Call for Papers

Overview

The Space Operations and Support (OPS) Technical Committee (TC) is seeking papers to advance the practice of operating space missions, from mission concept through execution and sustainment. The OPS TC accepts work spanning crewed and uncrewed missions, single spacecraft to large constellations, and from LEO to cislunar and planetary regimes. Submitted abstracts should be in an operational context and demonstrate measurable impact, risk reduction, and/or lessons learned.

Subtopics

Mission Operations Engineering & Readiness

Methods and practices that transition a mission from concept to an executable, testable, and certifiable operational capability. This may include procedures, training, rehearsals, readiness, reviews, and operational performance assurance. Note that Vehicle Test & Evaluation should not be submitted under this subtopic (see Space Domain Vehicle Test & Evaluation).

Flight Dynamics Operations

Practiced astrodynamics in operations: planning, execution, monitoring, and decision-making processes that are constrained to contracts, timelines, staffing, and mission rules.

Ground Segment & Mission Control Operations

Architectures, reliability, and mission control workflows that allow for safe, continuous, and efficient command/TM operations, particularly under failures, degraded modes, and scaling to fleets/constellations.

Operations Automation & Decision Support

Automation that is used by operators for decision support, workload management, scheduling assistance, anomaly triage support, and operational autonomy governance with measurable improvements on mission outcomes.

Safety & Space Traffic Coordination

Operational practice that protects mission safety and sustainability, conjunction response, coordination, procedures, and decision making under uncertainty for collision avoidance, safe modes, and multi-actor operational coordination.

Data Operations & Mission Product Pipelines

End-to-end operational data handling that enables mission success. This may cover data ingestion, processing, quality, archiving, product generation, distribution, and operational analytics that improve decision making, and mission outcomes.

Beyond-LEO / Cislunar / Planetary Operations

Operations under comm delay, sparse contacts, autonomy boundaries, and complex multi-element architectures, emphasizing how operations are engineered and executed in practice.

Special Session: Space Domain Vehicle Test & Evaluation (w/ Flight Testing TC)

This special session focuses on test and evaluation (T&E) of space domain vehicles and space enabled systems, with emphasis on the end-to-end planning, execution, instrumentation, and analysis of flight test and operational demonstrations. The session bridges OPS and FT.

Out of Scope

If your paper's primary contribution is in one of these areas below, it may be a better fit for other Space & Missiles Group Technical Committees.

- Launch/entry/transport vehicle design, access-to-space system development.
  - Space Transportation Technical Committee
- Spacecraft/subsystem design & development not centered on operational outcomes.
  - Space System Technical Committee or Small Satellites Technical Committee
- Robotics hardware design, manipulation, and robotic autonomy technology development.
  - Space Automation & Robotics Technical Committee
- Space resource extraction, processing, or utilization.
  - Space resources Technical Committee
- Settlement or Colonization enabling technologies and concepts.
  - Space Colonization Technical Committee
- Logistics architecture, depots, replenishment networks, or supply chain design.
  - Space Logistics Technical Committee
- Tether physics, tether design, electrodynamic tethers, or tether mission design.
  - Space Tethers Technical Committee
- Weapon lethality or effectiveness modeling primarily focuses on weapon outcomes.
  - Weapon system effectiveness technical committee

If the primary contribution is space mission operation (operational workflows, readiness, execution, resiliency, decision-making, measurable ops impact), OPS may still be appropriate – even if the mission context includes elements from the areas above.

Abstract Considerations

To ensure your submission remains centered on space mission operations, your abstract is strongly encouraged to include at least two from the following:

- A real mission (or credible mission class) context and constraints
- An operational workflow description
- Quantitative performance or risk outcomes
- Transferability/lessons learned applicable to other missions or operational settings
- Operational interfaces and constraints

- Operational decision(s) enabled and how the proposed approach improves decision quality, workload, safety, or resiliency.

Contact for Questions

If you are unsure if your abstract fits in OPS, please reach out to the technical chair below.

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