

shutterstock - 148735430

# Drone Remote Identification Protocol (DRIP)

requirements & related issues

2021 JUL 28

[stu.card@axenterprize.com](mailto:stu.card@axenterprize.com) 315-725-7002

[adam.wiethuechter@axenterprize.com](mailto:adam.wiethuechter@axenterprize.com)

## **Brief requirements related discussion topics**

- “ Interoperability testing & functional demonstration
- “ ASTM draft revision of F3411 UAS RID standard
- “ Roman Danilyw’s DISCUSS
- “ More complete scenario figure
- “ UAS RID & basic DRIP document relationships
- “ Fundamental DRIP questions & needs

## Interoperability testing & functional demonstration

- “ Prototypes w/DRIP enhancements successfully interoperated with a baseline ASTM F3411 implementation developed independently by a UTM provider
- “ Showing same to DHS, DOD, NASA this week (Adam, Stu, James in photo below)



# ASTM draft revision of F3411 UAS RID standard

Has everything we need for DRIP to be a recognized extension!

“ UAS ID in Basic ID Message

- . Type 4 = Specific Session ID
- . Subtype 1 = IETF DRIP

“ Authentication Message

- . Type 5 = Specific Authentication Method
- . Adam expects to register ~4 DRIP subtypes

“ Balloting in progress on the revised standard draft itself

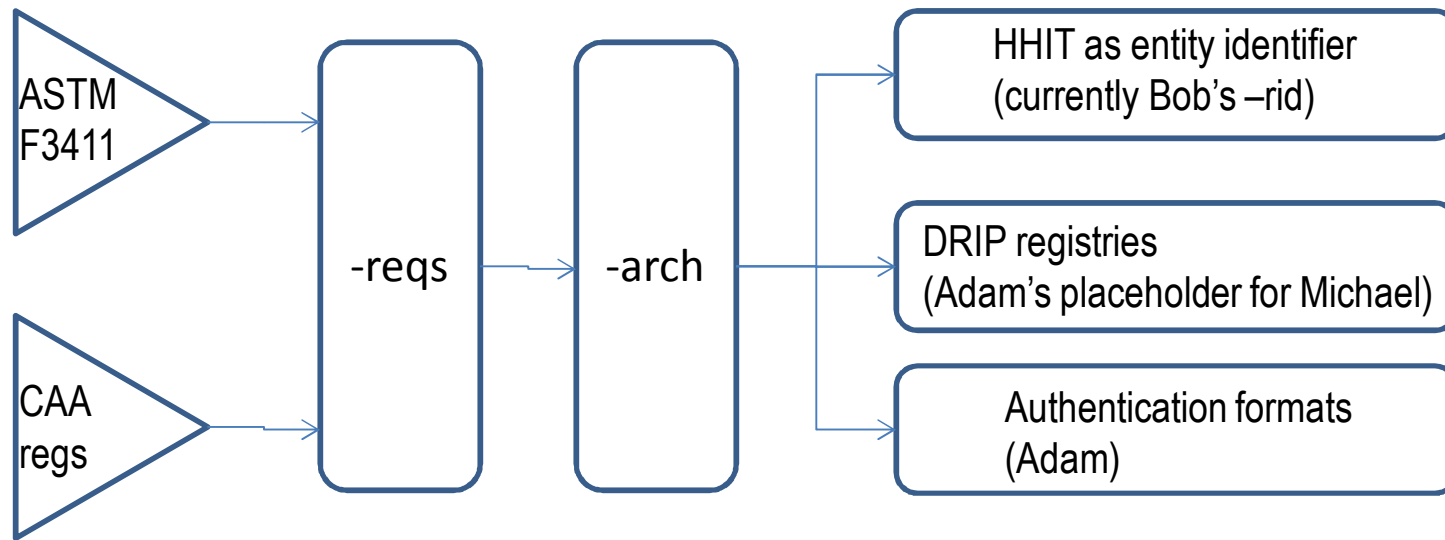
“ Means Of Compliance (MOC) draft being reviewed by FAA

## Roman Danilyw's DISCUSS

- “ Section 6 Security Considerations has caveats on the extent to which it is possible to satisfy requirements given the highly varied connectivity across intentional scenarios & unintentional link outages.
- “ Roman suggests we should change any MUST that cannot consistently be satisfied to SHOULD (my paraphrase, I might be misrepresenting his position).
- “ I think that this applies to essentially all IETF protocols: requirements rarely can be satisfied if someone cuts the underlying Ethernet cable.



# UAS RID & basic DRIP document relationships



Then we have C2, CS-RID, etc., all optional, all dependent upon all the above.

# Fundamental DRIP questions & needs

## Document scopes & relationships

### “ Shuai’s -arch

- . Generic to cyber-physical entities or specific to UAS only?
- . “The DRIP Architecture” or only “A DRIP Architecture”?
- . Normative language (e.g. MUST)?
- . Don’t just list possibilities, specify so as to enable interoperability!
- . Cover not only identifiers & registries but also authentication formats

### “ Bob’s -rid

- . Cover identifiers, registries & authentication formats so merge into –arch, or cover identifiers only?
- . HHIT as “The DRIP Entity Identifier” or only “A DRIP Entity Identifier”?

### “ Michael’s (so far Adam’s placeholder draft) -registries

- . “DRIP Registries” or DNS, EPP, RDAP for “Domain Name Based DRIP Registries”?

### “ Adam’s –auth-formats

- . “DRIP Authentication Formats” or only “DRIP Broadcast Authentication Formats”?

### “ Need a “Means Of Compliance” (MOC) doc (how to use technical standards to satisfy regulations)

- . At least for FAA, probably for other CAAs
- . Could Bob’s –rid be tweaked to serve, as FAA admits Session IDs need work?