



FAA UAS SYMPOSIUM

The Makings of a BVLOS Solution



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Administration



Agenda

- Opening Remarks
- Panelist Introductions
- Presentation by the FAA
- Question and Answer



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Panelists



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FAA Panelists



John H. Page Jr.

Air Traffic Control Specialist

Air Traffic Organization, Emerging Technologies Team (UAS)

Paul Albuquerque

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Thomas Walsh

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FAA Briefing



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Part 91 Operations



- Requirements

- Operations may be conducted as:

- public operator (if applicable)

- providing a public declaration letter;

- providing self certification documents and

- Obtaining a Certificate of Waiver or Authorization (COA) issued by ATO

- civil operator (e.g. Part 135 certificate, Sec 44807) with a COA issued by ATO

- A COA is

- required for all classes of airspace

- valid for up to 2 years

- not used in conjunction with a Part 107 operation

- not the same as a 91.113 waiver (discussed later)



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Part 91.113 Waivers



- Scope
 - Part 91 operations only - Both Public and Civil
 - Needed anytime the UA is operated beyond the visual line of sight of the pilot
- Requirements
 - A proposal (via CONOPs, CONEMP, Safety Case, etc.) submitted to the FAA (AJV-115) via email
 - *At the minimum* it should describe the following areas:
 - A concept overview
 - Description of the airspace
 - Description of the system
 - Assumptions, hazards, risks, and mitigation plans
 - Concept of operations (operational, communications, safety procedures)
 - Contingency procedures
 - Accident and incident reporting
 - After-actions report



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FAA Waiver Review Workgroup



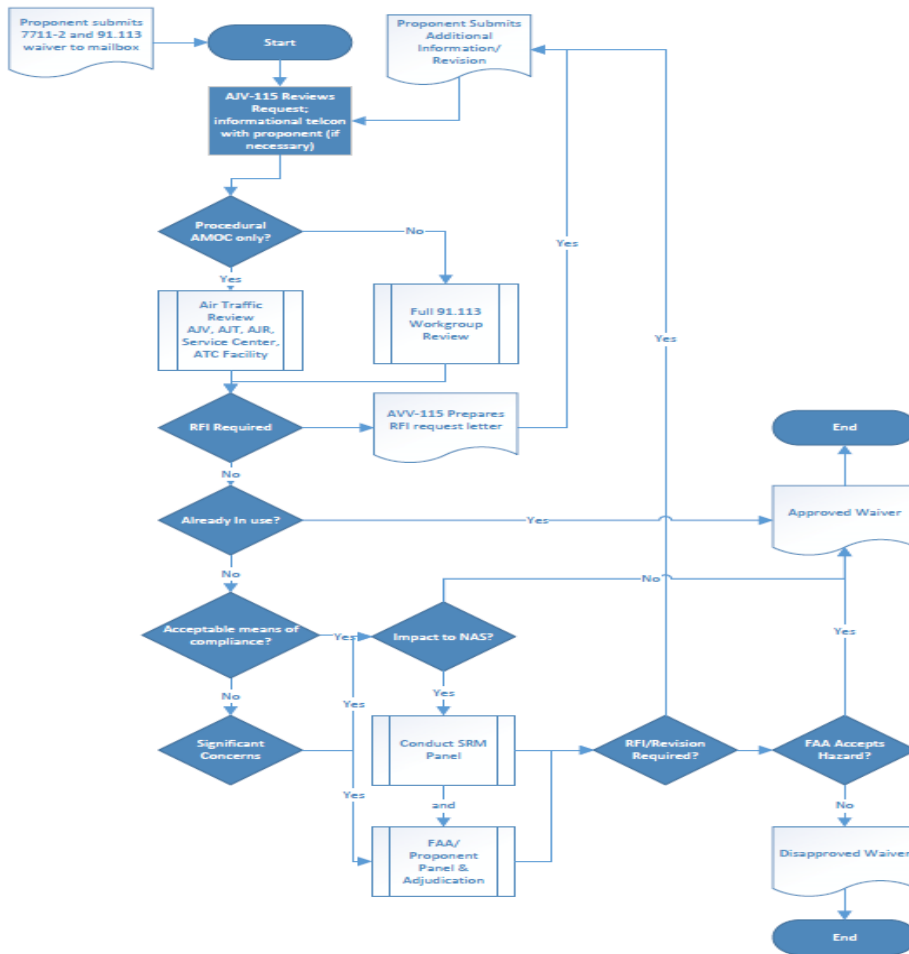
- FAA Lead: Emerging Technologies Team (AJV-115)
- Workgroup Representation from the following:
 - **FAA Air Traffic Organization (ATO)**
 - » Air Traffic Services Division, Airspace Services, Technical Ops, Security, Service Centers, Impacted ATC Facilities
 - **FAA Aviation Safety (AVS)**
 - » Aircraft Certification, UAS Integration, Flight Standards
 - **FAA Office of General Counsel (AGC)**
 - **National Air Traffic Controllers Association**
- **Workgroup does not certify or prescribe “one-size-fits-all” approach**



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Review Process



Review Process (cont.), but Simplified



An application and supporting documents (e.g CONOPs, Safety Case, hazard worksheet, etc.) is submitted to the following email address:

9-UAS-91.113Waivers@faa.gov



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Utilizing Standards



- The FAA cannot independently solve BVLOS for industry, the solution must be developed collaboratively
- The FAA is seeking to leverage industry standards as the basis of BVLOS approvals
- Consensus standards bodies (RTCA, ASTM, etc.) are an effective forum for industry, regulators, academia, and others to collaborate on developing the technology standards that will help enable BVLOS operations



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Transition from VLOS to BVLOS (using Part 107 as an example)



Rule #	Brief Description	Potential Alternatives
§107.12	Pilot Certification	Additional Pilot Qualifications/Certification
§107.19(c)	Not a hazard - loss of control	Restrict and/or survey operations area; or meets appropriate industry standards for UAS design
§107.31*	VLOS: UA position, velocity, etc.; other airspace users or hazards; etc.	Meets appropriate industry standards for UAS design
§107.37*	Yield right of way and stay well clear	Segregated airspace; meets appropriate industry standards for UAS design; and/or uses draft well clear AC
§107.39*	Operations over people	Restrict operations areas; meet NPRM requirements; or meets appropriate industry standards for UAS design
§107.49(a)	Assess the operating environment: weather; persons/property; etc.	Restrict and/or survey operations area; weather stations
§107.51(d)*	Distance away from clouds	Conservative weather limits and method to monitor



* Denotes regulations subject to waiver



Layers of BVLOS Conflict Management



1. Strategic Deconfliction – pre-planned mitigations (usually operational restrictions) to reduce the likelihood of an encounter (i.e. masking, UTM)
2. Tactical Deconfliction (i.e. SAA w/ VOs or DAA)
 - a. Remain Well Clear – real time actions to mitigate a conflict risk and comply with 91.113/107.37
 - b. Collision Avoidance – real time actions to mitigate an imminent collision

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Questions?



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Lunch Plenary starts at 12:30 PM...

Crawl, Walk, Fly – Getting to Full Integration

Boxed lunch available – Level 400 Ballroom

