UAM Weather Research and Development

Presented to: Community Integration Working Group: UAM Weather

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FAA Vision for UAS

- To integrate unmanned aircraft into civil airspace while ensuring the safety and efficiency of the National Airspace System (NAS)
- Goal will be achieved through incremental steps as technology, policies, operational procedures and automation evolve

The Path to Full UAS Integration

Airspace Management
- ATM – NAS System Integration
- ATM – ACAS-Xu Based DAA
- Aeronautical Information Infrastructure for sUAS
- Remote ID Network
- USS – USS Communication
- LEO TFRs
- ATC Order – No ATC Services below 400 ft AGL
- Low Altitude Authorization & Notification Capability (LAANC)
- sUAS Registration

Level of Autonomy
- Full UAS Integration
- Automated Flight Deck for Transport
- Urban Air Mobility
- Cargo Operations
- Consistent Airspace Rule Applicability
- Part 135 Certifications
- UAS Flight Restrictions & Remote ID
- UAS Operations Over People
- UAS Integration Pilot Program
- Partnership for Safety Plan Operations
- Part 137 Certifications
- Part 107 Operations
- Section 333 Operations

Building the Foundation

Federal Aviation Administration
FAA UAS Integration Research Plan (2019-2024)

- Presents framework to manage UAS-related research activities for safe integration of UAS into the NAS
- FAA worked with partners across industry, academia, and federal agencies to compile a comprehensive list of research, forming the backbone of this five-year rolling Plan
- Identifies possible gaps in current research that should be explored and aligns with the Agency’s strategic priorities and initiatives
- Supports key FAA missions and functions to publish regulations, policies, procedures and guidance
• Identifies Weather as one of 12 Focus Areas

• Focus Area defined as representing a key challenge for the safe and effective integration of UAS operations in the NAS

• Research activity under focus areas inform policy, procedures, capabilities and systems, requirements and other research outcomes to enable UAS integration

• Weather R&D just getting going…..
R&D Priorities for UAM Weather

• Determine the Micro-Scale Weather Information Gaps
  – Are experiments determining what the critical weather thresholds are?
  – Are manufactures providing weather limitations on their vehicles?
  – Do we know what weather phenomena to test against?
  – Do we have the technology and capability to measure those weather phenomena at a temporal and spatial scale they require for their thresholds?
• Focus R&D on what we find out about the Gaps