



Standardization Collaborative and Roadmap for the Commercial Space Industry

Problem

The United States commercial space industry is growing. The White House and U.S. federal government agencies are working to articulate the public policy framework needed to keep pace with and augment industry technology development and safe and sustainable deployment. Voluntary consensus (“industry”) standards are a vital adjunct to the public policy framework, supporting innovation and helping to ensure a safe, performance-based, and interoperable commercial space industry ecosystem. Several standards development organizations (SDOs) and federal agencies are independently developing a variety of standards and roadmaps but these efforts are not optimally coordinated. Coordination of standardization activities among SDOs, government, and industry is critical to focus standards participation resources, avoid duplication of effort, and maintain a consistent, harmonized, and non-contradictory set of standards.

Solution

The Commercial Space Industry Standardization Collaborative (CSISC) is proposed to coordinate and accelerate the development of industry-wide standards, specifications, and conformity assessment programs consistent with stakeholder needs, and thereby facilitate the growth of the commercial space industry. Priorities include the safe integration of the commercial space industry into the national airspace system (NAS) of the United States, safe on-orbit coordination, and human spaceflight safety.

Administered by the American National Standards Institute (ANSI), the CSISC will work to foster coordination and collaboration among industry, federal government agencies, standards developing organizations, and others on commercial space industry standardization issues, including pre-standardization research and development (R&D).

As a coordinating body, the CSISC will clarify the current and desired future standardization landscape for the commercial space industry. The CSISC will provide a basis for coherent and coordinated U.S. policy and technical input to regional and international audiences on commercial space industry standardization. Ultimately, the goal of the CSISC will be to facilitate the safe and efficient growth of the commercial space industry.

Participation

The CSISC will draw participation from industry, federal agencies, standards developing organizations, and other interested stakeholders. Substantial representation is anticipated from the aerospace and aviation industries, among others. Participation is open to commercial space industry stakeholders that have operations in the United States. Membership in ANSI is not a prerequisite and there is no fee to participate at this time. A mechanism shall be established to facilitate international coordination and adaptability.

Deliverable

The CSISC will produce in roughly a year's time from its formal kickoff meeting a comprehensive roadmap that describes the current and desired future standardization landscape for the commercial space industry. The roadmap will identify existing standards and standards in development, assess gaps, and make recommendations for priority areas where there is a perceived need for additional standardization including pre-standardization R&D. Each identified gap – meaning there is currently no published standard or specification that covers the issue in question – will include a corresponding recommendation for action, along with a priority level for producing a standard, and the name of a suggested organization(s) that can address the need.

Anticipated topical areas covered include: spaceports, launch and re-entry services and vehicles, satellites, ground systems and space data exchange, space-related products and services, spectrum allocation, human spaceflight practices, space tourism, space domain awareness, on-orbit coordination, rendezvous and proximity operations, orbital debris mitigation, long-term sustainability and end of mission, and workforce development.

The roadmap will include a list of standards related to the issues described. The document can be updated as needed over time based on stakeholder needs and available resources. A mechanism also can be put in place to monitor progress to address the gaps and recommendations identified in the roadmap through meetings with SDOs and an interactive, online portal.

The CSISC itself will not develop standards but, rather, will undertake to drive coordinated standards development activity by relevant entities including SDOs.

Background on ANSI

Founded in 1918, the American National Standards Institute (ANSI) serves as the administrator and coordinator of the United States private-sector voluntary standardization system. As a neutral facilitator, the Institute has a long track record of bringing public and private sectors together through its collaborative process to identify standardization needs for emerging technologies and to address national and global priorities in areas as diverse as homeland security, nanotechnology, electric vehicles, and energy efficiency in the built environment. ANSI's most recent standardization collaboratives are:

- The [ANSI Unmanned Aircraft Systems Standardization Collaborative \(UASSC\)](#) whose charter is 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. The UASSC is currently working on an update to its [Standardization Roadmap for Unmanned Aircraft Systems \(Version 1.0, December 2018\)](#).
- The [America Makes & ANSI Additive Manufacturing Standardization Collaborative \(AMSC\)](#) whose charter is to coordinate and accelerate the development of industry-wide additive manufacturing standards and specifications, consistent with stakeholder needs, and thereby facilitate the growth of the additive manufacturing industry. Most recently, AMSC produced its [Standardization Roadmap for Additive Manufacturing \(Version 2.0, June 2018\)](#) and is currently monitoring progress to address the gaps and recommendations identified in the roadmap through meetings with SDOs and an [interactive, online portal](#).