



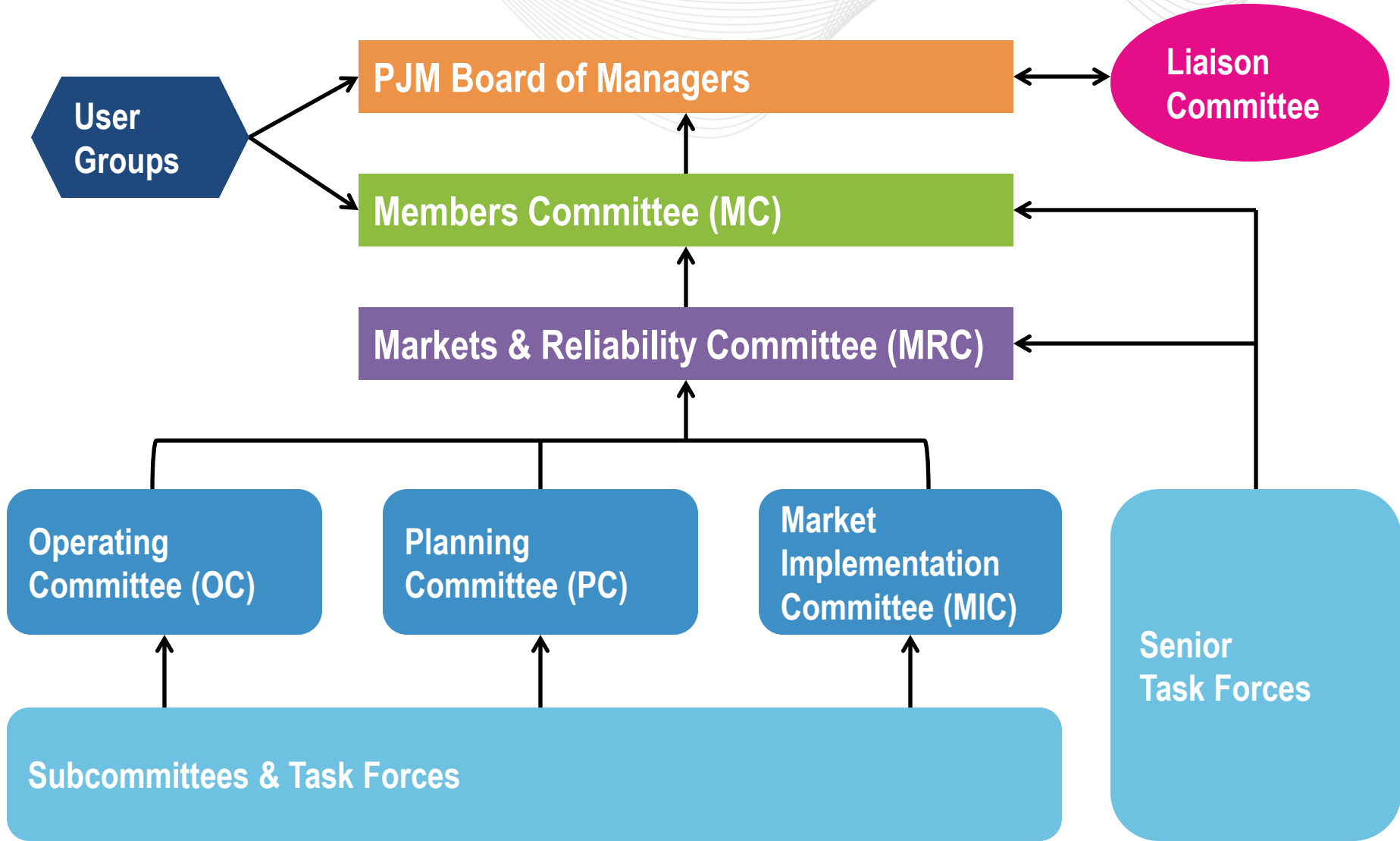
PJM Phasor Data Duality Task Force and Improvement

NASPI Meeting
March 12, 2014
Knoxville, TN

Jing Liu, Suzie Fahr
PJM Interconnection

- July 2013 – The SynchroPhasor Project began transitioning from a pilot project in Applied Solutions to the Real Time Data Management (RTDM) department within PJM.
- RTDM would assume the long term responsibilities of adding, maintaining, and monitoring phasor data at PJM.

- The Phasor Data Quality Task Force (PDQTF) was started in the fourth quarter of 2013.
- The PDQTF reports to the System Information Subcommittee (SIS).
- Goals of PDQTF:
 - Documenting an approach, error rate percentage, and timeline for achieving production grade PMU data quality.



- The PDQTF kick-off meeting was held December 12, 2013.
- There were 27 total attendees between PJM and 9 Transmission Owners. There are now 12 TOs that are involved in PDQTF.
- Meetings will be held quarterly and are open to anyone that is currently or working toward exchanging phasor data with PJM.
- The next meeting is scheduled for March 27th.



AGENDA
PJM Interconnection
Phasor Data Quality Task Force (PDQTF)
PJM Interconnection - CTC
March 27, 2014
9:00 am – 3:00 pm

1. ADMINISTRATION (9:00-9:15)

Attendance and review of the meeting minutes
Updates to roster
Review PDQTF private workplace

2. TO QUARTERLY PROGRESS (9:15-9:45)

- Data quality member discussion to inform the group what has been done individually and/or in conjunction with PJM, and their results achieved.
- PJM will report what they have done independently to help improve data quality.
- Discuss other areas of improvement, what can we be doing?

3. REPORT REVIEW (9:45-10:15)

PJM staff will review the most recent monthly report.

- What do the PDQTF members like and/or not like about the reports?
- What changes should we make as we try to find a final format?

4. TO ACCESS AND DISPLAYS - RTDMS (10:15-10:30)

Mike Luna will give an update on the TO access and RTDMS.

BREAK (10:30-10:45)

5. OUTAGES (10:45-11:15)

John Collier will talk with the group about how to accommodate planned outages in the reporting system.

6. NASPI RECAP (11:15-11:45)

PJM staff that attended the spring North American SynchroPhasor Initiative working group meeting will give a recap of the event.

7. SEL TIPS AND TRICKS (11:45-12:00)

Mike Smith from BGE will demo and discuss SEL.

LUNCH (12:00-1:00)

8. TECH CORNER – LATENCY (1:00-1:15)

Ryan Nice will lead a discussion with the group about recent issues seen with Phasor latency.

9. LOCAL DATA STORAGE (1:15-1:30)

Chris Frank and Matt Rivett will discuss PJMs current method of data storage. This will lead into the roundtable discussion for members to talk about their individual company's storage plan.

10. MEMBERS DISCUSSION (1:30-2:30)

- Long Term Storage – Where, how long?
- Response time – Still at “Best Effort”?
- Requirements/Lessons Learned/Best Practices
 - Naming convention issues

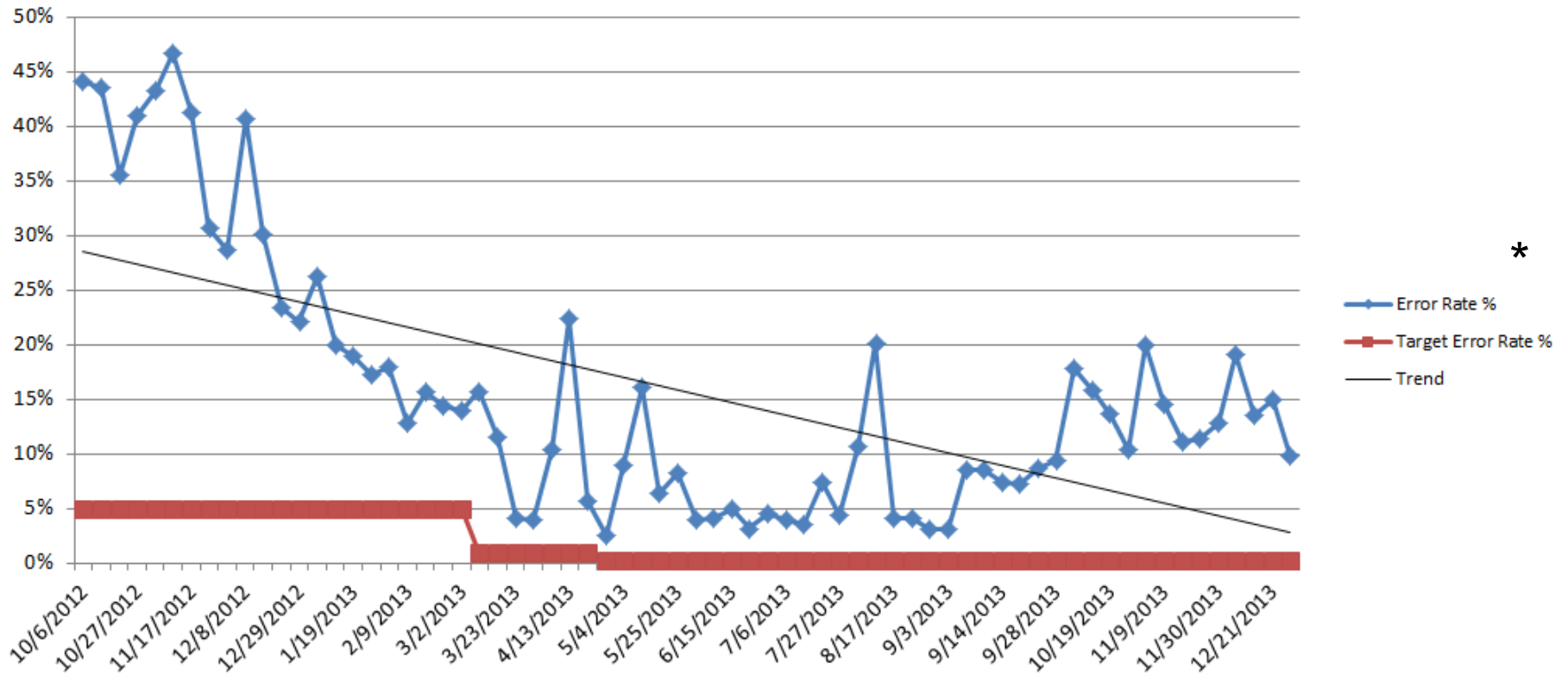
11. FUTURE AGENDA ITEMS AND NEXT STEPS

- Vendor discussion
- Common problems

12. FUTURE MEETING DATES

- June 12, 2014
- September 11, 2014
- December 11, 2014

PMU Error Rate Trend, All TOs



* Target of .2%.

- Overall 91% of data is acceptable
- 50% - “Good” (or better) rating [$< .2\%$ avg. error]
- 58% - delivering “Timely” data [latency $< 500\text{ms}$]
- Poor Quality – Root Causes
 - PMU Calibration
 - GPS Clock issues
 - Data Name limitations
 - Loose cables
 - Loss of telecom connection
 - Server overload
 - Aliasing at PDC
 - PDC configurations
- Lessons Learned
 - Establish test criteria to use at installation
 - Ensure data quality at TO PDC before sending data

- The DOE Grant Project was focused heavily on implementation of Phasor metering systems and typically used personnel with other primary job responsibilities (typically with their EMS). As such these systems are just now entering the “operations” phase. Impacted areas are:
 - Quality Measurement
 - Personnel
 - Data Quality Goals
 - PMU maintenance outages to improve data quality are sometimes difficult to achieve in a timely manner
 - Nature of Data Quality Problems

- Latency is the major culprit in degraded PMU data quality
- Wait-time setting
- Error Rates



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