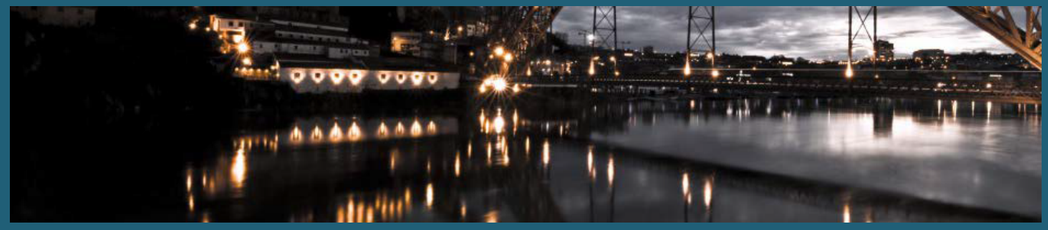
Sponsored by the IEEE Computer Society
Technical Committee on Real-Time Systems

RTSS 2016 – Workshops, RTSS@Work and Work-in-Progress Proceedings

RTSS 2016
37th IEEE Real-Time Systems Symposium

November 29 - December 2, 2016
Porto, Portugal



Proceedings of:

The RTSS@Work session
Edited by Heechul Yun

The Work-in-Progress session
Edited by Iain Bate

The 4th International Workshop on
Mixed Criticality Systems (WMC 2016)
Edited by Sathish Gopalakrishnan and Claire Pagetti

The 9th InternationalWorkshop on
Compositional Real-Time Systems (CRTS 2016)
Edited by Saad Mubeen and Geoffrey Nelissen

The 2nd International Workshop on
Interoperable Infrastructures for Interdisciplinary
Big Data Sciences (IT4RIs 2016)
Edited by Zhiming Zhao, Sebastian Altmeyer, Keith Jeffery,
Malcolm Atkinson and Alexandre Ulisses

IT4RIs 2016

Proceedings of the 2nd International Workshop on Interoperable infrastructures for interdisciplinary big data sciences

Theme: **Nearly real-time data processing and time critical cloud applications**

Porto, Portugal
November 29, 2016

In conjunction with:
The 37th IEEE Real-Time Systems Symposium (RTSS'16),
November 29 - December 02, 2016

Edited by **Zhiming Zhao**,
Sebastian Altmeyer, Keith Jeffery, Malcolm Atkinson,
Alexandre Ulisses

Message from the Program Chairs

We welcome you to Porto and the 2nd International Workshop on Interoperable Infrastructures for Interdisciplinary Big Data Science (IT4RIs) 2016. The workshop is held in conjunction with the 37th IEEE Real-Time Systems Symposium (RTSS16).

The IT4RIs workshop focuses on practical aspects of the design, development and operation of research e-infrastructure and virtual research environments, as well as the interaction between ICT infrastructure and user communities. This year, the workshop specifically highlights two important topics applicable to this context: nearly real-time data processing and time-critical applications in Clouds. The workshop aims to provide a forum for researchers and developers to exchange their experiences and ideas about building nearly real-time data processing solutions, and models for programming, executing and controlling time critical applications on virtualized infrastructures such as Clouds.

The workshop received four papers from different research infrastructure related communities, addressing technical concerns directed at specific domains (carbon observation; live event broadcasting) as well as concerns more generically applicable across domains (virtual research environment development; provisioning and customization of virtualized infrastructure for time critical applications). The workshop program is complemented by an invited talk on services for nearly real-time data processing on European e-Infrastructures (EGI foundation). The workshop is partially supported by EU H2020 SWITCH, ENVRI^{PLUS} and VRE4EIC.

We would like to thank all those who have contributed in making an excellent program for IT4RIs 2016. We thank all the reviewers for their hard work in providing valuable feedback to the authors.

Zhiming Zhao
On behalf of the IT4RIs 2016 Program Chairs

Committees

Organizing Committee

Zhiming Zhao, University of Amsterdam, NL
Sebastian Altmeyer, University of Amsterdam, NL
Keith Jeffery, Natural Environmental Research Council, UK
Malcolm Atkinson, University of Edinburgh, UK
Alexandre Ulisses, MOG Technologies, Portugal

Program Committee

Achim Rettberg, University of Oldenburg, Germany
Adam Belloum, University of Amsterdam, NL
Alessandro Spinuso, Koninklijk Nederlands Meteorologisch Instituut (KNMI), NL
Alex Hardisty, Cardiff University, UK
Alex Vermeulen, Lund University, Sweden
Andrew Jones, Cardiff University, UK
Ari Asmi, University of Helsinki, Finland
Cees de Laat, University of Amsterdam, NL
Dana Petcu, West University of Timisoara, Romania
Daniele Bailo, INGV, Italy
Carlos Rodrigo Rubia Marcos, Wtelecom, Spain
George Suciu Jr., BEIA Consult, Romania
Haiyan Wang, Nanjing University of Posts and telecommunication, China
Ian Gray, University of York, UK
Ian Taylor, Cardiff University, UK
Ingemar Haggstrom, EISCAT Scientific Association, Sweden
Jean Daniel Paris, Laboratoire des Sciences du Climat et de lEnvironnement, France
Jian Cao, Shanghai Jiaotong University, China
Leonardo Candela, CNR, Italy
Liqiang Wang, University of Central Florida, USA
Neil Audsley, University of York, UK
Paola Grosso, University of Amsterdam, NL
Paul Martin, University of Amsterdam, NL
Radu Prodan, University of Innsbruck, Austria
Shahriar Nirjon, University of North Carolina, USA
Tam Chantem, Utah State University, USA
Thomas Loubrieu, Ifremer, France
Xiaofei Liao, Huazhong Scientific Technology University, China
Yin Chen, Egi.eu, NL