

**Distribution Task Team (DisTT) Conference Call Minutes  
November 2, 2017 10:00 am PT/1:00pm ET**

Sascha Von Meier ([vonmeier@berkeley.edu](mailto:vonmeier@berkeley.edu)) and  
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**Attendees**

Roll call – see list below.

**Action Items**

- Sascha to contact Alison Silverstein with regards to the title of the DisTT white paper.
- Farnoosh, Luigi, and Harold to work with Teresa to capture the technical content of this conversation in reasonable detail.

**Status of white paper;** Tom Rizy and Sascha did a lot of work micro editing and adding content on the white paper. Wide range of discussion on the paper in Springfield, with additional items to include are in the present draft such as data quality and cyber security. Consensus reached about emphasizing time synchronized measurement in general rather than emphasizing the phasor nature of the measurement. Control applications, microgrids, and customer privacy due to high resolution data are not expanded upon in this draft, but might be considered for future work. Sascha proposed restructuring the document and adding an appendix. Please respond with specific change suggestions by November 17. Highlight your changes or used tracked changes and send Sascha your edits/comments.

What should we call this document? White paper tends to be shorter than what we have. Calling it a report isn't fitting either. We have more of a brainstorm effort. Tom suggested "technical memo." Luigi suggested asking Alison what she would call it, as NASPI has several white papers.

**Jim Follum & Harold Kirkham;** PMU placement rules. Harold shared a spreadsheet in Excel to help collect information that would assist in placing distribution PMUs in the system. The spreadsheet provides a framework for ranking candidate PMU install locations (in this case, substations), based on particular characteristics and phenomena of interest at each location. This framework came out of a GMLC project with INL that is looking at microgrids and PMU placement, but might be more broadly usable. Devices will be placed into the system, but where should they be located? The framework offers a way to take advantage of the Utility Engineer's knowledge on this subject.

Discussion points:

- Potential to connect PMUs on distribution side: were PMUs along the feeder considered (not yet)
- Expandability of model would be interesting: how would this framework apply to PMU installation down the feeder, placement criteria for applications down the feeder?
- How do you make this grow? Communication quality and encryption standards/risk assessment, grading quality of communication,
- Some applications required a good GPS signal – are there technologies that are less dependent on sky visibility that could give an adequate time signal in an underground vault?
- Communications can be an important cost of having a PMU in a certain location.

- Challenge will be getting people to install PMUs. Instead of a technical push, perhaps we should look at this from an application pull.

#### **Roundtable for future topics; what would you like to hear about?**

- Jim Follum; practical understanding distribution PMUs.
- Deep Deka; learn more about the filtering process onboard PMUs: how the phasor domain quantities are captured, how does the computation affect the use of the PMU; e.g. protection and localizing.
- Luigi; organize Deep's request into two topics: (1) internal computation algorithms, and (2) the effect of those computations on synchrophasor accuracy, and subsequent effect on applications.
- Laura; review of software that is used for the transmission PMUs and how that is relevant to the distribution PMUs.
- Harold; would like to see if there is some way to strengthen connection between the database system and distribution PMU.
- Tom; relative to PMU ranking there is a GMLC sensing and measurement strategy; looking at extending states (generation to building use), developing roadmap needs for advanced sensors, and sensor placement tool (SPOT). Looking at specification applications (e.g. state estimations for distribution systems). Limited number of sensors due to budget and physical location. Fault detection, isolation, and restoration. Working with distribution system in Chattanooga. Relative to this work is a DOE FOA funding; PNNL is developing the Gridapps-D tool (Kevin Schneider). Would like to tie into the PNNL is doing. DOE is looking at advanced sensors.

Sascha has put the latest version of the DisTT white paper on the NASPI DisTT SharePoint site (<https://spteams1.pnnl.gov/sites/naspi/distt/default.aspx>). If you need assistance working from SharePoint or would like access to the white paper please email [teresa.carlon@pnnl.gov](mailto:teresa.carlon@pnnl.gov).

#### **Next Call**

- December 7, 2017, 10am Pacific / 1pm Eastern. Prospective Guest Presenter: Asja Derviskadic, Swiss Federal Institute of Technology of Lausanne (EPFL). Teresa will send out a call invite.

#### **Reference Material**

- DisTT White Paper: <https://spteams1.pnnl.gov/sites/naspi/distt/default.aspx>
- Topics of ongoing work for this group include:
  - Present practices, research, state of the art and challenges with distribution PMUs
  - Distribution PMU applications and use cases
  - Theoretical aspects of PMU measurements
  - Technical requirements and specifications for distribution PMUs
- DisTT SharePoint Site: <https://spteams1.pnnl.gov/sites/naspi/distt/default.aspx>. Need access? Email [teresa.carlon@pnnl.gov](mailto:teresa.carlon@pnnl.gov)
- Link to DisTT dropbox folder, including meeting notes and Use Case Paper drafts: <https://www.dropbox.com/sh/6n2pkr6brb4qic7/AADmgJYBvDDCmb1vACkomur5a?dl=0>
- Link to Distribution PMU Project inventory: [https://docs.google.com/document/d/1DPy5cQch9KpLzMYcjSc2I1qLvZWEGO5KSH4\\_FfRsnr4/edit?usp=sharing](https://docs.google.com/document/d/1DPy5cQch9KpLzMYcjSc2I1qLvZWEGO5KSH4_FfRsnr4/edit?usp=sharing)
- [Expected Data Requirements for Different Classes of PMU Applications.](#)
- CRSTT Reference - [NASPI Diagnosing Equipment Health and Mis-operations with PMU Data](#) and the [event summary table](#).

- U.S. Department of Energy Grid Modernization Lab Consortium ([GMLC](#)).

**Attendees**

Aminy Ostfeld  
Dan Lutter  
Deep Deka  
Farnoosh Rahmatian  
Frank Tuffner  
Harold Kirkham  
James Follum  
Laura Mehrmanesh  
Luigi Vanfretti  
Reza Pourramezan  
Sascha von Meier  
Steve NLN  
Teresa Carlon  
Tom Rzy