



CALL FOR PAPERS for the Special Section of

Real-Time Systems - The International Journal of Time-Critical Computing Systems

Real-Time Embedded Systems Applications

Embedded Systems are earning growing importance in both research and practice, because of their wide employment in technological devices that are pervasively supporting our daily lives. Due to their critical relationship among monitored inputs, logical result of computations, and the time at which the results are produced, most of these applications need for real-time computing capabilities. In this context, when embedded system must meet various strict timing and computation constraints, they are named Real-Time Embedded Systems (RTES). Applications and examples of RTES are increasingly ubiquitous and include commercial, government, medical, educational, military and cultural infrastructures. Specifically, we can find RTES in vehicle systems for automobiles, subways, aircraft, railways, and ships. Traffic control for highways, airspace, railway, and shipping lanes also employ these systems. Medical systems for radiation therapy, patient tele-monitoring, pacemakers and defibrillation are based on real-time embedded systems. To conclude the list, also agriculture and smart grids are starting using this approach. The aim of this Special Section is to realize a forum for designers, researchers and major industrial personalities to present their latest developments in the field of real-time embedded systems, focusing on challenges and proposing novel and performant applications. Application papers must explicitly address timing issues, showing how real-time timing constraints defined on application tasks are derived, handled, and guaranteed.

TOPICS

Topics of interest include, but are not limited to

1. Real-Time issues in AI-powered embedded systems;
2. Real-time embedded systems applications (e.g., automotive and autonomous vehicles, manufacturing, edge computing, robotics, mechatronics, healthcare, smart buildings, smart cities, IoT and so on);
3. Real-time system architectures and real-time operating systems;
4. Real-time systems design and analysis tools and techniques;
5. Energy efficient real-time systems and applications;
6. Real-time embedded systems performance characterization;

This Special Section will only accept submissions based on selected works from the 7th Italian Workshop on Embedded Systems (IWES 2022) that address real-time embedded systems applications and timing issues (e.g., timing analysis, time management, derivations of timing constraints, etc.) according to the listed topics.

All invited papers shall undergo the standard *Real-Time Systems* peer review process.

All manuscripts must be submitted on-line, via the *Springer Editorial Manager System*:

<https://www.editorialmanager.com/time/default1.aspx>

When submitting, please indicate in the cover letter, that the paper is intended for the “Real-Time Embedded Systems Applications” Special Section. Authors are encouraged to **suggest names of potential reviewers** for their manuscripts in the space provided for these recommendations. For manuscript preparation and submission, please follow the guidelines in the *Information for Authors* at:

<https://www.springer.com/journal/11241/submission-guidelines?IFA>

Deadlines:

- Submission deadline: **October 31, 2022**
- Reviews Notification: December 30, 2022
- Final Manuscript Due: January 22, 2023
- Tentative date of publication: March 15, 2023

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