UAS Research – Who’s Doing What?
UAS Research – Who’s Doing What

Sabrina Saunders-Hodge  
FAA

Nick Lento  
FAA

Davis Hackenberg  
NASA

Mark Blanks  
Mid-Atlantic Aviation Partnership

Steve Luxion  
ASSURE
Meeting the Challenge

Innovation

Collaboration

Industry Volume & Pace

Personal Nature of UAS

Shared Commitment to Safety
FAA UAS Priorities

Address Security Concerns

Automate Systems

Continue Expanding Operations
The Path to Full Integration

Airspace Access

- NAS System Integration
- Aeronautical Information Infrastructure for UAS
- Low Altitude Authorization & Notification Capability (LAANC)
- Online Registration

Full UAS Integration

- Small Cargo / Passenger Operations
- Non-Segregated Operations
- Expanded Operations
- Rulemaking to Address Security Concerns
- UAS Operations Over People
- Part 107 Operations
- Operations by Exemption

Regulatory Framework

- Online Registration
- LAANC
- Part 107 Operations
- Operations by Exemption

Within VLOS / isolated operating area

- Large UAS / high energy output
- Small UAS / low energy output

Beyond VLOS / populated operating area

- Low-risk, Isolated
- Full UAS Integration

Large UAS / high energy output

Small UAS / low energy output
UAS Integration Research Functional Framework

UAS integration research is the foundation for UAS integration.
Research Continuum for Operational Capabilities Towards Full UAS Integration

UAS Operations Today
- Part 107
- UAS Waivers to Part 107
  - Limited Operations Over People
  - Limited Night Operations
  - Limited BVLOS Operations
- Exemptions
- UAS COAs
- Experimental Category

Informs:
- Research Needs
- Operational Capabilities

Operations Over People
- Expanded Operations
- Beyond Visual Line of Sight

Small UAS Package Delivery Operations
- Non-Segregated Operations
- Routine/Scheduled Operations

Large Carrier Cargo Operations
- Passenger Transport Operations

Identification & Tracking Capability
- DAA & BVLOS Performance Requirements
- UAS Operational Requirements & Repeatable Approval Process
- UAS Low Altitude Authorization & Notification Capability (LAANC)
- UAS Traffic Management

Command and Control Performance Requirements
- Infrastructure/Equipment Investment Analysis
- Cost Benefit Analysis

Enabling Capabilities
UAS External Collaboration & Partnerships

- AFRL: Air Force Research Lab
- ANSI: American National Standards Institute
- ASEB: Aeronautics and Space Engineering Board
- ASSURE: Alliance for System Safety of UAS through Research Excellence (FAA’s Center of Excellence for UAS)
- ASTM: American Society for Testing and Materials
- CAASD: Center for Advanced Aviation Systems Development
- CTA: Consumer Technology Association
- EASA: European Aviation Safety Agency
- EXCOM SSG: Executive Committee Senior Steering Group
- FAA CAMI: Civil Aerospace Medical Institute
- FAA WJHTC: William J. Hughes Technical Center
- ICAO: International Civil Aviation Organization
- IEEE: Institute of Electrical and Electronics Engineers
- JARUS: Joint Authorities for Rulemaking on Unmanned Systems
- NIST: National Institute of Standards and Technology
- NSF: National Science Foundation
- SARP: Science and Research Panel
- TRB: Transportation Research Board