IEEE Transactions on Cybernetics

CALL FOR PAPERS

for Special Issue on

Advanced AI for Low-Altitude Sensing, Communication, Computing, and Control

Theme: The low-altitude economy is transforming sectors such as logistics and disaster response., which depends on integrated low-altitude sensing, communication, computing, and control (SCCC) systems to perceive environments, manage computation, and make decisions. However, as these applications grow in, traditional SCCC systems face challenges in real-time data processing, distributed coordination, and adaptive decision-making. Traditional AI methods offer partial solutions but often rely on domain-specific models and labor-intensive processes. In contrast, the convergence of advanced AI, such as generative AI (GenAI) and large language models (LLMs), introduces a transformative paradigm with capabilities to enhance sensing through diagnostic generation, improve communications via semantic compression, support computing with dynamic orchestration, and enable interpretable control. However, challenges remain in deploying these models for low-altitude SCCC systems, including handling noisy time-series data, ensuring low-latency performance, and addressing privacy issues. Accordingly, this special issue seeks original and high-quality submissions for innovative methodologies for integrating advanced AI into future low-altitude SCCC systems.

This special issue will focus on (but not limited to) the following topics:

Advanced AI driven multimodal sensor fusion for intelligent perception and environment understanding in low-altitude SCCC systems; Advanced AI for decision support and management in low-altitude sensor networks; Applications of advanced AI for real-time anomaly detection in low-altitude SCCC systems; Advanced AI for adaptive optimization of communication protocols in low-altitude SCCC systems; Advanced AI approaches to robustness and safety for low-altitude control applications; Human-AI collaboration frameworks leveraging advanced AI for interactive decision-making in low-altitude SCCC; Integration of advanced AI with low-altitude IoT architectures for enhanced sensing and control.

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE Transaction on Cybernetics https://www.ieeesmc.org/publications/transactions-on-cybernetics. Please submit your manuscript in electronic form through Manuscript Central web site: https://mc.manuscriptcentral.com/cyb-ieee. On the submitting page # 1 in popup menu of manuscript type, select: SI on New Generation of Artificial Intelligence for Intelligent Monitoring and Maintenance of Complex Systems. Submissions to this special issue must represent original materials that have been neither submitted to, nor published in, any other journal. The review process for the special issue submissions and the paper length requirement are the same as the regular issue papers.

Note: The recommended papers for the special issue are subject to the final approval by the Editor-in-Chief. Some papers may be published in a regular issue, at the EIC discretion. Depending on the number of accepted manuscripts, this special issue could be published as a special section in a regular issue.

Timetable:

Paper submission:	**Jan 1, 2026**
Completion of first round of review:	**May 1, 2026**
Completion of final review:	**Aug 1, 2026**
Submission of final manuscripts:	**Sep 1, 2026**
Scheduled publication:	**Nov 1, 2026**

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