CALL FOR PAPERS - SPECIAL SESSION

"Guidance, Navigation and Control for Next-Generation Aero & space Applications"

for CODIT 2026

July 13-16, 2026 ▪ Bari, Italy

Session Co-Chairs:

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Session description:

Next-generation aerospace systems—including spacecraft, satellite constellations, planetary rovers, high-altitude platforms, and advanced aerial vehicles—demand increasingly autonomous and intelligent Guidance, Navigation, and Control (GNC) solutions. This special session aims to bring together recent advances in estimation, navigation, optimization-driven mission design, intelligent control, and AI-enabled autonomy for aerospace applications. Contributions are welcomed across the full spectrum of aerospace missions, from orbital and deep -space exploration to atmospheric flight and planetary surface mobility. Topics of interest include optimal and robust GNC algorithms, multi-sensor fusion, autonomous trajectory planning, distributed GNC for multi -agent systems, adaptive and fault-tolerant control, and machine learning techniques integrated into aerospace decision-making. Emphasis is placed on methods that address uncertainty, resource constraints, and real-time performance requirements.

By bridging aerospace engineering, control theory, robotics, and artificial intelligence, this session aligns closely with CoDIT's mission of fostering high-impact research in control, decision, and information technologies. The session will serve as a multidisciplinary platform for researchers and practitioners developing the next generation of autonomous aerospace systems.

The topics of interest include, but are not limited to:

- Autonomous orbit control, trajectory optimization, and station -keeping
- GNC for lunar, Martian, and deep -space missions
- Space robotics, on-orbit servicing, and autonomous docking
- Space situational awareness and collision -avoidance control
- AI-enabled deep-space navigation and autonomous mission planning
- Distributed GNC for UAVs/satellite swarms and formations

- Multi-sensor fusion for spacecraft and planetary vehicles
- Fault-tolerant and resilient control for spacecraft and rovers
- Guidance and landing control for planetary missions
- Emerging concepts: solar sails, swarm exploration, OOS autonomy

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SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **February 07, 2026:** **http://controls.papercept.net/conferences/scripts/start.pl**. In PaperCept, click on the **CoDIT 2026 link "Submit a Contribution to CoDIT 2026" and follow the steps.**

IMPORTANT: All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).

DEADLINES

February 07, 2026: deadline for paper submission

April 30, 2026: notification of acceptance/reject

May 20, 2026: deadline for final paper and registration