

Summary Remote-ID (4 Pages)**Origin and Purpose of NPRM for Remote Identification (RID):**

In 2016, as a result of reported drone incidents, Congress tasked the FAA with issuing regulations by July 2018 that would permit the FAA, the Public, law enforcement, and others to remotely track and identify UAS/model-aircraft during flight and identify operators. The purpose of the rule was to enhance safety and security of UAS operations and as a tool for law enforcement to address unauthorized and illegal drone operations as well as to develop the necessary elements for a comprehensive UAS traffic management (UTM) system.

NPRM - Remote Identification (Remote -ID):

Required Remote-ID: Under the proposed rule, a person operating a UAS in the NAS would have to meet the FAA RID requirements on or before the 36th month after the effective date of the final rule. This may be done in one of two ways, either by operating a UAS/model-aircraft that is FAA compliant Standard RID or Limited RID. Standard and Limited UAS/model-aircraft incorporate specific system technologies as well as different operational requirements and limitations.

Exempt Remote-ID: UAS/model-aircraft that are considered Amateur-built (more than 50% by hobbyist) or Owned and Manufactured before the NPRM rule was enacted are exempted from requiring RID. Exempted UAS/model-aircraft may only be flown at FAA FRIA sites and within VLOS of operator.

Remote-ID & Tracking is the ability of a UAS/model-aircraft in flight to provide its identification and location information that people on the ground and other airspace users can receive with an app on a smartphone. RID utilizes technology systems to broadcast and/or network flight path data and the ID of the aircraft and owner in message elements sent to a USS data handler for the FAA.

Unmanned Service Supplier (USS) is part of a network of USS data handlers who will collect the remote identification and location data in real-time that's broadcast and/or networked from in-flight UAS and their ground control-station for the FAA. The data collected will be retained for a period of 6 months. The average USS data handling fee will be \$2.50 a month for operators.

Message Elements – Standard RID broadcast message elements include UAS/model-aircraft serial/session number, latitude, longitude, BP altitude and warning status if broadcast is lost. Standard and Limited RID transmitted message elements via internet includes serial/session number and latitude, longitude, BP altitude of control station, time mark, and emergency status of the control station.

UAS Labeling - Manufactures of UAS with remote identification would have to include a permanent label affixed the UAS to indicate Standard RID or Limited RID requirements.

FRIA – An FAA-recognized-identification-area (FRIA) is a flying site approved by the FAA from established CBO sites. The CBO applicant must submit an application within 12 months from the rules effective date. The FAA will not consider applications after the date. The FAA will maintain a list of FRIA sites on their website. Renewals would be every 48 months. If a club loses a flying site, it will not be allowed to acquire another...no new sites and no temporary sites even on private property. Changes to application have to be submitted within ten days of the change. Renewals no later than 120 days prior to the expiration date. Terminated sites may request reconsideration within 30 days.

1. Standard Remote-ID UAS/Model Aircraft – The Standard UAS/model-aircraft’s onboard equipage includes a GPS receiver, barometric altitude sensor and a broadcast RF spectrum signal unit (47 CFR Part 15 no FCC license required) which automatically starts broadcasting its message elements every second of flight while the ground station utilizing a smartphone and app for its GPS and its barometric altitude sensor will simultaneously transmits via the internet its message elements every second to a USS data handler for the FAA. Range of flights from the operator are not limited by any equipage.

Equipage:

UAS - Broadcast RF Spectrum Signal Unit(47 CFR Part 15 no FCC license required) Wi-Fi/Bluetooth, GPS tracking unit, barometric altitude sensor.

Control Station – An Android/iOS smartphone and app or a compatible direct broadcast receiver module are needed to capture the Broadcast message elements and transmit them through the smartphones network connection to a USS.

Design requirements:

UAS – No flight range limit; Designed failsafe warning to land when unable to broadcast; Automatic message broadcast every second from takeoff to landing; Designed monitoring feature to notify the operator of the UAS if the broadcast capability is lost.

Control Station – Designed failsafe warning to prevent take-off when broadcast not functioning.

Standard Remote-ID operating requirements:

- UAS flying is not limited to FRIA sites and may be flown at any permitted location as well as BVLOS.*
- Broadcast systems start broadcasting message elements from the UAS on power-up directly to the Control Station’s smartphone or a direct broadcast receiver which simultaneously transmits the message ever second through a functioning internet connection to a USS data collector from takeoff to landing.

- UAS may be flown with only a functioning Broadcast system if the internet is unavailable.
- UAS must not be flown with only a functioning Control Station
- If the internet is unavailable at takeoff, or if during flight, the UAS may be flown with only a functioning Broadcast system.
- If the internet is available, but the UAS cannot connect to a USS, the UAS would be designed such that it could not take off.
- Loss of Broadcast function activates a UAS design feature to warn the operator to land the UAS.
- The Broadcast function doesn't require an internet connected device for transmission to the USS when a Control Station or its internet connection is inoperable?
- The UAS must be labeled as a Standard RID UAS and certified compliant to be flown.
- UAS have a monitoring feature that would notify the person manipulating the flight controls of the UAS if the broadcast capability was lost.

2. Limited Remote ID UAS/Model Aircraft - The Limited UAS/model-aircraft doesn't require an onboard broadcast unit or barometric altitude sensor and so its flight path is not tracked nor is its altitude. It is however required to be factory limited to flying at a maximum radius from the operator of 400 ft. This may require a GPS receiver onboard the aircraft integrated into the receiver control system to geo-fence the 400 ft. radius or utilize an RF power range limiting method, or another tamper proof method to limit the range.

Equipage:

UAS – May utilize a GPS receiver to detect/limit UAS's flight range to 400 ft. from the Control Station or utilize a RF power range limiting method or another tamper proof method.

Control Station – Android/iOS smartphone and app for internet connection to USS, and designed failsafe to warn operator and to prevent a takeoff when the internet isn't functioning.

Design requirements:

UAS – Flight range limited at factory to 400 ft. radius from the Control Station using GPS or RF limited power or other methods; UAS designed to monitor systems and notify the operator of any RID malfunctions, failures, or anomalies; RID systems are to be tamper-proof.

Control Station – Designed failsafe warning prevent takeoff when internet isn't functioning or warns the operator to land if the internet fails in flight.

Operating requirements:

- UAS must be flown only within 400 ft. within VLOS and only at FRIA site.

- Network from the Control Station with a smartphone app to send the message elements via the internet to the USS every second from takeoff to landing.
- Must not use a Broadcast system.
- UAS failsafe design must prevent a takeoff if the Network is not functioning.
- Network connection loss during flight activates a UAS failsafe to warn the operator to land.
- Must be labeled as Limited RID UAS and certified compliant.

3. Exempted Remote-ID - A UAS/model-aircraft that would not qualify for either Standard RID or a Limited RID may not be flown unless its Amateur-built* or owned and manufactured before the NPRM rule was enacted and then only flown at FAA FRIA sites within VLOS of the operator.

***Amateur-built** - means a UAS/model-aircraft where more than 50% has been fabricated and assembled by a person solely for their own education or recreation. Hobbyist who build Kits that contain more than 50% but less than 100% of already fabricated parts do not qualify for Amateur-built and the hobbyist is required to install either Standard/Limited Remote ID.

- Model-aircraft manufactured or owned before the NPRM rule was enacted may be flown without Remote-ID but only at FAA approved “FRIA” sites.
- Model-aircraft manufactured or purchased after the NPRM rule was enacted must be equipped with either Standard RID or Limited RID except if Amateur-built.
- ARF Model-aircraft do not qualify as Amateur-built because more than 50% was fabricated and assembled by the manufacture except if it was manufactured before the NPRM rule was enacted.
- Kit Model-aircraft must contain less than 50% of already fabricated parts in order to qualify as Amateur-built