan to propose and modify a few items to improve this initial event:

1. Begin a bi-weekly teleconference with the stakeholders (SOCOM). This will allow for constant communication which will provide us with feedback in order to improve each event.

2. Begin a bi-weekly telecon with all manufactures. Again, this will improve our communication and allow us to make sure all their documentation and requirements are captured prior to them arriving at the event.

3. We are going to recommend that EOTACS begins a few days before the JIFX event. We will still utilize the existing JIFX infrastructure and personnel but we will be able to dedicate our resources to EOTACS for the first few days of the event before JIFX. This event was manageable but as we scale to 10-12 platforms this will be too taxing on the JIFX infrastructure if we have EOTACS during the same time.

4. Assign a scribe to each of the components to provide us a way to better capture and categorize the assessments, rather than requiring the data collection team to conduct the assessment and capture the information at the same time.

5. As discussed throughout the event, we would like to have separate areas for each system. This will eliminate distractions at the ground control system by congestion of personnel/assessors. The JIFX team will begin coordination efforts to separate each organization.

6. Providing name tags to the vendors which include info on whether the person is a Business or Technical SME. This will allow personnel and assessors to address their questions to the correct person.

7. Incorporate TTPs into the final assessment day.

8. Create a section of the JIFX website dedicated specifically for EOTACS to make it easier for all involved to find any information they need.

Upcoming JIFX Events

JIFX 19-3: 29 April – 3 May 2019   EOTACS: 25 – 28 April 2019 (Proposed Dates)
JIFX 19-4: 5 – 9 August 2019   EOTACS: 1 – 4 August 2019 (Proposed Dates)

http://www.nps.edu/fx