

# IEEE Synchrophasor Related Activities at Power System Relaying and Control Committee (PSRC) and Power System Communications and Cybersecurity Committee (PSCCC)

NASPI 2023 Fall Meeting

Charlotte, North Carolina

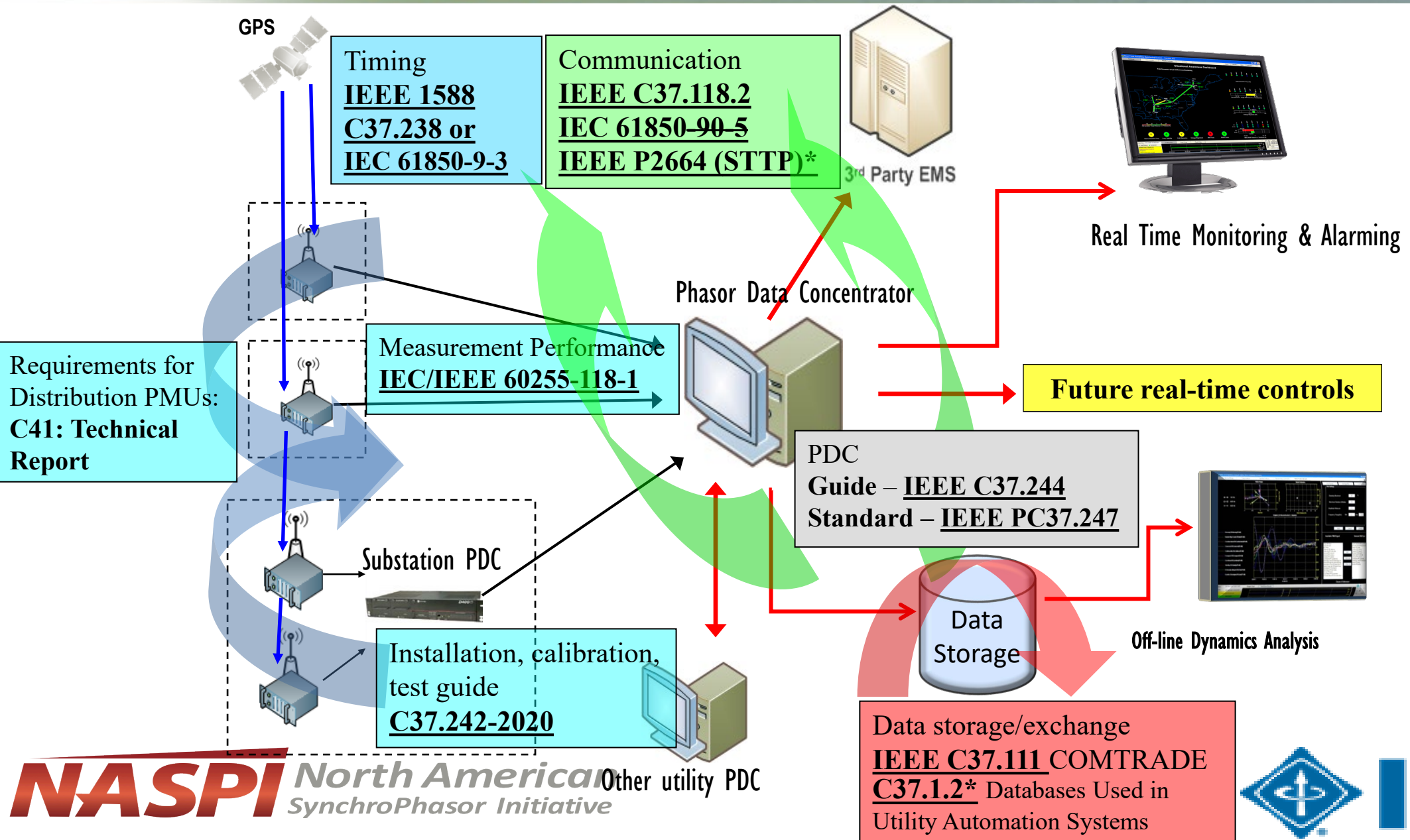
September 26-27, 2023

Presented by: Yi Hu

# IEEE PSRC/PSCCC Latest Meetings Report

- Two in-person joint PSRC and PSCCC meetings were held since NASPI spring meeting in April 2023
  - Las Vegas, Nevada, May 8-11, 2023, 260 attended
  - Myrtle Beach, South Carolina, September 18-21, 2023, >220 attended
- NASPI current activities as of April 2023 were reviewed and discussed at the PSRC WG C23 meeting
- The status of some PSRC/PSCCC activities reported today are up-to-date for attended September working group meetings with rest of them are up-to-date for May meeting

# Overview of Standards for Synchrophasor Measurement Systems



# Current Related Activities at IEEE PSCCC

Lead By	Activity Description	Status
PSCCC WG P1	Amend IEEE C37.233 “Standard Profile for Use of IEEE 1588 Precision Time Protocol in Power System Applications” – Adding a TLV to indicate the latest IERS-specified UTC Leap Second Event.	In comment resolution process after the recirculation
PSCCC WG P9	Revise the IEEE C37.118.2 standard “Synchrophasor Data Transfer for Power Systems”	In comment resolution process after completed the first-round ballot
PSCCC WG P10	Develop an IEEE standard P2664 for Streaming Telemetry Transport Protocol (STTP)	The first-round ballot is open until October 5, 2023
PSCCC WG P20	Joint Revision of IEC 61850-9-3 for timing requirements	Review/discuss latest draft revision
PSCCC WG S5	Revise IEEE C37.240 standard “Cybersecurity Requirements for Power System Automation, Protection and Control Systems”	Considered a motion to go inactive at the May 2023 meeting
PSCCC WG S8	Develop an “IEEE Guide P2658 for Cybersecurity Testing in Electric Power Systems”	Draft development
PSCCC WG S15	Develop an “IEEE Guide for Securing GOOSE and SV Protocols of IEC 61850 using IEC 62351-6 and IEC 62351-9”	In the draft development process

# Current Related Activities at IEEE PSRC

Lead By	Activity Description	Status
PSRC WG C23	Coordinate synchrophasor related activities at NASPI and IEEE	On-going
PSRC WG C40	Develop a tutorial for C37.247 “IEEE Standard for Phasor Data Concentrators for Power Systems”	Ready to present, looking for a venue
PSRC WG C41	Develop a report summarizing measurement performance requirements for PMUs in distribution system applications	Draft development
PSRC WG C46	Prepare a summary transactions paper for C37.242 “IEEE Guide for Synchronization, Calibration, Testing, and Installation of Phasor Measurement Units (PMUs) for Power System Protection and Control”	Address comments received from the C subcommittee review
PSRC WG H40	Develop an “IEEE Guide for Databases used in Utility Automation Systems” (C37.1.2) that has an annex on Synchrophasor Data Recording	Will form a ballot pool by January 2024
PSRC WG H50	Develop a report to document requirements for time sources (clocks) used in protection & control systems	Draft development
PSRC WG H54	Revise IEEE C37.111-2013/IEC 60255-24:2013 Standard for Common Format for Transient Data Exchange (COMTRADE)	Draft revision document development

# Current Of-Interest Activities at IEEE PSRC

Lead By	Activity Description	Status
PSRC WG C43	Develop a report on “Practical Applications of Artificial Intelligence and Machine Learning in Power System Protection and Control”	First version published 9/21/2023, intends to develop a second version
PSRC WG D45	Develop a report on “Protection Methods to Reduce Wildfire Risks due to Transmission and Distribution Lines”	Draft development
PSRC WG H44	Develop C2030.100.1 “IEEE Guide for Monitoring and Diagnostics of IEC 61850 GOOSE and Sampled Values Based Systems”	Worked on develop the first draft since May meeting
PSRC WG H45	Develop C37.300 “IEEE Guide for Centralized Protection and Control (CPC) Systems within a Substation”	In comment resolution process after the first-round ballot
PSRC WG H51	Revise IEEE C37.239-2010 “Standard on a Common Format for Event Data Exchange (COMFEDE)”	Did not meet in May.
PSRC WG H52	Revise IEEE C37.232 “Standard for Common Format for Naming Time Sequence Data Files (COMNAME)”	In the process of gathering inputs on areas to revise
PSRC WG I26	Recommend updating/expanding mathematical models of instrument transformers/transducers, including interface electronics such as merging units, for use in off-line and real time transient simulation.	In comment resolution after I subcommittee ballot

# Potential Activities for NASPI Task Teams to Consider

- Synchrophasor data transfer protocol selection and interoperability for data sharing
  - Multiple protocols will be available for selection once revised C37.118.2 and new 2664 are published, which will add to the current C37.118.2-2011 and IEC 61850 protocols
  - Situations will arise when data need to be shared among devices/systems using different protocols
- Use of Synchronized Measurement or Synchro-Waveform has been more frequently discussed at many IEEE conferences
  - While their definitions and requirements have not been clearly defined

# Any Recommended Activities for IEEE?

- IEEE PSRC and PSCCC are mainly responsible for developing standards that include IEEE standards, IEEE guides, and IEEE recommended practices.
- It is worth noting that PSRC and PSCCC also develop many technical reports that are made available at IEEE PES Resource Center
- Please reach out and discuss any potential IEEE activity recommendations from your task team – Will be happy to coordinate them with PSRC and PSCCC



# Next PSRC/PSCCC Meeting

Joint Technical Committee Meeting (JTTCM)

January 7 – 11, 2024

Sheraton New Orleans

500 Canal Street

New Orleans, LA

# Questions?

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