



CONFERS
FOSTERING THE SATELLITE SERVICING INDUSTRY

The Value of Voluntary Industry Standards:
CONFERS as an Example

Why Are Voluntary Industry Standards Important?



The Center for Association Leadership



- Voluntary industry standards work to achieve sustainability within their respective industries or professions by ensuring **safety, security, access, quality and equality**.
- Most importantly, they may help to pre-empt unnecessary regulations or serve as a guidance to government when promulgating regulations.
- Europe's medieval merchant and craft guilds are one of the earliest examples of organizational standards setting (and some anticompetitive activity as well!)
- Today, industries and their associations have been increasingly taking the lead in voluntary standards development as a way to self-regulate or at least minimize government intervention.
- Industry standards make processes and facilities safer; help prove compliance with regulations; improve the economics of an industry; make it easier to train and cross-train people in technical jobs; and encourage innovation, to name a few.
- **Healthcare standards**, by way of practitioner certification and licensure, and facility accreditation, provide patient protection, quality of treatment, dignity, and maintain the integrity of benefit programs
- In **transportation**, operational standards (equipment specifications, safety training, drug testing and fatigue tolerances, etc.) strive to enhance safety,

security, supply chain velocity, and on-time performance.

Space is risky business...



INTERNATIONAL
STANDARD

ISO
24330

Space systems — Requirements
and Processes Operations (RPO)
and On Orbit Servicing (OOS) —
Programmatic principles and
practices



- Space operations are inherently dangerous, expensive, complex operations involving multiple domestic and international collaborators, and are usually limited to the most robust national economies.
- Lack of clear, widely accepted technical and safety standards for responsible performance of OOS and RPO involving commercial satellites is an obstacle to satellite servicing becoming a major industry and could lead to incidents that put long-term sustainability of the space economy at risk by casting doubt on its commercial viability or inviting greater government scrutiny and uninformed regulation.
- Voluntary, non-binding industry consensus standards recommended and advanced by CONFERS provide the foundation for new, space-based capabilities and build a viable in-space economy.
- The standards help achieve sustainability goals by encouraging, a safe, secure, peaceful, cleaner and accessible space environment; and help to mitigate regulatory intervention.
- This helps to:
 - Foster unmanned and manned exploration of Earth and beyond
 - Maintain national security
 - Encourage the effective and peaceful use of outer-space to create economic opportunity and prosperity for all
 - Promote innovation by de-risking investment and accelerating the adoption of new technologies through confidence in performance

CONFERS Collaborative Role



- CONFERS CTWG has worked to develop industry-led recommendations for standards that contribute to a sustainable, safe, and diverse space economy and has contributed to multiple standards related to satellite servicing:
 - ISO 24330 Rendezvous and Proximity Operations (RPO) and On Orbit Servicing (OOS) — Programmatic Principles and Practices (Status: Published in July 2022) - *strategy and technical concepts foundational to establishing safe, cost-effective and capable methods for execution of commercial on-orbit Rendezvous and Proximity Operations (RPO) and On-Orbit Servicing (OOS) missions.*
 - AIAA S-155 (202X) RPO-OOS Spacecraft Fiducial Markers (Currently in progress through AIAA) - *improving orbital conditions such as lighting and increase observability and relative position and orientation estimation performance of navigation sensors and computer vision systems, leading to enhanced safety of on-orbit operations. Can also provide economic benefit through interoperability.*
 - AIAA S-157 (202X) RPO-OOS In-Space Storable Fluid Transfer Interfaces (Currently in progress through AIAA) - *best practices and requirements for the design, testing and operation of “prepared spacecraft” in-space (re)fueling systems, and includes requirements and recommendations for both servicer and client spacecraft.*
 - AIAA S-158 RPO-OOS Free-Flyer Capture (approved by the AIAA Standards Steering Committee (SSC) on May 5, 2023) - *ensure safe and reliable operations for prepared in-space capture; and, facilitate future in-space operations by developing standards for prepared capture interfaces.*