FPVFC's Layman's Guide to the NPRM for Remote ID

GLOSSARY OF TERMS

- **Transmit** - Referencing the ability of the UAS and / or ground station to connect to the internet via WiFI / cellular to send the required message elements to a Remote ID USS.
- **Broadcast** - References the ability of the UAS to send the required message elements via radio frequency compatible with personal wireless devices to any surrounding interested parties / aircraft.
- **Remote ID USS** - Remote ID Unmanned Service Suppliers are a third party company that will communicate with the UAS / ground station to provide Remote ID interfacing. These companies will log your flight data (Remote ID message elements), and will hold your data for a period of not more or less than six (6) months in case of review or investigation.
- **Ground Station** - The control unit for the UAS. In the case of UAS Systems such as a DJI UAS, this would the control transmitter / remote.

THREE TYPES OF REMOTE ID

STANDARD REMOTE IDENTIFICATION UAS

- No range limitation for this class of UAS and would be BVLOS-capable
- UAS would be designed and produced to fall into this category.
    - The UAS would need to meet an FAA accepted means of compliance
        - The means of compliance would be performed by the producer of the UAS, not the operator. This would include a review and approval by the FAA of "test cases" which prove the quality or function of a product. For example, a means test for a VTX would be a log of an RF analyzer showing the VTX transmits within an acceptable frequency and power.
- Transmit Remote ID message elements through the internet to a Remote ID USS (Unmanned Service Supplier) from takeoff to landing.
- **Simultaneously**, the UAS must broadcast the same Remote ID message elements directly from the aircraft using radio frequency from takeoff to landing.
- Remote ID message elements must include the following:
    - UAS ID: Serial Number or Session ID
    - Latitude and Longitude
    - Barometric Pressure based altitude reading of both the aircraft and the ground station
    - Time Mark (Date and Time)
    - Emergency Status (when applicable)
- If internet is available at take off, the UAS would be required to connect to a Remote ID USS and transmit the message elements.
    - If no internet is available, the UAS would only be required to broadcast the message elements directly from the aircraft.

    - If internet is available, but the UAS cannot connect to a Remote ID USS, the aircraft must be designed to not take off.
    - If the UAS loses its connection to the Remote ID USS during flight, the aircraft will be able to continue its flight as long as it is still broadcasting directly from the aircraft.
    - If a UAS loses its ability to broadcast, whether connected via the internet to a Remote ID USS or not, the operator should land the craft safely as quickly as possible.
- System must be equipped to notify the operator if the aircraft loses the ability to broadcast message elements via radio frequency or via the internet to the Remote ID USS.

Notes:

- What's the cost to subscribing to a USS? The FAA estimates this to be $2.50/month or $30/year.
- Serial Number must adhere to to ANSI/CTA-2063-A.
    - Interested persons can view ANSI/CTA-2063-A at https://www.cta.tech by creating a free account and searching under "Research and Standards". At the time of publication of this notice of proposed rulemaking, the ANSI/CTA-2063-A standard is available for viewing and download free of charge. ANSI/CTA-2063-A is summarized in the immediately preceding section, 1. American National Standards Institute/Consumer Technology Association Standard 2063-A.
- Must come from the manufacturer with this technology, and have been approved by the FAA.

LIMITED REMOTE IDENTIFICATION UAS

- Designed to not operate more than 400 feet from the controller.
- UAS must not be capable of broadcasting Remote ID messages via radio frequency.
- UAS would be designed and produced to fall into this category.
    - The means of compliance would be performed by the producer of the UAS, not the operator. This would include a review and approval by the FAA of "test cases" which prove the quality or function of a product. For example, a means test for a VTX would be a log of an RF analyzer showing the VTX transmits within an acceptable frequency and power.
- Would be required to connect to the internet and transmit Remote ID messaging to a Remote ID USS.
    - If no internet is available, the UAS must be designed to not take off.
    - If the UAS loses connection to the internet, the operator must land the aircraft safely as quickly as possible.
- Ability to add broadcasting ability to the UAS is prohibited as it would not be subject to design and production requirements.
    - This does not apply to the ability to broadcast non-Remote ID information such as camera feed or telemetry.

UAS WITHOUT REMOTE IDENTIFICATION

- UAS without the Remote ID capabilities of the above two systems would only be allowed to fly under two circumstances.
    - Within visual line of site of the operator of visual observer and within the boundaries of an FAA-recognized identification area (I.E. A fixed flying site approved by the FAA)
    - Or with approval from the FAA Administrator to operate the UAS for use in aeronautical research or to show compliance with regulations.
        - Research and Testing of the UAS, control systems, onboard equipment, flight profiles, or development of specific functions and capabilities.
            - Must be authorized by the FAA.

REMOTE ID MESSAGE ELEMENTS

- Would be considered publicly accessible information.
- Would be available to the general public.
    - Remote ID USS would be required to provide to the public, at no cost, the UAS ID message element (Serial number or Session ID).
- FAA will provide registration data associated with a serial number or session ID only to law enforcement or the federal government.
- Remote ID USS will not have access to registration information at this time.
- Broadcasts from UAV would be available to be received by personal wireless devices, including cellular phones and tablets.
    - Remote ID message element broadcasts from UAS would be available for the general public via cellular phones and tablets.
- Latitude, longitude, and barometric pressure altitude must be transmitted and broadcast no later than one (1) second after measurement.
- Message elements must transmit and broadcast the message elements at a rate of one (1) message per second.

UAS IDENTIFICATION

- Serial number of the aircraft assigned by the person who produced the aircraft, or
- Session ID number assigned by a Remote ID USS.
    - Used to specifically identify both the UAS and the operator to whom the serial number / session ID is assigned to.
- Registration # is not being considered due to the fact that it would be provided by the operator after they registered, and could change if the UAS was to change ownership.
- FAA assumes a serial number would be programmed to broadcast and transmit by the producer of the UAS regardless it has been registered or not.

LATITUDE AND LONGITUDE

- Would be derived from a GPS receiver.

    - Must be accurate to within 100 feet of the true position, with 95% probability.
- Used to tie a UAS with it's control station position.
- Used to provide situational awareness to other aircraft, both manned and unmanned operating in the vicinity.
- Standard Remote ID UAS systems would both transmit this as well as broadcast, allowing interested parties to know the location of both the UAS and the ground station.
- Limited Remote ID UAS systems would only transmit this via the ground station, allowing interested parties to know the location of only the ground station.

BAROMETRIC PRESSURE ALTITUDE

- Uses a barometer attached to UAS to establish altitude of the UAS and ground station.
    - Must be accurate to within 20 feet of the true barometric pressure altitude for pressure altitudes ranging from 0 to 10,000 feet.
- Referenced to standard sea level pressure of 29.92 inches of mercury or 1013.2 hectopascals.
- Used to provide situational awareness to other aircraft, both manned and unmanned operating in the vicinity.
- Standard Remote ID UAS systems would both transmit this as well as broadcast, allowing interested parties to know the altitude of both the UAS and the ground station.
- Limited Remote ID UAS systems would only transmit this via the ground station, allowing interested parties to know the altitude of only the ground station.

TIME MARK

- Provide a time mark utilizing Coordinated Universal TIme (UTC) to identify the location (GPS coordinates via latitude and longitude) of the UAS and / or ground station at a specific time.
- Standard Remote ID UAS systems would both transmit and broadcast this information, relaying the time mark for the position of both the UAS and the ground station.
- Limited Remote ID UAS systems would only transmit, relaying the position at the time mark of the ground station only.

EMERGENCY STATUS OF THE UAS

- Provides the emergency status of the UAS if applicable.
    - Would include indicators such as lost control link (fail safe), downed aircraft, or any other abnormal status of the UAS.
- Message element could be triggered manually by the operator or automatically by the UAS depending on the nature of the emergency.
- Would utilize emergency codes (alpha-numeric?) that would relate to a specific emergency status.
- Used to notify other aircraft in the vicinity of the emergency so they can be informed and make necessary adjustments to keep aircraft out of the way of the UAS experiencing the emergency.

REGISTRATION REQUIREMENTS

- Changes to registration requirements include:
    - All UAS must be individually registered (recreational and commercial)
    - All Standard or Limited Remote ID UAS must list the serial number assigned by the producer of the aircraft
    - Amateur built aircraft would be required to comply with the serial number requirement if the aircraft was designed and produced as a Standard or Limited Remote ID UAS.
    - Amateur built aircraft are also required to submit a make and model name of their choice.
    - Registrations will now require the submittal of one or more telephone number(s) for the applicant.
- The serial number of each UAS will be required to be registered before or by 36 months after the effective date of final rule.
- Previously, for Recreational UAS, the operator would register and the same FAA registration would be used on all of the operator's UAS. The proposed change will require the recreational and commercial UAS operator to register ALL UAS individually with a serial number.
- Cost of registration will be $5.00 per aircraft.

FAA RECOGNIZED IDENTIFICATION AREAS (FRIA)

- If operating a UAS without Remote ID, it must be done within an FAA Recognized Identification Area or FRIA.
- Only a Community Based Organization (CBO) recognized by the administrator would be eligible to apply for the establishment of a flying site as a FRIA.
- Currently existing fixed flying sites would not be automatically approved as a FRIA.
- FAA would maintain a list of approved FRIA sites at https://www.faa.gov and be made available to the public in order to:
    - Let UAS operators know where they can fly UAS without Remote ID.
    - Advise manned and unmanned aircraft operators know where operations of UAS without Remote ID are taking place.
    - Inform security and law enforcement agencies know where operations of UAS without Remote ID are taking place.
- FAA will accept applications for FRIA sites with 12 calendar months from the effective date of a final rule.
    - After that 12 month period, no new applications will be accepted.
    - No new FRIA sites will be approved, meaning the number of sites will never increase, but will stay the same or decrease.
    - The FAA's stated expectation is that all UAS without Remote ID will reach end of life or will be phased out so that the need for FRIA sites will no longer exist.

- All UAS operators are still bound to follow the rules and regulations of Federal, State, and local laws while in a FRIA site.

HOW TO REQUEST A FRIA

- Would be completed using an online process
- Requires the following information:
    - Name of the Community Based Organization requesting the FRIA.
    - Declaration that the person making the request as the authority to act on behalf of the CBO.
    - Name and contact information of the primary point of contact for communication with the FAA.
    - Physical address of the proposed FRIA site.
    - Latitude and Longitude coordinates of the geographical boundaries of the proposed FRIA site.
    - If applicable, a copy of any existing letter of agreement regarding the flying site.
- FAA will consider the following when vetting the proposed FRIA site:
    - Effects on existing or future airspace capacity.
    - Effect on critical infrastructure, existing or future man made objects, natural objects or existing use of the land both within or near the proposed FRIA site.
    - Effect on the safe and efficient use of airspace by other aircraft.
    - Effect of safety and security of people or property on the ground.
- FRIA Sites will be valid for 48 calendar months after approval.
- Renewal of FRIA sites will need to be submitted no later than 120 day before the expiration date.
- FAA would be able to terminate a FRIA site for any reason.
    - FRIA sites that have been terminated would be able to appeal within 30 calendar days of the issuance of termination.

AMATEUR-BUILT UAS VS KIT BUILT VS PREFABRICATED BUILT

WHAT IS AN AMATEUR-BUILT UAS?

- Person building it fabricates and assembles more than 50% of the UAS.
- Not required to comply with the design and production requirements of Remote ID.
- Restricted to operating within a FRIA site.
- Expectation is that amateur-built UAS represent a very small portion of total UAS.

PREFABRICATED BUILT

- UAS is assembled completely from pre-fabricated parts.

- Person assembling the UAS would be considered the producer and would be required to comply with the design and production requirements of Remote ID.

DESIGN AND PRODUCTION REQUIREMENTS

- People responsible for the design and production of Standard or Limited Remote ID UAS are required to do the following:
    - Each UAS produced has a serial number that is compliant with ANSI/CTA-2063-A serial number standard.
    - Designed and produced to meet the minimum performance requirements of Standard or Limited Remote ID UAS by using a FAA-accepted means of compliance.
    - Comply with inspection, audit, and notification requirements.
    - Label each UAS to identify it as a Standard Remote ID UAS or Limited Remote ID UAS.
    - Submit a declaration of compliance for acceptance by the FAA stating that the UAS conforms to design and production requirements.

OTHER INFORMATION

- Unless authorized by the Administrator, no person may operate a sUAS with a transponder on.
- Unless authorized by the Administrator, no person may operate a sUAS with an Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment in transmit mode.