CPS Summit
Overview
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CPS Summit

Coordinated Support Action

Goal: Facilitating and creating an enduring and sustainable collaboration campaign on CPS research and development between Europe and the US.

Start: 1st February 2015
End: 31st July 2016

Scientific Coordinators: Joseph Sifakis, Manfred Broy
Project Coordinators: Harald Ruess, Saddek Bensalem

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Project Officer: Werner Steinhögl

See also: http://cps-vo.org/node/19159 (group: cps-summit)
The EU and the US face **common challenges** to push forward the limits of the science and technology for engineering trustworthy CPS

- US PCAST, Agenda CPS, JU Artemis/ECSEL, Cyphers

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The CPS Landscape

Adapted from NSF source
Key Challenge

Mastering the Engineering of Trustworthy CPS

CPS are a core enabling technology with lots of game-changing business potential and novel business models for integrated services and products.

We do not yet have a mature science to support CPS engineering

- Area lacks the maturity of established engineering and scientific disciplines
- It also lacks scalable principles of combining large heterogeneous ensembles of physical systems, humans, and cyber-systems
- Lack suitable of methodologies and systems engineering processes applied to cross-domain CPS, and consequently, a lack of suitable standards and supporting tools.

... and the consequences are profound

- The lack of foundations and methodologies create barriers that may prevent market success of new CPS applications and hinders the implementation of cross-sectorial value chains.
- Current CPS systems are engineered and maintained at very high cost and sometimes with unknown risks.

We are about to make our society completely dependent on a technology, whose risks have been insufficiently reflected upon.
Key Action Plan
Transatlantic Research Collaboration

- The magnitude of the CPS foundational challenge is so great that a research cooperation between the US and Europe would prove to be more beneficial for industry, academia, and governments.

- The CPS Summit prepared an action plan for such a transatlantic collaboration.
  1. Joint research: making CPS predictable and dependable across life-cycle
  2. Driving open, horizontal standards: capitalizing on synergies in building CPS
  3. Open platforms and living labs: testing and experimentation with CPS
  4. Exchanging best practices: training and education for CPS

- CPS Summit champions the implementation of a transatlantic CPS research program with joint review process based on its action plan.
  - A novel mechanism to foster a strong EU-US research collaboration is needed.

- CPS Summit aims to jointly assess fundamental CPS design, production, operation and life-cycle management principles, methods, and associated risks