

ICSE Workshop: Software Engineering for Automotive Systems

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Organizers**

Software is taking a leading role in automotive development and innovation. It is commonly estimated that software and electronics account for 90% of all innovations. Already today cost for software and electronics in current premium cars make up 40% of the overall cost. The applications are not anymore limited to classical embedded control systems, such as airbag control software, but cover a broad range from mission critical embedded systems in the X-by-wire field, driver assistance to infotainment and personalization in the MMI (Man Machine Interface) area.

The next generation of premium cars is expected to host a cumulated amount of up to one gigabyte of binary code of software deployed via a set of embedded platforms. To design, implement and manage the complexity of such a huge, heterogeneous distributed system with increasingly short innovation cycles, neither the techniques and methods of classical embedded systems are suitable, nor the known ones in the desktop and business software domain. To tackle this challenge we need furthermore new adapted software engineering methods for the automotive domain that allow to design the different software types specifically, corresponding to their requirements and later on integrate the system parts to one reliable and manageable system. We therefore see the discipline of automotive software engineering (ASE) as a massively emerging research field with heavy impact in industry.

This workshop is intended to provide a discussion forum for researchers and practitioners working in or interested in the field of automotive software. A particular goal is to discuss established software engineering concepts for their adoption to the automotive domain towards an explicit discipline of software engineering including tailored techniques and methods for automotive software.

Special focus of this workshop are models as well as specification and engineering techniques that support system integration in a field characterized by a sharp division of labor between original equipment manufacturers and different suppliers.

Accepted papers will be concerned with one or more of the following subjects:

- * Model-based SW Engineering
- * High-level Languages
- * Requirements Engineering
- * Specification
- * SW Architectures and Communication Infrastructures (Corba, etc.)
- * Services, Service Infrastructures (OSGi, etc.)
- * Quality Assurance, Test Strategies, Verification, Compatibility
- * Product Line Engineering

Juergen Bortolazzi (DaimlerChrysler, Sindelfingen, Germany) agreed to deliver a keynote on “Challenges in Automotive Software Engineering.”