Summer School Partners

INTO-CPS

INTO-CPS: Integrated Tool Chain for Model-based Design of Cyber-Physical Systems
http://into-cps.au.dk

CPSE Labs

CPSE Labs: Cyber-Physical Systems Engineering Labs
http://www.cpse-labs.eu

MPM4CPS

cost
EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

MPM4CPS: Multi-Paradigm Modelling for Cyber-Physical Systems
http://mpm4cps.eu

AMASS

AMASS: Architecture-driven, Multi-concern and Seamless Assurance and Certification of Cyber-Physical Systems
http://amass-ecsel.eu

ACOSAR
ADVANCED CO-SIMULATION OPEN SYSTEM ARCHITECTURE

ACOSAR: Advanced Co-Simulation Open System Architecture
http://acosar.eu

ULBS
Universitatea "Lucian Blaga" din Sibiu

"Lucian Blaga" University of Sibiu
http://www.ulbsibiu.ro/en/

Location

The CPS Summer School will take place at "Lucian Blaga" University of Sibiu in Romania. Sibiu International Airport is in close proximity with links to several European airports, including Munich, Milan and London.

Accommodation is available for all participants at a reasonable cost.
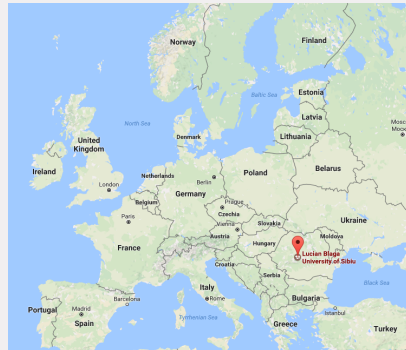
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Newcastle University

AARHUS UNIVERSITY

CPS Summer School
3rd – 7th July 2017
Sibiu, Romania

Advances in Cyber Physical Systems Engineering – a summer school for industry and academic researchers and engineers

into-cps.au.dk/summerschool

Summer School Overview

Cyber physical systems, composed of physical systems (hardware/mechanics), software systems and potentially other types of systems (e.g., human systems), are increasingly prevalent in society. CPSs have the potential to bring about significant social benefits, however bring a number of engineering challenges.

The CPS summer school is targeted at research scientists and students, and R&D experts from industry, who want to learn about advances in CPS engineering.

A program of briefings, tutorials and hands-on sessions will be delivered by industry experts and leading researchers in CPS from the INTO-CPS, CPSE Labs, AMASS and ACOSAR EU projects and the MPM4CPS EU COST Action. Participants will have the opportunity to tailor their attendance of lectures, tutorials and to their own interest.

Participation Options

1-day: high-level understanding of CPS technologies and modelling approaches.

3-day: learn about CPSs at a high-level and attend a collection of tutorials for more in depth knowledge on selected methods and technologies.

5-day: The overview and tutorials, plus participants have hands-on experience with various CPS technologies.

Registration

For more information, and to register, visit:

into-cps.au.dk/summerschool/

Please note that registration is free, but you must pay for your own travel and accommodation.

The Week

Day 1

Day 1 focuses on the industrial application of multidisciplinary, collaborative model-based CPS engineering, with many opportunities for networking. A collection of industry briefings are shown opposite.

Days 2–3

Expert speakers from EU project consortia provide insights into state of the art modelling and analysis techniques for cross-disciplinary CPS engineering. See opposite for a list of tutorials.

Days 4–5

The week finishes with practical training, giving an opportunity to use new tools and methods for modelling and analysing CPSs, including many of the technologies introduced in the tutorials.

Andrei-Daniel Nicolae on Flickr

Glasgowfoodie on Flickr

Industry Briefings

- **INTO-CPS industry studies in the Building Automation, Agriculture, Automotive and Railways Domains**, United Technologies, Agro Intelligence, TWT, ClearSy

- **iPP4CPPS: Integrated Product-Production co-simulation for Cyber-Physical Production Systems**, Continental Automotive Romania

- **Challenges and Trends in Co-Simulation**, Virtual Vehicle

- **Test Optimization of Cyber Physical System Product Lines**, Mondragon Unibertsitatea

- **Co-Simulation of Distributed Engine Control System with Maritime Engine Physics**, MAN Diesel & Turbo

Tutorial Topics

- **Introduction to Discrete Event Modelling using VDM Real Time**, Aarhus University

- **Introduction to Object Oriented Modeling, Simulation & Debugging with Modelica using OpenModelica**, Linkoping University

- **Introduction to Continuous Time Modelling with 20-sim**, Controllab Products

- **Introduction to CPS Architectural Modelling with Modelio**, Softteam

- **Design Space Exploration for Cyber-Physical Systems**, Newcastle University

- **Mechanised proof support for CPS,** University of York

- **Modelling Distributed Industrial Control Systems with Eclipse 4diac**, fortiss

- **Multi-Paradigm Modelling for Cyber-Physical Systems**, University of Antwerp

- **SMT-based model checking of CPS**, VSI, FBK

- **Transferring best practice safety analysis methods from automotive and aerospace to maritime**, OFFIS