

The 30th IEEE International Symposium On Real-Time Distributed Computing

IEEE ISORC 2027

IIT Ropar, Punjab, India

April 7-9, 2027

<https://isorc-conference.org/>

CALL FOR PAPERS

About IEEE ISORC

IEEE ISORC was established in 1998 to advance research in real-time distributed computing. For nearly three decades, ISORC has served as the premier intimate forum where researchers and practitioners tackle the hardest timing, predictability, and dependability challenges facing modern computing systems.

Today, real-time constraints are no longer confined to traditional embedded systems. They define the performance envelope of autonomous vehicles, edge AI, medical devices, industrial control systems, and next-generation communications infrastructure. ISORC's single-track format and collegial atmosphere make it the ideal venue to bridge foundational real-time theory with these emerging application domains.

We invite high-quality papers that place real-time constraints, timing analysis, determinism, or embedded system concerns at the center of their contribution. Topics in AI/ML, IoT, and autonomous systems are welcome when grounded in these foundational concerns.

ISORC 2027 marks the symposium's 30th anniversary and its debut in India, hosted by IIT Ropar. As always, the program preserves ISORC's single-track format, intimate scale, and dedicated time for cultural engagement with the host region.

Topics

IEEE ISORC 2027 invites papers on all aspects of real-time distributed computing technology, including, but not limited to:

- **Real-Time and Embedded System Architectures:** Hardware/software co-design, real-time operating systems, hypervisors for RT, time-predictable processors and memory, microcontroller and SoC platforms.
- **AI/ML on the Edge:** TinyML scheduling, neural network inference WCET analysis, LLM inference on constrained hardware, RT-aware model compression, edge AI hardware (NPUs, GPUs) with determinism requirements.
- **Medical IoT and Healthcare Embedded Systems:** Real-time sensor fusion in medical devices, closed-loop control, wearable/implantable RT constraints, FDA/CE mark timing requirements, RT telemedicine.
- **Autonomous and Safety-Critical Systems:** Autonomous vehicles and UAVs, RT perception and decision-making, ISO 26262 and DO-178C software timing, RT robotics.

- **Real-Time Communications and Networking:** 5G/6G Ultra-Reliable Low Latency Communications (URLLC), Time-Sensitive Networking (TSN), deterministic networking, V2X/C-V2X, RT protocols and QoS.
- **Distributed Real-Time Computing Infrastructures:** RT cloud/edge/fog computing, RT containerization and orchestration, distributed RT middleware, digital twins with RT data pipelines.
- **Scheduling, Resource Management, and Timing Analysis:** Static and dynamic scheduling, WCET analysis, mixed-criticality systems, RT task models, energy-aware RT scheduling.
- **Dependability, Fault Tolerance, and Resilience:** Fault detection and recovery in RT systems, redundancy and failover, formal verification, RT DevOps/CI-CD, cybersecurity for RT embedded systems.
- **Real-Time AI Certification and Formal Verification:** Timing verification of ML components, formal methods for neural network safety, certification workflows for RT AI in safety-critical systems.
- **Sustainable and Green Real-Time Computing:** Energy-aware scheduling, DVFS, power-constrained embedded systems, carbon-aware RT infrastructure.
- **Industry 4.0, Smart Manufacturing, and Cyber-Physical Systems:** RT industrial control, cyber-physical systems, industrial IoT, RT SCADA, digital factories.
- **Operating Systems, Middleware, and System Software:** RT kernels (Linux RT, Zephyr, FreeRTOS), RTOS for multicore, middleware for distributed RT (DDS, ROS 2), RT hypervisors.
- **Real-Time Analytics and Stream Processing:** Complex event processing, RT time-series analysis, online ML with latency constraints, stream correlation.
- **Case Studies and Industrial Applications:** Empirical studies, deployment reports, and industrial experiences — all must place real-time constraints at the center of the contribution.

Note: papers addressing AI/ML, IoT, or general distributed systems topics without an explicit real-time, timing, or embedded dimension are outside ISORC's scope.

Submission Categories

- **Regular Research Papers:** Original work, 10 pages maximum plus two extra purchased pages for appendix and references.
- **Industrial Papers and Practitioner Reports:** Maximum of 10 pages (with option to purchase 2 extra pages). Papers describing experience using real-time/distributed technology in application or tool development are an integral part of the ISORC program.
- **Short Papers:** Maximum 6 pages. Should contain enough information for the program committee to assess the novelty of the problem or approach, an important on-ramp for emerging researchers.
- **Doctoral Symposium:** Open to PhD students at any stage; a dedicated venue to present and get feedback on dissertation research.
- **Dissertation Digest:** 2-page summaries of ongoing dissertation work, promoted directly to PhD advisors at target institutions.
- **Lightning Talks:** 5-minute presentations for work-in-progress, tool demonstrations, and position papers — a low-barrier entry point for first-time ISORC participants.
- **Posters and Demos:** Paired with a social hour — a high-value networking format for early results, tools, and demos.

All full-length papers should be formatted in the standard IEEE double-column format. Submission system shall be announced soon, and will be on HotCRP.

Important Dates

Milestone	Target Date
Call for Papers released	August 10, 2026
Paper submission deadline	October 15, 2026
Acceptance notification	December 1, 2026
Author registration deadline	January 2027 (tentative)
Camera-ready papers due	January 2027 (tentative)
Conference dates	April 7-9, 2027, IIT Ropar

Venue and Format

ISORC 2027 will be held at IIT Ropar, Punjab, India, the symposium's first visit to India and part of ISORC's Americas/Europe/Asia geographic rotation. Consistent with ISORC tradition, the technical program remains single-track so every participant can see every presentation, and the schedule reserves dedicated time for a cultural or excursion activity reflecting the host region. This also allows time for networking among colleagues.