IETF 105 HotRFC: Trustworthy Multipurpose Remote ID

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Extending Locator/Identifier split & 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 September
- 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

• HIP-based IPsec between observer and UAS

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

• Hierarchical HITs
• Expanded registration process
   Federated Registration Authorities
   HIT meta-data update/retrieval based on authorization
• New crypto support
   e.g. EDDSA, KMAC, cSHAKE
• HIs in CBOR Concise Identities
• HIP as an OAUTH method
• More TBD
IETF 105 side meeting:
Trustworthy Multipurpose Remote ID

Monday 18:00 – 19:00 room C2
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