



ASTM INTERNATIONAL Helping our world work better

#### ASTM F38 Committee on UAS Standards ICAO RPAS SYMPOSIUM

Philip M. Kenul TriVector Services, Inc. Chair F38 Unmanned Aircraft Systems Philip.Kenul@gmail.com

www.astm.org



### **About ASTM International**

### **A Proven and Practical System**

ASID

- One of the world's largest Standards Developing Organizations,
  - Global reach and influence
- Established in 1898; a private sector, not-for-profit organization
- 30,000 volunteer members; individuals from 154 countries
  - Representing public and private sector interests
  - Addressing over 90 industry sectors
- Headquartered in PA/USA, offices in:
  - Beijing, Brussels, Lima, Ottawa, Singapore, Washington DC
- Providing
  - Straightforward development and delivery of information
  - A stakeholder driven approach to standardization
  - A consensus-based process
- Test methods, specifications, classifications, guides, and practices



main committees plus 2,050+ subcommittees

# ASTM International in the Aviation/Aerospace Sectors



Standards Developing Committees

### F37 Light Sport Aircraft

Standards: 32 approved

### F38 Unmanned Aircraft Systems

Standards: 27 approved; 25+ in development

### F39 Aircraft Systems

- Standards: 10 approved; 9 in development
- FAA Notices

### F44 General Aviation Aircraft

Standards: 46 approved; 10 in development

### F46 Aerospace Personnel

Standards: 8 approved, 1 in development

F47 Commercial Spaceflight

### **Training and Certification**

### NCATT Testing & Certification

- Aircraft Electronics Technicians (AET)
- AerolT
- Foreign Object Debris
- many more...

### LSA Personnel Certificate Program

Training for compliance personnel



### F38 Unmanned Aircraft Systems



### **Quick facts:**

Formed: 2003, memorandum agreement with FAA Current Membership: 600 members (30 regulators) Standards: 27+ Published/Approved; 25+ in development

### **Subcommittees:**

#### F38.01 Airworthiness

- Hardware oriented
- Safe design, construction, test, modification, & inspection of the individual component, aircraft, or system

#### F38.02 Flight Operations

- Procedure oriented
- Safe employment of the system within the aviation environment among other aircraft & systems

#### F38.03 Personnel

- Individual, Crew and Organization Oriented
- Safe practices by the individuals and teams responsible for employing the system

F38 has coordination with EASA, Swiss FOCA, Transport Canada, FAA, JCAB and many other regulators.

**Global Representation** Australia Brazil Canada China Denmark France Germany Israel Italy Japan Republic of Korea Netherlands New Zealand Norway Russian Federation Singapore Slovenia Switzerland United Kingdom United States

### **ASTM Aviation Technical Committees**

AC377 – Administrative Committee – Autonomy Design and Operations in Aviation

- Created in 2018 to coordinate ASTM's approach to autonomy
- 4 Focus Areas
  - Terminology
  - Requirements framework for certification
  - Design "pillars" of autonomy
  - Regulatory barriers

### Inform Technical Committee activities

WK76044 - A Standard Practice for Exercising A Contextual Framework for Increasingly Autonomous Aviation Systems







ASTM F3411 "Standard Specification for Remote ID and Tracking"

- Compatible with personal hand-held device (smartphone technology)
- First Published 2019
- Revised effective April 2022
- Derivative Means of Compliance for FAA Remote ID rule Complete
- Swiss FOCA demonstrated Network Remote ID September 2019
  - Implemented voluntary compliance /Advance U-Space & UTM
- ICAO requirements included
- F3411 adopted as Means of Compliance in US, also in Japan and EU.



<u>F3548 -21</u> UAS Traffic Management (UTM) UAS Service Supplier (USS) Interoperability Service

Underway: Committee approved requirements for Collaborative Traffic Management (UAM and Upper Air) after publication of initial UTM standard.

- Define interoperability protocols and functional requirements for digital traffic management systems for Urban Air Mobility (UAM)
- Focus on Provider of Services for UAM (PSU) and its necessary functions and interfaces

UTM Space and Progress Today



Collaboration / Federation is key for progress

 First ASTM UTM specific standard work is focused on the interoperability and protocols between USS providers needed for flight management services (flight planning, strategic deconfliction, situational awareness, etc)









•<u>WK73142</u> Standard Specification for Weather Supplemental Data Service Provider (SDSP) Performance

•<u>WK75923</u> Standard Specification for Positioning Assurance, Navigation, and Time Synchronization (PNT) for Unmanned Aircraft Systems (UAS)

•<u>WK82742</u> Standard Practice for To support UAS manufacturers in obtaining Production Approval in concert with Type Certification for UAS.

•<u>WK60937</u> Standard Specification for Fuel Cell Power Systems for Use in small Unmanned Aircraft Systems (sUAS)

<u>Upcoming</u>

- OOP MOC
- UAS V2X Communications Security

### Follow up and Contact



## **Questions?**

Philip Kenul Chair, ASTM TC F38 Philip.Kenul@gmail.com Mobile: +1301.346.5939



