



Selected papers presented at the 26th International Conference on Real-Time and Network Systems (RTNS 2018)

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This issue of the journal *Real-Time Systems* contains extended versions of four selected papers among the ones presented at the 26th International Conference on Real-Time and Network Systems (RTNS 2018), held in Poitiers in October 2018. From 54 submitted papers, 27 were accepted. The scope of the conference covered all aspects of real-time systems and networks. A selection of the papers presented at the conference were invited to submit extended versions for this special issue. These papers were selected based on their quality, relevance and originality.

- The paper entitled “Tardiness Bounds for Fixed-Priority Global Scheduling without Intra-Task Precedence Constraints” is written by Sergey Voronov, James H. Anderson and Kecheng Yan. The work proposes to apply a relaxed sporadic task model to bound the deadline tardiness of tasks under global fixed-priority schedulers over an identical multiprocessor platform. The authors have shown that the derived bound is asymptotically tight and evaluated several prioritization strategies to control the per-task tardiness bound.
- The paper entitled “A Novel View on Bounding Execution Demand under Mixed-Criticality EDF” is written by Mitra Mahdiani and Alejandro Masru. The work deals with mixed-criticality scheduling using EDF and presents an approach where demand bound functions not only for LO and HI modes but also for the transition between these 2 modes. Evaluation results are presented for this approach and one of its approximation and compared to state-of-the-art algorithms (EDF-VD, ECDF, Greedy).

Supporting I/O and IPC via fine-grained OS isolation for mixed-criticality real-time tasks, <https://doi.org/10.1007/s11241-020-09351-2>, 56:349–390, originally accepted for publication in this special issue was inadvertently published in Volume 56 issue 4.

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- The paper entitled “Supporting I/O and IPC via Fine-Grained OS Isolation for Mixed-Criticality Real-Time Tasks” is written by Namhoon Kim, Stephen Tang, Nathan Otterness, James H. Anderson, F. Donelson Smith and Donald Porter. The work presents techniques for lessening the impacts of sharing I/O in mixed-criticality systems. The presented techniques can mitigate OS-induced interference in multicore real time systems. The conducted experimental study show that OS-related sharing can increase individual provisioned execution times.

We would like to thank the authors that submitted papers to RTNS 2018, and in particular to those who contributed extended versions of their RTNS submissions for inclusion in this journal special issue. We also thank the members of the RTNS 2018 program committee and also express appreciation to the referees for their time and effort in improving the quality of the aforementioned outstanding papers. Finally, the General Chairs of RTNS 2018, Dr. Yassine Ouhammou (Institut Supérieur de l’Aéronautique et de l’Espace—Ecole Nationale Supérieure de Mécanique et d’Aérotechnique ISAE-ENSMA), Dr. Frédéric Ridouard (University of Poitiers, France), and Dr. Emmanuel Grolleau (ISAE-ENSMA) deserve a special thank for their enthusiastic involvement in organizing the conference.

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Moris Behnam is Professor in computer science focusing on cyber-physical systems at school of innovation design and engineering, Mälardalen University, Sweden. He received B.Sc., and M.Sc. in Computer and Control Engineering at the University of Technology, Iraq, and also MS.c., Licentiate, and PhD in Computer Science and Engineering at MDH, Sweden, in 1995, 1998, 2005, 2008 and 2010 respectively. Moris has been a visiting researcher at Wayne State University, USA in 2009 and he has been a Postdoctoral Researcher at University of Porto in 2011. His research interests include real-time scheduling, synchronization protocols, multicore/multiprocessor systems, distributed embedded real-time systems, industrial cloud computing and internet of things.



Mathieu Jan obtained his engineer diploma in 2003 and got a PhD in 2006 on the subject of management of data on grid architectures in an INRIA laboratory. He joined the laboratory of Embedded Real-Time Systems Laboratory at “Commissariat à l’Energie Atomique” (the French DoE) in 2007. His main research interests are around real-time and embedded systems (network on chip, scheduling, mapping, low-power, formal modeling and verification). He is senior expert on these subjects at CEA Tech since 2014 and he obtained an Habilitation à Diriger des Recherche (HDR) in 2016. He participated in a technology transfer of a methodology to design and execute safety-critical real-time systems targeting automotive and energy distribution fields, now sold by the Krono-Safe society. He is member of the various program committees, such as the International Real-Time and Network Systems (RTNS) conference, has co-advised 5 PhD thesis and is the director of 3 on-going PhD thesis. He spent the whole year 2019 as visiting scholar at the University of California, Berkeley (UCB) in the group of Prof. Edward Lee.