

● ● ● | Data & Network  
Management Task  
Team

October 16<sup>th</sup>, 2008  
Charlotte, NC





# 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.



# Charlotte Team Composition

1. Dave Anderson Washington St. University
2. Dave Bakken Washington St. University
3. J. Ritchie Carroll TVA
4. Russell Robertson TVA
5. Paul Trachian TVA
6. Mahendra Patel PJM
7. Don Geiling DOE NETL
8. Shane Eaker Southern Co.
9. Yi Hu Quanta
10. Ken Martin Quanta
11. Matt Donnelly Quanta
12. Phil Overholt DOE

Task team leadership:

Paul Myrda

EPRI

[pmyrda@epri.com](mailto:pmyrda@epri.com)

Kris Koellner

SRP

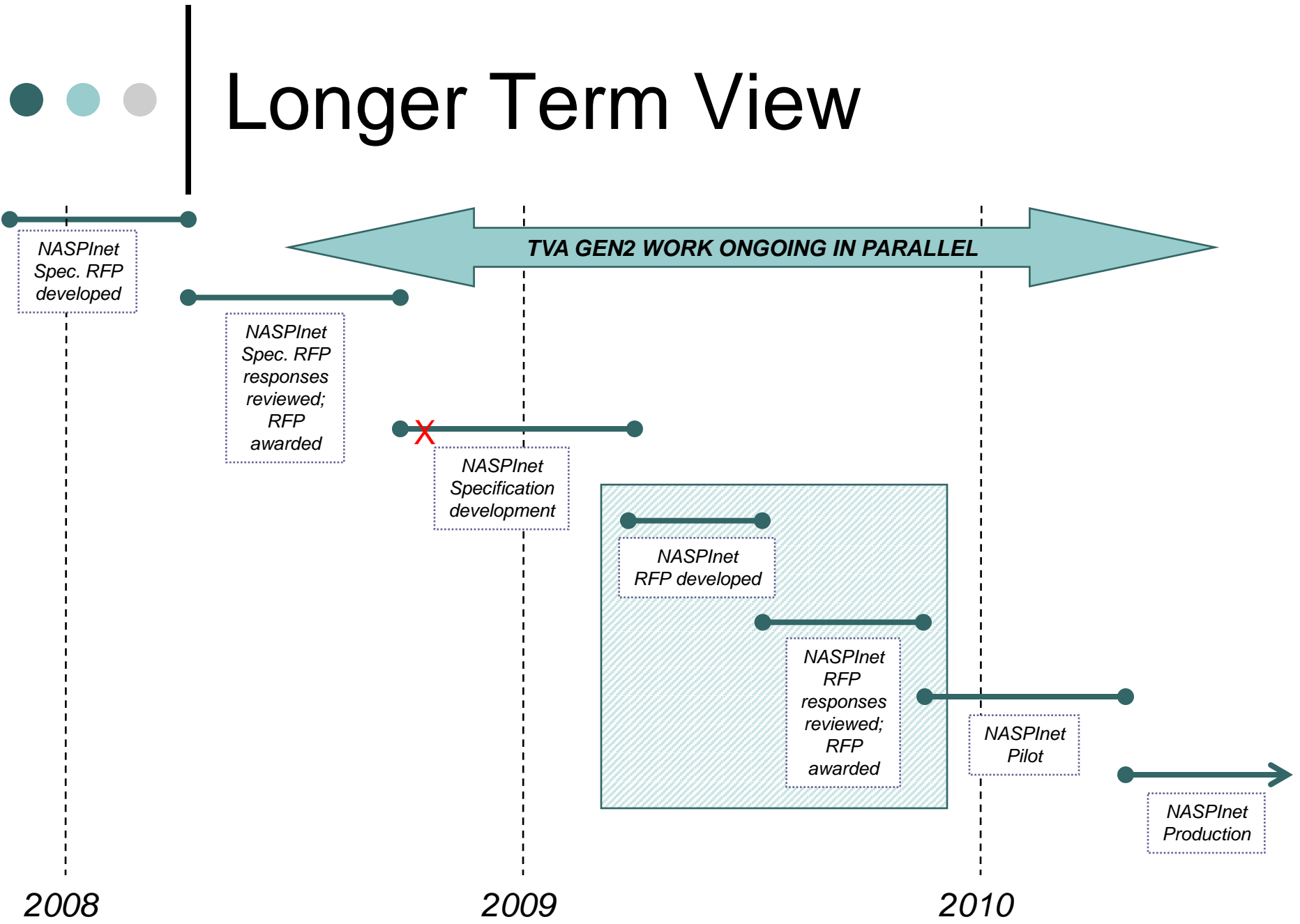
[kmkoelln@srpnet.com](mailto:kmkoelln@srpnet.com)



# NASPInet RFP Update

- NASPInet specification RFP awarded by DOE/NETL to **Quanta** on 9/27/08
- Upcoming milestones:
  - DOE Peer Review (DC) 10/21/08
  - DNMTT Conference Call 10/30/08
  - Conceptual Framework due 11/27/08
  - Draft specification due 1/27/09
  - NASPI Meeting (Phoenix) 2/4/09
  - Final specification due 3/27/09
  - Final delivery; end of contract 4/27/09

# Longer Term View





# NASPInet Timeline Draft

Current SuperPDC

12/31/2010

Gen2 PDC

NASPInet Spec

Gen2 PDC with NASPInet

4/27/2009

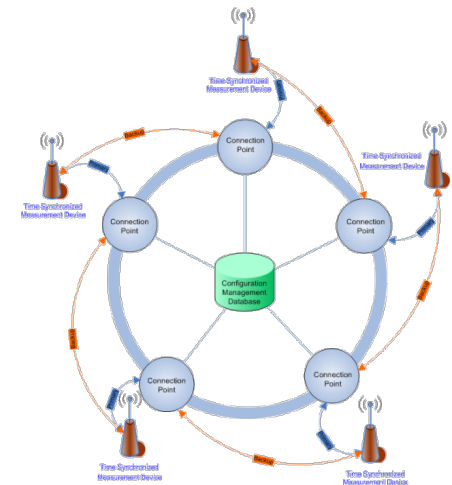
NASPInet Pilot

11/2009

NASPInet Rollout

# NERC Generation 2

Distributed phasor data collection and archival system.



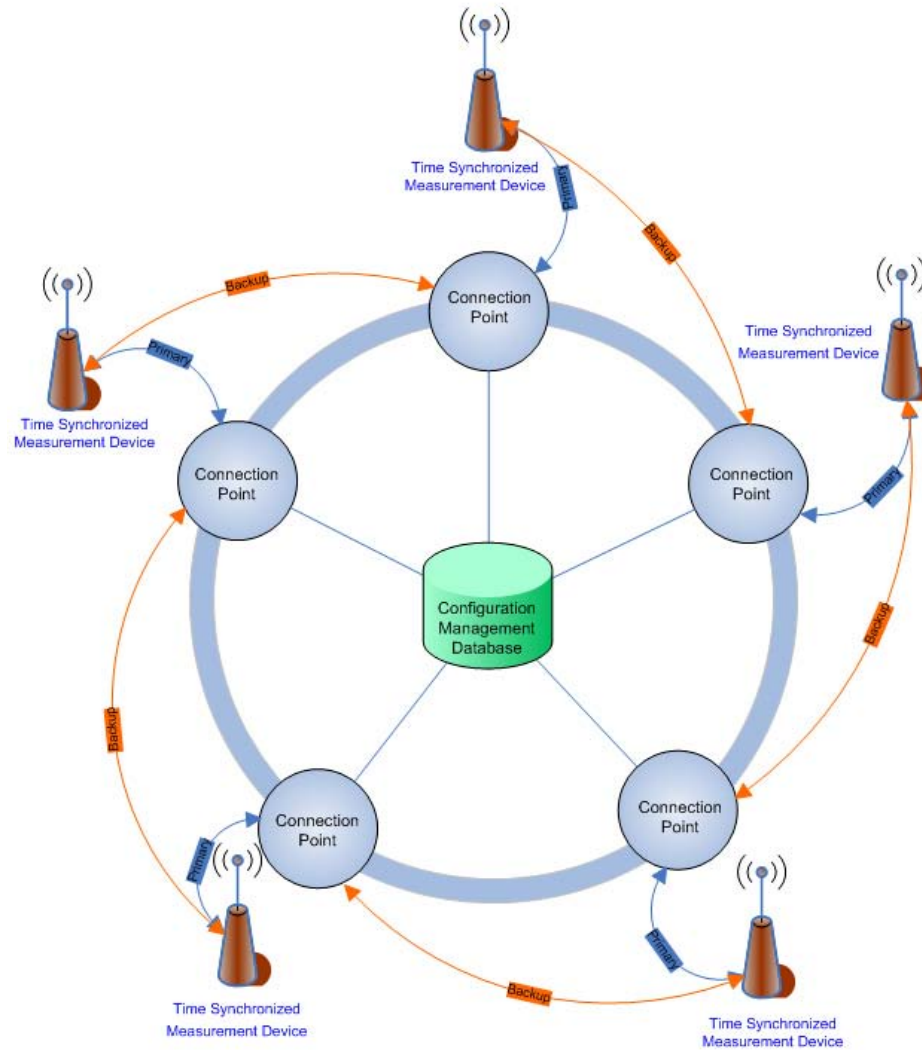


# 2<sup>nd</sup> Generation Objectives

- A production system for operational use
- Ownership and operating roles integrated with NERC/ERO functional model and reliability standards
- Continued support and coordination with NASPI
- Support of NASPI net interfaces as they are finalized.



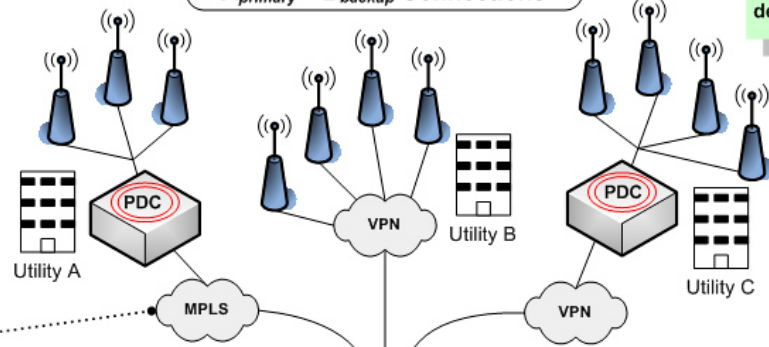
# Gen 2 - High Level Concept



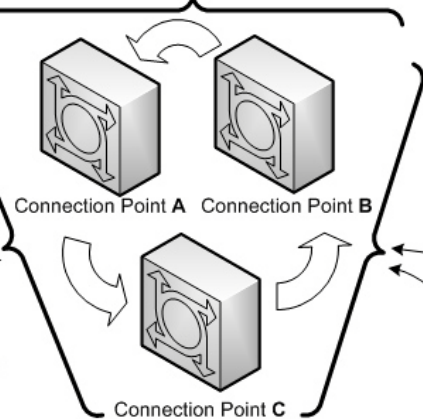
# Detail Architecture

Design overview of a multi-node system where devices send their data to at least two homes

**A<sub>primary</sub> – B<sub>backup</sub> Connections**



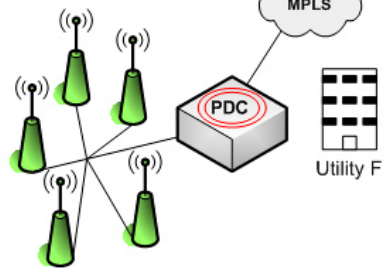
Note that all device connections (either directly to PMU or en-masse via PDC) occur through a SMS Proxy Service connection so that a single device feed can support data distribution to more than one connection point.



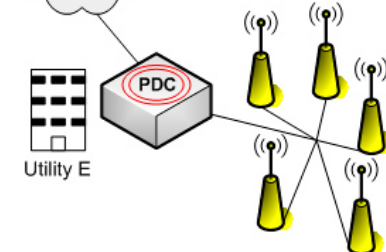
All historical data gets rolled off into permanent archive on an hourly basis

Central Archive

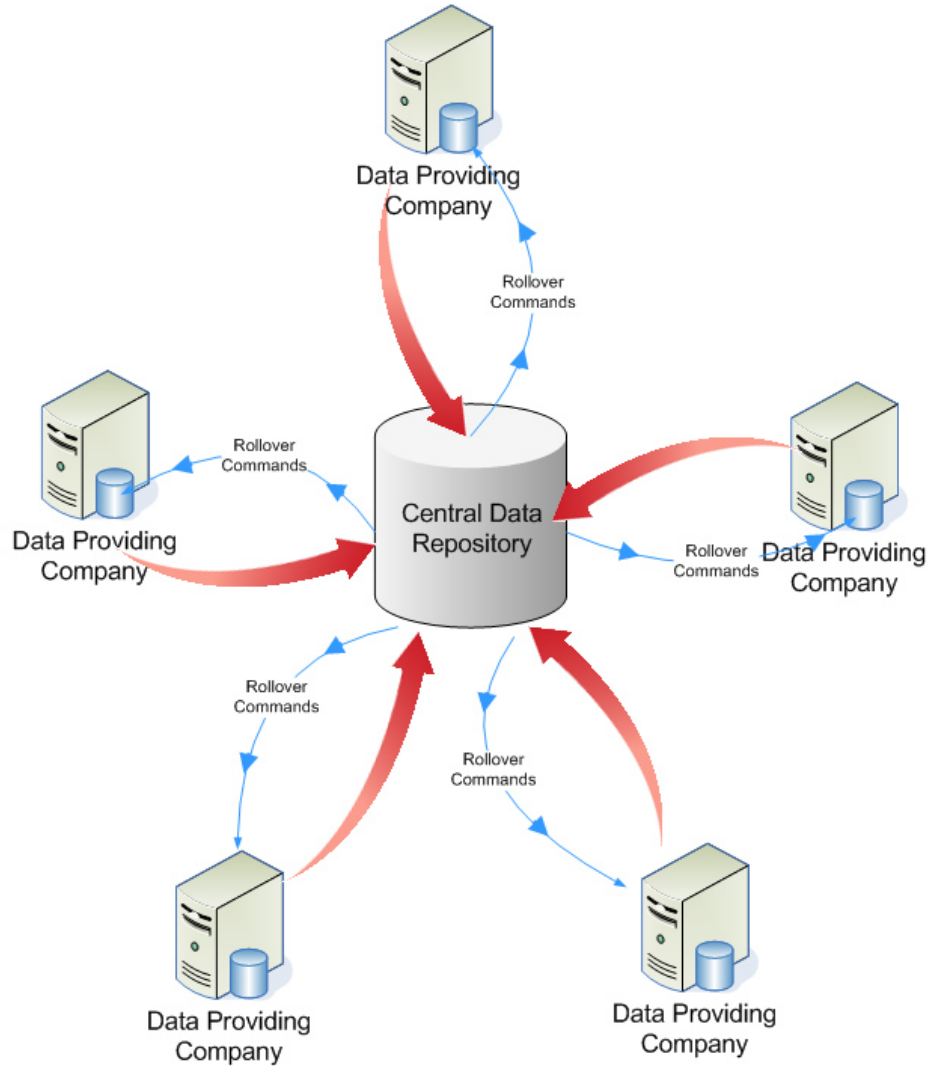
**C<sub>primary</sub> – A<sub>backup</sub> Connections**



**B<sub>primary</sub> – C<sub>backup</sub> Connections**



# Archive – Concept





# Gateways vs. Data Concentrators

## Phasor Gateway

- Sole access point for inter-organizational phasor traffic
- Access/admin rights enforcement
- Provides QoS and Cyber Security functions
- Manages traffic class priorities
- Data/task logging and failure mode event notification

## Phasor Data Concentrator

- Located on Asset Owner's network; subject to their rules, regulations & functional requirements
- Not specified or defined explicitly within NASPInet framework
- Time tag correlation
- Aggregates data from multiple PMUs
- Generally includes an archiving function

# Ongoing action items



## Task

1. NASPInet Draft Specification
2. TVA GEN2 Work
3. NASPInet promotional article
  - What it is, why needed
4. Next generation PMU features
  - To feed into IEEE standards cycle
5. System conventions and utilities
  - Naming convention for example
6. System failure modes & effects analysis
  - What fails, why, and how to handle
7. Role of PDC in NASPInet
  - Compare/contrast with PG function

## Lead

Quanta/RFP Team/NETL  
Ritchie/Robertson/Trachian  
Myrda

Khurana

Bakken

Cherian

Chassin

- DNMTT will be meeting via conference call to continue work on these items - **join us! Next call 10/30/2008 3:30 Eastern – 12:30 Pacific**
- <http://www.naspi.org/meetings/dnmtt/dnmttmeetings.stm>



Thank you!