

FEMA Region 04  
Remote Sensing - UxS

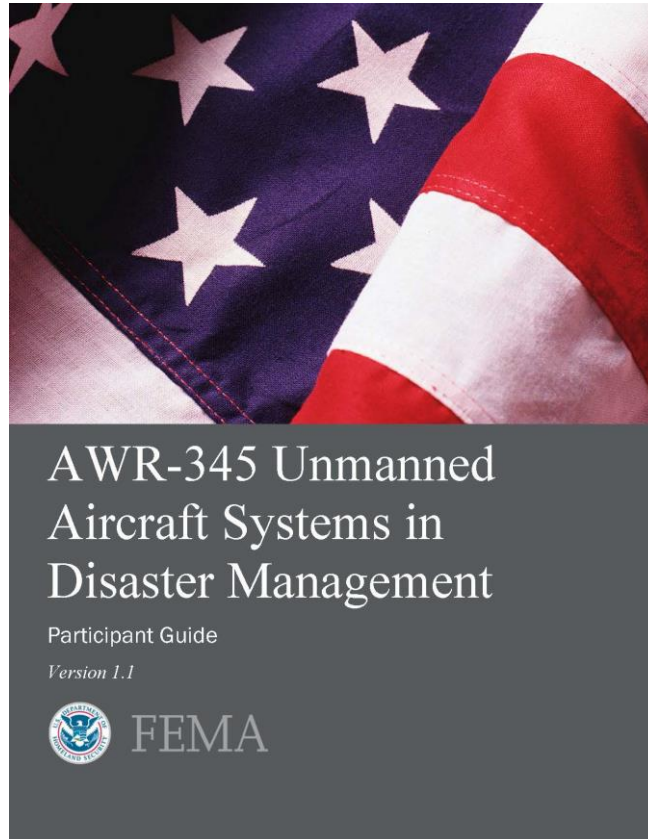


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North Carolina Public  
Sector UAS Working Group  
Meeting

July 25, 2023

# FEMA National Training & Education Division



AWR-422 UAS  
Flight Operations

# FEMA National Integration Center

UAS Typing



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# FAA & Assure Center of Excellence for UAS Research

## Schedule of Events – Combined Look Ahead

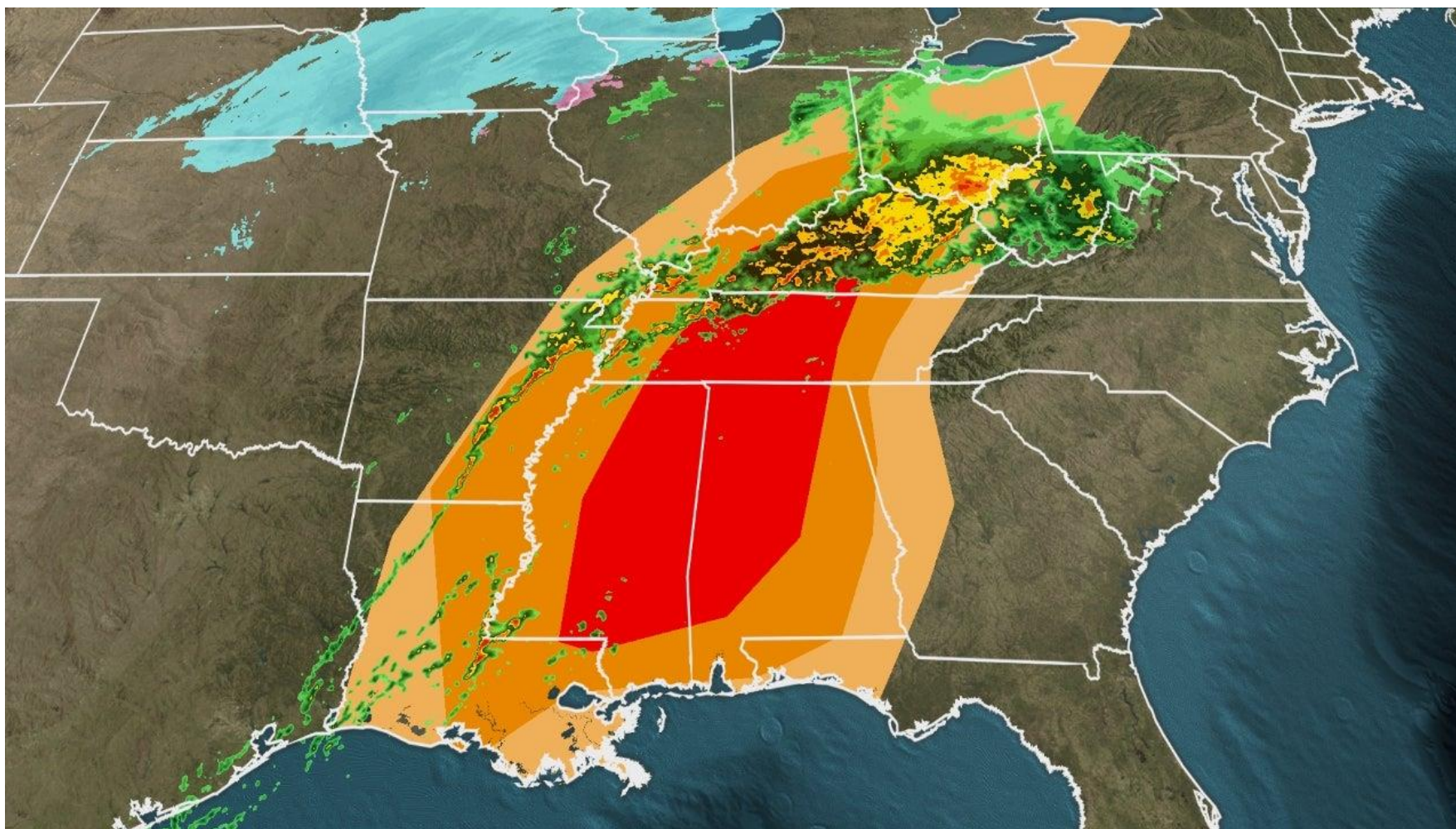
Disaster Category	Event Type	Lead Organization	Location	Date(s)
Train Derailment	Seminar	Univ. of Vermont (UVM)	ZOOM	<del>21-Feb-23</del> , 7 March 23
Hurricane/Tornado/Flooding	Workshop/Tabletop Exercise	Univ.of Ala.Huntsville (UAH)	Huntsville, AL	22-Feb-23
Wildland Fire: New Fire in Satellite Data	Workshop/Tabletop Exercise	Univ. of Alaska - Fairbanks (UAF)	Fairbanks	23-Mar-23
Volcanic Eruption	Workshop/Tabletop Exercise	Univ. of Alaska - Fairbanks (UAF)	Anchorage	30-Mar-23
Airport Terrorism	Seminar	Univ.of Ala.Huntsville (UAH)	Huntsville, AL	3-Apr-23
Airport Terrorism	Drill	Univ.of Ala.Huntsville (UAH)	Huntsville, AL	5-Apr-23
Earthquake with Tsunami	Workshop/Tabletop Exercise	Univ. of Alaska - Fairbanks (UAF)	Anchorage	11-Apr-23
Oil Spill	Workshop/Tabletop Exercise	Univ. of Alaska - Fairbanks (UAF)	Anchorage	14-Apr-23
Train Derailment	Workshop/Tabletop Exercise	Univ. of Vermont (UVM)	Burlington	18-Apr-23
Hurricane/Tornado/Flooding	Functional Exercise	Univ.of Ala.Huntsville (UAH)	Huntsville, AL	24-Apr-23
Pandemic: Medical Delivery Between Rural Communities	Functional Exercise	Univ. of Alaska - Fairbanks (UAF)	TBD	16-May-23
Pandemic: Medical Delivery Between Major Hub and Rural Community	Functional Exercise	Univ. of Alaska - Fairbanks (UAF)	Fairbanks	30-May-23



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[www.ASSUREuas.org](http://www.ASSUREuas.org)



Bi-Weekly Regional UAS Working Group Meeting

February 16th, 2023



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# FEMA Region 04 UAS Working Groups



AL UAS WG Kickoff - Huntsville, AL December 11, 2017



NC UAS WG Kickoff - Wanchese, NC April 20, 2018



FL UAS WG Kickoff - Tallahassee, FL August 3, 2018



NC UAS Workshop - Nags Head, NC April 19, 2018



GA UAS WG Kickoff - GPTSC June 18, 2018



SC UAS WG Kickoff- SC EOC August 28, 2018



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# FEMA Region 04 UAS Working Group Exercises



Alabama UAS WG Rodeo – October 28, 2019



Georgia UAS WG Exercise – November 28, 2019



Florida UAS Summit – March 2022



Florida CURSE Exercise – June 28 - 29, 2023



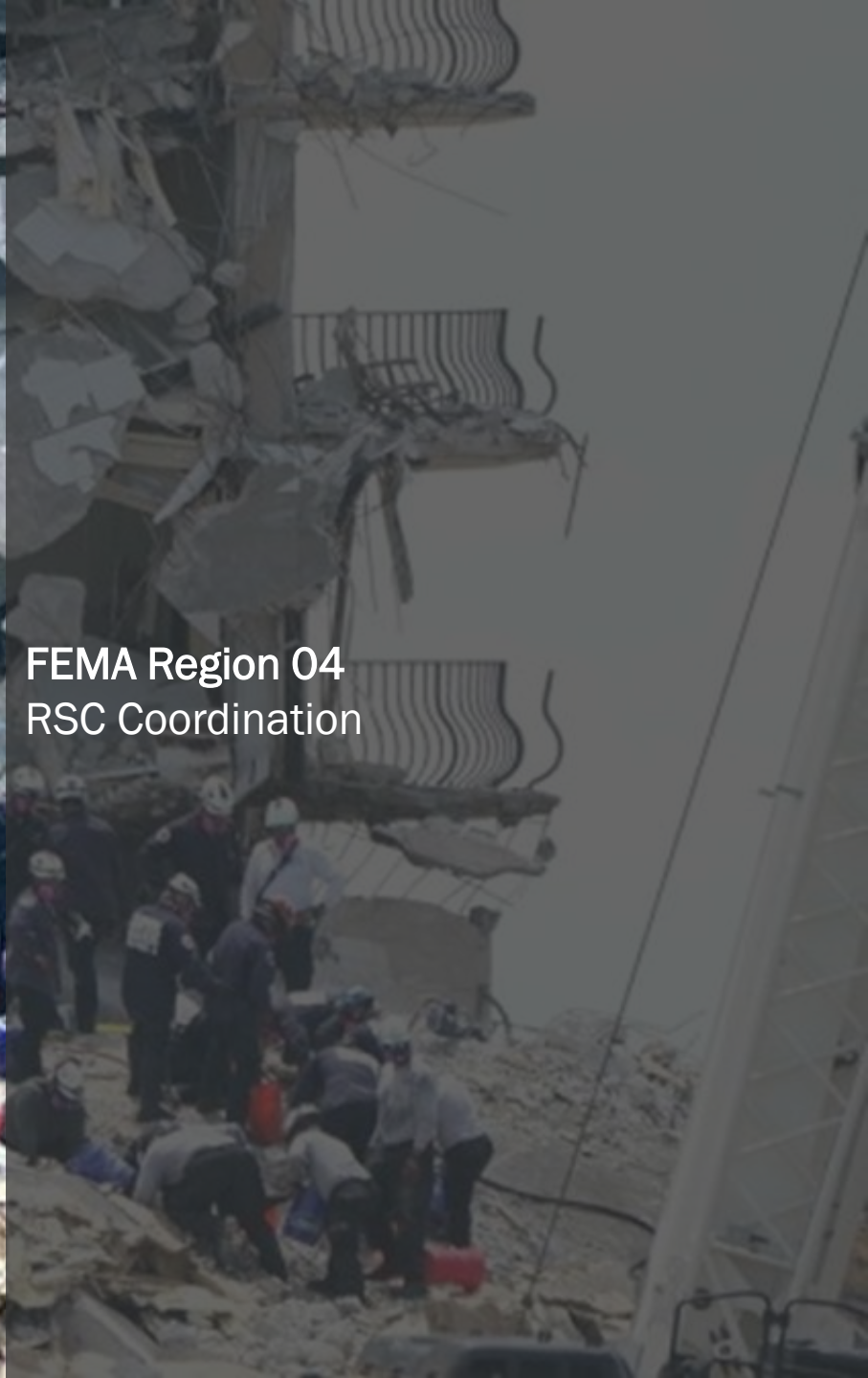
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FEMA Region 04  
RSC Coordination



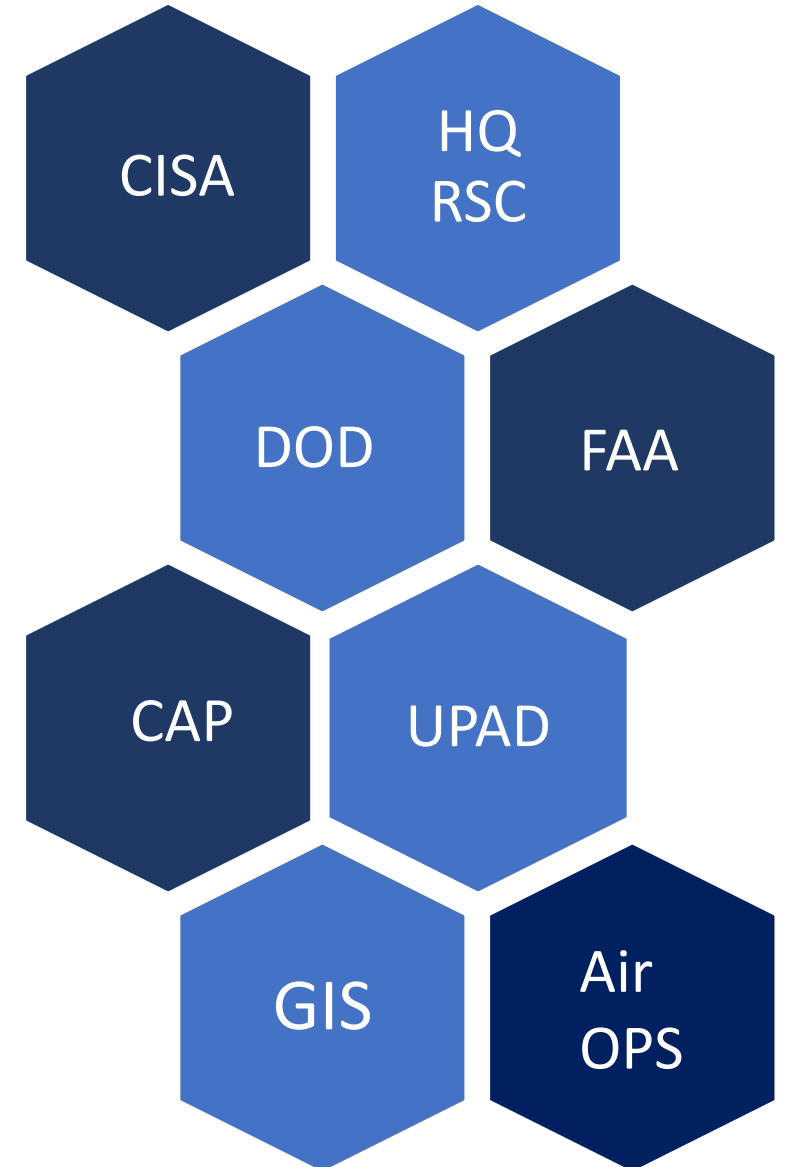


# Remote Sensing Cell

The Remote Sensing Cell was created to coordinate the collection of imagery during major disasters. This collection is accomplished by the means of a collaborative collection plan that incorporates an approved collection strategy that includes areas of interest identified by the RRCC, ESFs, state partners and other federal agencies.



The members of the RSC include: RSC Staff from Mitigation, National Preparedness, Recovery, Response, Air Ops, CISA, Civil Air Patrol, FAA, FEMA GIS, DOD Collection Plan Manager, and an Imagery Analyst.



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# Local, State, Federal & Private Sector Calls

## Pre-Landfall UAS Coordination Calls



**ESFs**



**FEMA**



**FEMA**



**Law Enforcement**



**Insurance**



**Utilities**



**Media**



# Remote Sensing Partners



**MAXAR**

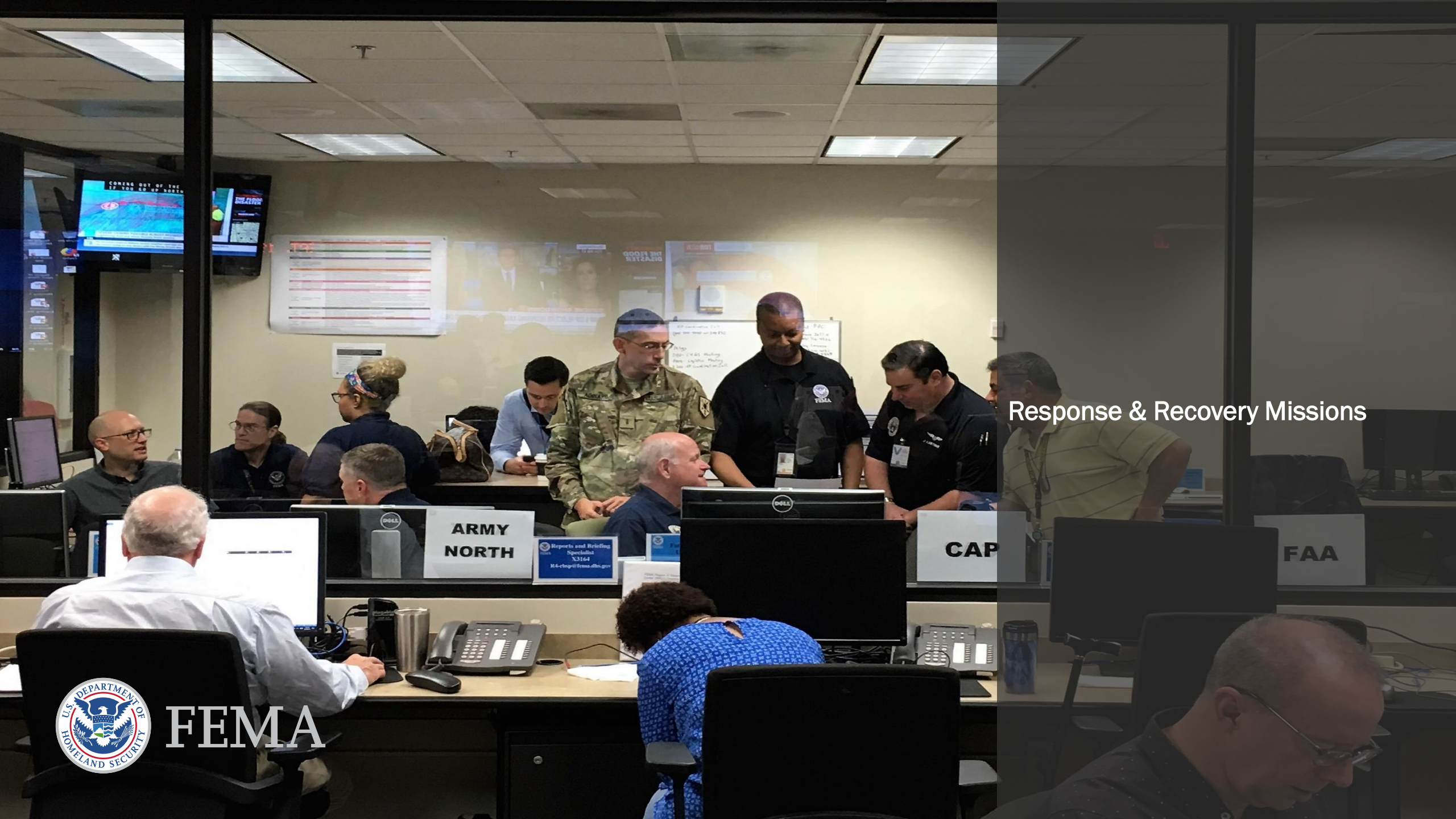


The International Charter Space and Major Disasters



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Response & Recovery Missions



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ARMY  
NORTH

Reports and Briefing  
Specialist  
X3164  
R4-camp@fema.dhs.gov

CAP

FAA





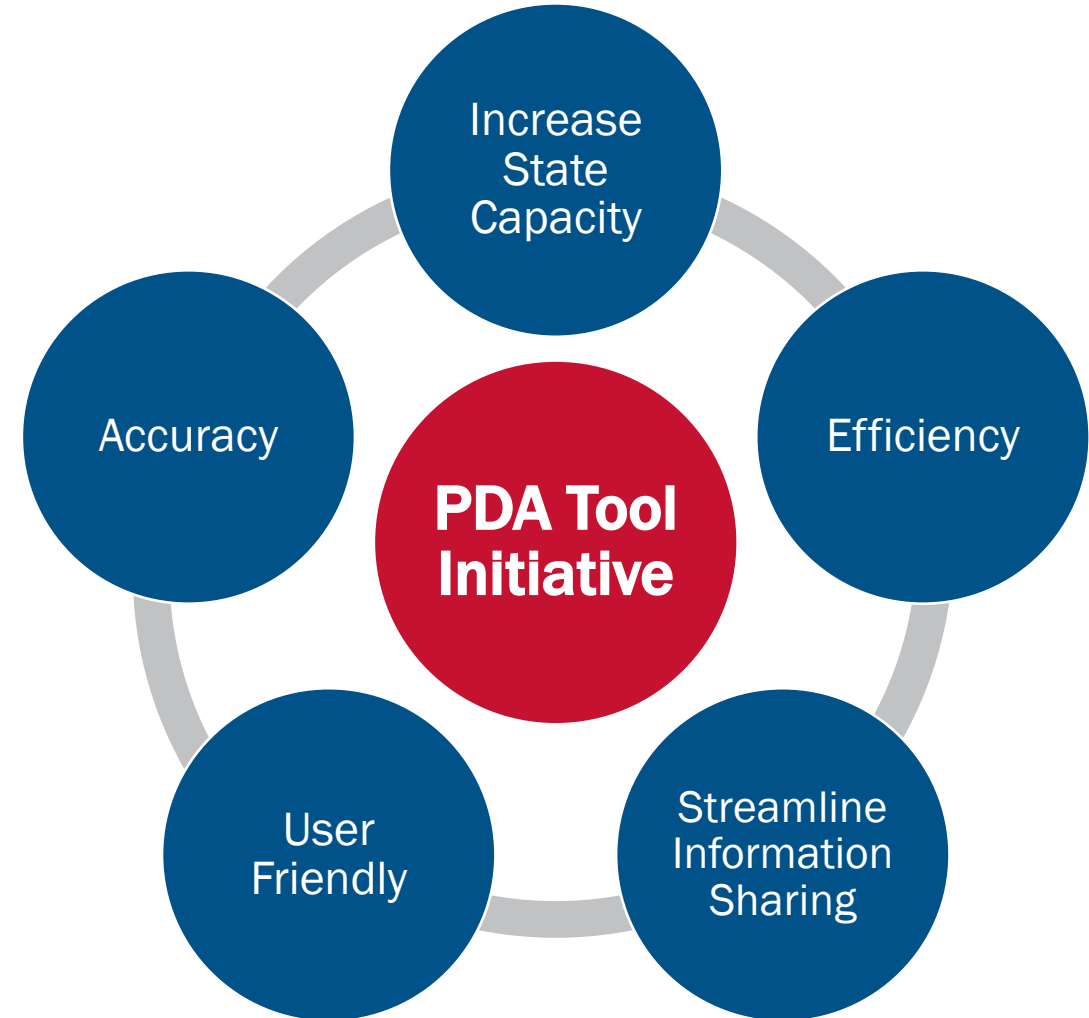
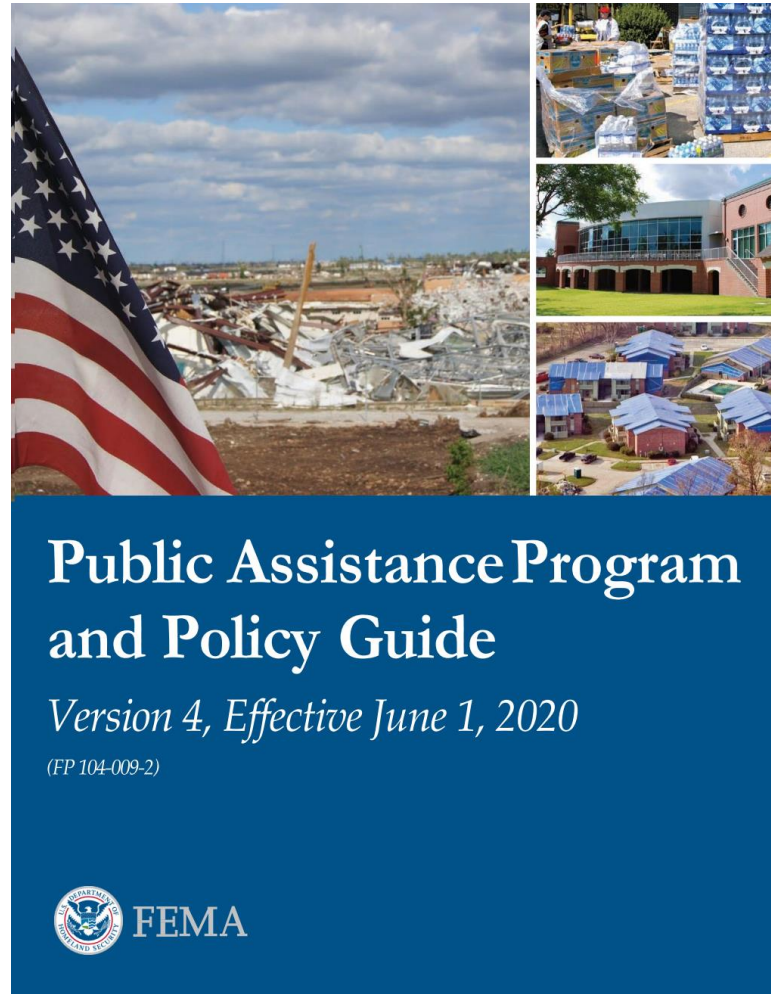
# Windshield Damage Assessment

Perform windshield damage assessment and optimize outage response with ArcGIS QuickCapture.



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# Desktop Damage Assessment



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# Collaborative Collection Plan

[illegible]

## Required AOI Information

## Priority

## Location

## Location Name

### Description

Latitude

Longitude

## Essential Elements of Information

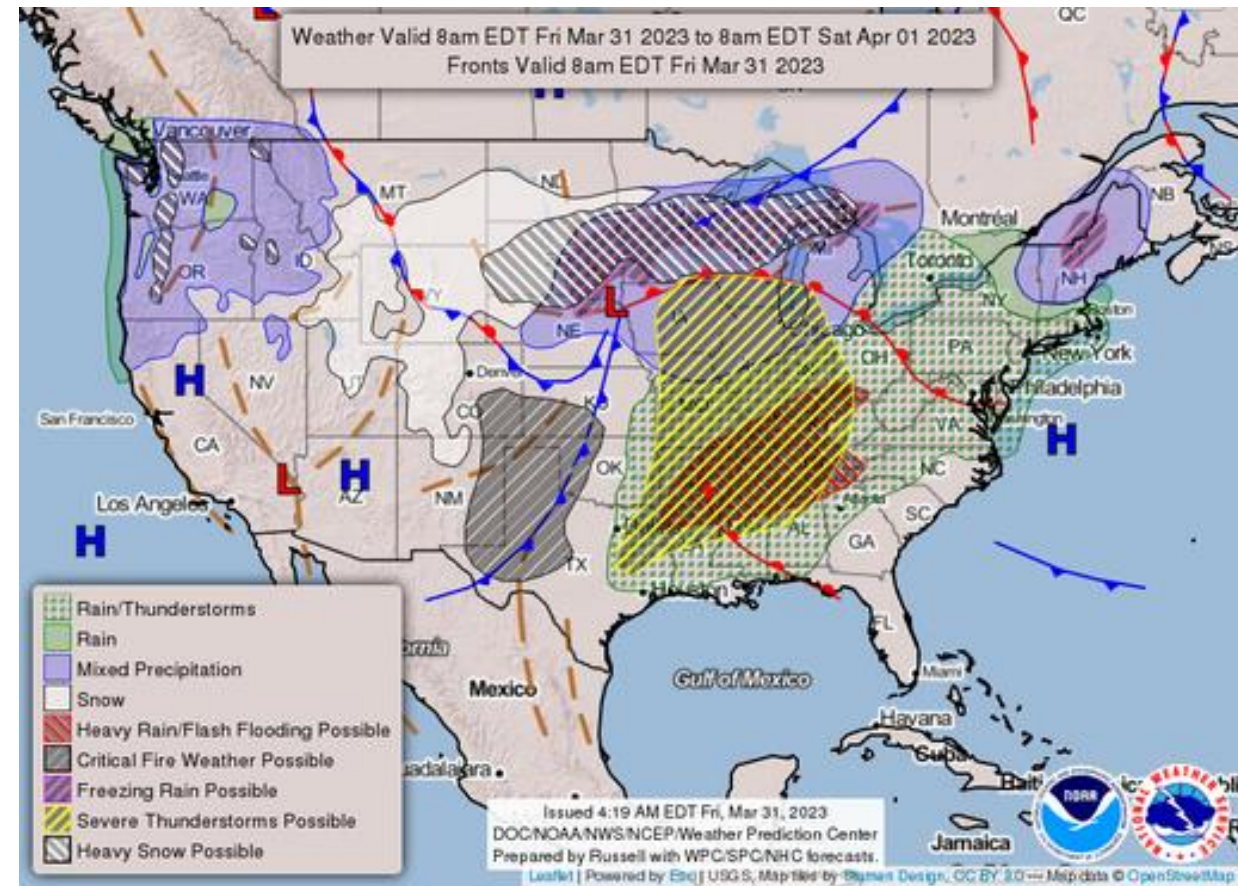
## Reporting Instructions

## Special Instructions



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# Collaborative Collection Plan Calls



FEMA Region 04 Remote Sensing Call for the Mississippi Tornadoes

March 31, 2023



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**FEMA**  
Region 4  
Remote Sensing Cell

Green St & LL Anderson Ave,  
Selma, AL, 36703, USA

DOI: January 16, 2023

32.418, -87.020

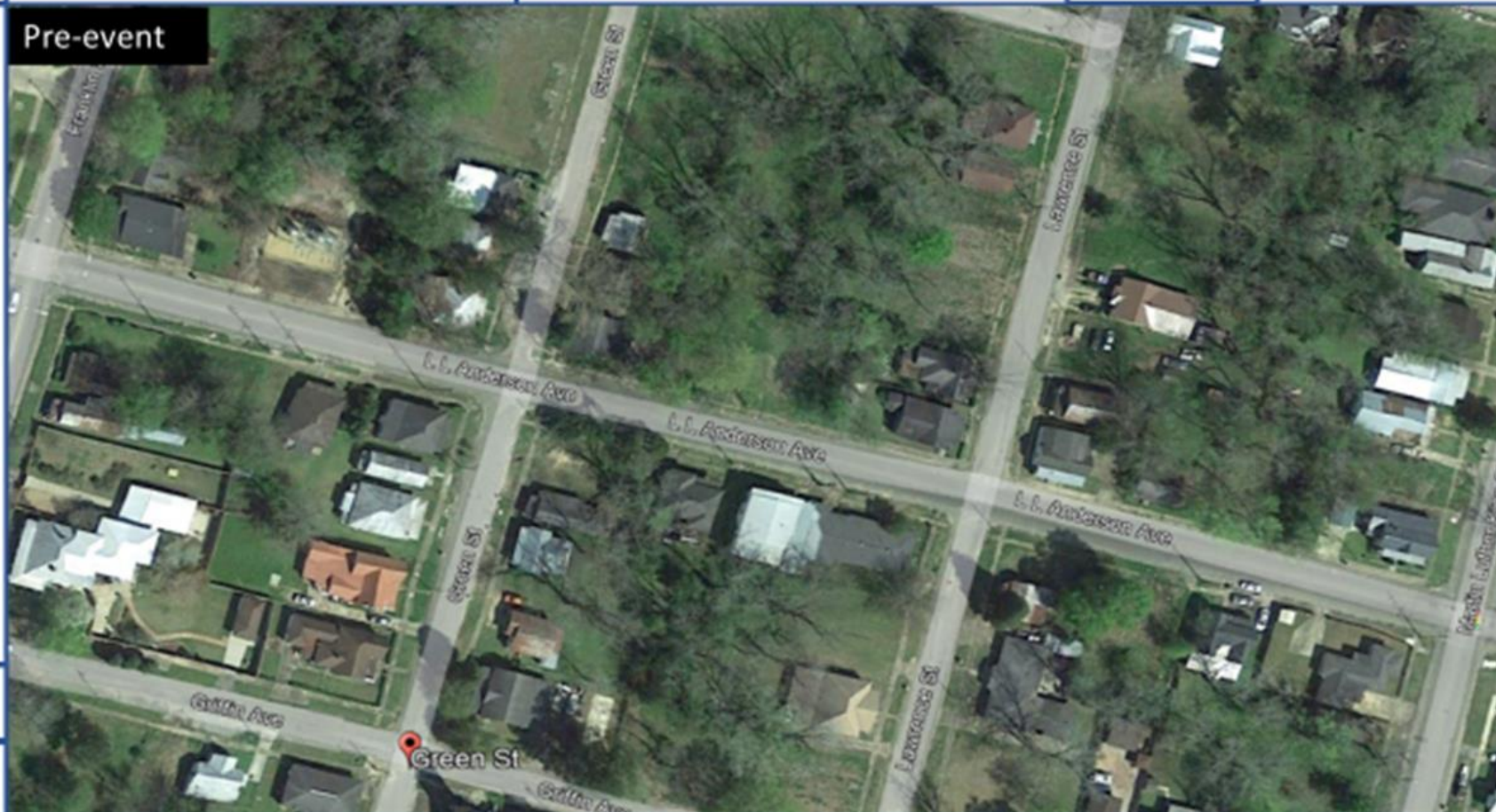


Assessors Comments:

Pre-Disaster Imagery 3/2019

(CH, January 16, 2023 , 10:00 AM)

Pre-event



Date of Imagery: 1/14/2023  
January 14, 2023

Prepared By: Cary Hollis

Reviewed By: Travis Potter

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Region 4  
Remote Sensing Cell

Green St & LL Anderson Ave,  
Selma, AL, 36703, USA

DOI: January 16, 2023

32.418, -87.020



**Assessors Comments:**

**3 Destroyed** structures. There are several structures that are displaced or no longer there. There are debris fields consistent with destroyed structures.

There are **8 Major** damaged structures with substantial failure. Structural debris is visible adjacent to the buildings.

There are **8 Minor** damaged structures sustaining exterior damage (e.g., missing roofing tiles or roof segments)

Multiple structures were potentially **affected** by high wind event. Egress and ingress are observed to be unrestrictive.

(CH, January 16, 2023 , 10:00 AM)



Date of Imagery: 1/14/2023  
January 14, 2023

**Prepared By: Cary Hollis**

**Reviewed By: Travis Potter**

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**FEMA**





**FEMA**

Region 4  
Remote Sensing Cell

Green St & LL Anderson Ave,  
Selma, AL, 36703, USA

DOI: January 16, 2023

32.418, -87.020



**Assessors Comments:**

Observed area post-event. Multiple non-construction debris piles are visible in the highlighted white boxes

(CH, January 16, 2023 , 10:00 AM)

**Post-event**



Date of Imagery: 1/14/2023  
January 14, 2023

Prepared By: Cary Hollis

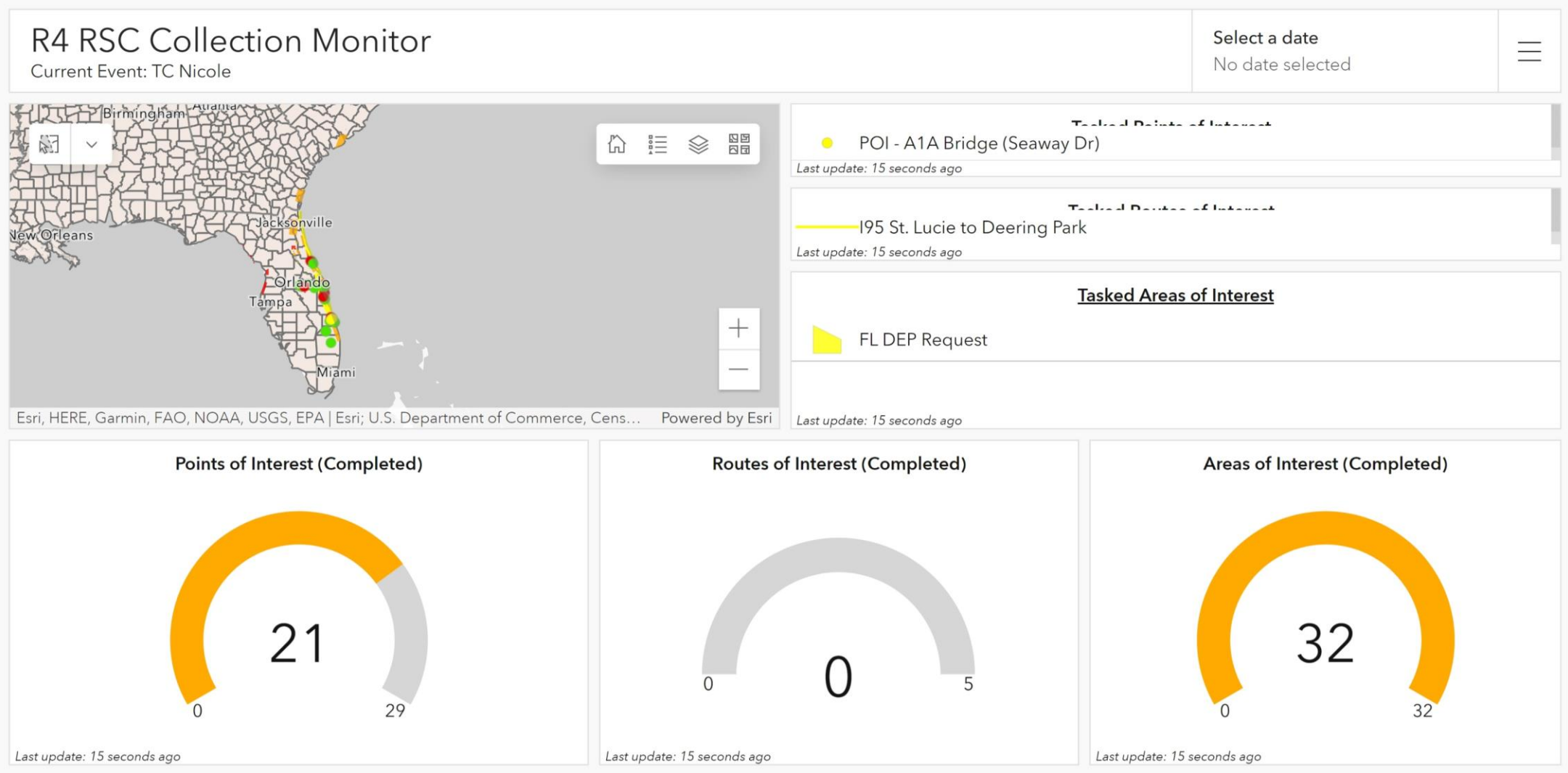
Reviewed By: Travis Potter

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# Collection Monitor Tool





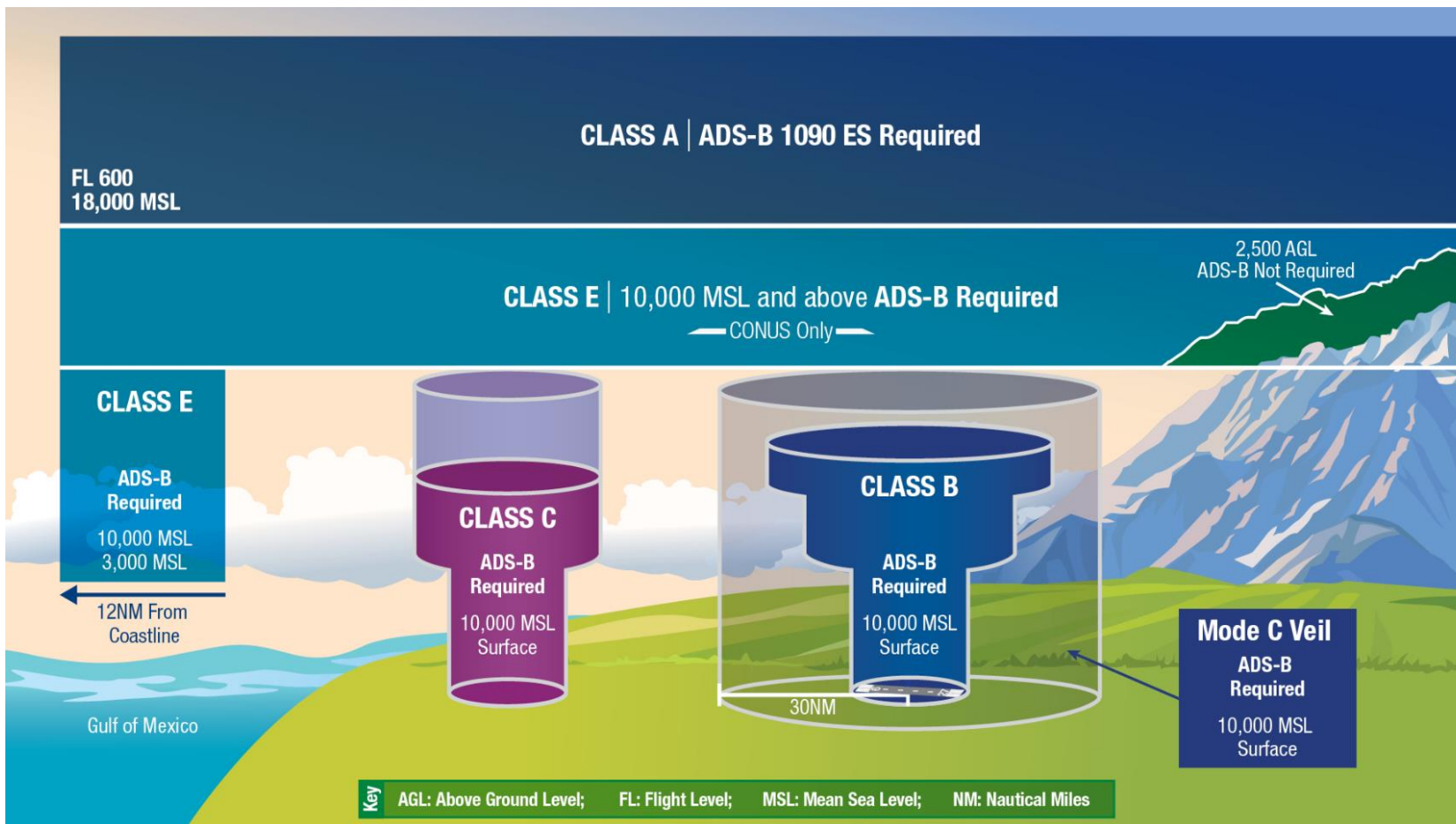
Future of UxS  
Remote Sensing



FEMA



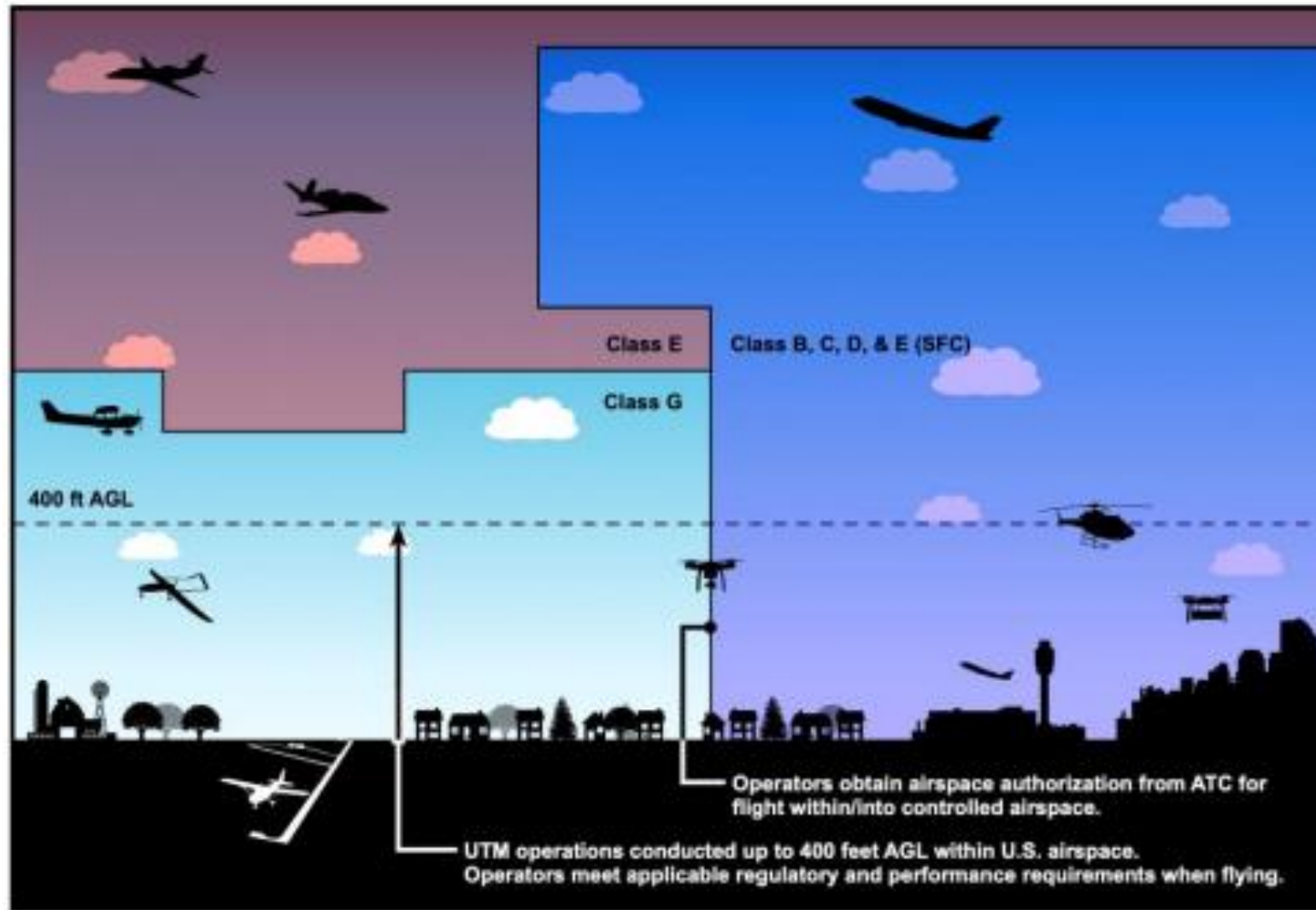




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Source: FAA.gov



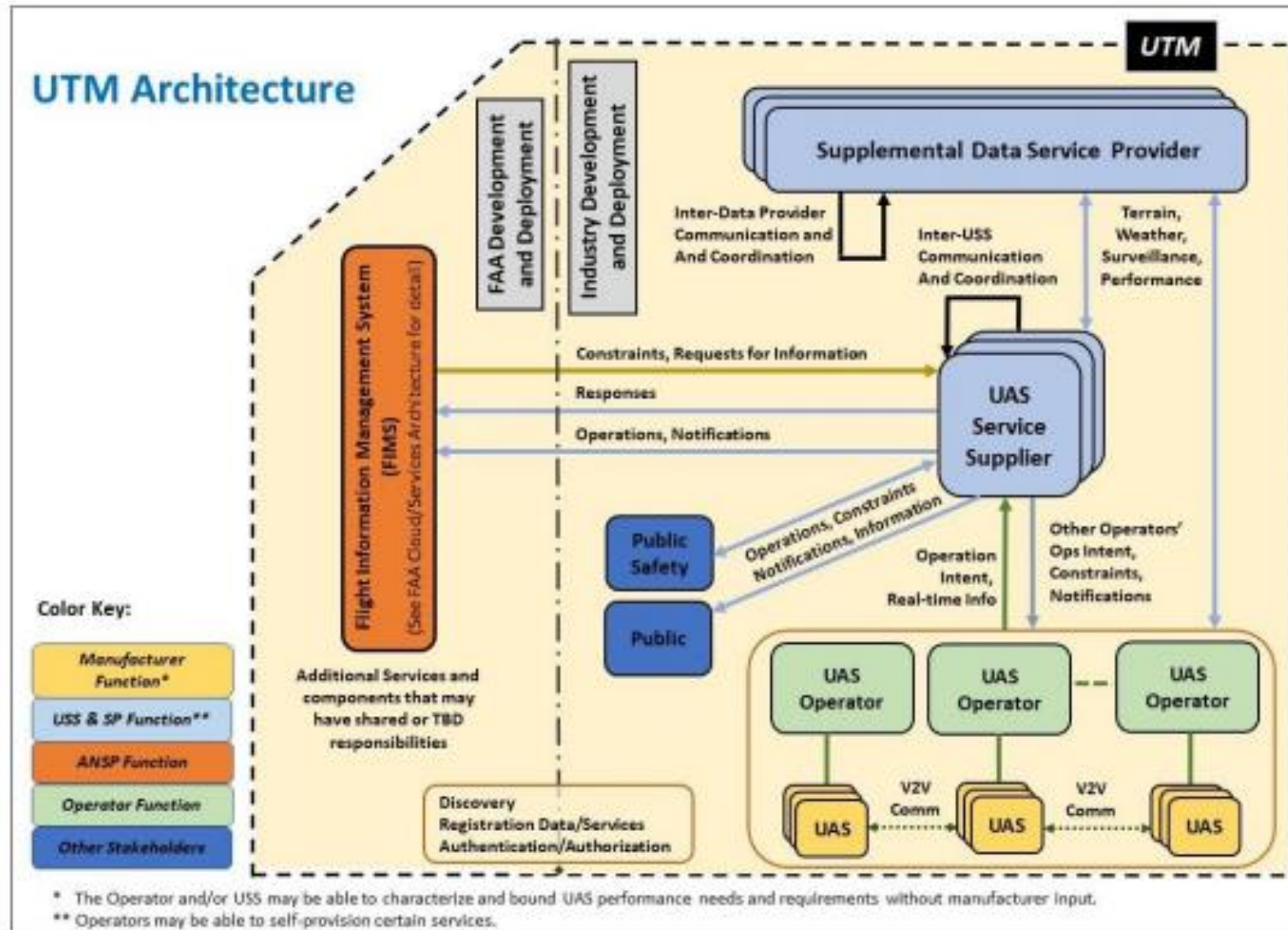


**Figure 2. UTM Operations in context of airspace classes**

Source: FAA UAS UTM ConOp v2.0



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**Figure 3. Notional UTM architecture**

Source: FAA UAS UTM ConOp v2.0



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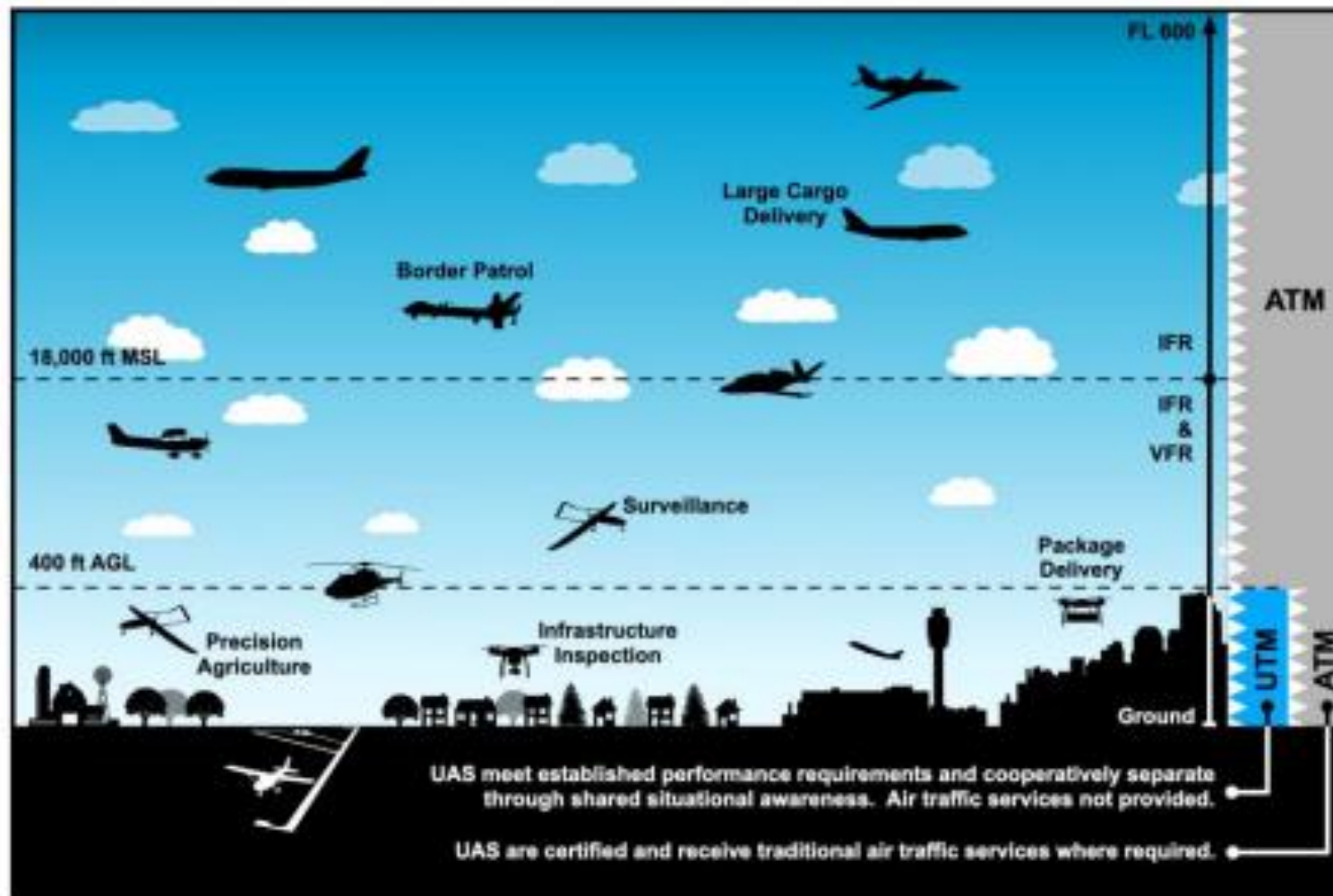
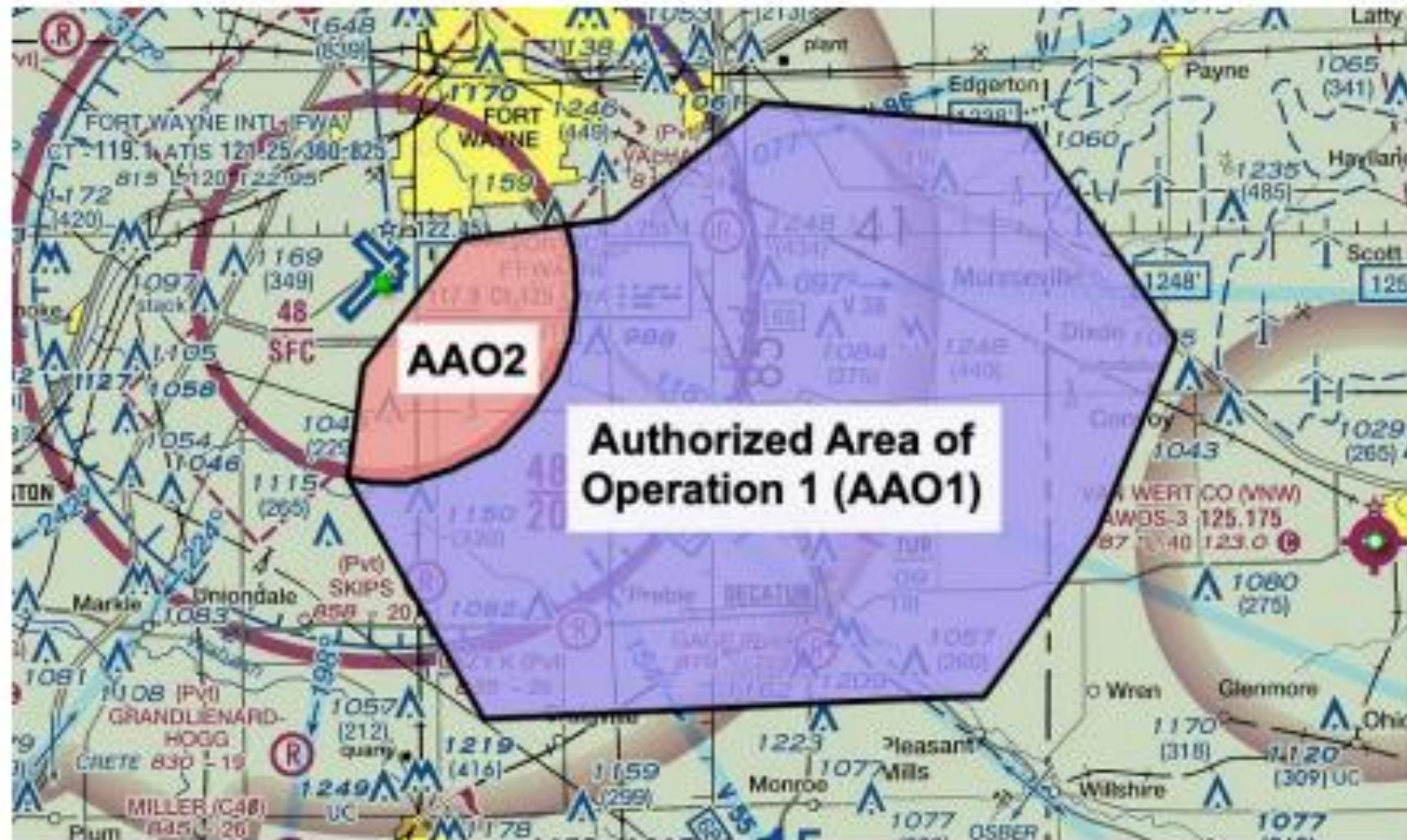


Figure 4. Operational context of UTM services

Source: FAA UAS UTM ConOp v2.0



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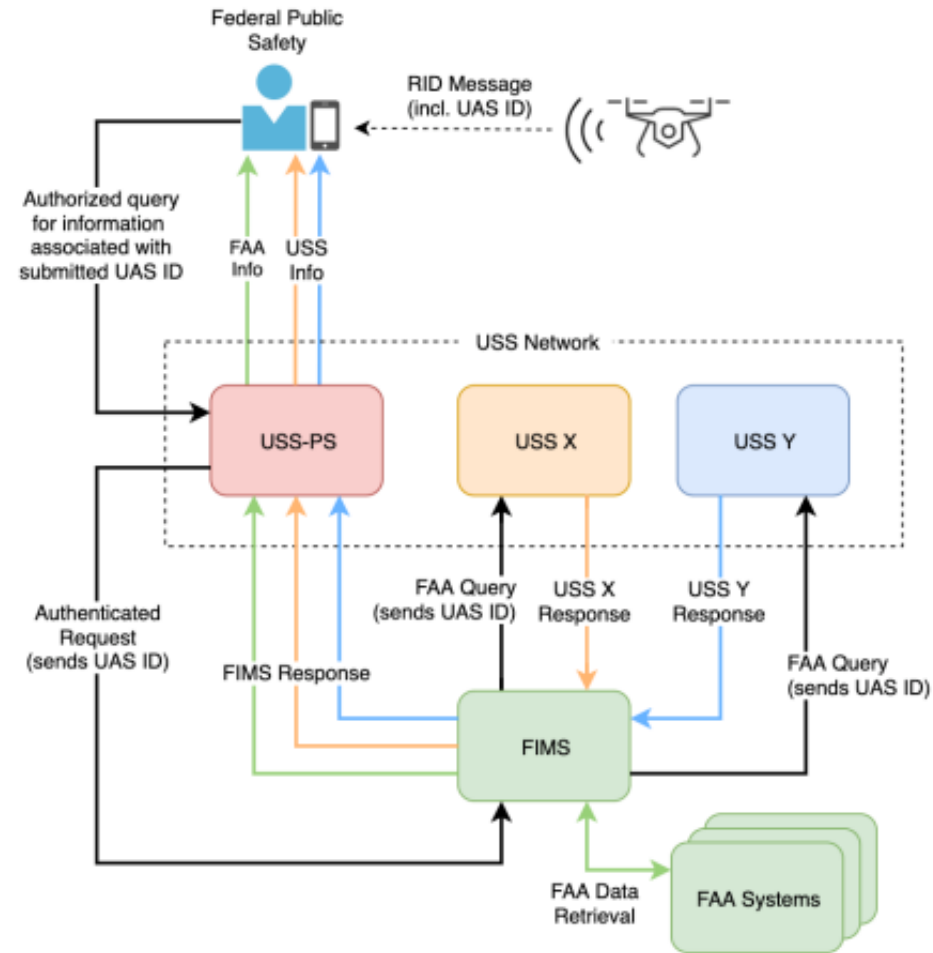
**Figure 5. Examples of multiple authorized areas of operation for a UAS Operator**



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Source: FAA UAS UTM ConOp v2.0



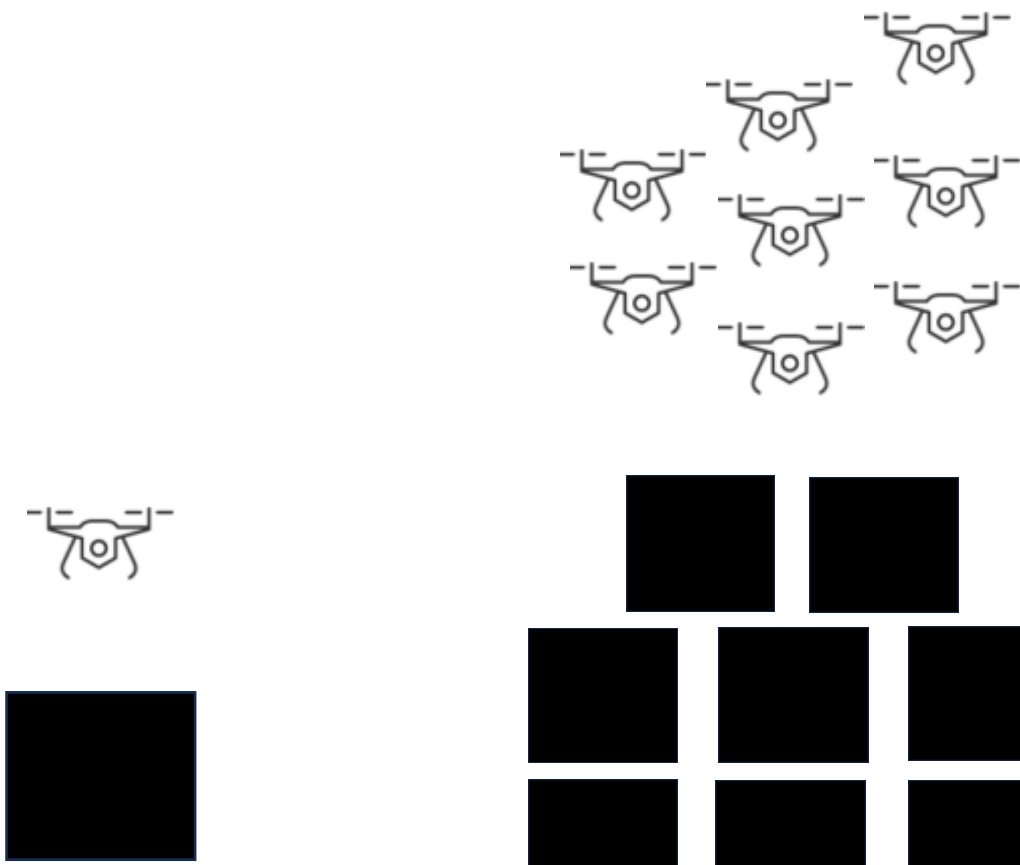


**Figure 16. Notional direct query to FAA and indirect query to USS Network**



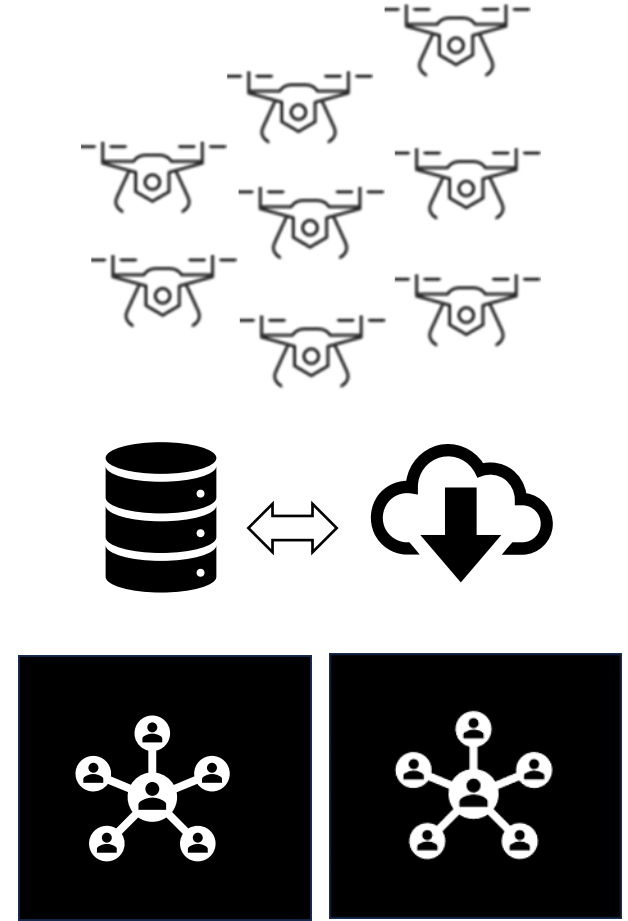
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Source: FAA UAS UTM ConOp v2.0



Drone In a Box

Drone Collective



Hybrid UxS + AI  
Service



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# Questions & Discussion

*FEMA Region 04 Remote Sensing*

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