NASPI North American SynchroPhasor Initiative

Data & Network Management Task Team

June 12th, 2008

Seattle, WA

D&NMTT Charter

- **Data & Network Management Task Team** – The scope of the Data and Network Management Task Team includes the development of the hardware and software requirements to collect and store the PMU data at a master storage site(s). The group is also responsible for defining the communications requirements from the PMU(s) or local storage site(s) to the master storage site(s), and development of future network **architecture** options.

Seattle Team Composition

Dave Anderson	Washington St. University
Dave Bakken	Washington St. University
Dave Chassin	PNNL
J. Ritchie Carroll	TVA
Leonard Chamberlin	Entergy
Veselin Skendzic	SEL
Yuchen Lu	Siemens
Ankit Mishra	PJM
Lynn Constantini	NERC

Task team leadership:

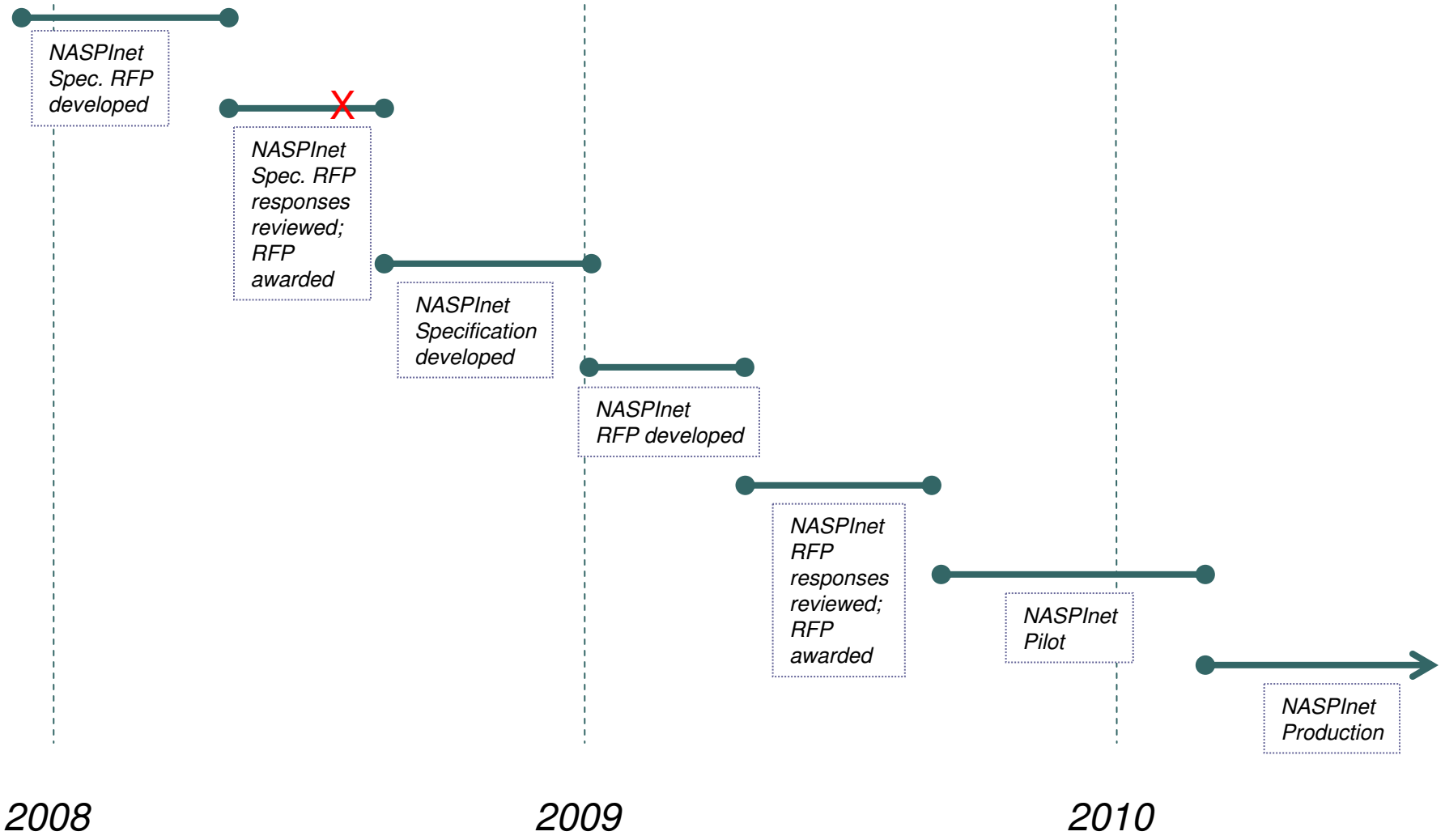
Paul Myrda	EPRI	pmyrda@epri.com
Kris Koellner	SRP	kmkoelln@srpnet.com

Recent Progress - RFP

- NASPInet specification RFP underway with DOE/NETL
- Statement of Work distributed 5/13
- Proposals due back 7/8
- Review in mid-late July
- Award/contract by late summer:
- Contractor status briefings slated for:
  - Charlotte meeting (Oct 08)
  - Phoenix meeting (Feb 09)

  - http://e-center.doe.gov/iips/busopor.nsf/1be0f2271893ba198525644b006bc0be/9e37759eefc5550b85257428005ea3ef?OpenDocument

NASPInet Longer Term View



Architecture Features

- [Massively] De-centralized
  - More onus on asset owner, less on a centralized host
  - Current system is not scalable
- Based on publish-subscribe model
- Multicast capability
- Differentiated classes for different application types
  - Not all PMU installations are considered equal
- Phasor Gateway concept introduced
  - “Internet routers on steroids for PMUs” – D. Bakken
- Access-control lists for each data set
- Latitude-longitude as a PMU descriptor
- Self-describing, common naming convention

Service Class Concept

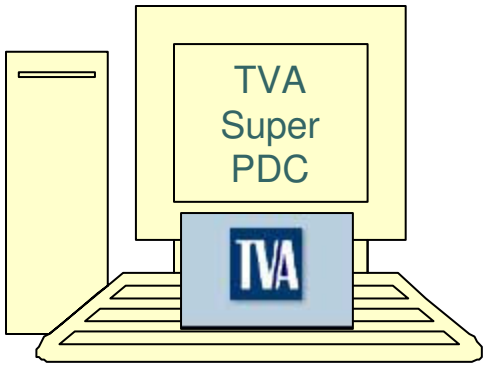
	Class A 	Class B 	Class C 	Class D 
Low Latency	●	◕	○	◑
Reliability **Availability**	●	◕	◑	○
Accuracy	●	◕	●	○
Time Align	●	●	○	◑
Message Rate	●	◕	●	◑

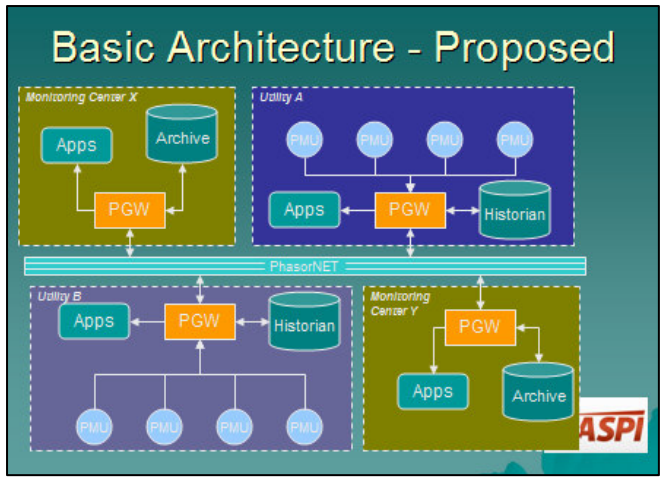
Legend:

- ○ Not very important
- ◔ Somewhat important
- ◕ Fairly important
- ● Critically important

Class E: Test/Research

Internet analogy

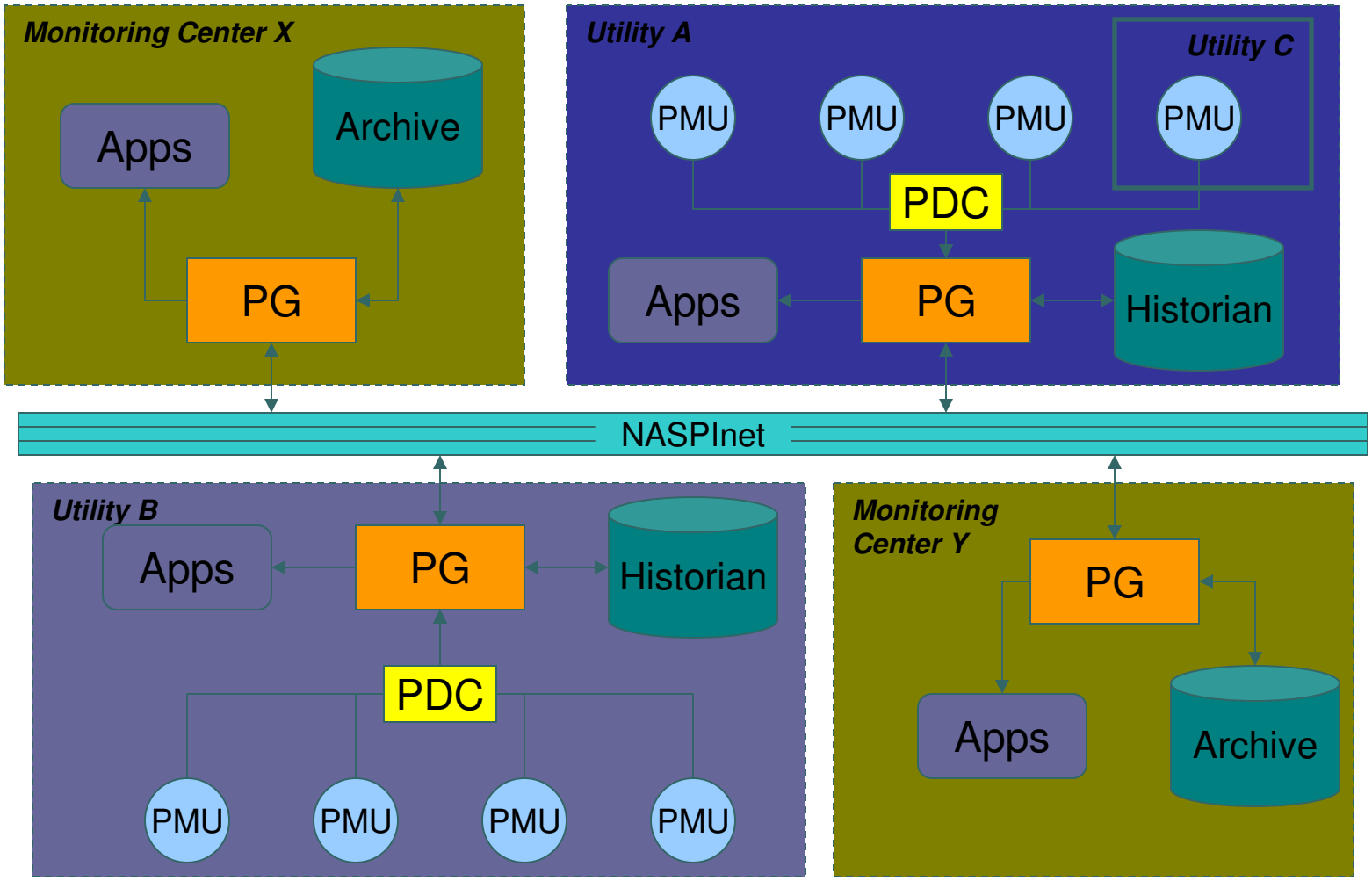




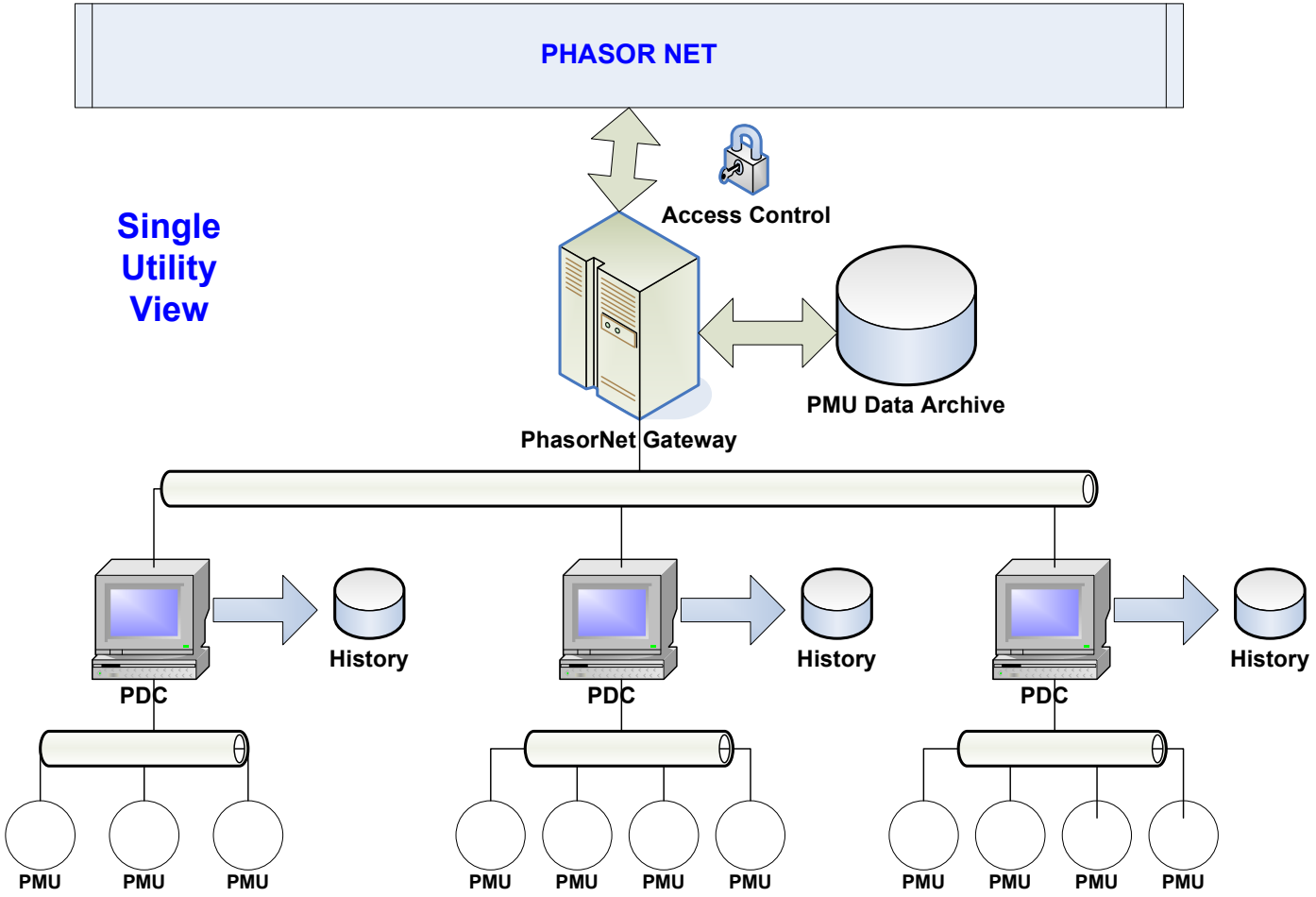
First web server at CERN;
Centralized,
Specialized,
Home grown

Today web servers are ubiquitous;
De-centralized
Standardized interfaces/protocols,
Vendor supported, outsourced

NASPInet Basic Architecture



Single Utility View



Phasor Gateway Role

- Principal access point for inter-organizational phasor traffic
- Access/admin rights enforcement
- Disseminates access rights
- Maintains data integrity
- Handles format compatibility issues
- Manages traffic class priority

Ongoing action items

Task	Lead
1. NASPInet specification RFP	NETL/RFP Team
2. NASPInet promotional article	Koellner
○ What it is, why needed	
3. Next generation PMU features	Khurana
○ To feed into standards cycle	
4. System conventions and utilities	Bakken
○ Naming convention for example	
5. System failure modes & effects analysis	Cherian
○ What fails, why, and how to handle	
6. Role of PDC in NASPInet	Chassin
○ Compare/contrast with PG function	

- DNMTT will be meeting via conference call to deliver these items by Charlotte (October 2008) - **join us!**
- http://www.naspi.org/meetings/dnmtt/dnmttmeetings.stm