

Call for Papers
Special Issue on Cyber-Physical Autonomous Systems
IEEE Systems, Man, and Cybernetics Letters (L-SMC)

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Paper size: 4-7 pages

Cyber-physical autonomous systems are transforming a wide range of domains by integrating computational intelligence, physical processes, and communication networks to enable perception, decision-making, and control with minimal human intervention. These systems span diverse platforms, including unmanned aerial vehicles (UAVs), ground robots, intelligent transportation systems, and distributed multi-agent systems, operating in complex and dynamic environments.

At their core, autonomous systems are characterized by the tight integration of three fundamental cyber-physical components:

- **Computational elements**, including embedded and edge computing platforms, control units, and AI and machine learning algorithms that support real-time perception, reasoning, and decision-making.
- **Physical components**, such as sensors (e.g., cameras, LiDAR, IMU), actuators, and platform-specific hardware that interact with the physical environment.
- **Networking capabilities**, enabling communication for coordination, data exchange, and interaction with other systems and infrastructure.

The convergence of these elements enables increasingly intelligent, adaptive, and cooperative behaviors. However, it also introduces significant challenges related to system reliability, safety, scalability, efficiency, and security, particularly in resource-constrained and latency-sensitive environments.

This special issue aims to bring together recent advances, emerging methodologies, and innovative applications in autonomous systems. We invite original research contributions that address theoretical foundations, system architectures, enabling technologies, and real-world deployments across various autonomous platforms.

Papers accepted will receive a **50% discount** on the article processing charge (APC), resulting in an APC of \$525 per paper.

Topics of interest include, but are not limited to:

- Sensor data fusion and multimodal perception
- Human–autonomy interaction and human-in-the-loop systems
- Formal verification and validation for safety-critical autonomous systems
- Planning and decision-making under uncertainty

- Energy-efficient and optimal trajectory planning
- Cybersecurity and resilience in autonomous systems
- Real-time perception, obstacle detection, and avoidance
- Distributed, cooperative, and swarm intelligence
- Real-time system operation and mission management
- Task allocation, scheduling, and coordination in multi-agent systems
- Networked autonomous systems and distributed computing
- Edge computing and resource-constrained AI for autonomous systems
- System modeling, simulation, and performance evaluation
- Machine learning and reinforcement learning for autonomous systems

We welcome high-quality submissions that advance the state of the art and address key challenges in the analysis, design, and deployment of cyber-physical autonomous systems.

Important Dates:

Paper submission: July 15, 2026

The first round of review: August 5, 2026

Revised manuscript submission: August 26, 2026

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