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.
## Scottsdale Team Composition

1. Dave Anderson  
   Washington St. University
2. Dave Bakken  
   Washington St. University
3. J. Ritchie Carroll  
   TVA
4. Don Geiling  
   DOE NETL
5. Yi Hu  
   Quanta
6. Ken Martin  
   Quanta
7. Matt Donnelly  
   Quanta
8. Ken Hopkinson  
   Air Force Institute of Technology
9. Carl Hauser  
   Washington St. University
10. Reynaldo Nuqui  
    ABB
11. Scott Hilbelink  
    American Transmission Company
12. Matt Rhodes  
    SRP
13. Dave Norton  
    Entergy
14. Himanshu Khurana  
    UIUC
15. Jeff Dagle  
    PNNL
16. Sushil Cherian  
    Kalkitech

### Task team leadership:

- **Paul Myrda**  
  EPRI  
  pmyrda@epri.com
- **Kris Koellner**  
  SRP  
  kmkoelln@srpnet.com
TVA PCS

NERC PCS Overview

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

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

All historical data gets continually rolled off into permanent archive.

2004 - 2007
Generation 1 (SuperPDC)

2008 - 2012
Generation 2 (NERC PCS)

2012 - 2016
Generation 3 (NERC PCS + NASPInet)
NASPInet Spec Update

- NASPInet specification RFP awarded by DOE/NETL to Quanta on 9/27/08

- Upcoming milestones:
  - Rough draft spec review: 2/4/09
  - Valley Forge input gathering: 2/10/09
  - Final draft specification due: 3/27/09
  - NASPInet Review Team Call: 3/30/09
  - NASPInet Review Team Call: 4/20/09
  - Final delivery; end of contract: 4/27/09
NASPIInet Spec Top Issues

1. Data format for historical data – not constrained
   - Answer ID needs to match Question ID
   - Class (D) needs to be specified

2. Naming convention
   - Name service provides unique identifier – minimum 128 bit (GUID)
   - Meta data fields, incl. universal naming field (per outside directive)
   - Naming support down to the channel level, incl. digitals

3. Level of data granularity
   - Services will support signal level granularity
   - Data bus traffic will be C37.118 message format for streaming data

4. Security
   - CIP compliance
   - Must discern varied requirements across different classes
   - Access control vs. encryption

- Ensuring interoperability among vendor community, post-spec
- Quanta deliverable vs. next steps (pilot, procurement, etc.)
- Quantifying description of service classes (latency, availability, etc.)
Longer Term View

- NASPInet Spec. RFP developed
- NASPInet Spec. RFP responses reviewed; RFP awarded
- NASPInet Specification development
- NASPInet RFP(s) developed
- NASPInet RFP responses reviewed; RFP awarded
- NASPInet Pilot(s)
- NASPInet Production

TVA PCS WORK ONGOING IN PARALLEL
## Ongoing action items

<table>
<thead>
<tr>
<th>Task</th>
<th>Lead</th>
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<tbody>
<tr>
<td>1. NASPInet Draft Specification</td>
<td>Quanta/RFP Team/NETL</td>
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<tr>
<td>2. TVA PCS Work</td>
<td>Ritchie/Robertson/Trachian</td>
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<td>3. NASPInet promotional article</td>
<td>Myrda</td>
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<tr>
<td>- What it is, why needed</td>
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<td>4. Next generation PMU features</td>
<td>Khurana</td>
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<td>- To feed into IEEE standards cycle</td>
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<td>5. System conventions and utilities</td>
<td>Bakken</td>
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<tr>
<td>- Naming convention for example</td>
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<td>6. System failure modes &amp; effects analysis</td>
<td>Cherian</td>
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<td>- What fails, why, and how to handle</td>
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<td>7. Role of PDC in NASPInet</td>
<td>Chassin</td>
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<tr>
<td>- Compare/contrast with PG function</td>
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- DNM TT will be meeting via conference call to continue work on these items - **join us! Next call TBD.**

- [http://www.naspi.org/meetings/dnmtt/dnmttmeetings.stm](http://www.naspi.org/meetings/dnmtt/dnmttmeetings.stm)