

Update on the Consortium for Execution of Rendezvous and Servicing Operations (CONFERS)

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CONFERS Objectives

- Independent industry forum to advocate and promote on-orbit satellite maintenance, servicing, and rendezvous operations
- Collaborate to research, develop, and publish voluntary, consensus technical and safety standards
- Engage with governments on policy and oversight of satellite servicing activities
- Open to participation by private sector stakeholders in the international satellite servicing community
- Initially supported by DARPA, CONFERS intends to transition to full private-sector funding over a period of several years

CONFERS: A Holistic Approach To Standards

Interfaces and Designs

- Engineering and design to increase the safety, viability, and interoperability of satellite servicing

Operational Practices

- Behavior of satellite servicing and RPO activities

Data Exchange and Sharing

- Information sharing between servicing companies, clients, and governments

Transparency

- Mechanisms to reduce misperceptions and clarify intent about the dual-use activities

Current Members



CONFERS Organization

- Executive Committee
 - Six elected representatives from CONFERS members
 - Two statutory representatives from the Secretariat (Advanced Technology International and Secure World Foundation)
- Executive Director
 - Dr. Brian Weeden, Secure World Foundation
- Technical Working Group
 - Monthly telecon of CONFERS members and government subject matter experts to advance technical development of current and future CONFERS products
- Policy Working Group
 - Monthly telecon of CONFERS members to discuss policy positions and government engagement

CONFERS Activities

- Workshops for our members and international government subject matter experts
 - April 8, 2019 (Colorado Springs, CO)
 - May 9-10, 2019 (Washington, DC)
 - June 7-8, 2019 (London, UK)
 - Sept 4-5, 2019 (Washington, DC)
 - March 24-25, 2020 (Brussels, Belgium)
 - May/June 2020 (California, US)
 - Aug/Sept 2020 (Washington, DC)

- Global Satellite Servicing Forum
 - Nov 8, 2018 (Washington, DC)
 - Oct 1-2, 2019 (Washington, DC)
 - Oct 2020 (California)

CONFERS Products

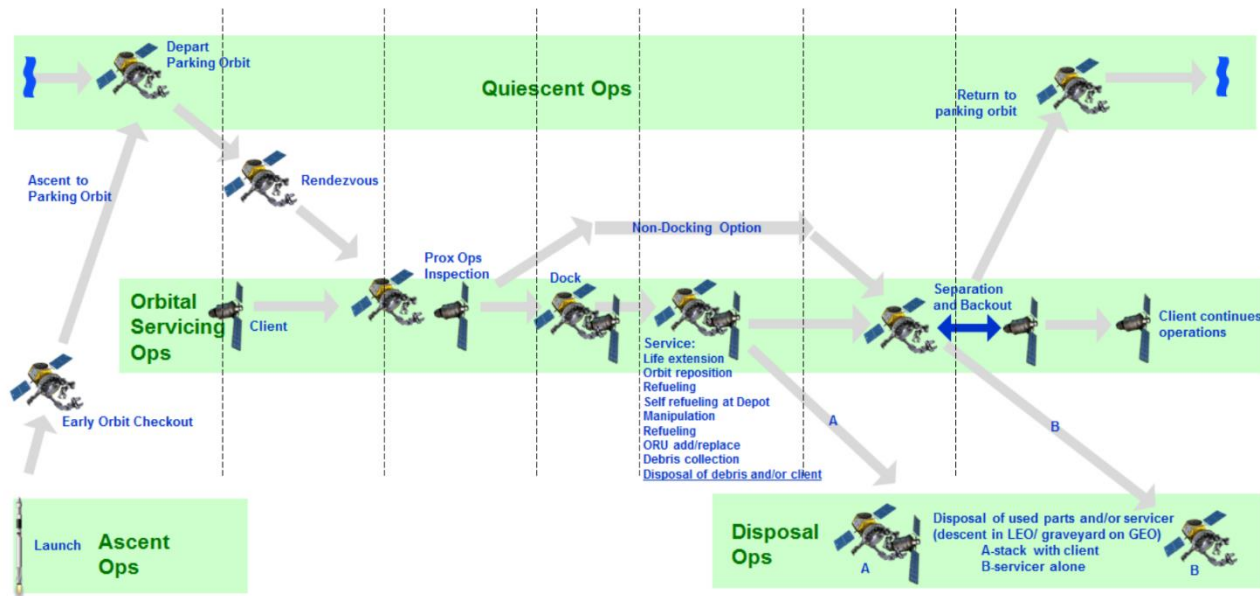
- **Guiding Principles for RPO and OOS** (published Nov 2018)
 - Consensual operations
 - Compliance with relevant laws and regulations
 - Responsible operations
 - Transparent operations
- **Design and Operating Practices** (updated Oct 2019)
 - Design for OOS and RPO mission success
 - Design satellites to improve OOS and RPO mission safety
 - Design operations to minimize OOS and RPO mishaps
 - Avoid interference during OOS and RPO operations
 - Share info on OOS and RPO anomalies and resolutions
 - Promote OOS and RPO space sustainability guidelines/practices

CONFERS Products

- On-orbit Satellite Servicing Mission Phases

(published Oct 2019)

- Baseline of mission phases that is intended to describe the functions of all OOS missions



CONFERS/ISO Collaboration

- Importance of developing an international standard on satellite servicing
 - Chose ISO TC 20/SC 14/WG3 as initial forum for international consensus on top-level standard
 - Likely to see additional complementary efforts from ISO or other regional/national standards organizations
- CONFERS submitted new work item proposal in April 2019
 - Based on CONFERS Principles and Practices
 - Approved by WG3 in July 2019
- ISO Draft Standard 24330
 - Currently being revised by experts from Brazil, France, Germany, Japan, Russia, Ukraine, UK, US
 - Anticipated vote to move to Committee Draft Stage in April 2020

International Outreach

- **2018**
 - Mention during SWF statement at UN COPUOS STSC
 - Presentation at the Global Space and Technology Convention, Singapore
 - Embassy briefing in Washington, DC (US State Dept)
 - CONFERS Workshop in Bremen (Airbus)
 - IAC Booth, technical paper, and panel discussion
 - International partners briefing in Washington, DC (US State Dept)
- **2019**
 - Technical presentation at UN COPUOS STSC
 - Presentation at International Symposium on Ensuring Stable Use of Outer Space, Tokyo, Japan
 - Participation in the ISO TC20/SC14 meetings in London, UK, and St. Petersburg, Russia
 - Panel and booth at the UK Space Conference in Wales
 - IAC booth, technical paper, and panel discussion
- **2020**
 - CONFERS Workshop in Brussels, Belgium (European Commission)
 - Presentation at the Japan Space Forum Symposium in Tokyo, Japan
 - Presentation at the ESA CleanSpace Industry Days in Noordwijk, Netherlands

Participate in CONFERS

- **Private Sector Entities**

- Industry, academic research institutions, nonprofit and not-for-profit organizations can join as formal members
- Direct and material interest in satellite servicing and standards development
- Three membership tiers and annual dues
 - Sustaining (\$2,500)
 - Contributing (\$1,000)
 - Observer (\$500)

- **Governments**

- Cannot be formal members, but can participate in CONFERS activities
- Provide RPO and OOS subject matter experts to participate in CONFERS technical working group and workshops
- Provide technical feedback to ISO draft standard 24330
- Engage CONFERS leadership with national space policymakers to explore role of standards in national policies and regulations

Contact Info

- Consortium publications and further information are available on the CONFERS website at: www.satelliteconfers.org
- Contact Information:
 - Technical/Standards questions: Dr. Brian Weeden (bweeden@swfound.org)
 - Membership/Administrative: Mr. Rick Nobbs (rick.nobbs@ati.org)