

North American SynchroPhasor Initiative (NASPI)
[Formerly, Eastern Interconnection Phasor Project (EIPP)]

Performance and Standards Task Team (PSTT)

Meeting Minutes

March 28, 2008

By Teleconference and Live Meeting

A conference call of the NASPI Performance and Standards Task Team was held on March 28, 2008. Twenty (20) participants were in attendance. The attendance list can be found in Appendix A. The following action items and agreements resulted from the meeting.

NEXT MEETING

Next PSTT Teleconference Schedule is scheduled on April 18, Friday, 8:00am-9:00am PT (1 hour). Please adjust for your respective time zones. Instructions for teleconference and LiveMeeting can be found in Appendix B.

Please start your set-up 5 minutes before the start of the teleconference. If you attend via Live Meeting, please install the new client prior to March 28, if you haven't already done so.

Individual task forces can send request to Teresa Carlon (teresa.carlon@pnl.gov) for setting up additional teleconferences.

ACTION ITEMS AND AGREEMENTS

- Henry Huang: prepare the PES 2008 presentation and distribute for review and comments to the PSTT by the first part of April.
- Teresa Carlon will email Jerry Stenbakken dynamic Phasor calibration presentation presented at the March 2008 New Orleans PSTT meeting.
- Teresa Carlon will send out Damir's presentation to the PSTT.
- Henry will explore possibility of a web based method for users and developers to list phasor tools.
- Krish will send comments to Alfredo on Guidelines for synchronization techniques - Accuracy and Availability – Task 2C
- Krish will provide comments on Devices with Integrated PMU – Task 5

CONTACT INFORMATION

- Performance and Standards Task Team Co-chairs – Vahid Madani, PG&E, (510)874-2300, VXM6@pge.com; Damir Novosel, Quanta Technology, (919) 334-3010, DNovosel@Quanta-Technology.com. Supported by Henry Huang, PNNL, (509) 372-6781, zhenyu.huang@pnl.gov.

- PSTT Resources Website: <http://www.naspi.org/resources/pstt/psttresources.stm>. Contact: Teresa Carlon, (509) 375-3628, teresa.carlon@pnl.gov.
- PSTT SharePoint Site: <http://www.eippshare.org/prtt/default.aspx>. Contact: Teresa Carlon, (509) 375-3628, teresa.carlon@pnl.gov.

MINUTES

Agenda items with some discussion points were sent out to the team prior to the meeting. Notes from the resultant discussion for each agenda item are as follows.

1. Roll call – see Appendix A.
2. See notes in table for updates on goals.

2008 Goals	Task Leader (Bold)
2. Requirements to guide PMU deployment and system architecture needs, locally and regionally	
a) System and device requirements for combined applications 11/2/07 Comments: A scope document was sent to the team prior to the teleconference. Applications need to be grouped into categories before requirements can be addressed. Chris Anderson will send a related document to Yi and Jim. This task seems to have some overlap with item #7 “Requirements for Protection and Control”. Vahid will look at Yi’s scope document against item #7 to identify commonalities and differences. A question was raised regarding why we need combined requirements if we already have requirements for individual applications. This needs more discussion.	Yi Hu , Jim Hackett
b) Phasor Tools Listing - Requirements and specifications for phasor tools 3/28/08 Comment: Phasor tool listing: Henry has been thinking about how to move this forward. One of the steps is to survey existing tools and provide categorization/summary. Inspired by the NASPI research repository site developed by PNNL. Maybe we can create a similar web site to collect information on various phasor tools. The site would be accessible by the public and can be filled by tool developers. Incentive for the vendors to provide information is that the site can be an "advertisement" for their tools.	Henry Huang , Jim Hackett, Enrique Martinez, Tony Weekes., Sushil Cherian

2008 Goals	Task Leader (Bold)
<p>If on-line based listing is feasible, Henry will work with Teresa to see how we may set it up.</p> <p>Vahid asked if Robert Folkes would join this group. Robert offered to assist with providing a list of tools as a starting point based on the experience Psymetrix team has in dealing with their clients. Also, Tony Weekes and other team members will help Henry and will add to the list.</p> <p>11/2/07 Comments: A scope document was sent to the team prior to the teleconference. Accessibility tools were proposed to be added to the scope. Also users should be able to make specifications for phasor tools. Several people provided valuable comments based on their experiences. Vahid encouraged everyone that has developed a tool or has recognized value for a particular tool based on their experience to send a note to Henry for consideration.</p>	
<p>c) Guidelines for synchronization techniques - Accuracy and Availability</p> <p>3/28/08 Comment: Krish will send out guidelines out prior to the April meeting.</p> <p>2/22/08 Comments: Should the testing of the GPS be part of Jerry’s document or should the testing of GPS be a stand alone document? Should we address vulnerability? Henry suggested to start with separate documents then in the future we can combine if needed. This method will allow the Guidelines for Synchronization Techniques can remain stable for a while without opening it backup for comments. Jerry suggested we steered away from the term GPS – instead focus on “time reference.” Alfredo is going to prepare a new version of the document and probably a presentation for the March meeting.</p> <p>1/25/08 Comments: Alfredo Vaccaro distributed an updated draft document after incorporating Bill Dickson’s comments. Unfortunately, Alfredo was not able to join the conference call due to phone connectivity issues. The draft document will be posted at the SharePoint site.</p> <p>Action Item: PSTT team members are requested to review and provide comments to Alfredo.</p>	<p>Bill Dickerson, Jerry Stenbakken, Alfredo Vaccaro</p> <p>Sub-team: Krish and Jay to comment and provide feedback to Alfredo</p>

2008 Goals	Task Leader (Bold)
<p>11/9/07 Comments: Discussion of synchronization codes: GPS, IRIG-B, and 1488. Each type has different errors and issues. A reference sheet listing pros and cons of each would be useful. Also, discuss the requirement for synchronization. Goal would be to develop a guideline. Vahid had started such a document and will send to Jerry Stenbakken.</p>	
<p>d) Requirements for hardware and firmware upgrades</p> <p>11/9/07 Comments: No progress to report.</p>	<p>Shane Haveron, Jim Hackett, Floyd Galvan., Enrique Martinez</p>
<p>3. Procedures for testing PMU at the commissioning level</p> <p>11/9/07 Comments: Vahid Madani reviewed existing document. If the document has covered all areas, including testing, then the document may be considered complete. Discussion as to whether or not the title of the document needs to be changed or if other information still needs to be added. Other people need to be involved to review and approve document.</p>	<p>Vahid Madani, Tony Weekes., Ken Martin, Mladen Kezunovic, Alfredo Vaccaro</p>
<p>4. Standardizing PMU Configuration for IEC 61850 Applications</p> <p>Implementation Agreements (Standards) for Interoperability of the Synchrophasor Values</p> <p>1/25/08 Comments: Sushil distributed updates on the work plan prior to the teleconference. IEC 61850 has been contacted and they are interested in working with PSTT on this important issue.</p> <p>Action Item: Comments on the work plan are requested and are due Sushil by Feb 22.</p> <p>11/30/07 Comments: Shushil presented the resource estimate to the attendees.</p> <p>11/9/07 Comments: The scope document was sent to the team prior to the teleconference. The goal is to develop a companion standard for IEEE 61850. Deliverables need defined so resources can be identified. For example, ESG/NERC financial support to help hire consultants. Action Sushil will develop an estimate by next task team meeting.</p>	<p>Shane Haveron, Roger King., Sushil Cherian</p>

2008 Goals	Task Leader (Bold)
<p>5. Expand guidelines for using devices with Integrated PMU Functionality</p> <p>3/28/08 Comment: Krish will have a draft before the April meeting for review.</p> <p>11/9/07 Comments: The goal is to expand a previous presentation to a document, including testing guide for integrated PMUs. Coordinate with Jerry Stenbakken to decide what should reside in which document regarding testing.</p> <p>Invited Chris Anderson, Jerry Stenbakken and Roberto Cimadevilla to the team.</p>	<p>Krish will lead, with the team consisting of Anurag, Damir, Jay, Jerry, Jim, Enrique, and Yi.</p>
<p>6. Issues with “Dynamic Phasors”</p> <p>11/9/07 Comments: The goal is to determine whether the current steady-state based phasor definition would still be applicable with higher sampling rates, transient signals, frequency tracking, etc. Higher sampling rates increase data volume, which may exceed practical technical limits. Identify deliverables so that resources can be determined.</p> <p>Roberto Cimadevilla was welcomed to join the group.</p>	<p>Henry Huang, Tony Weekes, Jerry Stenbakken, Bogdan Kasztenny, Mark Adamiak, Ken Martin, Arun Phadke</p>
<p>7. Standards & requirements for Protection and Control Applications</p>	<p>Shane Haveron, Enrique Martinez, Ken Martin, Jim Hackett, Virgilio Centeno, Vahid Madani, Yi Hu, Sakis Meliopoulos, Mohammad Zubair</p>
<p>8. Identify requirements for redundancy (part of architecture)</p>	
<p>9. Discussions with IEEE on COMTRADE file use with PMU – See notes from January 2008 conference call.</p> <p>Feedback from PSRC indicates that COMTRADE standard defines only formats but not contents. An add-on configuration may be developed to satisfy the need when Comtrade is used for phasor measurements. Jim Hackett, as vice chair of PSRC WG H10, invites PSTT members to attend the next H10 meeting at Kansas City on May 13-14, 2008 or give Jim some</p>	

2008 Goals	Task Leader (Bold)
feedback for discussion at the H10 meeting.	
<p>10. Define Standard requirements for the Phasor Data Concentrator (PDC) Hardware Input protocols, and protocols needed if in the future we want to go to the SE - Whether it is better to have a independent server or independent database etc. for future expansion, what data bases will match what PDCs.</p> <p>3/28/08 Comment: Tony gave on overview of the Phasor Data Concentrator Standard Requirements document. Form a team: Robert Folkes, Sushil Cherian, Ken Martin, Jim Hackett, Yi Hu; Krish Narendra</p>	Tony Weekes

9. Next Meeting: **April 18, 2008, Friday, 8:00am-9:00am PT.**

10. Meeting adjourned.

Appendix A:

March 28, 2008 Conference Call Attendees

Attendee	Affiliation
Alfredo Vaccaro	Università degli Studi del Sannio, Italy
Anurag K. Srivastava	Mississippi State University
Brian Kirby	AREVA
Chris Anderson	SEL
Damir Novosel	Quanta Technology
Franco de Villiers	ESKOM
Harish Mehta	MethaTech
Jim Hackett	MethaTech
Jingtao Wu	SIFANG
Ken Martin	BPA
Kevin Richardson	SCE
Krish Narendra	NxtPhase
Mladen Kezunovic	Texas A&M University
Mohammad Zubair	Hydro One
Robert Folkes	Psymetrix
Sushil Cherian	Kalki Tech
Teresa Carlon	PNNL
Tony Weekes	Manitoba Hydro
Vahid Madani	Pacific Gas and Electric Co.
Yi Hu	Quanta Technology

Appendix B: Instructions for Teleconference and LiveMeeting

1. Instructions for conference call participants:

- **Local participants:** call 376-7411 and ask for the conference title "**PSTT**" or "**PRTT**" (confirmed by Teresa Carlon).
- **Long-distance participants:** call 1-800-664-0771. When you hear the Octel voice mail system answer, please dial 0 and ask the Operator for the conference title "**PSTT**" or "**PRTT**".
- **International participants:** Please use one of the two ways: 1) call 509-376-7411 (will incur long distance charge to you) and ask for the conference title "**PSTT**" or "**PRTT**"; 2) let Teresa Carlon, (509-375-3628, teresa.carlon@pnl.gov) know in advance that you want to participate, and then Teresa will have PNNL Telephone Service personnel call you and connect you to the teleconference.

(If you need assistance, please call PNNL Telephone Services at 509-375-6400)

2. Instructions for LiveMeeting:

Depending on the results for action item #1 above, time of meeting may change, Live Meeting log in information will NOT change.

Teresa Carlon has invited you to attend a Live Meeting.

<https://www.livemeeting.com/cc/pnnl/join?id=DZKT3R&role=attend&pw=tzZ%292H%2Bjq>

Subject: PSTT Teleconference/Live Meeting 8:00am PT
Meeting URL: <https://www.livemeeting.com/cc/pnnl/join>
Meeting ID: DZKT3R
Meeting Key: tzZ)2H+jq
Role: Attendee

Click to add to your Outlook calendar:

<https://www.livemeeting.com/cc/pnnl/meetingICS?id=DZKT3R&role=attend&pw=tzZ%292H%2Bjq&i=i.ics>

FIRST TIME USERS: To save time before the meeting, check your system to make sure it is compatible with Microsoft Office Live Meeting:

<http://go.microsoft.com/fwlink/?linkid=52354>

This Live Meeting invitation is a personal invitation; it should not be forwarded.

For assistance, visit Live Meeting Help and Support:

http://r.office.microsoft.com/r/rlidLiveMeeting?p1=7&p2=en_US&p3=LMIInfo&p4=support