

Sol Lindström



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



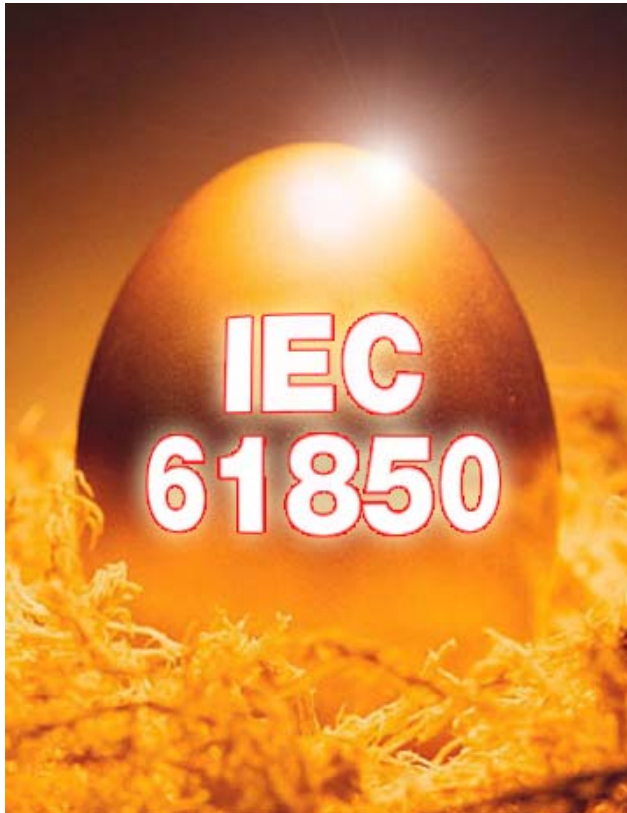
"A solid background creates strong innovations"



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



"Where there has been life – there has been communication"

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



The New Standard of Interoperability



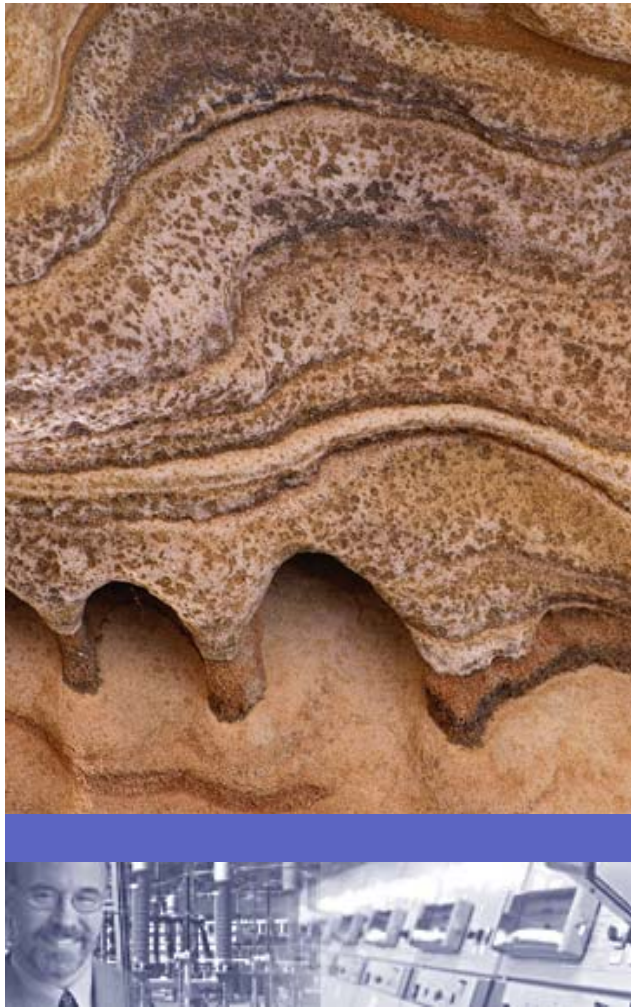
"Natural interoperability"

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!



The New Link Between Now and the Future



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

"Nature records the values of its history"



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



IEC 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"



Open to Changes in SA Architectures



"In natural evolution every change has its purpose"

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



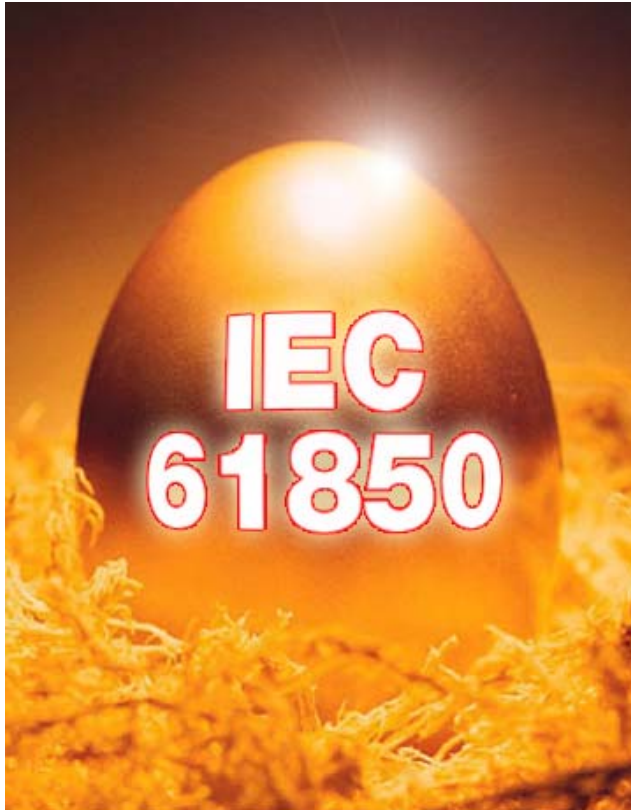
- Higher degree of flexibility through interoperability
- Taking full advantage of future innovations within Substation Automation and communication technologies
- Cost savings through reduced engineering and testing
- Substation architecture adapted to your requirements



"A new standard for value"



A Global Standard Now Ready for You!



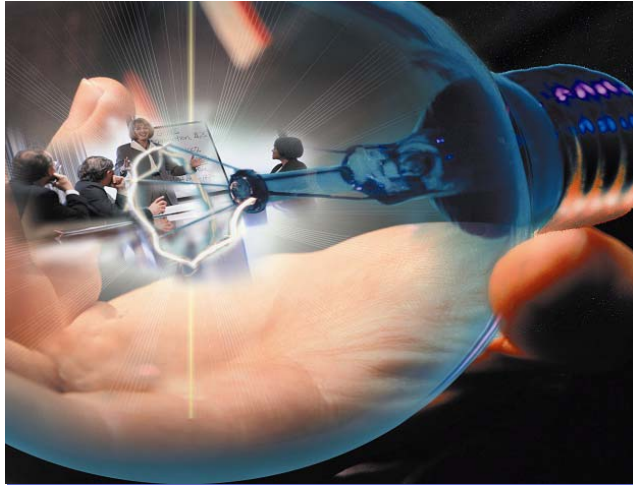
**ABB provides
devices and systems
that support the
IEC 61850**



"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

WEB connection
for diagnosis

IEC60870-5-101

IEC60870-5-104

RTU560 –
Information node

Operating level

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RTU560

IEC60870-5-101

COM581

Substation level

IEC60870-5-103

REF542+

IEC61850-8 - LAN

ZX2

REC316

REL511

REF542+

REF543

REC316
+Sim

