

Distribution Task Team Session

Wednesday, March 22, 3:00-5:45pm

Mission Statement

The mission of the Distribution Task Team (DisTT) is to foster the use and capabilities of networked PMUs at the medium-voltage distribution level, beyond the substation.

This group will share information in support of effective research, development and deployment of distribution PMUs and their applications.

We aim to create a community to solve technical and other challenges specific to distribution PMU technology and context.

See www.naspi.org/distt

Using synchrophasor measurements to detect cyber attacks on AC power distribution grids

Alex McEachern (PSL), Sean Peisert (LBNL) and Chuck McParland (PSL)

Hardware and firmware lessons learned

Alex McEachern (PSL)

Why C.37 does not work well for distribution-level synchrophasor measurements

Alex McEachern (PSL) and Harold Kirkham (PNNL)

Waveform Instrument for Synchronized Environmental Recording (WISER)

Sean McDaniel, Michael Cohen, and Peter Weed (MITRE)

DisTT Business

Using synchrophasor measurements to detect cyber attacks on AC power distribution grids

Alex McEachern (PSL), Sean Peisert (LBNL) and Chuck McParland (PSL)

Key Take-Away:

Goal is to detect rehearsals of cyber-attacks that don't cause actual physical impacts

Discussion – are distribution systems & data relevant for cyber threats?

Report-Out

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Hardware and firmware lessons learned

Alex McEachern (PSL)

Key Take-Away:

...lots... see slide deck!

Why C.37 does not work well for distribution-level synchrophasor measurements

Alex McEachern (PSL) and Harold Kirkham (PNNL)

Key Take-Away:

C.37 filtering takes out rapid changes that are often exactly what's interesting in the distribution context

Waveform Instrument for Synchronized Environmental Recording (WISER)

Sean McDaniel, Michael Cohen, and Peter Weed (MITRE)

Key Take-Away:

Built prototype of a flexible, low-cost tool for time domain data with high sampling rate, GPS sync, plug into a.c. mains

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Agenda

DisTT Business

- Use Case Papers – topics & authors
- Other White Paper sections – process
- Field Experience – add to inventory
- Technical investigation topics - process
 - understanding noise
 - beginning to define requirements for distribution PMUs
 - other?
- Other Business

Use Case Papers

Drafted so far:

- *Phase Identification*
- *Equipment Health Diagnostics*
- *DG-Load Disaggregation*
- *Microgrid Automation*

Other Topics of Interest:

- *Cybersecurity*
- *Embedding PMUs in distributed resources, e.g. inverters?*
- *“Thumper”*: *understanding forced oscillations from loads*
- *50,000-ft view: Situational awareness from combined T & D data*
 - *e.g. Geomagnetic disturbances (GMD) and related phenomena*
- *PMU supported Islanding / reconnection*

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DisTT Logistics

Resources to post or link at www.naspi.org/distt

Reference Data Set: <http://powerdata.lbl.gov/>

Subscribe to the email list

naspi-taskteam-distribution@lyris.pnnl.gov

Next meetings: Once per month on Thursday 10-11am Pacific

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