RID, OOP and NO Overview

UAS CTI Webinar

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Operations Over People Overview

- Small UAS Operations Over People (OOP) Notice of Proposed Rulemaking (NPRM) published 13 FEB 2019
  - Approximately 933 comments received at close of comment period, 15 APR 2019
- Final rule published 15 JAN 2021, effective 16 MAR 2021:
  - Creates categories of operations that permit small Unmanned Aircraft (UA) to operate over people
  - Allows small UA operations over moving vehicles
  - Allows routine night operations
  - Updates initial testing and recurrent training requirements

OOP Category 1 Operations

- Small UA 0.55 pounds (0.250 kg) or less
- No exposed rotating parts that would cause skin lacerations
- Requires remote identification to operate over open-air assemblies
- No need for FAA approval, can operate over people once rule is effective

OOP Category 2 Operations

- Aircraft cannot cause an injury equivalent to or greater than an injury resulting from an impact kinetic energy of **11 ft-lbs** from a rigid object
- No exposed rotating parts that would lacerate human skin
- Requires remote identification to operate over open-air assemblies
- Declaration of compliance to demonstrate that the UA me an FAA accepted means of compliance.

OOP Category 3 Operations

- Aircraft cannot cause an injury equivalent to or greater than an injury resulting from an impact kinetic energy of **25 ft-lbs** from a rigid object.
- No exposed rotating parts that would lacerate human skin
- Operating restrictions: closed/restricted sites or transiting only
- Declaration of compliance to demonstrate that the UA me an FAA accepted means of compliance.

Category 2 & 3 Performance-Based Criteria

- Rule provides flexibility to qualify as Category 2 and 3 aircraft
  - UA manufacturer has control over UA design and impact characteristics
  - Equivalent injury severity allows applicants to take credit for design features such as frangibility, breakability, energy absorption, crash-protection characteristics
- Specific means of compliance will be defined by industry
  - Standards bodies will provide standards
  - Applicants may adopt unique/proprietary methods
  - FAA has currently has one MoC for injury equivalent due to KE impact and one for rotating parts causing skin laceration

OOP Category 4 Operations

Allow small UA w/ airworthiness certification to fly over people

- Allows manufacturers to address safety through aircraft reliability, established through airworthiness certification
- Includes maintenance and inspection requirements
- Requires remote identification to operate over open-air assemblies

Operations Over Moving Vehicles

- The small unmanned aircraft operation must either meet the requirements for a Category 1, 2, or 3 operation under the new subpart D of part 107 or meet the requirements for Category 4 small unmanned aircraft, if not prohibited by the aircraft operating limitations.
- For Category 1, 2, or 3, the operation must meet one of the following conditions: (1) the small unmanned aircraft must be within or over a closed- or restricted-access site where any human being located inside a moving vehicle within the closed- or restricted-access site is on notice that a small unmanned aircraft may fly over them; or (2) if the operation is not within or over a closed- or restricted-access site, the small unmanned aircraft must not maintain sustained flight over any moving vehicle.

Night Operations

Allow routine night operations if:

- Remote pilots in command complete either the updated initial knowledge test or the updated recurrent online training prior to conducting such operations.
- The small unmanned aircraft must be equipped with anti-collision lights that can be seen for three statute miles and have a flash rate sufficient to avoid a collision. These anti-collision lights must be operational.

Other Amendments

- Allows remote pilots to take recurrent training online rather than go to a testing center

- Adds requirement for remote pilot in command to present pilot certificate and photo identification upon request by certain officials

Operations Over People Implementation

Final Rule posted on FAA.gov	28 DEC 2020
Final Rule published in Federal Register	15 JAN 2021
Final Rule Effective Date • Category 1 operations begin • Night operations • Initial and Recurrent training	16 MAR 2021 1 MAR 2021
Category 2 and 3 Operations • Industry develops means of compliance • Industry provides compliant small UA	Estimate MAR 2022 and beyond

Remote ID Final Rule (Part 89 – new)

Remote Identification (ID) Overview

- The Remote Identification of Unmanned Aircraft Final Rule is the next incremental step towards further integration of Unmanned Aircraft (UA) in the National Airspace System.
- In its most basic form, remote identification can be described as a “digital license plate” for UA.
- Remote ID is necessary to address aviation safety and security issues regarding UA operations in the National Airspace System, and is an essential building block toward safely allowing more complex UA operations.

Notice of Proposed Rulemaking

- The FAA's Notice of Proposed Rulemaking on Remote Identification of Unmanned Aircraft Systems was published on December 31, 2019.
- In the 60-day comment period following publication, the FAA received over 53,000 comments.
- We reviewed all of the comments and considered them when writing the final rule.
- The final rule becomes effective 60 days after publication in the Federal Register.

RID Rules Being Implemented

Parts 47/48
Registration

- Serial Numbers
- Registration Requirements

Part 89
Remote ID

- Operating Requirements
- FRIA
- Performance Requirements
- Means of Compliance
- Design/Production Requirements

Part 91
Broadcast Module/ADS-B Policy

- ATC Transponder Reporting Equipment & Use
- ADS-B Out Equipment & Use

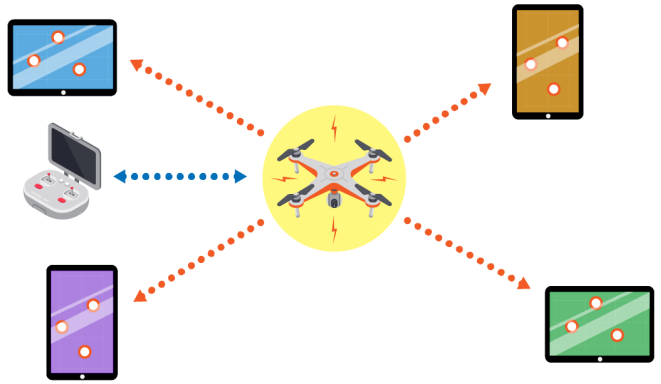
Part 107
Broadcast Module/ADS-B Policy

- ATC Transponder Equipment Prohibition
- ADS-B Out Prohibition

3 WAYS DRONE PILOTS CAN MEET REMOTE ID RULE

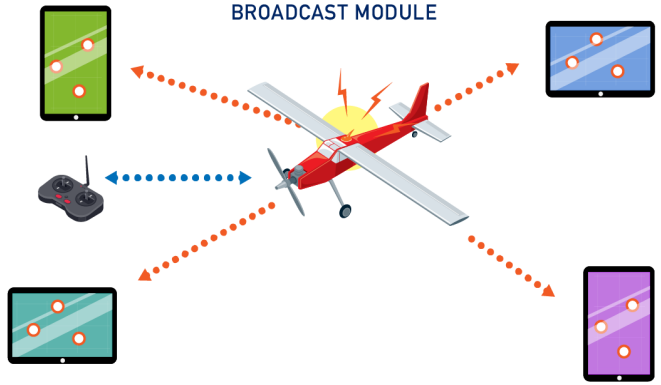
DRONE REMOTE IDENTIFICATION

STANDARD REMOTE ID DRONES



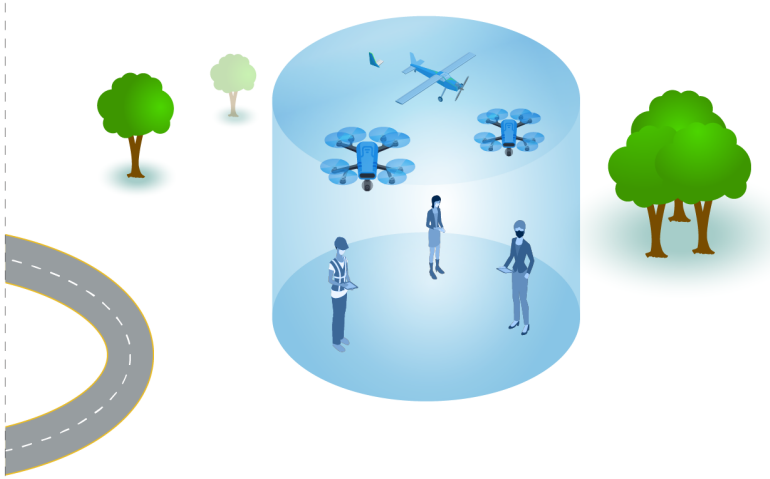
DRONE REMOTE IDENTIFICATION

DRONES WITH REMOTE ID BROADCAST MODULE



FAA-RECOGNIZED IDENTIFICATION AREA [FRIA]

DRONES WITHOUT REMOTE ID



Standard Remote ID

- Requires unmanned aircraft to broadcast message elements locally over radio frequency
  - Message elements includes: Unique ID (serial # or session ID), Unmanned Aircraft location (lat/long, altitude), Control Station location (lat/long, altitude), Velocity, Time Mark, Emergency Status
  - No associated operational limitations other than the operating rules that apply to the specific operation

Remote ID Broadcast Module

- Option for home built unmanned aircraft and pre-existing unmanned aircraft fleet made before manufacturing compliance date
- Retrofit broadcast module attached to the unmanned aircraft broadcasts message elements
  - Unique ID (module serial number), Time Mark, Unmanned Aircraft location (lat/long/alt), Take-off location (lat/long/alt)
- Operator must install broadcast module and update registration information with module serial number
- Operation must be visual line-of-sight

FAA-Recognized Identification Areas (FRIAs)

- Compliance path for UAS that are not equipped with Remote ID
  - Applicants limited to Community Based Organizations (e.g. model aircraft clubs) or educational institutions
- VLOS operations only, limited to the geographic bounds of FRIA
- Expire after 48 months, can be renewed
- FRIAs can be terminated by the FAA when necessary for safety/security reasons

Home-Built Unmanned Aircraft (Remote ID)

- Defined as an unmanned aircraft that an individual built solely for education or recreation
- Must equip with Remote ID broadcast module or only fly in a FRIA
  - VLOS operations only
- Producers of disassembled unmanned aircraft kits (with all the parts to build an unmanned aircraft) are required to comply with manufacturing requirements, resulting in Standard Remote ID UAS

Unmanned Aircraft Registration (Remote ID)

Registration requirement for **recreational operators** (flying under Sec. 44809):

- UAS owner can register once and apply their unique registration number to multiple UA, but must include serial number of every standard remote ID UAS or remote ID broadcast module flying with their registration #
- Single registration may have more than one UA serial number, but a serial number cannot be used on more than one registration
- Enables law enforcement to connect person to the unmanned aircraft without requesting information from the UAS manufacturer

Current Remote ID Rule Schedule

Final Rule posting on FAA.gov	December 28, 2020
Final Rule published in Federal Register	January 15, 2021
Final Rule Effective Date	March 16, 2021
UAS Manufacturing/Production Compliance Date	September 16, 2022 (Effective Date + 18 months)
FAA begins accepting FRIA applications	September 16, 2022 (Subpart C effective 20 months after publication date)
Operational Compliance Date	September 16, 2023 (Effective Date + 30 months)

Questions?

www.faa.gov/uas

Additional Information

https://www.faa.gov/uas

https://www.faa.gov/uas/commercial_operators/operations_over_people/

https://www.faa.gov/uas/getting_started/remote_id/

https://www.faa.gov/uas/getting_started/remote_id/fria/

For questions about operations contact the UAS Support Desk:
UAShelp@faa.gov or 844-FLYMYUA