

Call for Papers

2nd International IFIP Workshop on Emerging Ideas and Trends in Engineering of Cyber-Physical Systems (EITEC' 15)

Cyber-physical systems are based on networked embedded software systems which connect computational entities in a collaborative manner with physical entities of the real world to achieve an overall purpose of its users. Together with available content and services on the World Wide Web, they build networks of systems that integrate with the physical environment. This will lead to radical changes in many application fields (e.g. energy, mobility, healthcare) and will have an impact on our daily lives. Many technology leaders are already in the midst of a global race of repositioning and reinventing themselves by developing new dynamic CPS inspired business models. However, mastering the engineering of complex and trustworthy CPS faces serious challenges, which have to be addressed by the engineering methodologies of the future.

The EITEC workshop series aims at bringing together researchers and practitioners from various domains relevant to CPS dedicated to mastering the challenges in engineering of CPS today and in the future. The workshop will be a venue to share results and new ideas, discuss upcoming research directions, and to catalyze a joint industry-academia platform that bridges the gap between scientific results and transfer into practice.

The organizers invite contributions with a strong focus towards CPS that describe problem statements, trends, and emerging ideas in the engineering of CPS. The workshop defines 4 categories of submissions, targeted to address dedicated topics.

The workshop will include a keynote presentation by Dr. Klaus Havelund, Senior Research Scientist at the Jet Propulsion Laboratory, CA, USA. Dr. Havelund's contribution on model checking has been awarded the ASE 2014 Most Influential Paper award. More information on his current research is available at <http://www.havelund.com/>

The workshop is sponsored by the IFIP Working Group 10.2 "Embedded Systems".



Paper Categories

Category 1: Problem Statements and emerging ideas

Submissions for this category shall describe open issues in the engineering of CPS of theoretical or practical nature and discuss / present corresponding solution ideas or describe industrial and academic challenges for the engineering of CPS.

Category 2: Demonstration papers

Submissions in this category will present and demonstrate prototypical features of development tools that address the specific challenges in engineering of CPS.

Category 3: Research Directions and trends

Submissions in this category shall discuss contributions that address proposals how to shape future research in the engineering of CPS.

Category 4: Empirical Evaluation

Submissions in this category shall discuss contributions that address empirical evaluation work related to future research in the engineering of CPS.

Topics

Topics for contributions in the aforementioned categories may include:

- *Engineering Paradigms*: Model-based engineering, engineering methodologies, quality assurance techniques, engineering for adaptation, self* CPS, heterogeneous applications and platforms.
- *Modeling and Analysis*: Multidisciplinary modeling and analysis, context-analysis and context-awareness, specification of requirements, functional analysis, verification and validation of safety, security, and timing properties.
- *Architectures*: Scalable and evolvable system and software architectures, architectural design and languages.
- *Design Space Exploration (DSE)*: (Multi-) objective analysis support for DSE of CPS.
- *Variability*: Management, modelling and analysis for CPS.
- *Processes*: Integrated processes based on the design-operation life-cycle continuum of CPS.
- *Industrial Practice*: Experiences from efforts in the industry addressing the technological challenges that come with the introduction of CPS.
- *Empirical Evaluations*: Results from empirical evaluations addressing the technological challenges that come with the introduction of CPS.

Workshop format:

The workshop will be held as part of CPS Week 2015 to take place in Seattle, Washington on April 13-17, 2015. It will feature invited keynotes as well as peer-reviewed paper presentations organized according to the 4 categories defined above. Accepted papers will be published at Springer's IFIP series. Papers not exceeding **12** pages must be submitted electronically in .pdf format through EasyChair (see: <https://easychair.org/conferences/?conf=eitec2015>) and conform to the Springer guidelines (see: <http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0>). Each submission will be reviewed by at least two members of the Program Committee and will be evaluated on the basis of originality, importance of contribution, soundness, evaluation, quality of presentation and appropriate comparison to related work. The program committee as a whole will make final decisions about which submissions to accept for presentation at the conference.

Important Dates (tbc):

Abstract Submission	Jan 14 th , 2015
Author Feed-back	Jan 17 th , 2015
Full Paper Submission deadline	Feb 8 st , 2015
Notification of acceptance/rejection	Mar 6 th , 2015
Final version due	Mar 22 nd , 2015
Workshop	Apr 13 th , 2015

Program Committee (preliminary)

Wolfgang Böhm (Technische Universität München)
 Manfred Broy (Technische Universität München)
 Heinrich Daembkes (EADS - Cassidian)
 Stefan Henkler (Applied University of Dortmund)
 Frank Houdek (Daimler)
 Peter Liggesmeyer (Fraunhofer IESE)
 Holger Pfeifer (Technische Universität München)
 Klaus Pohl (University of Duisburg-Essen)
 Achim Rettberg, (Hella KGaA Hueck & Co)

Ingo Stierand, (Carl von Ossietzky University)
Marco Torchiano (Politecnico di Torino)
Antonio Vetro (Technische Universität München)
Andreas Vogelsang (Technische Universität München)
Thorsten Weyer (University of Duisburg-Essen)

Organization Team:

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The workshop organized by the German government sponsored project SPES_XT.

Workshop Web Page:

<http://EITEC.informatik.tu-muenchen.de>

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