
Software Quality Days 2020

January 14-17, 2020, Vienna, Austria

(Preliminary Call for Papers)

Call for Papers Scientific Program

www.software-quality-days.com

The 12th Software Quality Days (SWQD) conference and tools fair – one of the largest software quality conferences in Europe - will bring together researchers and practitioners from business, industry, and academia working on quality assurance and quality management for software engineering and information technology.

In 2020 the SWQD conference hosts the 9th scientific program on research and industry experience. The guiding topic for 2020 will be “**Software Quality. Quality Intelligence in Software and Systems Engineering**”.

Main Scientific Program

High software and systems quality are success-critical factors in engineering practices and refer to product, process, and service quality. However, quality attributes have to be embodied within individual phases of software and systems development.

In distributed engineering environments, where various stakeholders coming from heterogeneous disciplines have to collaborate and interact efficiently. Additional quality attributes with focus on collaboration and data exchange apply. Mobile environments typically refer to product quality and include quality requirements regarding usability, interaction, safety and security.

Following the guiding topic, we welcome contributions related to software and systems quality in context of software-intensive systems in distributed and mobile environments.

Topics of interest for research and industrial experience paper include but are not limited to

- System and software quality management methods
- Improvement of software development methods, processes, and artifacts
- Testing and quality assurance of software and software-intensive systems
- Process and quality assurance automation
- Requirements Engineering and Management
- Project and Risk Management
- Effort and quality estimation
- Metrics and measurements (product, process, project)
- Domain-specific quality issues such as embedded, medical, automotive systems
- Novel trends in software quality
- Crowdsourcing in Software Engineering

PC Co-Chairs

- Stefan Biffel, TU Wien, Austria
- Dietmar Winkler, TU Wien, Austria
- Daniel Mendez-Fernandez, TU München, Germany

Special Session on Industrial Security (InduSec)

Special Session Chair

Edgar Weippl, SBA Research, Austria

With the ongoing automation of large parts of the industry, especially considering the Industry 4.0 paradigm, many environments that were sealed in the past become accessible for attackers. During the last years, a multitude of different attacks targeting industrial environments or large IoT networks has been devised, still, even more attacks are expected for the future. From the attacker perspective, especially the potential to inflict damage in the offline world makes these attacks a game changer in professional cyber crime, as well as even cyber warfare. With new systems introduced to the internet every day, the attack surface is constantly expanding, while many issues, like un-patchable legacy systems, are not solved. The Special Session on Industrial Security focuses on bringing together researchers from all over the world to share their experience and present recent results. A list of topics of interest can be found below, still, we are open for any other topics relating to attacking or securing industrial environments.

Possible topics include (but are not limited to):

- Secure sensor communication
- Industrial Security
- Securing legacy systems
- Monitoring industrial networks
- Intrusion detection in industrial networks
- Securing legacy protocols
- Securing industrial interfaces
- Security in Production System Engineering
- Securing the Production System Engineering (PSE) Process
- Opportunistic networks
- Low-energy protocols
- APTs against industrial environments
- Securing industrial communication
- Security in HAS/BAS (home/building automation)
- Securing communication in transportation systems (cars, trains, ships)
- AutomationML

Special Session on Testing the Internet of Things (T-IoT)

Special Session Chair

Ina Schieferdecker, Fraunhofer Institute for Open Communication Systems FOKUS, Germany

The objective of the Testing the Internet of Things track (T-IoT) is to establish a fruitful and meaningful dialog among systems practitioners and with systems engineering researchers in embedded systems (ES), cyber-physical systems (CPS), and the Internet of Things (IoT) on the challenges, obstacles, results (both good and bad), and lessons learned associated with the massive deployment of Internet of Things solutions in various safety- and security-critical environments. The T-IoT presentations will provide accounts of the application of testing and test engineering practices (which may be principles, techniques, tools, methods, processes, testing techniques etc.) to a specific domain or to the development of a significant IoT system. In particular, we are interested in new methods, experiences, best practices, etc. on how to assure the quality, safety, security, reliability, resilience and trustworthiness of IoT systems during development, for certification and deployment, and in operation and maintenance. We would like the T-IoT presentations to be of interest to system development professionals as well as to quality groups for such software-based systems.

Possible topics include (but are not limited to):

- Risk-oriented testing, security testing, performance testing, scalability testing for IoT devices and solutions
- Quality assurance and certification for IoT devices and solutions
- Simulation and testing of large-scale IoT deployments
- IoT test platforms and tools

Common Paper submission information

The **scientific program of SWQD 2020** accepts two categories of conference submissions. In both categories, papers with practical relevance and already conducted practical evaluation will be preferred.

- **Technical Research Papers** should describe innovative research in software quality concepts, standards, processes, methods, or tools. They should describe a novel contribution to the field or significantly improve existing solutions. The proposed solution technique or its application to this kind of problem must be novel and sound. The author(s) must provide (empirical) validation of the proposed solution, for example, a proof-of-concept and sound arguments that the solution technique will scale to real-world-sized problems. Results must be stated clearly so that the author(s) or others can further validate them in later research. A technical solution paper should also be clear about its contributions with respect to related work by others and to previous work by the author(s).
- **Industrial Experience Papers** should describe a significant experience in applying software quality technology in a real-world context and should carefully identify and discuss important lessons learned so that other researchers and/or practitioners can benefit from the experience. The author(s) should provide (empirical) evidence supporting the experience and derived conclusions.

The SWQD 2020 conference will provide **best paper awards** in both categories, i.e., technical research papers and industrial experience papers.

Publication of Papers with Springer LNBIP (requested)

The scientific program papers will be rigorously peer-reviewed for publication in the well known research publication series Springer LNBIP.

- **Full papers** should be 15-20 pages (in Springer LNBIP proceedings format) and include an abstract of up to 150 words.
- **Short Papers** should be 8-12 pages (in Springer LNBIP proceedings format - see the [LNBIP Website](#) for author instructions).

The language of the scientific program is English.

Papers must contain original unpublished work, describe significant novel contributions, and provide evidence on the validation of results. Reports on industrial applications are particularly welcome. Papers must not have been previously published or submitted for review elsewhere.

All scientific program contributions will be reviewed by the international Program Committee on their scientific merit and relevance to the conference topics and may be accepted as regular or short papers. Accepted papers will be included in the proceedings, published by Springer LNBIP (abstracted/-indexed in ISI Proceedings, DBLP, EI and Scopus), and the Springer Digital library.

If accepted, papers must be presented at the Software Quality Days 2020 Conference by the author or one of the co-authors in person. Please note that we cannot accept remote presentations. The first presenting author **can participate free of charge** at the two conference days. **Additional authors/presenters can participate at discounted partner fee.**

Paper Submission

Authors are encouraged to submit a PDF version of their paper via EasyChair (<https://easychair.org/conferences/?conf=swqd2020>)

Please select the paper category (i.e., technical research paper of industry experience paper during the submission process. The assignment to full and/or short papers is implicitly given by the number pages per submission.

Important Deadlines

- Abstract Submission: 24.05.2019
- Full Paper Submission: 31.05.2019
- Notification of accepted/rejected papers: 02.08.2019
- Camera-ready paper for Springer Publication: 26.08.2018
- Program completed: 30.08.2018
- Finalized Version of the Presentation: 30.12.2018

Program Committee (invited)

Maria Teresa Baldassarre, University of Bari, Italy
Miklos Biro, Software Competence Center Hagenberg, Austria
Matthias Book, University of Iceland, Iceland
Ruth Breu, University of Innsbruck, Austria
Fabio Calefato, University of Bari, Italy
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Sebastian Voss, fortiss GmbH
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