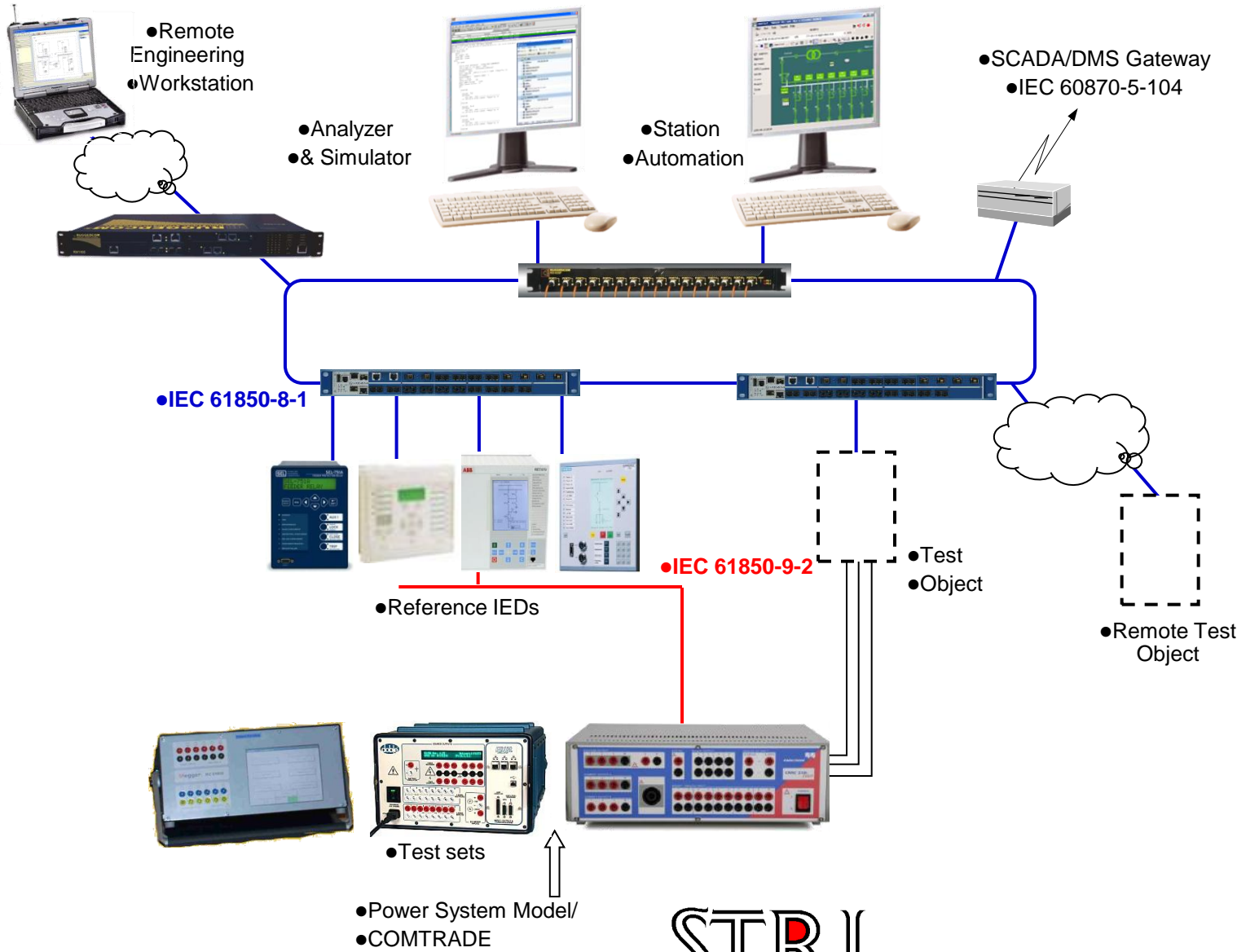


Power Utility Automation

- IEC 61850 vendor independent competence centre
 - Theoretical and hands-on training
 - Implementation strategy and road map
 - Specification and configuration support
 - Interoperability testing and commissioning support
- Power System Protection
 - Theoretical and hands on training
 - Specific application solutions
 - Relay coordination studies



STRI INDEPENDENT INTEROPERABILITY LABORATORY FOR IEC 61850



•Suppliers

- SCT SUBSTATION CONFIGURATION TOOL
- KALKI COMMUNICATION TECHNOLOGIES
- atlan ENGINEERING 61850
- RUGGEDCOM INDUSTRIAL STRENGTH NETWORKS
- HIRSCHMANN A BELDEN BRAND
- ABB
- AREVA
- SIEMENS
- SEL
- Megger
- doble
- OMICRON

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IEC 61850 Training content

Module 1 – Level 1
What is IEC 61850?
Why should we use
this global standard?



Module 2 – Level 2
What is IEC 61850?
Why should we use
this global standard?



Module 3 - Application
Where shall we use
IEC 61850?
Which architecture
is the optimum?



Module 4 – Hands on
How shall we use IEC 61850?
Who need to do what?



IEC61850 Training courses

Date	Location	Description	No. Partic.	Days
25-28 Nov 2008	Ludvika Sweden	Theory, application & hands-on training	35	4
3-6 March 2009	Frankfurt Germany	Theory, application & hands-on training	20	4
30 June- 2 July, 2009	Turin Italy	Hands-on training for TERNA	11	3
17-20 Aug 2009	Itaipu Brazil	Application and hands-on training for Itaipu Binacional	20	4
4 Sept 2009	Moscow Russia	Hands-on work shop	14	3
13-15 Oct 2009	Stockholm Sweden	Relay Protection Application	20	3
20-23 Oct 2009	Frankfurt Germany	Theory, application & hands-on training	25	4
24-25 Nov 2009	Stockholm Sweden	Hands-on training for Royal Institute of Technology PhD stud.	7	2
1-4 Dec 2009	Brisbane, Sydney Australia	Application and configuration	37	2x3
19 Jan 2010	Stockholm Sweden	IEC 61850 mapping to IEC 60870-5-104 for SvK	10	1
23-26 Feb 2010	Västerås Sweden	Application & hands-on work shop for ABB	20	4

IEC61850 Projects within T&D

Project	Year	Description	Participants
81688	2008	Optimized application of IEC 61850 in substations	Fingrid, Finland (TSO) Svenska Kraftnät (TSO)
82489-A	2009	Documentation strategies utilizing IEC 61850 SCL descriptons	Fingrid, Finland (TSO) Svenska Kraftnät
82489-B	2009	Development and verification of maintenance procedures for IEC 61850 stations	Fingrid, Finland (TSO) Svenska Kraftnät (TSO) Service providers
82489-C	2009	Development of security configuration checklists for IEC 61850 systems	Fingrid, Finland Svenska Kraftnät
82187	2009	Participation in IEC Technical Comittee 57, working group 10. (IEC61850)	On behalf of Svenska Kraftnät
82588	2009	Model for implementation of IEC61850 for Elforsk, the Swedish T&D utlity branchorganisation	Elforsk
83160	2009	Participation in FAT	Svenska Kraftnät
83229	2010	IAT, FAT & SAT procedure for IEC61850	Statnett, Norway
83064	2010	Participation in IEC Technical Comittee 57, working group 10. (IEC61850)	On behalf of Svenska Kraftnät
83167	2010	Review of protection and relayc oordination	Fortum
83173	2010	Coordination of Helinks Development for IEC 61850 S/S Documentation	Fingrid, Finland Svenska Kraftnät

Reference list for training, work shops or implementation projects

- ABB (SE)
- Vattenfall (SE)
- Megger (SE/DE/US)
- EI & Industriteknik (SE)
- Scottish Power (UK)
- Dong Energi (DK)
- VAMP (FI)
- Empower (FI)
- Fingrid (FI)
- Svenska Kraftnät (SE)
- Microsol (UK)
- Mälarenergi (SE)
- Statnett (NO)
- Royal Haskoning (NL)
- E-ON (SE)
- Vector (NZ)
- Schneider Electric (FR)
- Schneider Electric (USA)
- SEL (US)
- Joulz, HS Engineering (NL)
- Volta River Authority (GH)
- Copa-Data (AT)
- ANDRITZ HYDRO (AT)
- ARC Informatique (FR)
- Doble (NO)
- ProQPoint Consulting (DE)
- Hirschman (DE)
- Skellefteå Kraft (SE)
- ÅF (SE)
- Itaipu (BR)
- Terna (IT)
- Novintech (RU)
- Energosoyuz (RU)
- NTC Mehanotronika (RU)
- RTSoft (RU)
- NPP EKRA (RU)
- NPP Dynamics (RU)
- SSV Software Systems (DE)

Reference list for training, work shops or implementation projects

- Elia (BE)
- EAC (CY)
- Microsol (IR)
- Megger (SE)
- Rugged Com (DE)
- KUT (LI)
- Power Sense (DK)
- UAS (DE)
- Makker (IS)
- OVIT (HU)
- Vattenfall Services Nordic (SE)
- Vattenfall Power Consultants (SE)
- Power Control AB (SE)
- Royal Institute of Technology (SE)
- Areva T&D (SE)
- Power Control (SE)
- Powerlink (AU)
- ENERNEX (AU)
- Doble (Au)
- Schneider Recloser Sol (Au)
- ElectraNet (AU)
- CQ University (AU)
- University Auckland (NZ)
- Transend Network (AU)
- Transgrid (AU)
- Energy Australia (AU)
- IBM Global Services (AU)
- ELECTRO 80 (AU)
- Worley Parsons (AU)
- Alcatel-Lucent (AU)
- University of Adelaide (AU)
- Preemraf (SE)

Hands-on training in Sweden, Germany, Italy, Russia, Brazil & Australia



Itaipu busca norma IEC 61850

18/08/2009 | 11h13



Curso reúne 20 engenheiros de diferentes áreas da Diretoria Técnica e vai até quinta-feira (20).



IEC 61850 Training at TERNA (Turin, 30.6.-2.7.2009)





**IEC61850 co-operation with Nettedautomation
Karlheinz Schwarz for several training courses
(Photos from Russia and Germany)**



IEC61850 hands-on training in Itaipo, Brazil





IEC61850 training in Moscow, Russia



IEC61850 work shop for Swedish & Finish TSO Svenska Kraftnät & Fingrid



IEC61850 work shop for ABB February 2010



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