



Networked Communication Fundamentals for Power System Protection and Automation

Agenda

- 8:30. Data Networks: *Mark Adamiak*
- Topologies (ring, bus, star)
 - OSI-7 layer model
 - Protocol concepts
 - Circuit and packet switching
- 8:50. Ethernet: *Mark Adamiak*
- Physical connections
 - Data frames
 - Collision and retransmission mechanisms
 - Bridging/Switching
 - Wireless interfaces
- 9:45 BREAK
- 10:00. TCP/IP
- Internet protocol concepts
 - Routing, routing tables
 - Address discovery
 - Loop issues
- 10:45. Communication Networks and Systems in Utility Automation – IEC 61850
- Abstract service models
 - Logical node concept
- 11:00 BREAK
- 11:15
- Internet-based communication
 - Peer-to-peer communications (GOOSE)
 - Substation configuration language - SCL
 - Integration system examples
- 12:00 LUNCH
- 12:45 Remaining Material Presentation and Hands-on Networking Session:
- Configuring a local area network - bring your own laptop

Note: Times are approximate.