IEEE/NIST Timing Challenges in the Smart Grid Workshop October 26, 2016

Draft Agenda (rev. October 25, 2016)

Time	Title	Speaker
8 a.m.	Introductions and Workshop Objectives Presentation	Dave Wollman, *NIST Smart Grid and CPS Program Office* Doug Arnold, *IEEE 1588 Co-Chair* Rudi Schubert, *IEEE*
Utility Perspective		
8:15 - 8:35	Utility Keynote: Time Synchronization and the Power System	Aaron Martin, *Bonneville Power Administration*
8:35-9:00	PTP for Substation Synchronization at PG&E	Vahid Madani and Dewey Day, *Pacific Gas and Electric*
9:00 - 9:25	GPS Timing in Substations at Dominion	Robert Orndorff, *Dominion Virginia Power*
9:25-9:45	*Break*	
Research Perspective		
9:45-10:05	Timing Security Assessment and Solutions	Glen Chason, *Electric Power Research Institute*
10:05 - 10:25	GPS Timing in Critical Infrastructure	Sarah Mahmood, *Department of Homeland Security*
10:25 – 10:45	Emerging Solutions in Time Synchronization Security	Karen O'Donoghue, *Internet Society*
10:45 - 11:05	*A DOE Perspective on Time Synchronization Needs*	Terry Jones, *Oak Ridge National Laboratory*
11:05 - 11:25	Testbed Capability at the Pacific Northwest National Laboratory	Jeff Dagle, *Pacific Northwest National Laboratory*
11:30	***Lunch***	
Timing Research Areas: Distribution, Anomaly Detection, Resilience		
12:30-12:50	Time Distribution: Current Technologies and Future Visions	Marc Weiss, *NIST Time and Frequency Division*
12:50-1:10	Time Anomaly Detection	Judah Levine, *NIST Time and Frequency Division*
1:10-1:30	Clock Ensembling for Resilience	Dhananjay Anand, *NIST Software and Systems Division*

Time	Title	Speaker
1:30 - 1:50	Reliable GPS-Based Timing for Power System Applications: A Multi-Layered Multi-Receiver Approach	Grace Gao, *University of Illinois Urbana Champagne*
1:50-2:10	Improved IEEE 1588 Synchronization Performance Bound and Attack Mitigation using Estimation Theory	Rick S. Blum, Lehigh University
2:10-2:30	Quantum Technologies for Secure Wide-Area Time Distribution	Phil Evans, *Oak Ridge National Laboratory*
Industry Efforts		
2:30 -2:50	*PTP Power Profile Conformity and Interoperability*	Bob Noseworthy, *UNH/IOL*
2:50 – 3:05	1588 over MPLS	Mark Adamiak, *GE*
3:05-3:20	1588 over Wide Area	Carmine Chase, *CenturyLink*
3:20-3:40	*Break*	
3:40-5:00	Round Table: • Application Timing Requirements Near-term and Long-Term • Time Distribution Experiences and Challenges • Potential Solutions - Standards and Technology • Future research directions	Moderated by Doug Arnold: Vahid Madani, *PG&E* Aaron Martin, *BPA* Judah Levine, *NIST* Bob Noseworthy, *UNH-IOL* Carmine Chase, *CenturyLink*
5:30	*IEEE Sponsored Networking Hour*	At the Gaithersburg Hilton