Agenda

- FAA NPRM RemoteID proposed rules
- What is Crowd Sourced RemoteID
- How it works
- Added features
- Work to do
FAA NPRM RemoteID Proposed Rules

• In the Dec 29, 2019 Notice of Proposed Rule Making the FAA has defined
  – Standard Remote ID
    • Both Network and Broadcast RemoteID
  – Limited Remote ID
    • Network RemoteID only

• What happened to prior inclusion of
  – Broadcast RemoteID only?
FAA NPRM RemoteID Proposed Rules

• Broadcast only RemoteID UAs are not
  – Visible to UA Traffic Management (UTM)
  – FAA cannot fulfill goal to manage the National Air Space (NAS)

• Broadcast RemoteID is
  – Easier to support in UAs than N-RID
  – Immediately visible to observers
Crowd Sourced RemoteID

- Inspired by Apple’s “Find My” application
  - Presented at IACR RWC2020, Jan 9, 2020
  - No, I haven’t found slides or a recording, yet.
- Any smart device with Bluetooth/WiFi radios
  - Can receive Broadcast-RemoteID messages
    - That is the design of B-RID!
  - Can forward them into the UTM ecosystem
    - We just need to add a little trust in
Crowd Sourced RemoteID

- Finders may be
  - Mobile
    - People devices, vehicle devices
  - Fixed location at
    - Airports, Public buildings, stadiums, public gatherings

- SPDP Trust model
  - Up to individual SPDPs
  - Should use EdDSA keys for Identities
Crowd Sourced RemoteID

- Finders register to a SDSP
  - ID and trusted communications method

- Finders forward received B-RID msg to SDSP
  - Add Finder time, GPS, B-RID MAC and radio type
  - If too many Finders at a location
    - SDSP can instruct some to be ‘quiet’

- SDSP can use information for multilateration
  - Where really is the UA?
Crowd Sourced RemoteID

130M

40M range
Crowd Sourced RemoteID
Added features

• Finders provide their GPS even if no UA
  – SDSP maintains full coverage map
  – SDSP can instruct Finder to go quiet if crowded loc
    • Or start sending if in uncrowded area

• Finder passive Observation option
  – Finders with LIDAR or Cameras detect UA
    • Information on non-broadcasting UA forwarded to SPDP
  – More research needed
Crowd Sourced RemoteID
Work to do

• Real message format
  - Recommend CBOR
    • Be kind to Finders providing from their bandwidth

• Best practices for SDSPs
  - Finder Identity recommendation (HHITs!)
  - CS-RID protocol
    • ?
Crowd Sourced RemoteID

Hum to adopt as a workgroup item.

QUESTIONS?