

NASPI Working Group Meeting Control Room Solutions Task Team (CRSTT) Monthly Meeting

Presenters: Mike Cassiadoro and Jim Kleitsch
January 20, 2016



Agenda

- I. Introductions
- II. March 2016 NASPI Work Group Meeting CRSTT Breakout Session Info
- III. Quick Review of CRSTT Goals for 2016
- IV. Provide Status Update on CRSTT Focus Area Documents
- V. Event Data Example
- VI. Any other business?
- VII. Adjourn

March 2016 CRSTT

Our current agenda for the March 2016 CRSTT break out session follows:

Task Team break-out sessions

NASPI Control Room Solutions Task Team

- A software tool for real-time prediction of potential transient instabilities using synchrophasor measurements -- Dinesh Rangana Gurusinghe, Yaojie Cai & Dr. Athula D. Rajapakse (University of Manitoba) (15 minutes)
- Black-start restoration using phasor simulator for operator training (PSOT) – Bill Blevins (ERCOT), Saugata Biswas & Anil Jampala (GE Grid Solutions), Vahid Madani & James Barich (Pacific Gas & Electric) (15 minutes)
- Synchrophasor enabled Total Transfer Capability Determination -- Ali Daneshpooy, Rahul Anilkumar, Boza Avramovic & Dino Lelic (Quanta Technology) (15 minutes)
- Real-time closed-loop test-bed for a synchrophasor voltage/VAR controller – Backer Abu-Jaradeh (SCE)
- CRSTT business

CRSTT Goals for 2016

1. Prioritize and complete remaining focus area documents
2. Develop operational use case summary documents to support NASPI technical papers
3. Create additional video event files for use cases and simulated events (includes data sharing)
4. Gather operator feedback on synchrophasor applications (best practices)
 - We need to figure out who is using the data and for what so we can communicate that information and lessons learned to the larger community. (Tom Rizy)
5. Identify available training materials

Focus Area Document Updates

(On their way to completion)

3. Using Synchrophasor Data for Phase Angle Monitoring – [ETC March 2016](#)

➤ (Cassiadoro – TRS, Chanoski – NERC, Nuthalapati - ERCOT)

Update from NDR

- We shall finish up this Draft paper by end of the month and have the final one posted on our website.
- We shall work with the leadership Team on having a Workshop at the 2016 October NASPI Meeting on Phase Angle Alarming
- There were some video clips provided by some participants in this report. We shall try to have them in NASPI website in the video section. This will add to the list of videos that we already have on the website.

Focus Area Document Updates

(On their way to completion)

4. Enhanced State Estimation Survey – [ETC March 2016](#)
 - (Vaiman – V&R Energy, Kleitsch – ATC, Cassiadoro – TRS)
 - Alison reviewed and blessed the survey so we can move forward
 - Marianna has contacted the IEEE Cascading Failure Working group [CFWG] and they are ready to collaborate with NASPI on the survey and talk with IEEE on distributing the survey now that the survey questions are approved.

Focus Area Document Updates

(On their way to completion - SE Survey)

Survey on Enhanced State Estimation

1. Do you run conventional SCADA-only State Estimation?

- ☐ Yes
☐ No

If Yes

How frequently do you run it?

What is the size of the model (number of buses)?

How many SCADA measurements do you use for State Estimation?

2. Do you use synchrophasor data for State Estimation?

- ☐ Yes
☐ No

If No, is there a plan to use Synchrophasor data in future?

3. How many PMU signals do you use for State Estimation?

4. Which PMU signals do you use?

- ☐ Current Phasor
☐ Voltage Phasor
☐ Current and Voltage Phasors
☐ Voltage Angles
☐ Other

If Other, please provide details below:

5. Do you run Hybrid State Estimation (e.g., use synchrophasor data in conventional State Estimation)?

- ☐ Yes
☐ No

If Yes

How frequently do you run it?

Do you use higher weights for PMU data compared to SCADA

6. What is the down sample rate for the synchrophasor data that is used for State Estimation?

7. Can you quantify the observed benefit of using PMU data in conventional State Estimation?

- ☐ Mismatches Reduction
☐ Run Time Reduction
☐ Increase in the Solution Robustness
☐ Other

If Other, please provide details below:

8. Do you have any concerns about using PMU data in conventional State Estimation?

- ☐ Yes
☐ No

If Yes, please provide details below:

9. Do you run Linear State Estimation?

- ☐ Yes
☐ No

If Yes

How frequently do you run it?

What is the size of the model (number of buses)?

10. In which environment do you run Linear State Estimation?

- ☐ Production
☐ Pre-production Testing
☐ Research Lab
☐ Other

If Other, please provide details below:

11. How are results of Linear State Estimation used by your organization?

- ☐ Bad data detection and conditioning
☐ Check of Conventional State Estimation
☐ Back-up for Conventional State Estimation
☐ Operations Support
☐ Other

If Other, please provide details below:

Focus Area Docs – Status Update (Cont.)

(Stalled? How do we get them started/restarted?)

5. Oscillation Detection

- (Dyer – EPG, Blevins and Rjagopalan – ERCOT, Patel - EPRI)

6. Determining Disturbance Locations

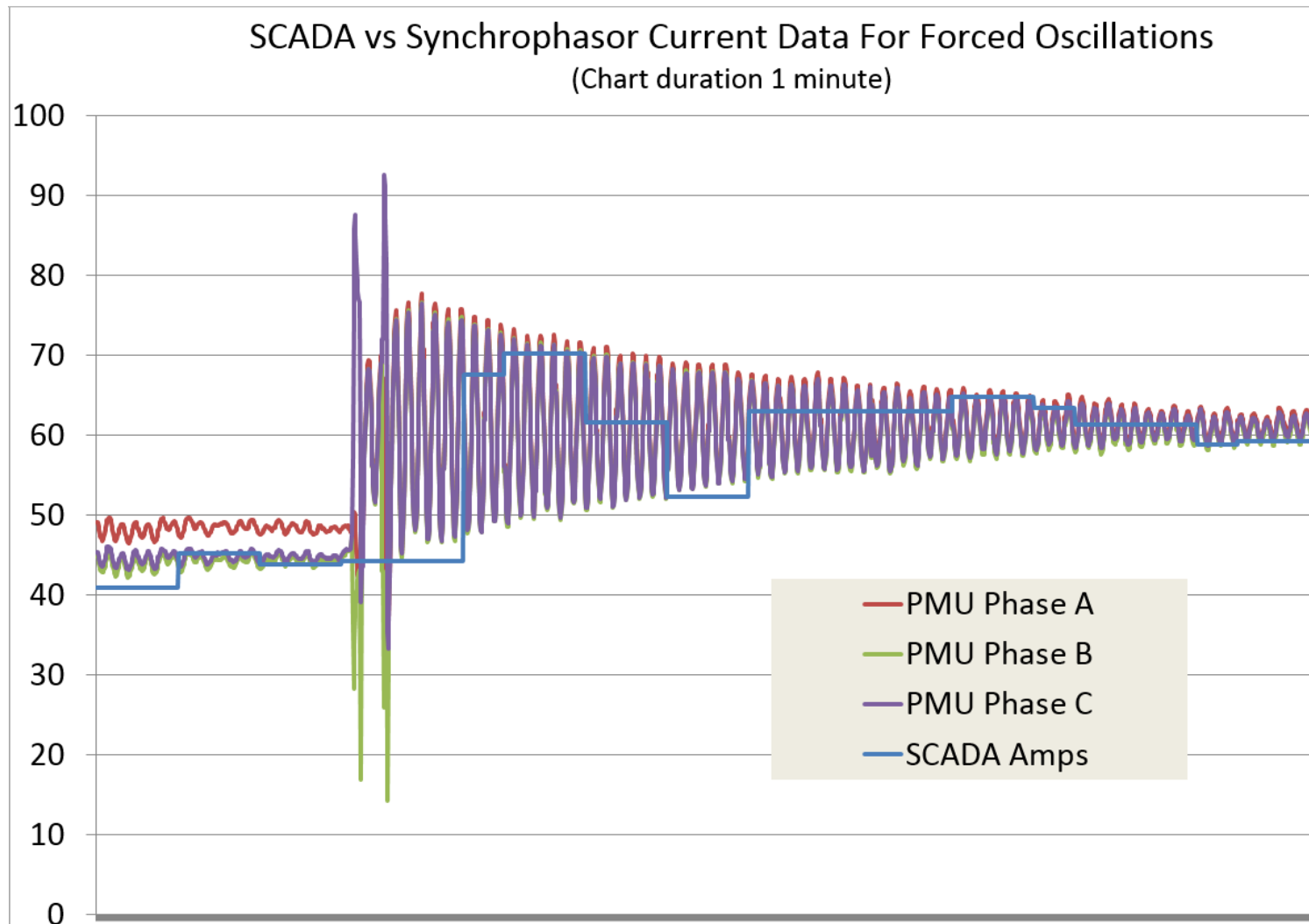
- (Dyer – EPG, Zweigle – SEL Inc., Cassiadoro – TRS)

7. Using Synchrophasor Data to Monitor Reactive Power Balancing

- (Cassiadoro - TRS, SCE –A.J, Peak RC – Zhang)

Event Data Example [Why We're Here.....]

Oscillations observed during a recent storm with multiple line trips in a weak transmission system



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Next CRSTT Conference Call: February 17, 2016

Next NASPI Work Group Meeting: March 2016