ANSI Unmanned Aircraft Systems Standardization Collaborative (UASSC)

Orientation Webinar

September 6, 2018

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This webinar is being recorded.

Today's Agenda

UASSC background, mission, and objectives	Representatives of UASSC leadership
Gap Analysis Process, Timeline, & Prep for 9/20 Meeting	Jim McCabe, Sr. Dir, Standards Facilitation, ANSI
Topics covered by Working Groups (WGs)	WG Co-Chairs
Q&A - We'll hold Q&A until the end - Raise hand to be unmuted or ask via Q&A panel	All

These slides & the recording link will be made available on the ANSI website

Representatives of UASSC Leadership

Public Sector

- Art Hinaman, Manager, Technical Support Branch
  Office of UAS Integration
  Federal Aviation Administration
  (on behalf of UASSC Co-Chair Earl Lawrence)

Private Sector

- Tracy Lamb, BA, Avn. MBA, Avn. ATPL
  VP of Regulatory and Safety Affairs & Chief Pilot
  Association for Unmanned Vehicle Systems International
  (on behalf of UASSC Co-Chair Brian Wynne)

ANSI Unmanned Aircraft Systems Standardization Collaborative (UASSC)

- Established following May 19, 2017 coordination meeting involving 40+ private- and public-sector organizations where UAS standards and policy activities were discussed

- Kick-off meeting held September 28, 2017

- Participation open to UAS stakeholders that have operations in the United States
  - Participants come from industry, government agencies, standards developing organizations (SDOs), and others
  - ANSI membership not a prerequisite and no fee to participate

UASSC Mission and Deliverable

- **Mission:** To coordinate and accelerate the development of the standards and conformity assessment programs needed to facilitate the safe integration of unmanned aircraft systems (UAS) into the national airspace system (NAS) of the United States, with international coordination and adaptability

- **Deliverable:** A comprehensive roadmap developed over the course of a year describing the current and desired standardization landscape for UAS
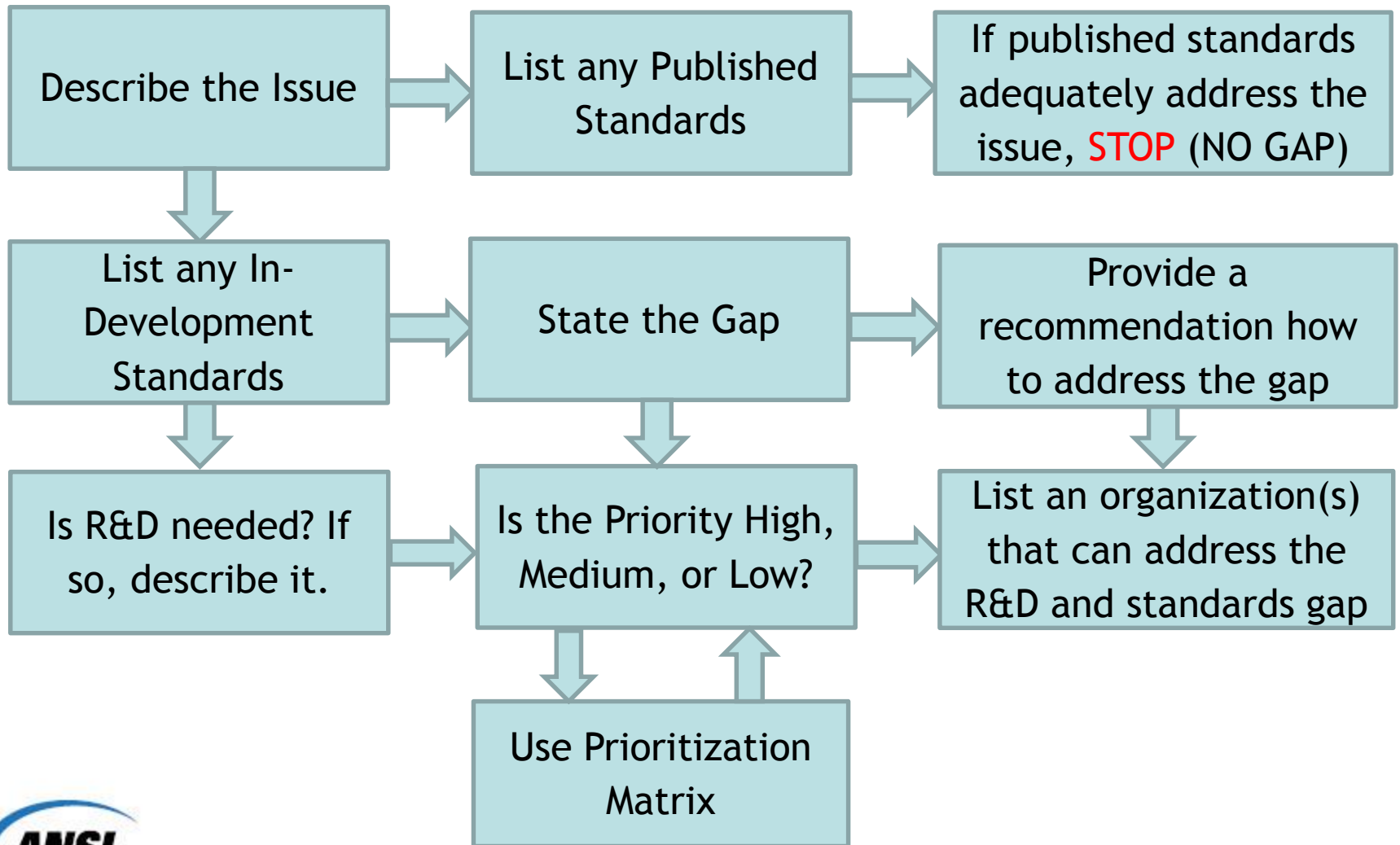
UASSC Objectives

- **To foster coordination and collaboration** among industry, standards developing organizations, regulatory authorities, and others on UAS standardization issues, including pre-standardization research and development

- **To clarify the current and future UAS standardization landscape** and enable stakeholders to better focus standards participation resources

- **To provide a basis for coherent and coordinated U.S. policy and technical input** to regional and international audiences on UAS standardization

- **To support the growth of the UAS market** with emphasis on civil, commercial, and public safety applications

Working Group Functions

- Identify published and in-development standards

- Describe in-development standards and "should be developed" standards as gaps
  - A "gap" means no <u>published</u> standard or specification exists that covers the particular issue in question

- UASSC and the WGs are <u>NOT</u> developing standards

- Working Groups meet by Webex twice a month

- Sign up for one or more at <u>www.ansi.org/uassc</u>

Process Flow for Describing Issues & Gaps

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┌─────────────────────┐     ┌─────────────────────┐     ┌─────────────────────────┐
│  Describe the Issue │ ──▶ │  List any Published │ ──▶ │  If published standards │
│                     │     │      Standards      │     │  adequately address the │
│                     │     │                     │     │  issue, STOP (NO GAP)   │
└─────────────────────┘     └─────────────────────┘     └─────────────────────────┘
           │
           ▼
┌─────────────────────┐     ┌─────────────────────┐     ┌─────────────────────────┐
│   List any In-      │ ──▶ │   State the Gap     │ ──▶ │      Provide a          │
│   Development       │     │                     │     │  recommendation how     │
│   Standards         │     │                     │     │  to address the gap     │
└─────────────────────┘     └─────────────────────┘     └─────────────────────────┘
           │                          │                            │
           ▼                          ▼                            ▼
┌─────────────────────┐     ┌─────────────────────┐     ┌─────────────────────────┐
│  Is R&D needed? If  │ ──▶ │  Is the Priority High, │ ──▶ │ List an organization(s) │
│  so, describe it.   │     │  Medium, or Low?    │     │  that can address the   │
│                     │     │                     │     │  R&D and standards gap  │
└─────────────────────┘     └─────────────────────┘     └─────────────────────────┘
                                 │        ▲
                                 ▼        │
                            ┌─────────────────────┐
                            │  Use Prioritization │
                            │       Matrix        │
                            └─────────────────────┘
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Sample Gap Statement

- **Gap: Crane Inspection Using UAS**. Standards are needed to cover requirements for the use of UAS in the inspection, testing, maintenance and operation of cranes and other material handling equipment covered within the scope of ASME's B30 volumes.

- **R&D Needed:** No

- **Recommendation:** Complete work on ASME B30.32 to address crane inspections using UAS.

- **Priority:** Medium (see prioritization matrix on next 2 slides)

- **Organization:** ASME

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Prioritization Matrix: Making the <u>CASE</u> for the Gap Priority Level

Criteria

- **<u>C</u>riticality (Safety/Quality Implications)** How important is the project? How urgently is a standard or guidance needed? What would be the consequences if the project were not completed or undertaken? A high score means the project is more critical.

- **<u>A</u>chievability (Time to Complete)** - Does it make sense to do this project now, especially when considered in relation to other projects? Is the project already underway or is it a new project? A high score means there's a good probability of completing the project soon.

Scoring Values

- 3 - critical
- 2 - somewhat critical
- 1 - not critical

- 3 - project near completion
- 2 - project underway
- 1 - new project

Prioritization Matrix (contd.)

Criteria

- **Scope (Investment of Resources)** - Will the project require a significant investment of time/work/money? Can it be completed with the information/tools/resources currently available? Is pre-standardization research required? A high score means the project can be completed without a significant additional investment of resources.

- **Effect (Return on Investment)** - What impact will the completed project have on the industry? A high score means there are significant gains for the industry by completing the project.

Scoring Values

- 3 - low resource requirement
- 2 - medium resource requirement
- 1 - resource intensive

- 3 - high return
- 2 - medium return
- 1 - low return

Score rankings

- High Priority (a score of 10-12)
- Medium Priority (a score of 7-9)
- Low Priority (a score of 4-6)

2018 Timeline

- WG calls - standards inventory & gap analysis (Jan–Aug)

- Volunteers draft roadmap (May-Aug)

- Webinar for new participants (Sep 6)

- Release of initial draft of roadmap (Sep 13)

- F2F meeting to discuss initial draft roadmap (Sep 20)

  - Register by 9/13 www.ansi.org/uassc

- Comment period (Oct)

- Reconvene WGs / revise roadmap (Oct-Nov)

- Publish roadmap by year's end

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Prep for 9/20 Meeting

- Familiarize Yourself with the Roadmap

- <u>Ask Yourself These Questions:</u>

  1) Is the presentation of issues, gaps, and recommendations for new or revised standards clearly stated?

  2) What could be improved?

  3) Is there any content that conflicts with or should be consolidated with another section?

  4) Are there any issues or gaps that have been overlooked?

- Keep in mind we are only identifying the issues, not coming up with the solutions (stay out of the weeds)

Flow of 9/20 Meeting

- 8:00 – 9:00 am – Continental Breakfast/Registration
- 9:00 – 9:15 – Welcome/Opening Remarks
- 9:15 – 10:30 – WG3 review of questions on prior slide
- 10:30 – 10:45 – AM Break
- 10:45 -12:15 pm – WG1 review of questions on prior slide
- 12:15 – 1:15 – Lunch (to be provided)
- 1:15 – 2:45 – WG2 review of questions on prior slide
- 2:45 – 3:00 – PM Break
- 3:00 – 4:15 – WG4 review of questions on prior slide
- 4:15 – 4:45 – Open Discussion
- 4:45 – 5:00 – Next Steps/Closing Remarks
- 5:00 – 6:00 – Networking Reception

WG1 - Airworthiness

<u>Co-Chairs</u>

- Phil Kenul
  Senior Vice President, Aviation and Operations
  TriVector Services, Inc.

- Mark DeAngelo, PhD
  Aerospace Standards Engineer
  SAE International

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WG1 - Airworthiness

- Design and Construction

- Safety

- Quality Assurance/Quality Control

- Avionics and Subsystems

- Command and Control Link

- Navigational Systems

- Detect and Avoid Systems

- Software Dependability and Approval

- Crash Protected Airborne Recorder Systems

- Cybersecurity

- Electrical Systems

- Power Source and Propulsion Systems

- Noise, Emissions, and Fuel Venting

- Hazard Mitigation Systems (e.g., Parachutes)

- Maintenance and Inspection

WG2 – Flight Operations and Personnel Qualifications

Co-Chairs

- Joe Valasquez
  Founder and Chief Flight Engineer
  DroneScape, LLC

- Jon Gustafson, PS, CFedS, PMP, GISP
  Consultant, Civil Integrated Management
  Research and Innovation Solutions
  Advisory Services, U.S.
  WSP USA

WG 2 – Flight Operations and Personnel Qualifications

- Privacy
- Operational Risk Assessment
- EVLOS/BVLOS
- Operations Over People
- Weather
- Data Handling & Processing
- UAS Traffic Management
- Remote ID & Tracking
- Geo-fencing

- Personnel Training, Qualifications and Certification
- Terminology
- Manuals
- UAS Flight Crew
- Additional Crew Members
- Maintenance Technicians
- Compliance/Audit Programs

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WG3 – Critical Infrastructure and Environment

<u>Co-Chairs</u>

- Brian Daly

  Assistant Vice President, Standards & Industry Alliances

  AT&T

- Philip Hall

  Founding Director & CEO

  RelmaTech Ltd (UK)

WG3 – Critical Infrastructure and Environment

- Vertical Infrastructure Inspections
  - Boilers & Pressure Vessels
  - Cranes
  - Building Facades
  - Low-Rise Residential and Commercial Buildings
  - Communications Towers

- Linear Infrastructure Inspections
  - Bridges
  - Railroads
  - Power Transmission Lines

- Wide Area Environment Infrastructure Inspections/ Precision Agriculture
  - Environmental Monitoring
  - Pesticide Application
  - Livestock Monitoring and Pasture Management

- Commercial Package Delivery

WG4 - Emergency and Medical Response

Co-Chairs

- Christine DeJong
  Director of Business Development
  ASTM International

- Kristy Kiernan, PhD
  Assistant Professor, Program Chair MS in Unmanned
  Systems, College of Aeronautics, Worldwide
  Embry-Riddle Aeronautical University

WG4 – Emergency and Medical Response

- sUAS for Public Safety Operations
- Hazardous Materials Incident Response and Transport
- Forensic Investigations Photogrammetry
- UAS Payloads in Public Service Operations

- Search and Rescue
  - sUAS FLIR Camera Sensor Capabilities
  - sUAS Automated Waypoint Missions
- Response Robots
- Law Enforcement Tactical Operations
- Counter UAS

Questions

- Don't Forget to Register by 9/13 for 9/20 face-to-face meeting www.ansi.org/uassc

- Thank You!