IEC 61850 – A New Perspective in Substation Automation
Towards a Global Solution for...

...Substation Automation Systems

Experience in:
- International standards
- De facto standards
- Customer requirements
- Proprietary solutions
- System engineering

Goals:
- Interoperability
- Future-proof standard

“A solid background creates strong innovations”
A Breakthrough for Substation Automation

- One world
- One technology
- One standard

IEC 61850

“Combining the best properties in a new way...”
A New Standard for Open Communications

Connecting:

- Devices from different suppliers
- Present and future installations
- Engineering information from different tools from different manufacturers
- New communication technologies with existing applications
- Different and changing SA architectures

“Where there has been life – there has been communication”
The New Standard of Interoperability

Enables:

- Information exchange and cooperation between IEDs from different manufacturers
- Understanding of both structure and meaning of information

- Higher degree of flexibility than ever before, but it still matters which products you choose!

“Natural interoperability”
IEC 61850 allows you to benefit from innovations within Substation Automation:

- Flexible substation retrofits and extensions
- Easy to add on new functionalities based on ready-made definitions included in the standard
- Migration via gateway solutions

- Interoperability throughout the lifetime of the installation
The New Standard for Intelligent Investment

Cost savings from efficient IED engineering

- IEDs are engineered using manufacturer specific IED configuration tools
- Configuration tools translate the IED capabilities to the SCL (Substation Configuration description Language)
- SCL enables information exchange between IED configuration tools from different manufacturers
- SCL secures backwards compatibility between different versions of IEDs and IED configuration tools

"Details can make a big difference"
The New Standard for Intelligent Investment

Cost savings from efficient system engineering

- Information exchange between IED and system engineering configuration tools
  - IED capabilities from IED configuration tools to a system configuration tool
  - Substation description for system related IED configuration, for instance:
    - Communication addresses
    - Peer-to-peer communication paths
- Engineering from the Human Machine Interface with direct download to the IEDs without an intermediate cross-reference of data

“Details can make a big difference”
The New Standard for Intelligent Investment

Cost savings from efficient re-use of applications

- Upgrading
  - IED upgrade
  - Substation Automation system upgrade
- Extensions
- New installations

- Reduced engineering and testing

“Details can make a big difference”
The Standard for Future-proof Communications

IC 61850 separates applications from communication technologies:

- Applications are independent from the communication technologies
- Data and proven applications are safeguarded

- You benefit from the advantages of the evolving communication technologies

“Use what you have to get what you want”
The IEC 61850 supports optimization of SA architectures through:

- Free allocation of functions
  - Centralized and/or
  - Distributed
- Adapting the substation architecture in response to your specified requirements
  - Availability
  - Budget
The New Standard for Value

- Higher degree of flexibility through interoperability
- Taking full advantage of future innovations within Substation Automation and communication technologies
- Cost savings through reduced engineering and testing
- Substation architecture adapted to your requirements
A Global Standard Now Ready for You!

ABB provides devices and systems that support the IEC 61850

“New but proven from ABB”
ABB – Your Partner...

...for complete power system protection and automation

- More than 100 years of innovations
- World-wide accepted products and systems for any application
- Tools for efficient engineering, analysis and maintenance
- World-class services and support
- Open for system extensions
- Future-proof investment

...so it still matters which supplier you choose!

"ABB supplies value"
Demonstration at the Hannover Fair 2004

Transmission
- Net operation/Data maintenance

Distribution (Multi utility)

Planning, Maintenance, Service

Network Manager
- IDES
- Micro SCADA Pro
- GIS
- ERP
- Neplan

Operating level
- IEC61850-8 - LAN

Substation level
- RTU560 – Information node
- COM581
- IEC60870-5-101
- IEC60870-5-103
- IEC60870-5-104
- REC316
- REL511
- REF542+
- REF543
- REC316 +Sim
- REC542+