IETF 106 HotRFC:
Trustworthy Multipurpose Remote ID

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Progress and Next Steps to add strong authentication techniques to identify physically nearby objects
Unmanned Aircraft System (UAS) Remote ID

- Need means to identify nearby observed Unmanned Aircraft (UA)
- Complicated by small size, hi speed, remote operation, autonomy…
- Urgent: US FAA Notice of Proposed Rule Making this December
- Competing approaches from PHY on up, none entirely satisfactory
- ASTM WK65041 draft: Open Drone ID messages / multi transports
  - Broadcast: Bluetooth 4 / 5 & WiFi beacons direct to local observer phone
  - Network: from UAS (e.g. via LTE) or proxy (e.g. operator phone) to Internet
- Aviators familiar w/radio comms, not networking; IETF could help
  - strengthen authentication, balance operator privacy w/genuine Need To Know
  - generalize to support V2X, self-separation, collision avoidance…
  - what else?
- (UA physical location : UA ID) ~ (host logical location (IP) : host ID)
Value of HITs as UA Remote ID

• Provides Trustworthy Identity to pair with physical and logical location data

• HITs are valid IPv6 addresses and can be used directly over broadcast media (e.g. BT)
  ~ With provable ownership (use HI for sig)

• Full mobility and multihome support

• Secure registration protocol for Identity bootstrap
  ~ First-come, first-own for ID
IETF work status

- UAS use case draft
- Hierarchical HITs draft
- Expanded registration process draft
  - Federated Registration Authorities
  - HIT meta-data update/retrieval based on authorization
- New crypto support draft
  - e.g. EDDSA, KMAC, cSHAKE, Keyak
- HI-signed Broadcast Authentication Messages draft
  - Compatible with ASTM Standard
- Hackathon on above items
IETF work needed

• Progress drafts
• More testing
• Liaison with ASTM
• HIs in CBOR Concise Identities
• HIP as an OAUTH method
• More TBD
IETF 106 BOF:
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Tuesday 10:00 – 12:00 room VIP A
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