UAS Branch (UASB/D101)
NASA Langley UAS Operations Office (UASOO)

Matt Coldsnow, UASOO Branch Head

UASOO provides operational support for Langley and other NASA-related UAS research activities and is enabling routine access for Uncrewed Systems to the National Airspace System (NAS).

To learn more and explore collaboration opportunities, please contact us at larc-dl-rsd-partnerships-team@mail.nasa.gov

UAS Branch (UASB/D101)
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- ***Vehicle Centric***
  - Autonomous Operations
  - Health Monitoring and Prognostics
  - Mission (Capability) Driven Airframe Design
  - Flight Dynamics and Controls
- ***Airspace Integration***
  - UAS in the NAS
  - UAS Traffic Management
  - Sense and Avoid
  - Contingency Operations
  - Certification
- ***Research Payload Platform***
  - Atmospheric Science
  - Space Systems
  - Wildfire Detection
  - Acoustic Signatures
  - Exploration simulation
- **Support CERTAIN SMART Center**

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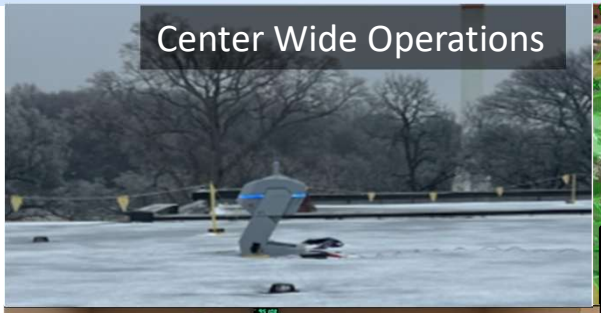
Current CERTAIN Capabilities

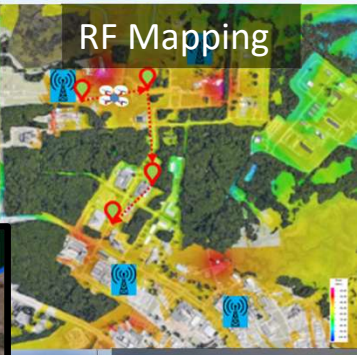
Airspace
- 800 Acres of **Urban** and **Rural** Airspace
- FAA COA and LAFB Letter of Procedure for BVLOS
- 400’ altitude, no weight limit, 2k' weather profile
- Class D airspace

Technology
- NextNav Local Positioning System - Unfunded
- ClearCom voice communication system
- Radar, Remote ID, and RF detection systems installed
- GPS Predictive Quality Services
- UAS Mission Assessment Tool (UMAT)
- Traffic Awareness and Ubiquitous Realtime Airspace Surveillance (TAURAS)
- Ground Cameras
- Vision based tracker (version 1)

Data Collection
- Telemetry
- Local Weather Stations
- Data networking

Infrastructure
- Spectrum Management Office
- Rooftop Access and Operations
- Indoor flight/testing capability
- Improved surface for fixed wing operations
- Vertiports
- Command and Control Rooms
- UAV test vehicles
- Dock Stations
- Safety Process and Procedures
- Simulation capabilities
- Mobile Operations Trailer





Frequently Used COTS Aircraft – Multi-Rotor

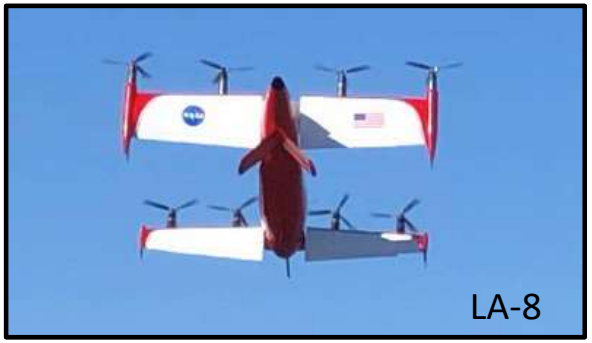
MULTI-ROTOR						
Quantity	Aircraft	Motors	Max Gross (lbs)	Payload (lbs)	Max Endurance (no payload)	Mission
8	Alta 8	8	40	20	0:41	Research Vehicle
5	Alta X	4	76.85	33.2	0:50	Research Vehicle
2	Tarot T-18	8	35.3	13	0:40	Research Vehicle
3	Astro	4	15.3	3.3	0:37	Media and Inspection
4	Skydio 2	4	1.7	0	0:23	Media and Inspection
2	Skydio X2D/E	4	2.9	0	0:35	Media and Inspection
4	Skydio X10	4	5.49	1	0:40	Media and Inspection

Frequently Used COTS Aircraft – VTOL & Fixed Wing

VTOL						
Quantity	**Aircraft**	**Motors**	**Max Gross (lbs)**	**Payload (lbs)**	**Max Endurance (no payload)**	**Mission**
4	SuperVolo	4 + 1	40	5	6:00	Research Vehicle
1	Wingtra	2	10	1.8	0:59	Survey

Fixed Wing						
Quantity	**Aircraft**	**Motors**	**Max Gross (lbs)**	**Payload (lbs)**	**Max Endurance (no payload)**	**Mission**
1	Blackswift	1	20.9	2.18	1:20	Research Vehicle
2	Carbon Z	1	15	4	0:15	Research Vehicle
2	Bat 4	1	100	30	8:00	Research Vehicle

NASA Langley Designed & Built Aircraft



CERTAIN
UAS OPERATIONS OFFICE
CITY ENVIRONMENT RANGE TESTING FOR AUTONOMOUS INTEGRATED NAVIGATION