

UAS Data Specialist - Tasks

InSitu ScanEagle (Type 1)

Interagency Fire Unmanned Aircraft Systems

August 31, 2018

Purpose

This document summarizes the data types unique to the In Situ ScanEagle for wildland fire operations, as well as outlines the tasks assigned to the UAS Data Specialist for obtaining and managing the data and creating products.

Summary

InSitu ScanEagle sensors (MWIR3) and ground control software (I-MUSE) can generate two types of data: MISB-compliant geotagged video files and latitude/longitude point coordinates stored as XML files.

The MISB-compliant analog video is streamed to the GCS via radio. The stream can be sent through a LAN or wi-fi connection to TacitView for viewing live stream or recording video clips both on-site at the GCS or back at the ICP. Video clips can be imported into ArcMap or ArcPro using Full Motion Video to automate the creation of fire perimeters or orthophotos for mosaics.

Points can also be generated by the GCS operator/sensor operator in I-MUSE by clicking on the map or dropping points in the center of the sensor screen. The points can be exported by the GCS Operator as XML files as a Target List and converted to shapefiles for use in GIS.

Initial Tasks

- Assist in site location after Resource Order has been received
 - Locate/extract DTED/DEM for viewshed analysis
 - Locate ownership data, transportation data, orthophotos for launch site
 - Locate TFR/Aerial Hazard data
- GISS/SITL
 - Provide briefing sheet and sample data
 - Download GISS data to UASD hard drive if team is not connected to EGDB
 - Integrate with AGOL/Collector workflow if applicable:
 - Add/create mobile editing group for UAS IR data
 - Agree to workflow (Modified Approval workflow v. Standard workflow)
 - Provide TFR, ROZ, launch site data if known

Daily Tasks

Prior to departing ICP/Prior to launch

- Obtain most recent base, incident data, projects from GISS:
 - Ideal method: Download direct from GISS at ICP (allows for Annotations and layers to be pulled over directly from latest Ops and IAP maps)
 - Okay method: For satellite Hub sites, import EGDB to MXD and checkout>disconnect local copy
 - Least ideal method: Copy Event GDB from NIFC FTP site
- Generate updated map for ScanEagle GCS (based on Air Ops or Briefing Maps)
 - Features:
 - Incident Data: IR (or latest Fire) Perimeter and Intense Heat, TFR, ROZ
 - Base Data: Roads (labeled), Aerial Hazards (transmission lines, cell towers), Structures, Ownership, Hillshade
 - Reference scale: 10,000 to 20,0000
 - Projected Coordinate System: Web Mercator Auxiliary Sphere
 - Export: GeoTIFF @ 1200 DPI (embed geotags)
- TacitView set up (Command truck and ICP)
 - Load/provide updated GCS map and DTED/DEM
 - If available, load WMS from NIFC AGOL
 - If necessary, load KMZ/KML of fire perimeter
 - Verify livestream

In-flight

- Tacitview
 - Operations/Situational Awareness
 - Record video clips
 - Maintain sensor tracking
 - Continue to reset contrasts
 - Create screen captures/chips with annotation and 3D oblique for morning/evening briefings
 - Mapping
 - Record video clips for FMV
 - Keep camera at an angle of 45 degrees down, 90 degrees off left wing
 - Manual mode (e.g. @ 8500', frame ~ 3000', so maintain radius slightly smaller (~2500') with FOV staying within orbit and overlapping centerpoint, 60 degrees depression, 45 degrees off wing)
 - Keep reticule of camera view on fire perimeter
 - Have GCS operator reset orbits to keep footprint of camera FOV within orbit as you follow the perimeter
- ArcMap

- Import Tacitview clips and DTED/DEM for FMV
- Record metadata (through FMV toolbar or in FMV toolbox) to create camera center points to generate line/polygon
- Send line/polygon to GISS for map updates or edit in ArcMap/AGOL for Event GDB
- Send KMZ to OPS
- Fill out UAS Data Specialist Daily Logs

Post-flight/ICP

- TacitView
 - Load recorded OPS clips on machine at ICP
- ArcMap
 - Verify fire perimeter in Events geodatabase
 - Generate map/briefing products for OPS/PIO

Name	Date	Notes
B. Schroeder	8/22/2018	Created document
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