

EASTERN INTERCONNECTION PHASOR PROJECT (EIPP)

Work Group Meeting

March 29, 2004
Washington, DC

Minutes

A meeting of the EIPP Work Group was held on March 29, 2004 in New Orleans, LA. Fifty-four participants were in attendance. The meeting agenda and attendance list are attached as appendices. The following action items and agreements resulted from the meeting.

ACTION ITEMS AND AGREEMENTS

1. A revised Work Group Charter was approved. The formation of an Executive Committee was the focus of the revision. The Work Group Charter can be found on the web site at http://phasors.pnl.gov/EIPP_Org.html. (complete)
2. The Executive Committee was asked to develop a budget and plan for Phase II of the project. Phase II is characterized by hundreds of time-synchronized instruments providing complete visibility of the eastern interconnection along with appropriate contractual agreements, software tools and standards. (Plan to be complete by June 1, approved by Work Group by July 1)
3. The Executive Committee was asked to begin a series of presentations and/or workshops leading up to a presentation to the NERC Operating Committee. The subject of the series is to be a set of display screens that would be useful to system operators. There was a suggestion that the series start with a focus group of reliability coordinators, then move to the NERC RCWG, and finally to the NERC OC. (Focus group presentation to be complete by June 1)
4. The Work Group requested that an article explaining the EIPP be placed in the NERC newsletter. (Article to be submitted to NERC by April 22)
5. A legal contact from each of the Phase 1 participants should be submitted to Floyd Galvan as soon as possible. Mr. Galvan seeks to determine whether the NERC confidentiality agreement is suitable to all Phase 1 utilities. (Please submit contact information by April 9)
6. Real Time Applications Task Team - The Work Group asked the Real Time Applications Task Team to investigate the feasibility and cost of incorporating commercial products at an early stage in the project.
7. EIPP be prepared to present some prototype screen shots to the NERC Operating Committee at their July meeting. (Lead, Jim Dyer)
8. EIPP to put an article describing the project into the NERC Newsletter. (Lead, Matt Donnelly)
9. Off Line Applications Task Team (OLATT) - Issued a call for new OLATT members and requested that each attending utility provide a representative to the OLATT.

10. Matt Donnelly will take the lead in organizing the next meeting in early-June time frame.

MINUTES

Phil Overholt (US DOE) welcomed the attendees and gave the Department of Energy perspective on the project.

Paul Barber (CERTS) then provided an update on the August 14, 2003 blackout investigation. Mr. Barber reported that the final DOE recommendations would be published in early April. The NERC-approved recommendations include a technical initiative to “Install Additional Time-Synchronized Recording Devices as Needed.” The NERC recommendations go on to state, “Time-synchronized devices, such as phasor measurement units, can also be beneficial for monitoring a wide-area view of power system conditions in real-time, such as demonstrated in WECC with their Wide-Area Monitoring System (WAMS).” Analysis of the system restoration process is ongoing.

Matt Donnelly (CERTS) provided background information on the EIPP’s vision and mission. Mr. Donnelly presented an overview of the minutes from the January 22 meeting, discussed proposed changes to the Work Group Charter, and discussed Phase II planning. There was some group discussion about the need to establish budgets for the project prior to the FY05 budget planning cycle. It was noted that the DOE FY05 budget planning cycle has already passed, but that budgets for the utility participants are required as soon as possible.

TASK TEAM REPORTS

Copies of the Task Team presentations will be uploaded to the project web site at <http://phasors.pnl.gov>.

PHASE 1 IMPLEMENTATION TASK TEAM

Mike Ingram (TVA) provided an update on the progress of the Phase 1 Implementation Task Team. Mr. Ingram presented a map showing the locations of the PMUs targeted for incorporation into the network this summer. There were several points of discussion following the presentation. Some of these points can be summarized in the following questions paraphrased from the Work Group discussion.

- What makes a PMU or other instrument “eligible” for incorporation into the EIPP network?
- How many instruments are “good enough” for specific applications like state estimation or operator displays?
- What quantities, e.g. “Line X MW at Substation Y” or “Bus Voltage at Substation Z”, will be available on the EIPP network in mid-summer? Phase 1 Task Team to pass this information along to Real Time Task Team.
- What data rate will the initial network be built upon?

Mr. Ingram indicated that the Phase 1 Task Team will take up these questions and offer answers before the next meeting.

VENDOR PRESENTATIONS

Copies of the vendor presentations, if available, will be uploaded to the project web site at <http://phasors.pnl.gov>.

A number of vendors offered to present a short summary of their products for the benefit of the EIPP Work Group. Ken Martin (BPA) began the presentations by describing the need for interoperability. Mr. Martin indicated that interoperability can best be achieved through standards. He also described the functionality of the BPA Phasor Data Concentrator.

After the BPA presentation, the following vendors presented information about their company and product offerings.

- ABB (Manmadhan Ullatil)
- Arbiter
- Macrodyne (Jay Murphy)
- MehtaTech (Harish Mehta)
- Schweitzer Engineering Labs (Armando Guzman)
- OSI Soft
- Powerworld (Scott Dahman)
- Psymetrix (Jos Trehern)

The meeting then adjourned to the Hyatt Regency where the aforementioned vendors offered product demonstrations to the attendees.

NERC COLLABORATION

Upon reconvening the meeting Tuesday March 30, Bob Cummings (NERC) made a presentation describing the progress in the NERC/EIPP relationship subsequent to the January meeting. Mr. Cummings indicated that NERC is still very interested in working with the EIPP Work Group. There is still some uncertainty as to how the hardware specific to the NERC Frequency RFP will be acquired and maintained. Several options were discussed including NERC ownership of several PMUs or the establishment of some long-term agreements with current PMU owners.

More importantly, Mr. Cummings indicated that he would like to see the NERC/EIPP relationship extend beyond the current RFP to include a more extensive response to the recommendations contained in the blackout report. He concluded his presentation with a

suggestion that the EIPP be prepared to present some prototype screen shots to the NERC Operating Committee at their July meeting.

TASK TEAM REPORTS (CONT.)

Copies of the Task Team presentations will be uploaded to the project web site at

<http://phasors.pnl.gov>.

REAL TIME APPLICATIONS TASK TEAM

Jim Dyer (CERTS) presented an update on the progress of the Real Time Applications Task Team. Mr. Dyer was reporting for Wayne VanOsdol (MISO), the Task Team leader. The Team recommends the deployment of the EPG visualization package prepared for the CAISO for the early stages of the EIPP. The Team would develop screens and an interface to a PDC containing the initial EIPP phasor data. The suggested “host” PDC would be located at AEP. In the later stages of the project interfaces would be developed for multiple PDCs and the EIPP PDCs would be networked in a peer-to-peer configuration rather than the initial PDC host configuration. In the initial configuration, access to the screens, residing on a server at AEP, would be made available to EIPP participants through secure internet connections.

The presentation precipitated questions regarding the state of readiness of commercial software packages and whether the Team had investigated these options. When asked, several vendors in the audience responded in the affirmative. The Work Group asked the Real Time Applications Task Team to make a thorough investigation of the different software packages available on the market and contrast those against the EPG software before making a final recommendation to the Work Group. This is to be done ASAP.

STANDARDS AND PERFORMANCE TASK TEAM

Bruce Fardanesh (NYPA) presented an update on the progress of the Standards and Performance Task Team. Mr. Fardanesh outlined numerous issues yet to be resolved in both the hardware and software areas. The following points of discussion were raised subsequent to the presentation.

- The Work Group expressed a strong desire to align with the proposed 37.118 standard.
- The Work Group asked the SPTT to develop a “guide spec” for use in specifying equipment suitable for incorporation into the EIPP. The guide spec need not be a standard, but it should enumerate minimum requirements for an EIPP-compatible product.
- The Work Group expressed interest in seeing a report from the SPTT. There was some discussion regarding existing PMU testing results and the Work Group asked for these test results to be an early deliverable for the SPTT. The Work Group further suggested a staged report with early results being presented at the June meeting with subsequent reports delivered in October and early 2005.

GUEST PRESENTATION – FNET

A copy of the FNET presentation, if available, will be uploaded to the project web site at <http://phasors.pnl.gov>.

At the request of the Work Group, Prof. Yilu Liu provided a brief overview of the FNET project in which many time-synchronized frequency transducers are being installed throughout North America and research on frequency phenomena is ensuing.

TASK TEAM REPORTS (CONT.)

Copies of the Task Team presentations will be uploaded to the project web site at <http://phasors.pnl.gov>.

OFF LINE APPLICATIONS TASK TEAM

Navin Bhatt (AEP) presented an update on the progress of the Off Line Applications Task Team. Mr. Bhatt described some of the accomplishments from the WECC in power system analysis using phasor technology and proceeded to a discussion of eastern interconnection dynamics. He further issued a call for new OLATT members and requested that each attending utility provide a representative to the OLATT. The course of action for the Team is to investigate CERTS and commercially available analysis tools for deployment within the project. The OLATT will also develop a budget for tool development and/or procurement followed by deployment and training to be presented to DOE at the earliest convenience. The Work Group asked the Team to prioritize the potential applications for presentation to the Executive Committee and dissemination to the Work Group.

BUSINESS MANAGEMENT TASK TEAM

Floyd Galvan (Entergy) presented an update on the progress of the Business Management Task Team. Mr. Galvan announced that the standard NERC confidentiality agreements were very compelling. They had been reviewed by Entergy lawyers and determined to be, for the most part, suitable. The major impediment to adoption by the EIPP may be a clause stipulating the duration of time in which the phasor data is formally considered to be confidential. In comments following the presentation, NERC officials commented that they would not distribute phasor data publicly unless required by law. Mr. Galvan asked Phase 1 participants to provide contact information for their respective legal departments. Mr. Galvan informed the vendors in attendance that if they participate in the application and tool development related to the EIPP and had access to phasor data they would be required to sign a NDA.

WRAP-UP

Following all of the Task Team presentations, the Work Group took up general business. The Work Group approved the Charter as amended to include the Executive Committee. The Work Group then asked the Executive Committee to present a plan and budget by June 1 for the purpose of developing budgets for individual organizations. The date and format for the next meeting was discussed. The early June time frame was suggested. Matt Donnelly will take the lead in organizing the meeting. The Work Group asked Bob

Cummings if it would be feasible to put an article describing the project into the NERC Newsletter. Mr. Cummings replied in the affirmative.

The meeting was then adjourned.

Respectfully Submitted,

Matt Donnelly

EASTERN INTERCONNECTION PHASOR PROJECT WORKING GROUP MEETING

*March 29-30, 2004
New Orleans Hyatt Regency
50 Poydras Plaza
New Orleans, LA
(504)561-1234*

The purpose of the meeting is to receive reports from WG Task Teams and to provide direction to the Task Teams on their objectives and work plans. Rooms are available at a discounted rate of \$146 per night. Please make your reservations before March 12 to get the group rate. Ask for the "EIPP Work Group – US Department of Energy" to get the group rate.

The WG meeting will be held at Entergy Corporate Headquarters, 639 Loyola Avenue, New Orleans, LA 70113. Entergy Corporate Headquarters is part of the complex of buildings including the Hyatt Regency. You will be able to walk to the Entergy conference room through the hotel atrium. We will use Conference Room 707. Please sign in with security and then proceed to the 7th floor room 707. The vendor displays/presentations will be held in the Cabildo room of the Hyatt Regency on Monday afternoon.

AGENDA

Mon. 10:00–10:15 AM	• Introductions and meeting accommodations	P. Overholt
10:15 AM–10:35 AM	• Update on Blackout, Recommendations and NERC Audit	P. Barber
10:35 AM–10:50 AM	• EIPP Status, Roles and Responsibilities for Exec. Committee	M. Donnelly
10:50 AM–11:10 AM	• NERC Liaison – Update of RFP, etc.	TBD
11:10 AM–11:50 AM	• Phase 1 Implementation Task Team Report	M. Ingram
11:50 AM–12:20 PM	• Lunch Service	
12:20 PM–2:40 PM	• 15-minute Vendor Presentations (lunch continues)	
2:40 PM–8:00 PM	• Product Demonstrations (Trade Show format)	
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Tue. 8:00 AM–8:40 AM	• Real Time Applications Task Team Report & Discussion	J. Dyer
8:40 AM–9:20 AM	• Standards and Performance Task Team Report & Discussion	B. Fardanesh
9:20 AM–10:00 AM	• Business Management Task Team Report & Discussion	F. Galvan
10:00 AM–10:15 AM	• Break	
10:15 AM–10:55 AM	• Off Line Applications Task Team Report & Discussion	N. Bhatt
10:55 AM–11:15 AM	• Recap of Action Items, Planning for Meetings and/or Workshop	M. Donnelly

- Note: Task Team reports should cover the following
- Recap of Task Team objectives and deliverables
 - Work Plan to meet objectives and deliverables
 - Discussion of possible issues and challenges
 - Areas requiring guidance and/or direction from WG

Important Numbers

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Transmission Reliability Program Manager
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March 29 Attendees

Florez	Miguel	ABB
Manmadhan	Ullattil	ABB
Suranyi	Andreas	ABB
Allemong	John	AEP
Bhatt	Navin	AEP
Myers	Steven	Arbiter
Roeder	Bruce	Arbiter
Martin	Ken	BPA
Barber	Paul	CERTS
Donnelly	Matt	CERTS
Dyer	Jim	CERTS
Guttromson	Ross	CERTS
Huang	Henry	CERTS
Imhoff	Carl	CERTS
Meliopoulos	Sakis	CERTS
Nastac	Laurentiu	Concurrent Technologies
Cao	Jim	Cyberpower
Gu	John	Cyberpower
Huang	Jules	Cyberpower
Berndsen	Jerry	Entergy
Galvan	Floyd	Entergy
Kolluri	Sharma	Entergy
Mandal	Sujit	Entergy
Prejean	Ryan	Entergy
Adamiak	Mark	GE
Murphy	Jay	Macrodyne
Wang	Dali	Macrodyne
Hackett	Jim	Mehta Tech
Mehta	Harish	Mehta Tech
Osborn	Dale	MISO
Phillips	Bill	MISO
Cummings	Bob	NERC
Nolan	Brian	NERC
Vandervort	Tom	NERC
Chow	Joe	NY ISO
Fardanesh	Bruce	NYPA
Folse	James	OSISoft
Wells	Chuck	OSISoft
McAnelly	Mike	PCS Consultant
Pylant	Randy	Power Connections
Dahman	Scott	PowerWorld
Golder	Alex	Psymetrix
Treherm	Jos	Psymetrix
Anderson	Chris	SEL
Collum	Mike	SEL
Guzman	Armando	SEL
Zimmerman	Karl	SEL
Marshall	David	Southern Company
Viikinsalo	James	Southern Company
Bell	Sandra	TVA
Ingram	Mike	TVA
Overholt	Phil	US DOE
Liu	Yilu	Virginia Tech