NIST Smart Grid and CPS Newsletter

September 2016

CPS Stakeholders Explore “Trustworthiness” at NIST Workshop, August 30-31, 2016

Technical experts and policy leaders from the world of Cyber-Physical Systems (CPS) and the Internet of Things (IoT) gathered last month to examine “Trustworthiness”—a key concept or "Aspect" from the CPS Framework addressing concerns related to safety, security, resilience, reliability, and privacy.

The workshop—held August 30-31, 2016, at the NIST campus in Gaithersburg, Maryland—focused on the integration of approaches from engineering to the conceptualization, realization, and assurance of safe, secure, and effective CPS and IoT systems.

Edward Griffor, Associate Director, Smart Grid and Cyber-Physical Systems Program Office, one of the organizers of the workshop, commented that “These were highly stimulating, cross-sector discussions that made a good start at building bridges in trustworthiness efforts, in government and industry and academia, between cyber and physical experts, providing a shared understanding across privacy, security, safety, reliability, and resilience. Next steps are in the works that will address newly identified challenges and opportunities for trustworthy IoT.”

Plenary speakers from industry and government included:

- Vint Cerf, Vice President and Chief Internet Evangelist, Google
- Tony Scott, U.S. Chief Information Officer, White House’s Office of Management and Budget (OMB)
- Greg Shannon, Assistant Director for Cybersecurity Strategy, White House’s Office of Science and Technology Policy (OSTP)
- Robert Silvers, Assistant Secretary for Cyber Policy, U.S. Department of Homeland Security (DHS)

The format of the workshop included panel sessions on enterprise risk management and each of the five trustworthiness concerns.

The workshop was webcast and the videos are archived online.

Back to Top

Innovative Smart Grid Technologies (ISGT 2016) Conference Features NIST Staff, September 7-9, 2016

With 400 attendees from around the world, IEEE's ISGT conference—held last week in Minneapolis, Minnesota—provided a forum for stakeholders to share recent accomplishments, planned developments, and long-term visions.

Three plenary panels highlighted technology visions, regulatory issues, and utility executives' perspectives. The program also featured more than 20 panels on selected topics, from synchrophasors to microgrid controllers and from rate design to cybersecurity. In addition, more than 125 technical papers and posters were presented.

NIST's David Holmberg gave a presentation about the NIST Transactive Energy Challenge during a panel session on transactive energy, and Eugene Song and Gerald FitzPatrick presented a paper, "Interoperability Test for IEEE C37.118 Standard-based Phasor Measurement Units (PMUs)."

Back to Top

Upcoming Virtual Meeting: Transactive Energy Challenge Phase I Capstone Program, September 20, 2016

The NIST Transactive Energy Challenge (TE Challenge) Phase I Capstone Program will be held as a virtual meeting on September 20, 2016, 1 p.m. – 4 p.m., Eastern Time. The agenda will include a review of Phase I accomplishments, recent progress in developing a TE co-simulation framework, TE plans from the Department of Energy, and the TE Challenge Phase II strategy.

Project lead David Holmberg said, "The virtual meeting format allows us to engage a wide range of interested stakeholders and share what we are doing and planning. If you're interested in transactive energy, please join us." To register for the webinar, please visit the event webpage.

The TE Challenge brings researchers and companies with simulation tools together with utilities, product developers, and other grid stakeholders to create and demonstrate modeling and simulation platforms while applying TE approaches to real grid problems. If you would like to learn more about the TE Challenge, please visit the TE Challenge Collaboration Site.

Back to Top

Global City Teams Challenge (GCTC) Schedules Event to Launch "Supercluster" Phase, October 25-26, 2016

The Global City Teams Challenge is embarking on a new collaboration phase, "Superclusters," with a launch event to be held in Washington, DC, October 25-26, 2016.

"Superclusters will involve teams joining forces to pursue shared objectives and common approaches for collaborative deployment," said Sokwoo Rhee, NIST's lead for the GCTC

project. “Our objective is to create a mechanism that enables existing GCTC teams to work together and, in so doing, increase the scale and impact of their efforts.”

GCTC leaders anticipate that one or more Superclusters will form in each of the following areas:

- Emergency Preparedness, Disaster Recovery, and Resilience
- Energy, Utilities, Water, and Microgrids
- Environment and Healthcare
- Municipal Dashboards
- Transportation

The two-day meeting—featuring a half-day plenary session followed by one-and-a-half days of working sessions—will be held at the Washington Grand Hyatt. The meeting is free for all entities with an interest in participating, but registration is required.

In addition, GCTC teams may be interested in the Environmental Protection Agency (EPA) recent announcement of its Smart City Air Challenge, which encourages communities to deploy hundreds of air quality sensors and make the resulting data open. For more information, visit the Smart City Air Challenge website or write to EPA at smartcityairchallenge@epa.gov.

Back to Top

Upcoming Meeting: NIST/IEEE Workshop on Timing Challenges in the Smart Grid, October 26, 2016

In the North American power grid, where each interconnection stretches over a large spatial expanse, it can be a major challenge to achieve correct timing. Timing needs include one microsecond synchronization to a traceable time and frequency reference for synchrometrology, state estimation, fault detection, and localization, as well as real-time control. Issues include, but are not limited to, GPS and communication infrastructure, as well as concerns for reliability and resilience.

To address these subjects, NIST and IEEE have organized a workshop on Timing Challenges in the Smart Grid (Gaithersburg, Maryland, October 26, 2016). The goals of the workshop are to clearly identify and analyze:

- the practical challenges that are currently being experienced in wide-area time synchronization in current measurement and control deployments; and
- timing-related barriers that prevent the power industry from realizing future measurement and control technologies.

Registration is open for the workshop, and a full list of speakers and abstracts and an updated agenda are available online.

Doug Arnold, the IEEE 1588 Precision Time Protocol co-chair, will be chairing the event. Utilities planning to provide their perspectives on application precision timing requirements, experiences, and challenges include Bonneville Power Administration, Dominion Virginia Power, Pacific Gas and Electric, and Southern California Edison. Workshop organizers plan to initiate discussion on potential solutions and evaluate the need for standard and metrology enhancements. The

outcomes of the workshop will inform a NIST report summarizing the timing requirements, challenges, and potential solutions for wide-area clock synchronization.

For additional details about the workshop and its organizers, please visit the workshop webpage.

Back to Top

Upcoming Meeting: Smart Grid Interoperability Panel's Annual Conference, November 7-10, 2016

Registration is now open for SGIP's 2016 Annual Conference, which will be held November 7-10, 2016, at the Capital Hilton in Washington, D.C. Billed as the 2016 Grid Modernization Summit, the theme is "Accelerating Transformation." The program will include utility, vendor, and industry senior executives, as well as representatives from FERC, federal government agencies, state regulatory agencies, and national labs. NIST staff members continue to participate actively in SGIP technical sessions and will be contributing to the conference.

Back to Top