Concurrent Breakout Groups
NIST Cyber-Physical Systems
Public Working Group (CPS-PWG) Workshop
August 11-12, 2014

This workshop will introduce the beginnings of the CPS PWG, which is composed of four initial working sub-groups. The objective of the workshop is to refine these topics and establish milestones and overall plans for the PWG's work. To this end, each participant will select one of the following topics and join in a professionally-facilitated breakout session.

CPS PWG: Reference Architecture

Definitions, Taxonomy and Reference Architecture Subgroup
This subgroup will develop a consensus definition of CPS and identify a common taxonomy to promote communications across CPS stakeholders and domains.
This subgroup will identify a classification model based on common features, capabilities, and characteristics to inform the development of reference architecture. The reference architecture will include the identification of foundational goals, characteristics, common roles, actors, and interfaces, across the breadth of CPS domains. The reference architecture will be designed to include applicable cybersecurity and privacy considerations. The current NIST draft notional CPS reference architecture will serve as one source of input to this working group.

Reference Architecture Co-Chairs
Janos Sztipanovits, Vanderbilt University
Stephen Mellor, Industrial Internet Consortium (IIC)
Abdella Battou, NIST
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CPS PWG: Use Cases

Use Cases Subgroup
This subgroup will identify CPS use cases, both current and envisioned, in specific sectors, domains, and applications to understand how actors within CPS systems will interact and provide input on functional requirements to the reference architecture subgroup. The use cases will be used to identify and evaluate common CPS characteristics, actors, interfaces, and associated applied cybersecurity objectives and considerations.

Use Cases Co-Chairs
John Baras, University of Maryland
Stephen Mellor, Industrial Internet Consortium (IIC)
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CPS PWG: Timing

Timing and Synchronization Subgroup

This sub-group includes an existing organization, Time Aware Applications, Computers and Communications Systems (TAACCS), led by NIST. This subgroup will ensure that the Reference Architectures, and the Use Cases have appropriate timing and synchronization considerations. The timing and synchronization subgroup will evaluate the timing needs and explore what research needs to be done and optimal directions to satisfy those needs.

Timing Co-Chairs

Sundeep Chandhoke, National Instruments
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CPS PWG: Cybersecurity

Cybersecurity and Privacy Subgroup

Although CPS encompasses a broad and diverse range of sectors, domains, and applications, it is uniformly expected that cybersecurity and privacy considerations must be included in all phases of the system development lifecycle, from design through implementation, maintenance, and disposition. The primary goal of the Cybersecurity and Privacy subgroup is to develop a cybersecurity and privacy strategy for the common elements of CPS that includes a focus on the identification, implementation, and monitoring of specific cybersecurity activities (including the identification, protection, detection, response and recovery of CPS elements) and outcomes for CPS in the context of a risk management program. Where applicable standards, guidelines, and measurement metrics do not exist, this subgroup will identify areas for further CPS cybersecurity research and development.

Cybersecurity Co-Chairs

William Sanders, University of Illinois at Urbana-Champaign
Claire Vishik, Intel
Ronald Perez, Advanced Micro Devices
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