

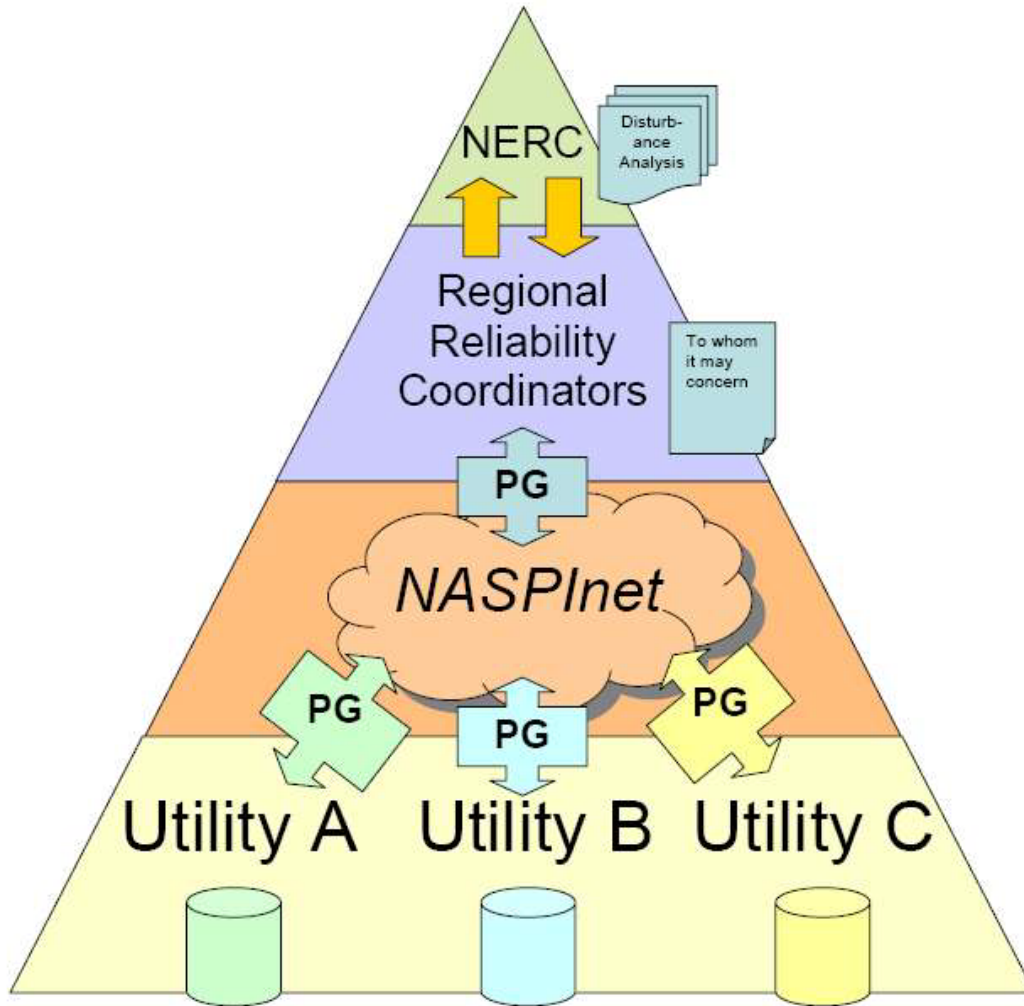


NASPInet Specification Project

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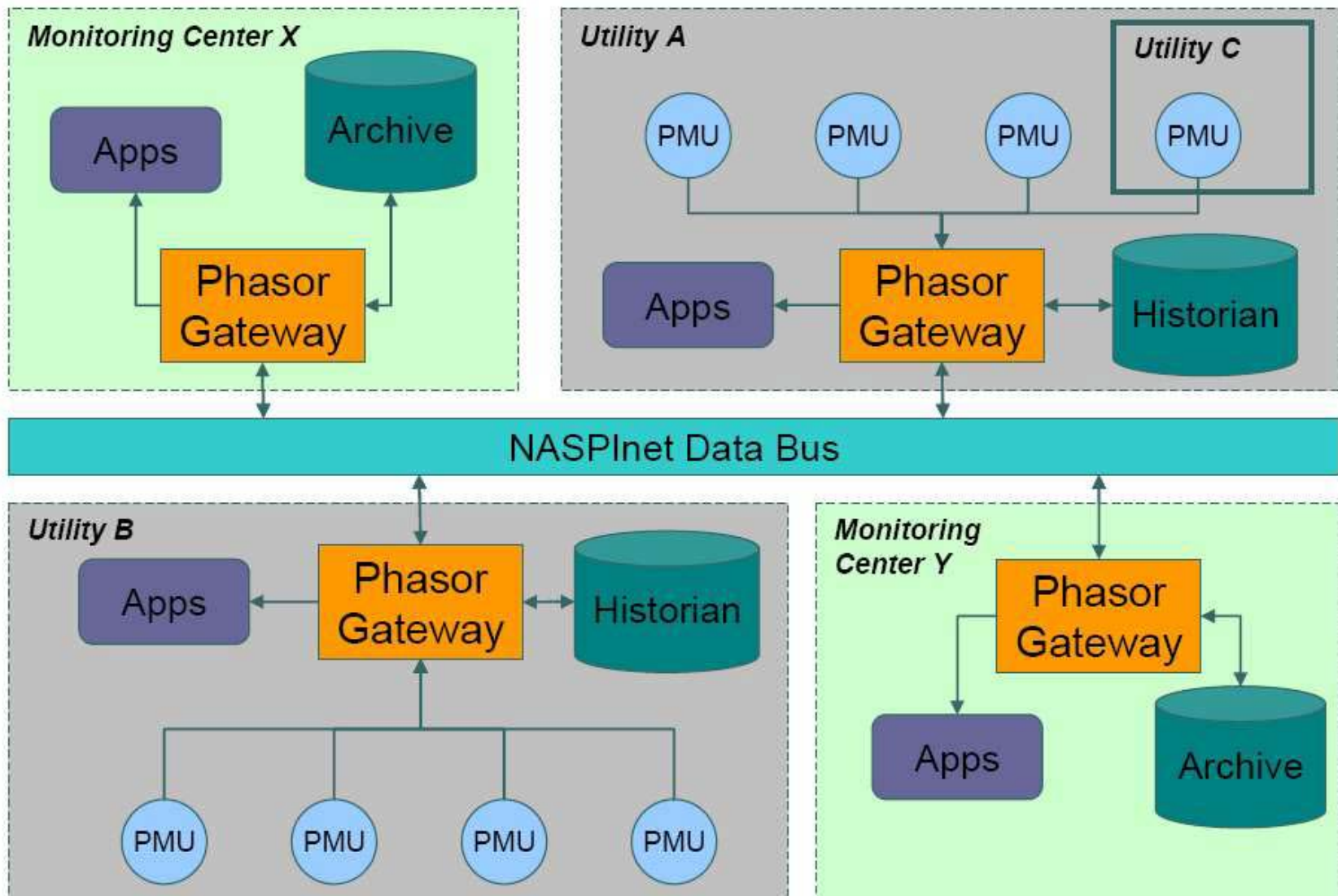
Charlotte, NC
October 16, 2008

DOE/NASPI envisioned NASPInet



- Synchrophasor data flows
 - Within NASPInet
 - Among connected utilities
 - Utilities to Regional Reliability Coordinators
 - Between Regional Reliability Coordinators to NERC (ERO)
- Will be used to connect tens of thousands and possibly millions of PMUs and support a wide range of critical applications in the future

DOE/NASPI envisioned NASPInet (cont.)



Phasor Gateway & Data Bus roles in NASPInet

■ Phasor Gateway (PG)

- Sole access point to DB for inter-organizational synchrophasor traffic
- Administer and disseminate cyber security and access rights
- Monitor and maintain data integrity
- Manage traffic format and timing compatibility
- Manage traffic priority according to Service Classes of the data

■ Data Bus (DB)

- Provide connectivity among PGs and other elements of the NASPInet
- Provide Quality of Service (QoS) for reliable and redundant delivery of real-time operational data
- Provide QoS conformance monitoring for Service Classes
- Enforce conformance with cyber security and access control policies

NASPInet services

- Name services
 - Component registration, and Name registration
- Cyber security services
 - Authentication, Key management, Non-repudiation, Data integrity, Data confidentiality, Access authorization and control, and Trust management
- Data and control services
 - Chain of custody, Connection management, and Configuration management

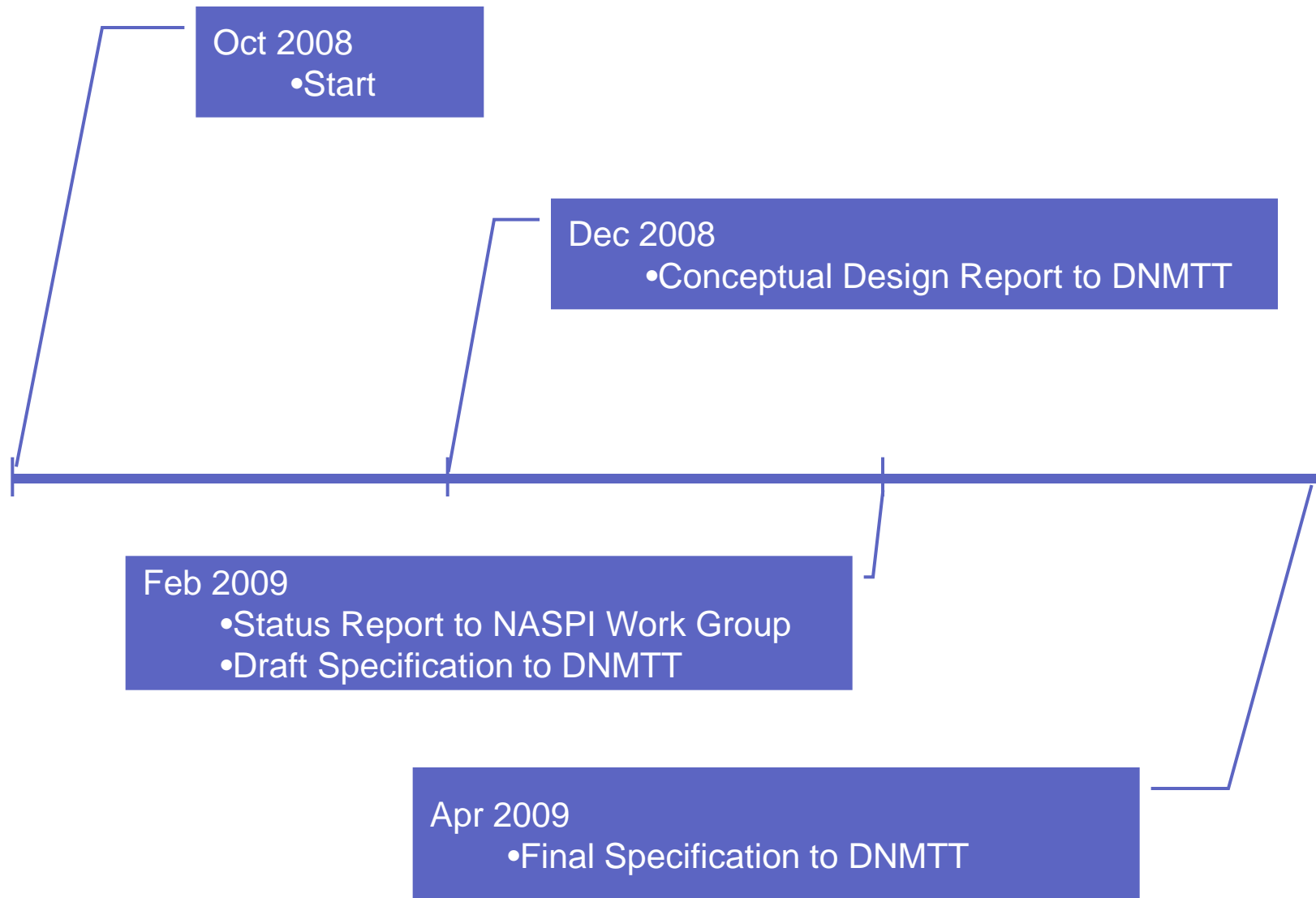
NASPInet characteristics

- A decentralized data publishing/subscribing system
- All transported data must meet their Quality of Service level requirements
- Publishers of data shall be able to maintain full control on the accessibility of their data
- Subscribers shall be ensured that data will only come from publishers they subscribed to
- Resilient to various types of cyber attacks and certain level of system failures
- Highly flexible, scalable, and manageable
- Vendor neutrality

Objective, deliverables & schedule of the project

- Objective
 - Produce detailed Phasor Gateway and Data Bus functional requirement specifications to be used by DOE in subsequent NASPInet procurement
- Key deliverables
 - Conceptual framework of NASPInet
 - Draft specifications for Phasor Gateway and Data Bus
 - Final specifications for Phasor Gateway and Data Bus
- Schedule
 - Started September 27, 2008
 - To be completed by April 27, 2009

Project deliverables forecast



Project approach

- Technical approach
 - Employ proven system design and specification development approach
 - Adhere to open standards
 - Adopt proven technologies and engineering solutions
 - Enable implementation flexibility
- Team and Stakeholder Input
 - Quanta Team Members: Hu, Tram, Martin, Uluski, Donnelly
 - Enspiria Team Members: Helmer, Cioni
 - Iowa State Team Member: Govindarasu
 - NASPI Interface: DNMTT
 - Outreach efforts: Project team will solicit input from utilities with phasor experience – especially if that utility is not represented on the DNMTT



Questions?