

Press Release: Public meetings of the three CPSoS Working Groups

The CPSoS project launched discussions of its three Working Groups with experts from industry and academia to prepare the European Roadmap on Cyber-physical Systems of Systems.

Cyber-physical Systems of Systems are of crucial importance for the well-being of the citizens of Europe. The most important examples are the systems for the generation and distribution of electric energy, drinking water and gas, rail, road, air and marine transportation systems and their elements, and industrial production processes. To tackle the challenges posed by the engineering and the operation of technical systems in which computing and communication systems interact with large complex physical systems, the CPSoS project provides a forum and an exchange platform for Systems of Systems related communities and ongoing projects.

CPSoS has organized public Working Group meetings with experts from industry and academia to progress the **“European Research and Innovation Agenda on Cyber-physical Systems of Systems”**.

Two Working Groups analyse the state of the art in specific application domains of transportation and logistics, and physically connected SoS (electric grids, industrial complexes, smart buildings) in a bottom-up fashion and collect needs for research and development in methods and tools for Systems of Systems engineering and operation. The third Working Group analyses the available tools and methods and the existing gaps from a methodological point of view.

Working Group 1: Transportation and Logistics



The 2nd Working Group Meeting of the Transport and Logistics Working Group took place in conjunction with Automotive Megatrends Europe 2014 which was held in Brussels on September 10-11. The Conference brought together key stakeholders from industry and academia to network and debate business models, technologies and trends that will shape Europe’s commercial vehicle and passenger car markets over the next ten years and beyond. The conference attracted over 100 expert speakers and 250 delegates discussing cutting edge topics including fuel economy, emissions reduction, eMobility and in-car connectivity. CPSoS sponsored the event and widely circulated the work and the outcomes of the Transport and Logistics Working Group over the two days, including an Exhibition Stand for the promotion of the project. The sessions and panel discussions highlighted that increased connectivity is the main trend

for the future in this sector and offers many advantages for both commercial vehicles and passenger cars. Examples of fuel, emissions and maintenance savings made by a number of key companies operating fleets of vehicles were highlighted and greater safety and fuel economy are promised by increased use of autonomous driving features in future vehicles. On the second day of conference a Working Group Meeting was held. The objectives of the Working Group Meeting were twofold:

- 1) Refinement and Comments on State-of-the-Art and Challenges in Transport and Logistics Report

2) Discussion of the Draft Overall Research Priorities put forward by CPSoS

The report was presented over the first half of the meeting, comments were received and clarifications given on the key findings. The Working Group concurred that the report gave a good overview of the state-of-the-art across the different domains and with the recommendations made for future research priorities. Additionally, the draft overall recommendations from CPSoS were discussed. This highlighted the need for clarifications in a number of areas and the need to consider complexity management, risk modelling and management of models. **Find out more [here](#).**

Working Group 2: Physically Connected Systems

The public meeting of the CPSoS Working Group 2 on physically connected Cyber-physical Systems of Systems took place on October 1st 2014 at ETH Zürich. 39 European experts from the domains of process industries, smart grids, smart cities, automation, and systems engineering met to discuss the state of the art and future developments in the engineering and operation of physically connected CPSoS. The workshop was organised jointly by CPSoS and the [DYMASOS](#) project and the DYMASOS project consortium and the members of the DYMASOS Industrial Advisory Board participated in the CPSoS breakout sessions.



First two plenary sessions were held on management methods for physically connected CPSoS and tools to support their engineering. Then domain-specific breakout sessions on smart grids, process industries, and tool support for physically coupled SoS took place. The main goal of the breakout sessions was to discuss the future research needs in the respective areas. Lists of research topics in the different domains were discussed and prioritized. **Find out more [here](#).**

Working Group 3: Tools for SoS Engineering and Management



The second WG meeting and public event of Working Group 3 took place as a Workshop on Tools and Methods for CPSoS on September 12th in Bertinoro, Italy in conjunction with [IFM2014](#). For the workshop an open call for presentations had been issued. Five contributed presentations were given on security models for cyber-physical systems (V. Sassone), hierarchical control of large complex plants (C. de Prada), optimization methods for recoverable smart electric grids (L. Petre), a decision support system for Systems of Systems management (M. Fanti) and on model-based support for dependable Cyber-physical Systems of Systems (C. Ingram). An invited presentation was made by A. Cimatti (WG 3 member) on a formal approach to the design and operation of complex systems. After the technical presentations,

the analysis on the state of the art and future challenges in the domain of tools for CPSoS was presented and discussed. **Find out more [here](#).**

Towards a European Roadmap on CPSoS

Based on the results of these discussions, the CPSoS project will present a first draft of [a document on the Scope and Research Needs in the area of Cyber-physical Systems of Systems](#) to the European Commission in December. This paper will later be complemented by detailed technical papers written by the members of the Working Groups and will contribute to the definition of the future EU research policy on CPSoS.

About the project:

CPSoS Consortium	About the CPSoS Project
<p>TU Dortmund, <i>Germany</i> </p> <p>Haydn Consulting Ltd., <i>UK</i> </p> <p>TU Eindhoven, <i>Netherlands</i> </p> <p>inno TSD, <i>France</i> </p>	<p>Supported by the European Commission under the FP7-ICT programme (contract no. 611115)</p> <ul style="list-style-type: none">> Start date: October 1, 2013> Duration: 30 months> Budget: 640 000 € (with an EC contribution of 560 000 €)> Coordinator: Prof. Sebastian Engell TU Dortmund, Germany

MORE information on CPSoS : www.cpsos.eu.

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