Dan Brancaccio
Bridge Energy Group

Dan Brancaccio
dbrancaccio@bridgeenergygroup.com

NASPI Work Group Meeting
February 24–25, 2010
PMU

Minimum specifications

- C37.118 – 2005
- 30 / 60 Frames per second
- Firmware upgrade to C37.118-20XX
- UDP/IP Multicast (IPv6)
- Local Access
- NERC CIP-002 through CIP-009
PMU (continued)

- Minimum spec questions
  - A/D sampling rate
  - UTC Synchronization
  - Sample Rate
  - Gain
  - Phase Delay
  - Phasor inputs
  - Analog inputs
  - Digital / Status inputs
  - Commissioning (IEC 61850 SCL)
PDC

Categories

- Substation
  - Small number of PMUs
  - Rule Set and Threshold configuration
  - Local control and protection
  - IEC 61850 (Generic Substation Event GOOSE and GSSE)

- Control Center
  - Primarily concentrating data from other PDCs
  - More flexible routing configuration
PDC (continued)

● Specifications
  - C37.118-2005 (upgradeable)
  - UDP/IP multicast (IPv6)
  - Local and Remotely configurable
  - Latency < 10 milliseconds?
  - Concentrate 40 devices
  - Scale out
PDC (continued)

Questions

- IEC 61850 (Substation Configuration Language)
- How much can we ask a PDC to do
  - Gateway
  - On the fly routing changes
  - On the fly channel filtering
  - Down sampling
  - Protocol conversion
  - Commissioning
Questions
Dan Brancaccio
Bridge Energy Group

Dan Brancaccio
dbrancaccio@bridgeenergygroup.com

NASPI Work Group Meeting
February 24–25, 2010
Questions