RSSRail 2019

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International conference on reliability, safety and security of railway systems: modelling, analysis, verification and certification (RSSRail 2019)

The railway industry faces increasing pressure to improve system safety, to decrease production costs and time to market, to reduce carbon emissions and running costs, and to increase the capacity of the railway. Railway systems are now being integrated into larger multi-transport networks. Such systems require an even higher degree of automation at all levels of operation. These trends dramatically increase the complexity of railway applications and pose new challenges in developing novel methods of modelling, analysis, verification and validation to ensure their reliability, safety and security, as well as in supporting novel mechanisms and procedures to help make the case that development processes meet the mandated standards.

The RSSRail 2019 conference will build on the success of RSSRail 2016 (June 28-30, 2016, Paris, France) and RSSRail 2017 (November 14-16, 2017, Pistoia, Italy), and will contribute to a range of key objectives. There is a pressing demand to bring together researchers and developers working on railway system reliability, security and safety to discuss how all of these requirements can be met in an integrated way. It is also vital to ensure that advances in research (in both academia and industry) are driven by the real industrial needs. This will help ensure that such advances are followed by effective industrial deployment. Another particularly important objective is to integrate advances in research into the current development processes, and make them usable and scalable. Finally, a key goal is to develop advanced methods and tools that can ensure that the systems meet the requirements imposed by the regulatory standards and help in building the supportive arguments.

Development of the complex railway systems of the future requires integrated environments and methods that support different abstraction levels and different views, including systems architecture, safety analysis, security analysis, verification tools and methods.

The conference aims to bring together researchers and engineers interested in building critical railway applications and systems. This will be a working conference in which research challenges and progress will be discussed and

evaluated by both researchers and engineers, focusing on their potential to be deployed in industrial settings.

Topics of particular interest include:

- Safety in development processes and safety management
- Combined approaches to safety and security
- System and software safety analysis
- Formal modelling and verification techniques
- System reliability
- Validation according to the standards
- Safety and security argumentation
- Fault and intrusion modelling and analysis
- Evaluation of system capacity, energy consumption, cost and their interplay
- Tool and model integration, tool chains
- Domain-specific languages and modelling frameworks
- Model reuse for reliability, safety and security
- Modelling for maintenance strategy engineering.

Conference Chairs:

- Simon Collart-Dutilleul, IFSTTAR, France
- Thierry Lecomte, ClearSy, France
- Alexander Romanovsky, Newcastle University, UK

PC members:

- Marc Antoni, UIC, France
- Carlo Becheri, Alstom, Italy
- Fabien Belmonte, Alstom, France
- David Bonvoisin, RATP, France
- Jens Braband, Siemens AG, Germany
- Tom Chothia, University of Birmingham, UK
- Fares Chucri, SNCF, France
- Alessandro Fantechi, University of Florence, Italy
- Francesco Flammini, Linnaeus University, Sweden
- Barbara Gallina, Malardalen University, Sweden
- Frank Golatowski, Univ. of Rostock, Germany
- Anne Haxthausen, Technical Univ. of Denmark, Denmark
- Alexei Iliasov, Newcastle University, UK
- Chris Johnson, University of Glasgow, UK
- Hironobu Kuruma, Hitachi, Japan
- Michael Leuschel, Univ. of Dusseldorf, Germany
- Gianluca Mando, Thales, Italy
- Jan Peleska, Verified Systems Int., Germany
- Peter Popov, City University, UK
- Etienne Prun, ClearSy, France
- Klaus Reichl, Thales, Austria

- Aryldo Russo, CERTIFER, France
- Colin Snook, University of Southampton, UK
- Marielle Stoelinga, Univ. of Twente&Radboud Univ. Nijmegen, Netherlands
- Kenji Taguchi, CAV Technologies Co., Ltd, Japan
- Stefano Tonetta, FBK-irst, Italy
- Laurent Voisin, Systerel, France
- Kirsten Winter, University of Queensland, Australia

Conference Organisation and Finance Chair:

- Joan Atkinson, Newcastle University, UK

Local Organisation Chair:

- Nathalie Botticchio, IFSTTAR, France

Event Details

Location: Lille, France
URL: https://conferences.ncl.ac.uk/rssrail2019/

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CPS Domains Certification Modeling Science of Security Transportation Validation and Verification Foundations 2019 Conference