FEMA Region 04 Remote Sensing - UxS





North Carolina Public Sector UAS Working Group Meeting

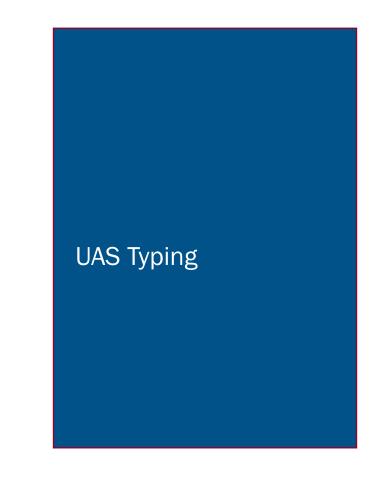
July 25, 2023

# FEMA National Training & Education Division

# FEMA National Integration Center



AWR-345 Unmanned Aircraft Systems in Disaster Management Participant Guide Version 1.1 FEMA AWR-422 UAS Flight Operations





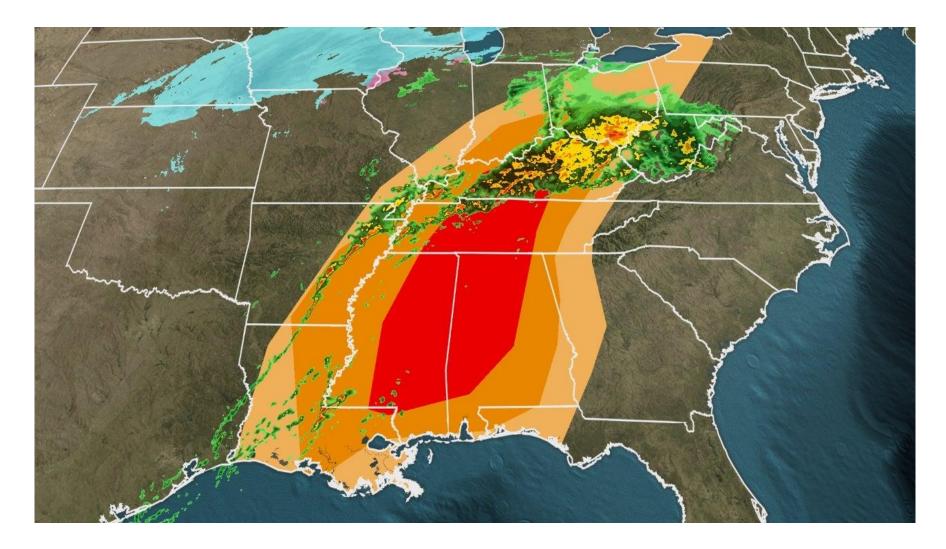
# FAA & Assure Center of Excellence for UAS Research

#### **Schedule of Events – Combined Look Ahead**

Disaster Category	Event Type	Lead Organization	Location	Date(s)
Train Derailment	Seminar	Univ. of Vermont (UVM)	ZOOM	21 Feb 23, 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 Huntsville, AL Huntsville, AL Anchorage Anchorage	30-Mar-23 3-Apr-23 5-Apr-23 11-Apr-23 14-Apr-23
Airport Terrorism	Seminar	Univ.of Ala.Huntsville (UAH)		
Airport Terrorism	Drill	Univ.of Ala.Huntsville (UAH)		
Earthquake with Tsunami	Workshop/Tabletop Exercise	Univ. of Alaska - Fairbanks (UAF)		
Oil Spill	Workshop/Tabletop Exercise	Univ. of Alaska - Fairbanks (UAF)		
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
andemic: Medical Delivery Between Rural Communities	Functional Exercise	Univ. of Alaska - Fairbanks (UAF)	TBD	16-May-23
Andemic: Medical Delivery Between Major Hub and Rural Community	Functional Exercise	Univ. of Alaska - Fairbanks (UAF)	Fairbanks	30-May-23



FEMA Region 04 Remote Sensing Strategy



Bi-Weekly Regional UAS Working Group Meeting



February 16th, 2023

### FEMA Region 04 UAS Working Groups



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





GA UAS WG Kickoff - GPTSC June 18, 2018



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



SC UAS WG Kickoff- SC EOC August 28, 2018



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



### 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

FEMA Region 04 RSC Coordination

ino

 $\mathbf{f}$ 

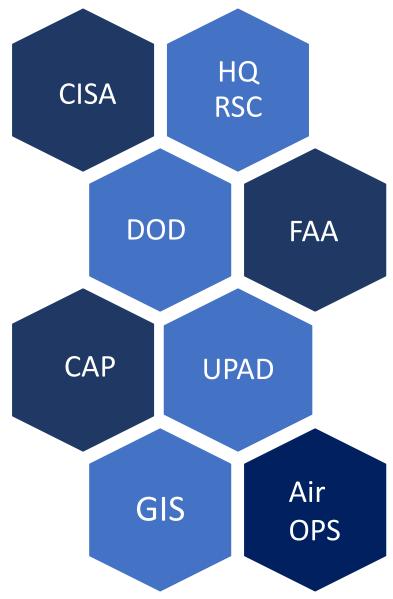
## **Remote Sensing Cell**

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.



#### Local, State, Federal & Private Sector Calls





#### **Remote Sensing Partners**











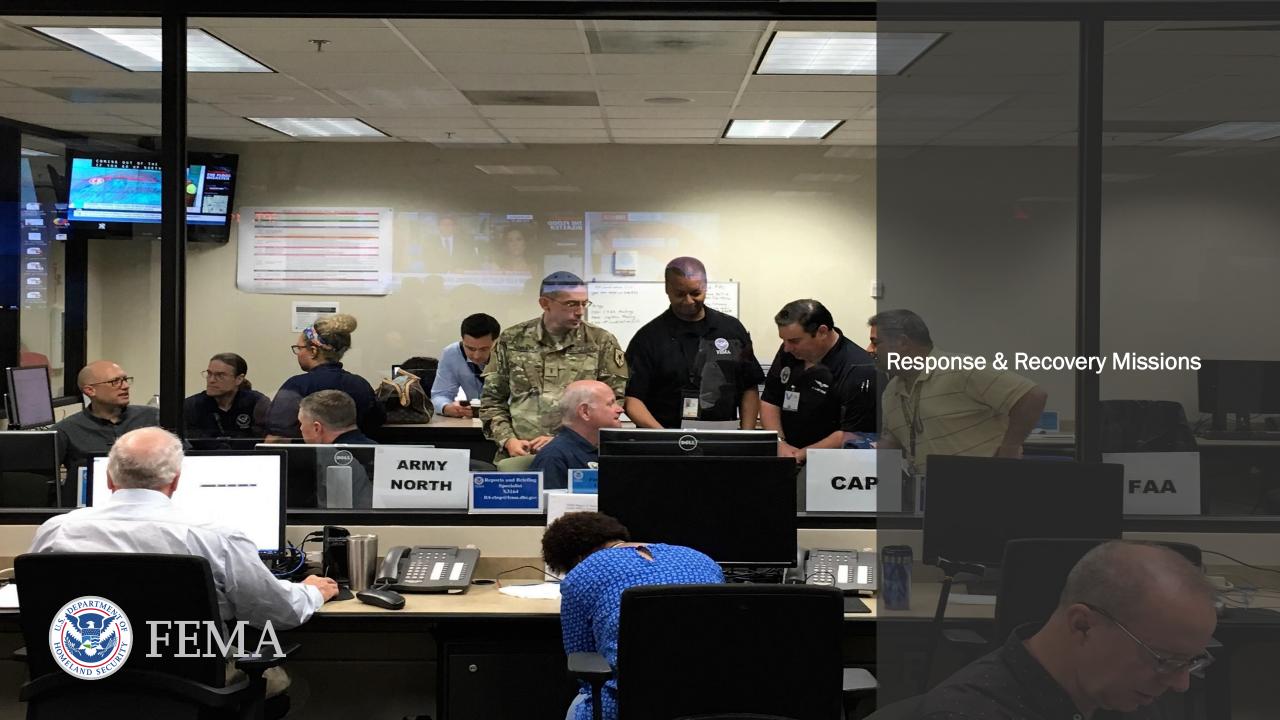






The International Charter Space and Major Disasters





# Windshield Damage Assessment

Perform windshield damage assessment and optimize outage response with ArcGIS

QuickCapture.



FEMA Region 04 Remote Sensing Strategy

#### **Desktop Damage Assessment**

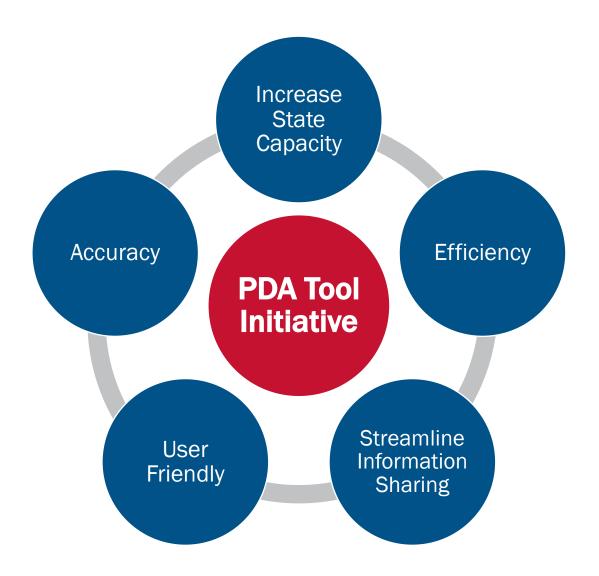


#### Public Assistance Program and Policy Guide

*Version 4, Effective June 1, 2020* (FP 104-009-2)







### **Collaborative Collection Plan**

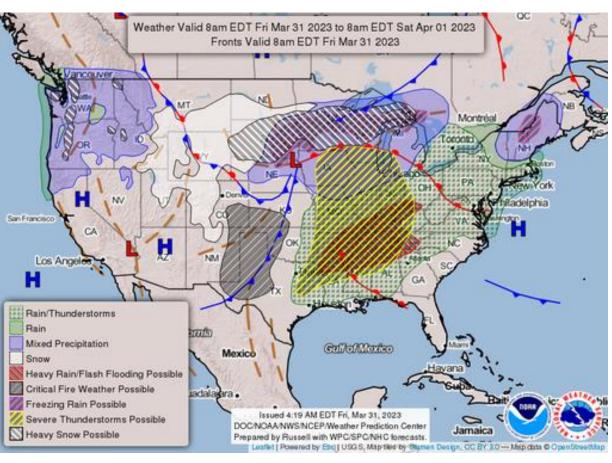
	COLLECTION REQUEST														
	UNIT:	noting Number			COLL	ECTION	REQUEST								
C a	doment Unite	OC Bunal etc.	Tank Ader Ader, Tank «Tank Adergeren die gen- 200 Adere, Anne annu jakending mit ad												
	Debut	Time of Request	1074007#@ 1700, FCH 14 DA 18												
Regul	ed Product (	PWV.RCJR etc.	N) KD, 200 Inge												
		al originated by													
		- and operation													
	Characteristic	Justification on Regularement					annualing damage, fooding, and large amounts of debits								
Cheef	aller of mode	-	UNCLASSING .												
	Procesy	Set.	Location Name	Description	Lat	Long	Recentler Rements of Information (RRI) / What are you	Reporting Instructions	Special Instructions						
	(The start of the		Location Name	Conception	~		halfdes for?	Taken and the second	Collect rades						
	Medure	-		Partie of Characteria					leading from the						
			Paramethy			45.706304112000			excessibility.						
	Medium	8	Mantan Manth Panama Chr	Paint of Duindeviller Paint of Duindeviller	20.04170349000	45.0000122			<u> </u>						
	Medium	8	Parameter (Cly	Partiel of Distance Star	101000000000000000000000000000000000000	48.708038072									
	Medure	R	Calenary Parama City	Paint of Children United	14170201000 30110002040	ALL SUPERIOR HEADING									
	Medum	8.	Parameter City	Paint of Divindention Paint of Divindention		AL APPENDIX									
	Medium	я.	Parama City Basch	Paint of Distribution	10.217067679000	100.073044003000	Need analysis of ingress and agrees nucles to each point. As well of condition of alls. Many alles are without power or communication capability, identify damage or chaltration to	Provide an imagery product annotating damage, Reading, and large amounts of debris							
	Vedue		Parama City Parama City	Paint of Distribution Paint of Distribution	NC 130454	45.50057421 45.6550211240800	commutation capability, kitrally damage or obstruction to Lines of Communication,		<b>—</b>						
	Medium	я.	Parama City	Paint of Distrolection	001404040000	45.545453777									
	Medium	R.	Youngsteel Persona City	Paint of Distribution Facility of Distribution	10.30072-003 10.300-07772000										
	Medium	R.	Parametry	Paint of Ohlindeyller		40.041704700400									
	Medum		Parame City Parame City	Paint of Distribution Paint of Distribution	10.150914001000 10.300407072000										
	Vedum	2	Rectal and	Paint of Dubaleutor	80.46116016										
	Medium	e.	Allia	Paint of Duinsbuiller	00.07030010										
	Medium	8	Revision .	Paint of Distribution Paint of Distribution	10 4000 1700000 10 40000 70 4000				L						
	Medium	R.	Real Property lies	Paint of Dickeloution	10.402112871	45.048364760800									
	Medium		Albe	Paint of Distribution Paint of Distribution	10.02150344000 10.440879791										
	Medum	8.	Constants	Paint of Chindrater	20.00000000										
	Medum	R.	Tempoint	Paint of Divindentian		86870214777800									
	Medum	Ê.	Calificity Applied Finally	Paint of Distribution Paint of Distribution	10. Second Second	AL DI TROUBUR			L						
	Medium	R.	Tempoint	Paint of Distribution		AL MO-CODED									
	Medium	8	Carabete Calicy	Paint of Chardeviller Paint of Chardeviller	20.001000007	ALMARCONT AL MONTON			<u> </u>						
	Medium	R	Challadouchee	Paint of Divindentian	SC TOOLT LANS	8484000011000									
	Vedum	R.	Politic Jan	Paint of Duindeallor Paint of Duindeallor	28.70080637000	45.3030022718			L						
	Medium	R.	Westballs	Paint of Dubaballar	100000000	45,21038475									
	Medium		Burdley Collected	Paint of Distribution Paint of Distribution	N. 70010100000	45.0790									
<u> </u>	Vedue	R.	Change Tay	Paint of Distribution	DE DELLA TECHNOL	1-66.0100008	L								
	Medium	R.	Martanaa Araasha	Paint of Divindention	N. THEY PROCEED										
	Medium	R	Stream State	Paint of Dubstallar Paint of Dubstallar	00.773713144000	45,218384862									
	Medum	2	Martana	Paint of Distribution Paint of Distribution	80.794517040000										
	Medium.	2	Martan va	Paint of Characteria	SC. TOREAU TRACE										
	Medium	R.	Tablanee	Paint of Distribution	IC AGAING AND D	64.381288115									
	Vedum			Paint of Distribution Paint of Distribution	COLUMN SALES										
	Medium	R.	T alla' assess	Partiel of Christopher	AC-474753501000	84,208280845									
	Medure	8	Tuffit users	Paint of Dubaleutlor Paint of Dubaleutlor											
	Vedue	я.	Tulkinsson	Paint of Distribution	00.441370940000	64,200017872									
	Medium	R		Paint of Distribution Paint of Distribution		ALIT CODADO									
	Medum	R.	- tested	Paint of Duindeviller	DO DERIVOR AND CO.	04.70620408									
	Medium	R.	trai Cardebile	Petri of Distribution	at Manager School										
	Medium	R	Candrala	Paint of Chiledeuller	IC 12052800000	1.84.2188008 1.84.3776787158800									
	Meduce	8.	Cartosta	Paint of Distribution	80.117083808										
	Medium	2	Tena Dainy	Paint of Distribution Paint of Distribution	10.00040712000	45.5924447212000									
	Medium	я.	Cleary	Paint of Distribution	COLUMN DATE:	45.5694447312000									
	Medium	R.	Cathy	Paint of Dubeleutlor	00.70470M07	40.007001701									
DEPAR	TMEAN														

Required AOI Information

Priority Location Location Name Description Latitude Longitude Essential Elements of Information Reporting Instructions Special Instructions

### **Collaborative Collection Plan Calls**





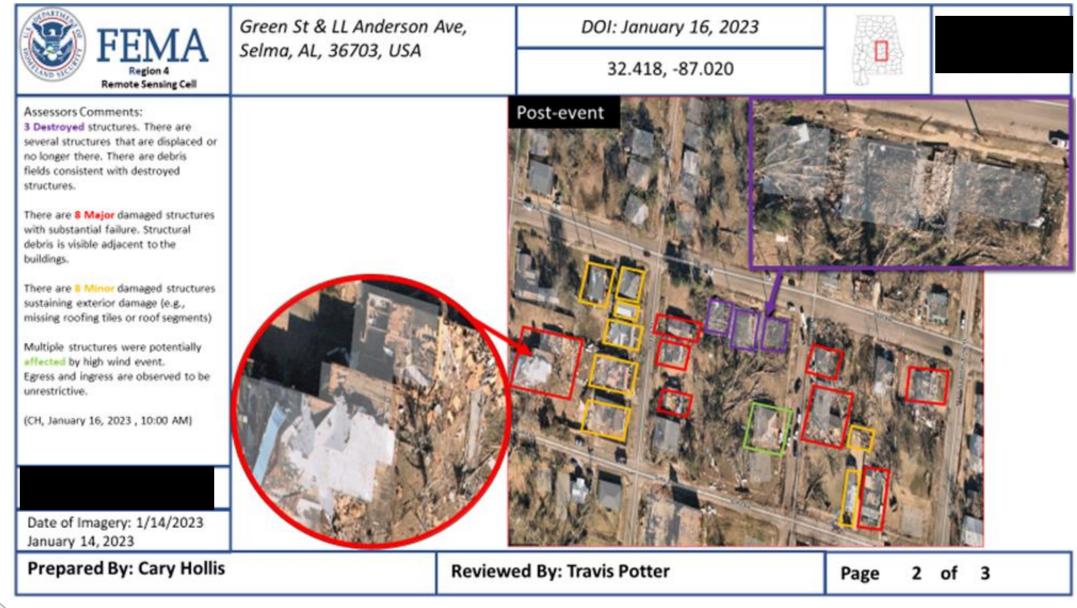
FEMA Region 04 Remote Sensing Call for the Mississippi Tornadoes



March 31, 2023

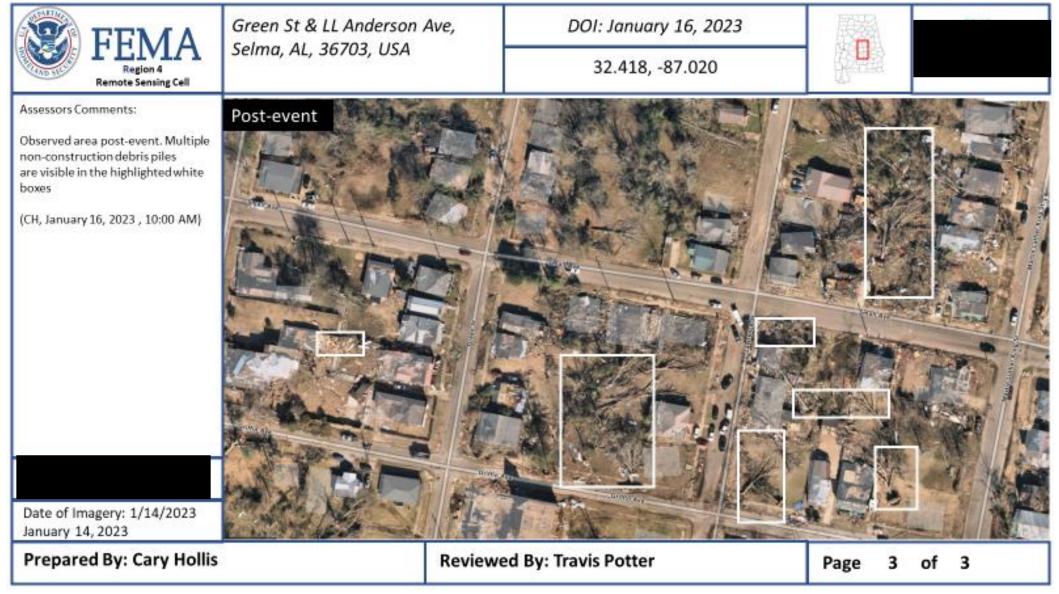






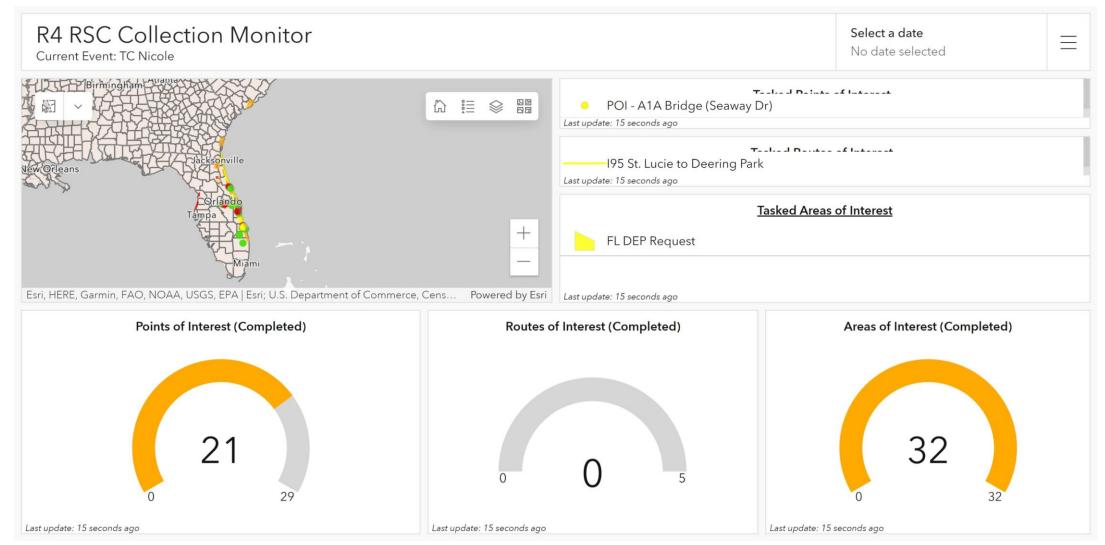


FEMA





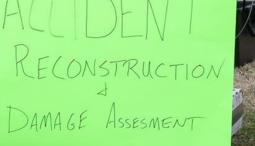
## **Collection Monitor Tool**



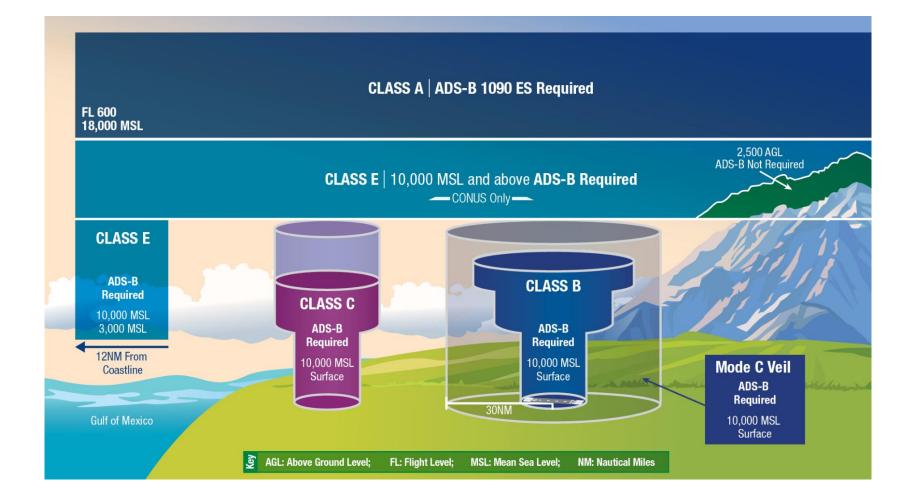


Future of UxS Remote Sensing





🐇 FD





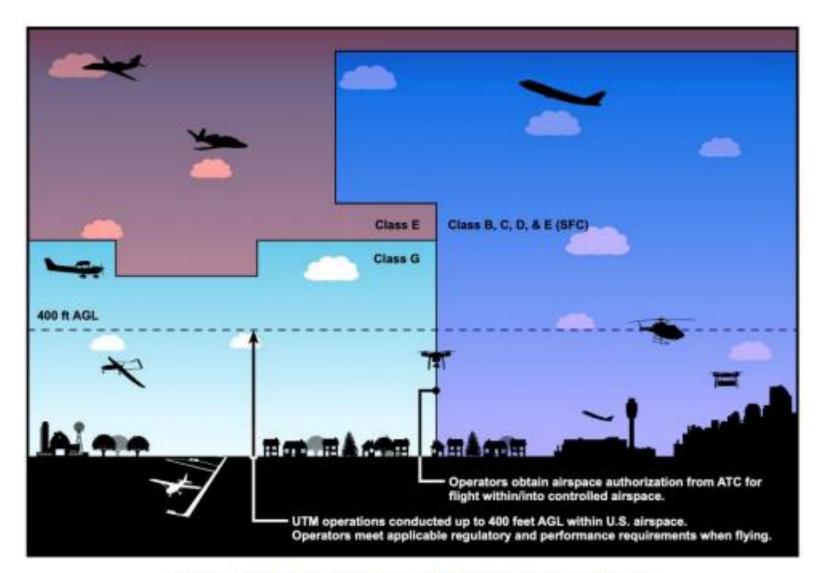


Figure 2. UTM Operations in context of airspace classes



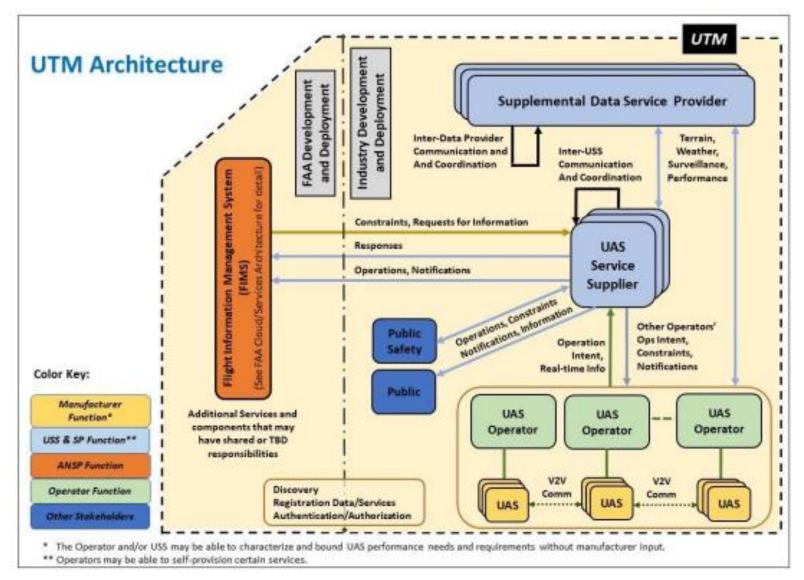


Figure 3. Notional UTM architecture



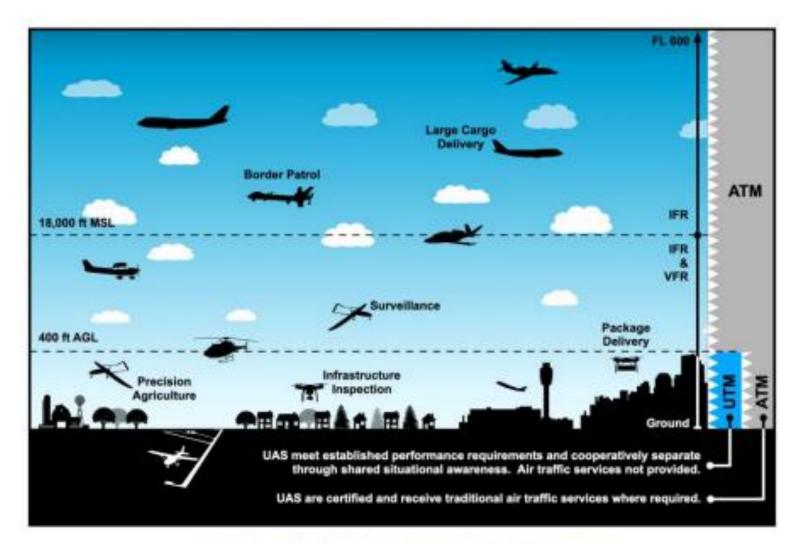


Figure 4. Operational context of UTM services





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



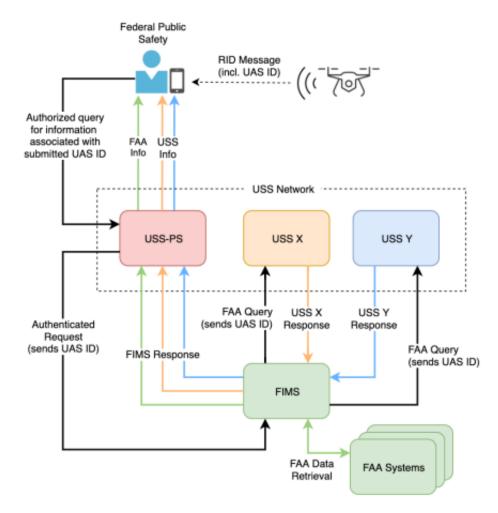
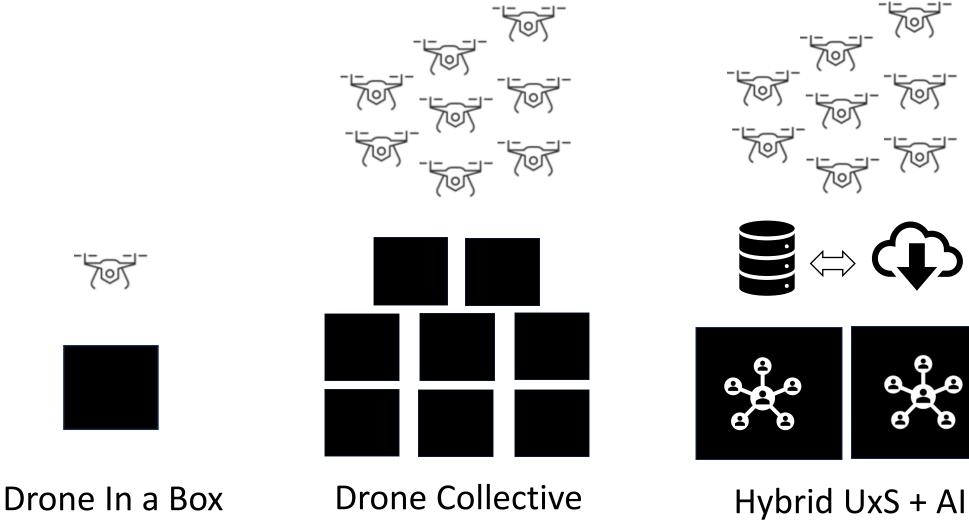


Figure 16. Notional direct query to FAA and indirect query to USS Network





Service





#### **Questions & Discussion**

FEMA Region 04 Remote Sensing

Travis Potter UAS/Remote Sensing Coordinator 404.909.1400 travis.potter@fema.dhs.gov