



National Weather Service and Civil Air Patrol Update

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OFCM WG/DIAP
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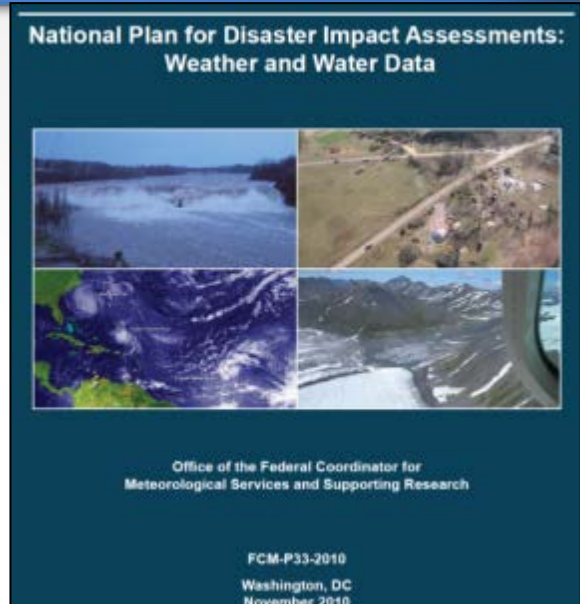
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National Plan DOC NOAA OFCM and DOD USAF CAP



- Joint Meteorological Committee coordinated weather information and forecasts during WWII
- The NOAA Office of the Federal Coordinator for Meteorology (OFCM), maintains coordination of federal meteorological activities today
- 15 federal departments and agencies are currently engaged in meteorological activities and participate
- The OFCM coordinates and publishes the **“National Plan for Disaster Impact Assessments: Weather and Water Data”**
- **Goal = coordinating the interagency in the collection of perishable data to advance research and science**
- Both USAF CAP and NOAA’s roles are explained
- The protocol for Federal Agencies to request CAP support provided in new Appendix E
- CAP meets NOAA Aviation Safety Standards



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National Agreements

DOC NOAA OFCM and DOD USAF CAP



- We have an overarching 5-year Umbrella Agreement (valid until November of 2017)
- Umbrella agreement contains the mission description, coordination protocol, need for reimbursement and a liability clause
- ...”AF AUX/CAP may provide light powered aircraft, aircrews, and communications support for NOAA OFCM ***to assist with aerial assessments/survey flights in support of pre- and/or post-storm scientific weather damage study operations.***”
- An Annual Agreement is also needed at the start of each federal fiscal year to specify accounting codes for the funding transfer.

MEMORANDUM OF AGREEMENT
BETWEEN THE
OFFICE OF THE FEDERAL COORDINATOR
FOR METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH,
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION,
U.S. DEPARTMENT OF COMMERCE;
AND THE UNITED STATES AIR FORCE

A. Parties and Purpose

- 1) This Memorandum of Agreement (MOA) sets forth procedures and practices for cooperation between the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM), part of the National Oceanic and Atmospheric Administration (NOAA), under the U.S. Department of Commerce (DOC), and the Deputy Chief of Staff, Operations, Plans and Requirements (A3/5), Headquarters U.S. Air Force (USAF), U.S. Department of Defense (DOD) through which DOC will pay USAF to provide support under the Economy Act for the collection and delivery of perishable data surrounding significant meteorological events.
- 2) USAF/A3/5 is the Air Force office responsible for coordinating the services of the Civil Air Patrol (CAP) when acting as the Air Force Auxiliary to provide aerial assessments/survey flights in support of pre- and/or post-storm scientific weather damage study operations to the OFCM.
- 3) NOAA has a three-pronged mission of Science, Service and Stewardship; to understand and predict changes in climate, weather, oceans, and coasts, to share that knowledge and information with others, and to conserve and manage coastal and marine ecosystems and resources.



NWS prepares for a CAP overflight of the Arkansas tornado damage April 2014





Most Common NWS Requests

NWS averages 11 CAP requests annually



Goal to assess damage impacts due to:

- Hurricanes
- Flooding
- Tornadoes
- Derechos
- Tsunamis

Goal to monitor for hazardous weather and flooding:

- Monitoring of Glacial Dammed Lakes (Alaska)
- River flooding onset
- Tsunami arrival

Skilak Glacier Dammed Lake AK
September 2002



Greensburg, KS EF-5 tornado May 4 2007



North Dakota Wing image of Red River of the North flooding March 2009

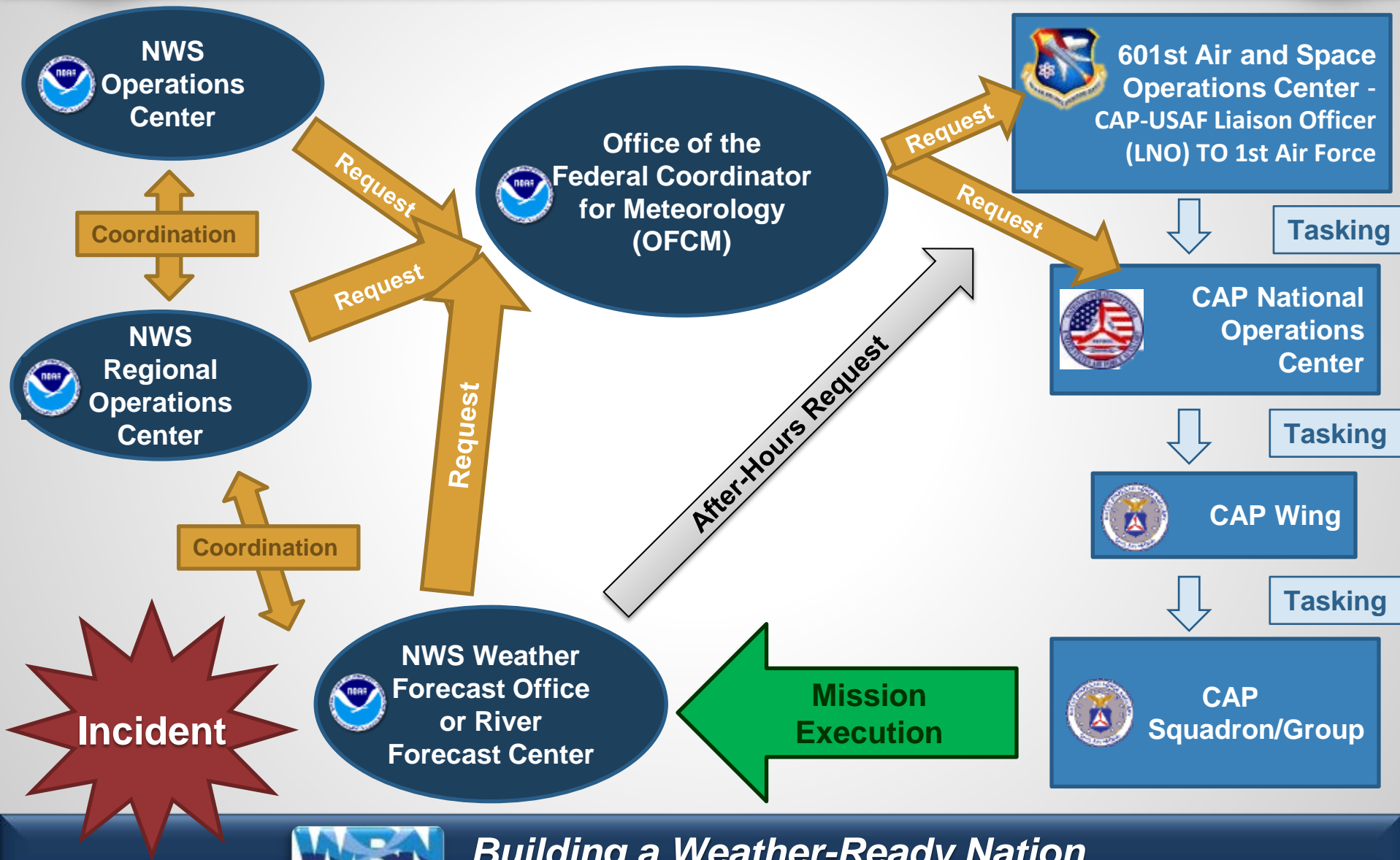


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CAP Support Request from NWS

Communication Flow





Form for Requesting CAP Support

NOAA OFCM Lead



NWS Request for Civil Air Patrol (CAP) Flight Support

Date of Request:	
Name of Requestor:	<and job title>
Office Location:	<local office>
Phone Number:	<best contact phone>
Fax Number:	
Email Address:	
Date of Event:	
Time of Event:	<as applicable>
Significant Weather/ Event Type:	<examples: coastal pre-storm assessment; hurricane; severe convective outbreak, including tornado, hail, and high winds; wildland fire; tsunami; river flooding; volcanic activity; inland flooding, ice jams/movement, monitoring glacier dammed lakes etc.>
Location of Event:	<general location>
State(s):	<as applicable>
County(ies):	<as applicable>
Nearest populated area(s):	<significant populated areas>
Flight Support Requested	
Requested Flight Date	
Type of Assessment	_____ Visual Assessments _____ Aerial Photographs
Estimated Flight Time:	<hours>
Estimated Flight Distance:	<miles>
Airport Preference	<preferred departure airport>
NWS Passengers/POC	<names of NWS passengers/job title and identify NWS POC for the flight>
Other information (e.g., additional contacts):	



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Form for Reporting CAP Mission

NOAA OFCM Lead



NWS Civil Air Patrol (CAP) Mission Report

Date of Request	<date of original request – from the request form>
Date of Completed CAP Flight	<mm/dd/yy>
Type of Aircraft	<Type of CAP aircraft used during the mission>
Number of Sorties Flown	
Location of Survey Area	<general description of survey area>
Total Flight Hours	<CAP crew should provide this info>
Flight Cost Estimate	<CAP crew should provide an estimate>
Participating NWS office(s)	<list local NWS offices participating on flight>
NWS Personnel Onboard:	<list NWS personnel onboard with job title>
What was learned from this overflight mission/other pertinent details:	<p><some options are: how this flight enhanced situational awareness and improved NWS Decision Support Services, final EF-scale rating; if other federal passengers were onboard; any direct benefit(s) from doing overflight (vs. a ground survey); key insights for damage assessment or coastal pre-storm assessment; etc.></p> <p>Please take the time to generate this report as your feedback is very important for continued funding justification – thank-you.</p>

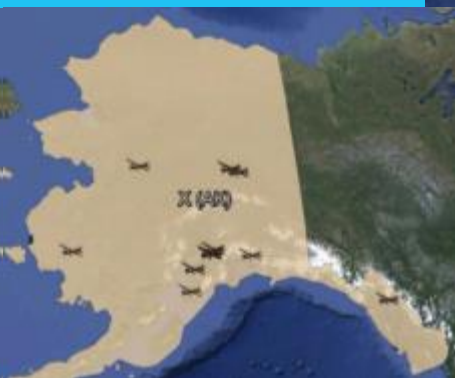


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Civil Air Patrol Assets

Distribution based on FEMA Regions



C-172R



C-182



Glider



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Unmanned Aerial Systems (UAS)

NWS UAS Team Preliminary Findings



- Aerial imagery of storm damage provided by hobbyist UAS operators can be another great example of “citizen science” – similar to SKYWARN weather spotters.
- Leverage UAS imagery owned by public safety officials and agencies
- Contract with UAS Operators with a [Section 333 waiver](#) from the FAA
- Not feasible for every NWS forecast office to own a UAS
- NWS will continue to work with the NOAA UAS Program Office and the Office of Marine and Aviation Operations (OMAO)



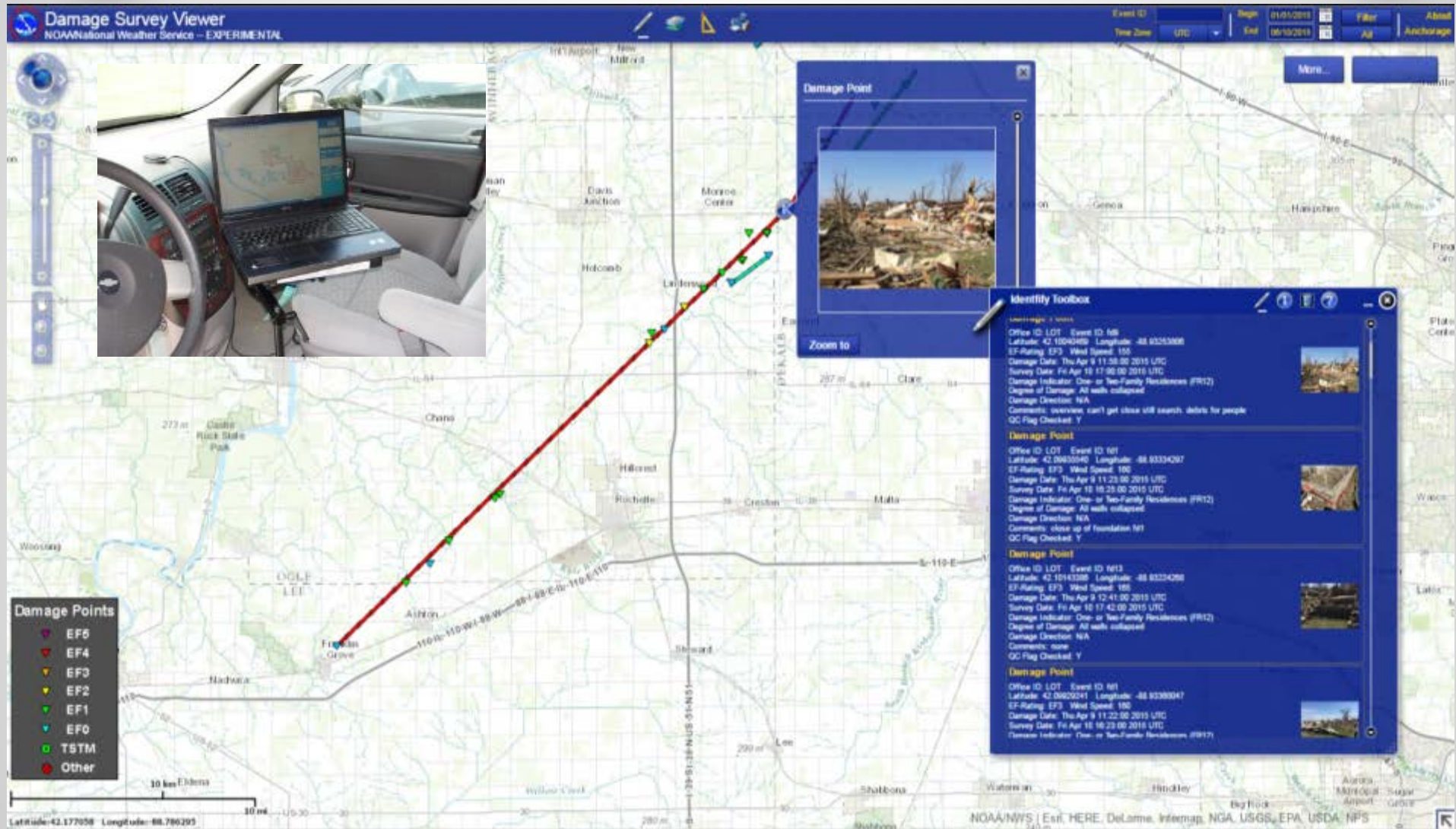
EF1 tornado damage Ft. Stewart-Hunter Army Base, GA on February 3, 2016





Damage Assessment Toolkit

<https://apps.dat.noaa.gov/StormDamage/DamageViewer/>



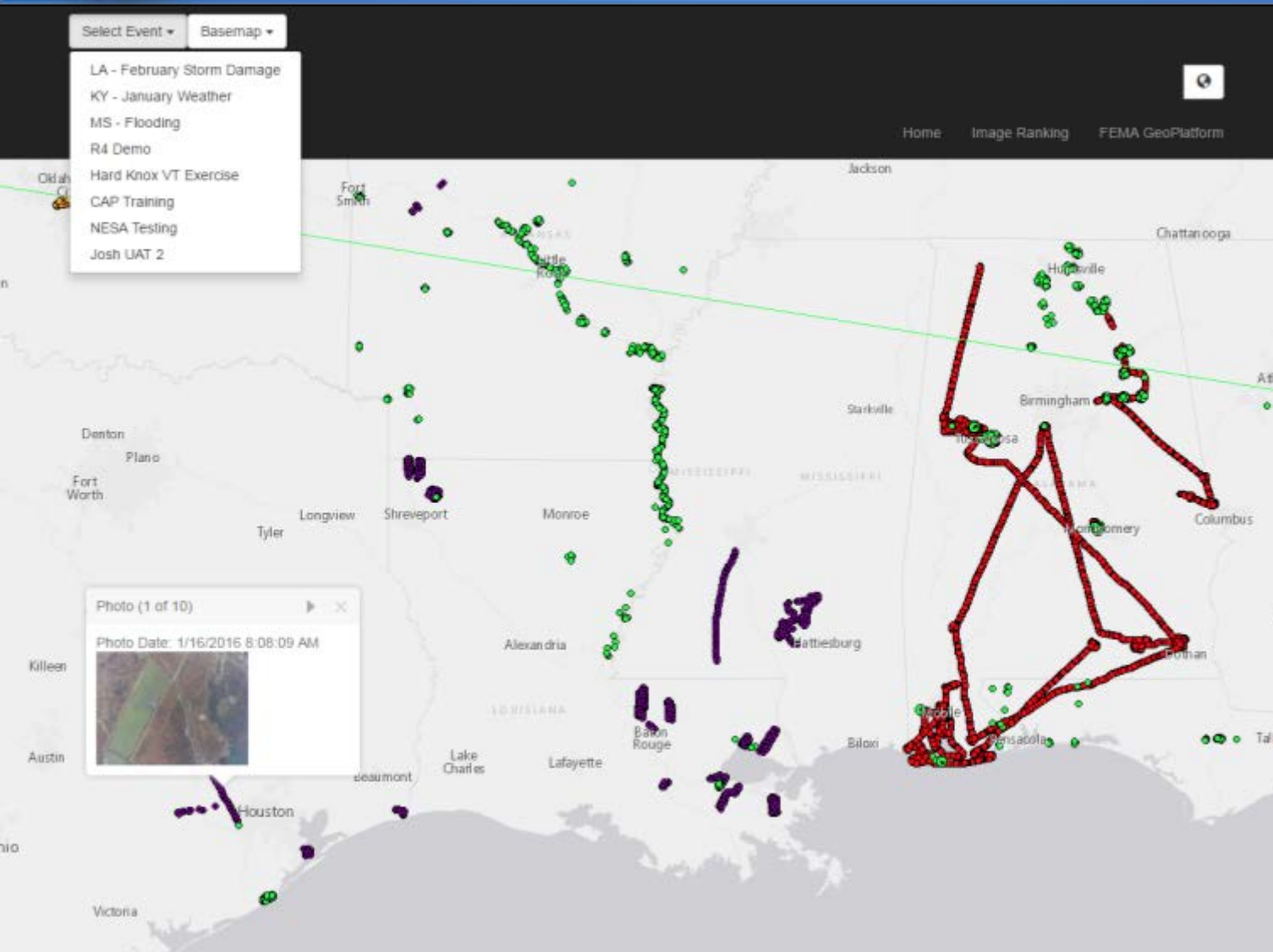
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FEMA Geoportal



<http://apps.femadata.com/ImageEventsPublic/index.html>



- FEMA mission assigns CAP for incidents requiring disaster assistance
- CAP uploads their imagery to the FEMA geoportal
- FEMA asking the interagency to utilize this for any imagery collection
- Coordination ongoing...



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