Forest Service Unmanned Aircraft Systems (UAS) Advisory Group UPDATE

April, 2014

UAS in the Forest Service - Background

- Several UAS missions conducted in last several years
  - Operational, research and demonstration/evaluation
- Application areas
  - Fire management
  - Resource mapping/inventory
  - Law enforcement
  - Research
- Conducted before agency established UAS policy

Current Forest Service UAS Perspective

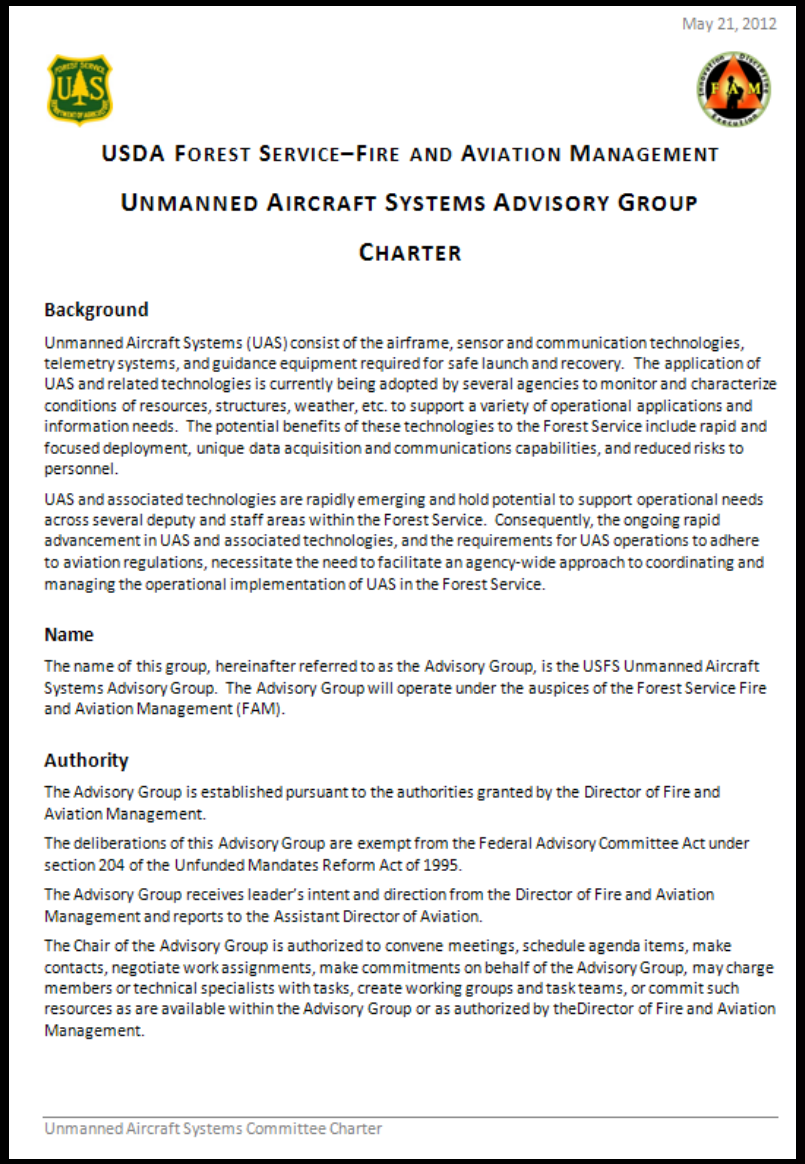
- Leadership recognizes potential of UAS
  - New and evolving technology so we need to proceed with caution
- Need to assess UAS implications on Forest Service manned aircraft program
  - Augment manned aircraft capabilities, not replace
  - Identify niche applications currently underserved
  - Leverage technology transfer benefits

Current Forest Service UAS Policy

- UAS are considered the same as manned aircraft (FSM 5713.7)
  - Acquisition
  - Carding of pilots/aircraft
  - Inspections
  - Maintenance
  - Avionics
  - Training
  - Operations
- Agency requirements to utilize UAS (FS NASMP 5.28)
  - Coordinate with Forest Service Washington Office and RAO
  - Completed and approved USFS and FAA documentation/procedures
- UAS considerations do not always reconcile with manned aircraft policies
  - Agency aviation policy and procedures review is needed

Forest Service UAS Advisory Group (UASAG)

- Charter developed and committee organized in early CY2012
  - Membership representation across USFS deputy and staff areas
- Charter signed in September 2012:
  - Fire and Aviation
  - Engineering
  - Forest Health and Protection
  - Forest Management Sciences



May 21, 2012

USDA FOREST SERVICE–FIRE AND AVIATION MANAGEMENT

UNMANNED AIRCRAFT SYSTEMS ADVISORY GROUP

CHARTER

Background

Unmanned Aircraft Systems (UAS) consist of the airframe, sensor and communication technologies, telemetry systems, and guidance equipment required for safe launch and recovery. The application of UAS and related technologies is currently being adopted by several agencies to monitor and characterize conditions of resources, structures, weather, etc. to support a variety of operational applications and information needs. The potential benefits of these technologies to the Forest Service include rapid and focused deployment, unique data acquisition and communications capabilities, and reduced risks to personnel.

UAS and associated technologies are rapidly emerging and hold potential to support operational needs across several deputy and staff areas within the Forest Service. Consequently, the ongoing rapid advancement in UAS and associated technologies, and the requirements for UAS operations to adhere to aviation regulations, necessitate the need to facilitate an agency-wide approach to coordinating and managing the operational implementation of UAS in the Forest Service.

Name

The name of this group, hereinafter referred to as the Advisory Group, is the USFS Unmanned Aircraft Systems Advisory Group. The Advisory Group will operate under the auspices of the Forest Service Fire and Aviation Management (FAM).

Authority

The Advisory Group is established pursuant to the authorities granted by the Director of Fire and Aviation Management.

The deliberations of this Advisory Group are exempt from the Federal Advisory Committee Act under section 204 of the Unfunded Mandates Reform Act of 1995.

The Advisory Group receives leader's intent and direction from the Director of Fire and Aviation Management and reports to the Assistant Director of Aviation.

The Chair of the Advisory Group is authorized to convene meetings, schedule agenda items, make contacts, negotiate work assignments, make commitments on behalf of the Advisory Group, may charge members or technical specialists with tasks, create working groups and task teams, or commit such resources as are available within the Advisory Group or as authorized by theDirector of Fire and Aviation Management.

Unmanned Aircraft Systems Committee Charter

UASAG Objectives

- Determine if there is an agency need for UAS
  - Assess feasibility of implementation
- Agency aviation policy review/recommendations
  - Acquisition and use of UAS and associated technologies
- Develop agency protocols
  - UAS missions; External agency coordination
- Prepare agency UAS guidance documentation
  - Communication plan, strategic plan and risk assessments

UASAG Communications Plan

Forest Service (FS) Unmanned Aircraft Systems (UAS) Charter-Based Communication Plan

Summary

The purpose of this document is to help guide the FS UAS Advisory Group's communication activities through the completion of the FS UAS Strategic Plan. This communication plan identifies and describes actions and tasks that must be performed or completed (outside of the project plan), the intended audience, and individuals responsible for performing or accomplishing each action or task. The three primary objectives of this plan are to:

- Ensure FS UAS Advisory Group members and others that work on behalf of the advisory group are on the same page.
- Inform FS leadership of UAS Strategic Plan development and obtain feedback.
- Communicate consistently to target audiences throughout the development of the FS UAS Strategic Plan.

Audiences

The FS UAS Advisory Group, FS Leadership, FS UAS Advisory Group Charter Signatories, FS Aviation Management Personnel, and Other represent six target audiences used in this communication plan. A description of each audience is described below.

Audience Category	Description
FS UAS Advisory Group	The FS UAS Advisory Group members and anyone working on behalf of the advisory group.
FS Leadership	Regional Foresters, Station Directors, Area Director, and ITF Director.
FS UAS Advisory Group Charter Signatories	All signatories on the FS UAS Advisory Group Charter (the Directors of Fire and Aviation Management, Engineering, Forest Health Protection, and Forest Management Sciences).
FS Aviation Management Personnel	All RAOs, RASMs, and other aviation management personnel.
External Agency Partners	Relevant partners in external agencies including USGS, NPS, BLM, CBP, and more.
Other	This audience includes all potential audiences that have not been captured in the categories listed above.

Communicate FS UAS Advisory Group's Activities and FS UAS Policy Tasks & Items

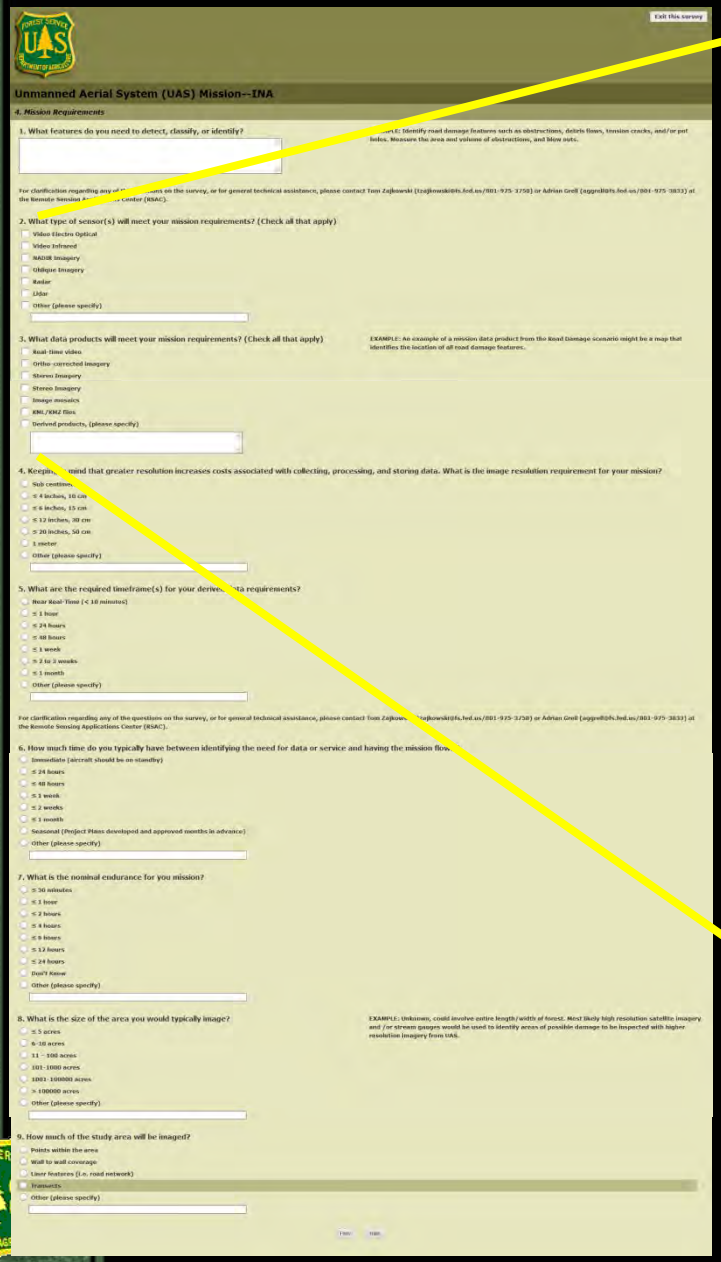
Item/Task/Action	Description/Method/Message	Audience (*see audience description on page 1*)	Frequency/Date	Owner (*or Delegated Authority*)
Report Charter Status	Provide status on Charter with each meeting until it is signed.	• FS UAS Advisory Group	COMPLETED	*Bob Roth*
Communicate FS UAS Advisory Group Charter	Draft and email a formal letter indicating that the FS UAS Advisory Group exists, highlight objectives of the advisory group, and where to get more information.	• FS Leadership	Once—after Charter is signed.	*Bob Roth*
Create Interim FS UAS Website	Generate interim FS UAS website that communicates current/interim FS UAS policies and guidance materials.	• All audiences	Once—send link out in letter after Charter is signed.	*RSAC*
Update Leadership	Provide leadership with periodic updates on FS UAS Advisory Group's accomplishments.	• FS UAS Advisory Group Charter Signatories	Quarterly	*Bob Roth, Everett Hinkley, or RSAC*
Present Alternative Analysis Report	Present the findings of the Alternative Analysis Report.	• FS UAS Advisory Group Charter Signatories	Once—after the Alternative Analysis Report is completed.	*Bob Roth or Everett Hinkley*
Disseminate Interim FS UAS Policy Briefing Paper	Disseminate interim FS UAS policy briefing paper as requested by email, make available on interim FS UAS website, and educate groups or individuals as needed on the current status and policy of UAS in the FS.	• FS UAS Advisory Group • FS UAS Advisory Group Charter Signatories • FS Leadership • External Agency Partners • Other	As needed until Strategic Plan is completed.	*Jim Morrison or Everett Hinkley*
Update FS Aviation Management Personnel	Update FS aviation management personnel on activities of the FS UAS Advisory Group.	• FS Aviation Management Personnel	Quarterly	*Bob Roth*

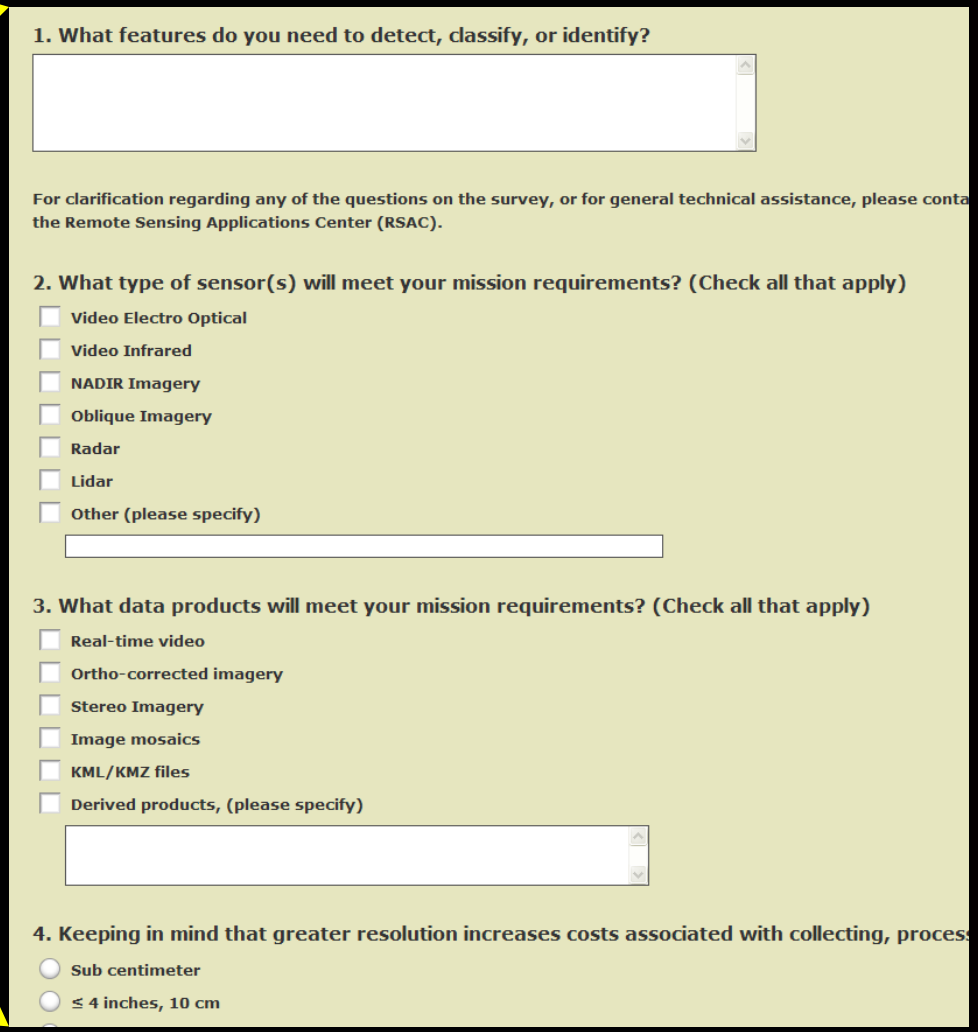
- Keeps advisory group members "on the same page"
- Inform USFS leadership; internal/external audiences

UASAG Observation/Mission Requirements Survey

- Conduct survey among deputy/staff areas of agency
  - Identify current observation gaps and other technical needs
    - Considerations:
      - Platform requirements (HALE, MALE, LALE, LASE, etc.)
      - Sensor requirements (spatial resolution, spectral channels, etc.)
      - Observation frequency
      - Data latency
      - Etc.
  - Compile and summarize survey results by early CY2013

UASAG Observation/Mission Requirements Survey

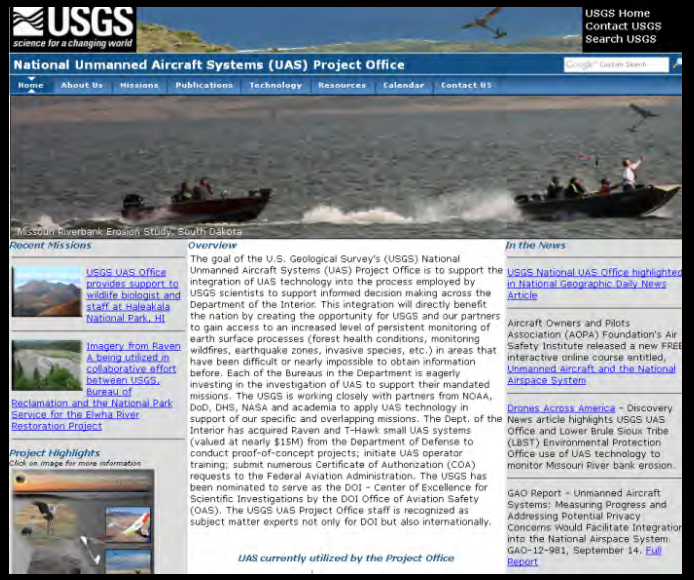


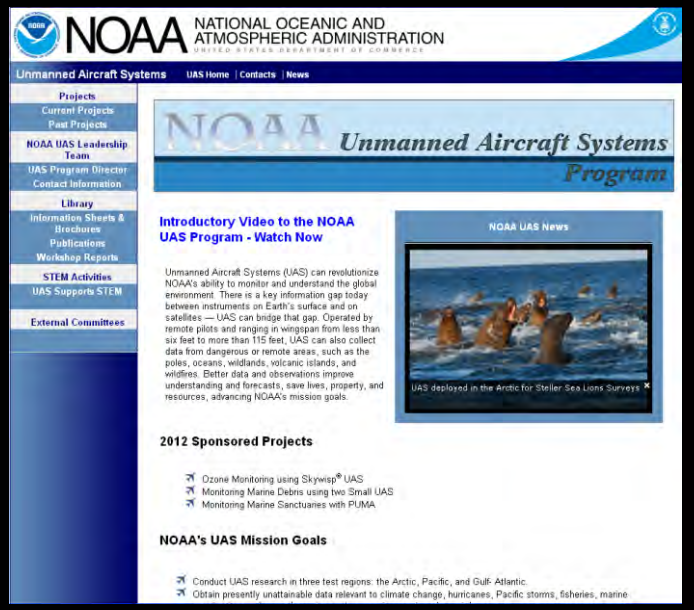


- 4 part survey
- Completed once for each potential mission
- http://www.surveymonkey.com/s/UAS_INA

UASAG-External Agency Knowledge Transfer

- Learn from established UAS programs (NASA, USGS, NOAA, etc.)
  - Strategic planning
  - Mission requirements/protocols
  - Coordinate on common interests/goals
- Invite SMEs to participate on UAS Advisory Group
  - Interest and participation by government representatives is welcomed





UASAG-External Agency Collaboration

- Collaborate with UAS research agencies/organizations
  - NASA, universities, etc.
- Collaborate with operational UAS programs
  - DHS/CBP, USGS, DOI OWF, etc.
- Establish formal partnerships to meet mutual objectives
  - MOAs/MOUs
- Develop protocols and procedures for engagement

Collaboration Opportunities With CBP

- Leverage CBP Predator UAVs
  - Tactical fire monitoring support
  - Law enforcement activities

UASAG UAS Mission SOPs/Protocol Development

- Identify and recommend potential projects
  - Forest health
  - Fire
- Protocol development by going through the process and documenting
- Conduct UAS mission from top to bottom
  - Risk assessments by UAV type
  - COA requests
  - PASP development

Use of UAS on Rim Fire in California

- August 27, 2013 - NICC placed RFA to DoD
- DoD provided MQ-1 operated by CA Air National Guard
- MQ-1 flew 150+ hours, providing EO/IR Full Motion Video
- Missions included:
  - Reconnaissance and monitoring during burnouts
  - Verification of new hotspots
  - Verification of location and size of known spot fires
  - Daytime mapping of fire perimeter

MQ-1 Ground station at Rim Fire ICP where IMT members watched video of events as they were happening.

Recreational use of UAS on NFS land

- The FAA has regulatory authority over recreational use of airspace by model aircraft.
- FAA Advisory Circular 91-57 "…outlines and encourages *voluntary (italics added)* compliance with safety standards for model aircraft operators."
- USFS has no authority to establish additional regulations regarding where UAS can or can't be flown.
  - However, recreational UAS must abide by TFRs.
  - Per the FAA, federal laws prohibit certain types of flight activity and/or provide altitude restrictions over "designated Forest Service Areas."

2014 Short term plans

- Develop SOP's for cooperators
- Conduct operational mission
  - With cooperator aircraft
  - Contract for services

Short term mini groups

- Contract Solicitation for aviation asset
- Airworthiness
- Inspections: Develop standards
  - Aircraft
  - Pilots
- Policy
- Mission request form
- Communications Plan/PIO and media campaign
- Privacy
- PASP/DORA: More detailed risk assessment based on aircraft and mission
- Change management plan:
- Data management
- Public use over FS lands

Thanks

Comments/Questions?

Bob Roth
Advisory Group Chairman
rroth@fs.fed.us or 406-829-6712

http://fsweb.wo.fs.fed.us/fire/fam/aviation/uas/