



IEC 61850

Specification, Design, Implementation, Testing

Choosing IEC 61850 as your engineering process is vital to achieve significant time and cost savings in current projects and in future refurbishments.

IEC 61850 is now common place and supported by many vendors. The objective is to successfully specify/select systems and IEDs through to designing systems for interoperability, maintainability, testing and augmentation. Hence it is essential to have a comprehensive knowledge of the Standard itself, how it is intended to be used, and just as importantly - how it is not intended to be used. This must be combined with understanding of the implication of applying Industrial Ethernet to Substation Automation Systems. This course is specifically "vendor-independent" to be able to focus on assessing solutions according to the Standard.

Presenter: Rodney Hughes

Rod is a well known protection engineer and manager with over thirty years experience in the Australian, New Zealand and international power industry. He has a wide range of expertise in the strategic direction of substations, power system protection and communication design at both technical and commercial levels.

He has provided protection training courses over many years and is a strong contributor to LinkedIn forums and an active member of CIGRE.

He has specialised in IEC 61850 since 2004 and has been the leading provider of highly valued IEC 61850 training courses in Australia and New Zealand since 2008.

Who should attend?

This course is designed for asset managers, engineering managers, engineers, technicians and project managers involved in substation secondary system specification, IED procurement, design, implementation, operation and maintenance. The seminar will be highly valuable for people involved with Protection & Control, Telecommunications, SCADA, Information Technology and Primary Plant.

Seminar outcomes.

This seminar will present IEC 61850 from the fundamentals through to detailed aspects of the engineering process and content as well as the mechanisms and processes to obtain the benefits of the business drivers and objectives for adoption.

Attendees will also receive a comprehensive reference manual of course material and references for further learning on the subject and the areas for continued skill development.

All Registrations Online — deadline 4th May:

<http://rodhughesconsulting.com/events/registration/?page=NZ2015&event=NZ2015>

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3-Day Course Content

Auckland 31 Aug-2 Sep 2015

The course program is based on a series of structured learning modules to build attendees understanding of the objectives and principles of the Standard through to practical implementation solutions.

The program includes coverage of Edition 1 and Edition 2 components of the Standard as well as use of vendor independent System Specification Tool and System Configuration Tool.

Overview

- * Objectives
- * Benefits

IEC 61850 Fundamentals

- * SCADA vs. SAS (more than DNP3)
- * Structure & Semantics
 - ◇ Logical Nodes, Data Objects, Data Attributes
 - ◇ Say "No" to GGIO
 - ◇ Common Data Classes
 - ◇ Logical Devices
- * Communication Mechanisms ('protocols')
 - ◇ MMS ACSE
 - ◇ GOOSE
 - ◇ Sample Values and Merging Units
 - ◇ Datasets
 - ◇ Commands
 - ◇ Reports
- * IED Compliance vs. Interoperability
- * Beyond just substation protection & control

SCL Engineering

- * Creating and using SSD/SCD/CID/IID/ICD/SED
- * Vendor-centric bottom up
- * System-centric top-down
- * System Specification
- * IED Specification
- * Meaning and Use of Conformance Certificates
- * PICS, MICS, PiXIT
- * Re-usable Engineering

Function implementation and modelling

- * Protection
 - ◇ O/C, Rev Block, Diff, Dist, CBF, PTRC
- * SCADA & Control
- * Automation
 - ◇ Volt Reg, A/R, Synchrocheck, UFLS
- * Condition Monitoring
- * Substation Metering & Recording
- * Smart Grid domain applications
 - ◇ Wind farm
 - ◇ Hydro
 - ◇ Distributed Energy Resources
 - ◇ Electric Vehicles
 - ◇ Photo-voltaic

The Ethernet Substation

- * Layer 2 vs Layer 3 (MAC vs IP address)
- * VLAN/Multicast Filtering
- * Priority Tag
- * Ingress/Egress Rules
- * Architectural Considerations
 - ◇ Station Bus, Process Bus
 - ◇ Duplication vs. Redundancy
 - ◇ National Electricity Rules
 - ◇ Star/RSTP/HSR/PRP
- * Security vs. Operation
- * Time Synchronisation
- * Testing IEC 61850 systems

Organisational Development Activity

- * Intellectual Property
 - ◇ policy, specification, standardisation
- * Intellectual Capability
 - ◇ tools, processes, documentation
- * Intellectual Capacity
 - * training and roll out
- * SAS rollout and scope evolution
 - ◇ technology impact plans
 - ◇ Merging Units and NCIT

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Registration Details

All Registrations Online — deadline 4th May:

<http://rodhughesconsulting.com/events/registration/?page=NZ2015&event=NZ2015>

Dates: Monday 31st August —Wednesday 2nd September 2015 8:30 am—5pm

Venue: Auckland, TBA

Course Fee:

- ◇ NZD 2000.00 per person
- ◇ NZD 1900.00 per person for Companies registering three or more attendees at the same time

Important Information

1. Registrations will only be confirmed on receipt of full payment prior to the event, unless by prior arrangement.
2. Immediate payment by Paypal preferred. Tax Invoice on request but must be paid in full prior to the event or may be refused attendance.
3. Rod Hughes Consulting Pty Ltd reserves the right to accept or refuse registrations at its sole discretion and without explanation.
4. Lunch as well as morning and afternoon tea is provided.
Please request any special dietary requirements at least three days prior to the event.
5. The course cost does not include travel, accommodation or other expenses as may be incurred by attendees, which will be the responsibility of attendees in all respects.
6. Attendance cancellation up to seven working days prior to the event will be subject to a 10% cancellation fee. Cancellations less than seven working days prior to the event will not be refunded and must be paid in full. Nominated attendees may be substituted. Attendance is for an individual for the full program and cannot be shared.
7. Course materials are only provided to the attendees on the day in hard copy only. Course content is subject to copyright.
8. The course is subject to a minimum number of attendees. Cancellation of the course for any reason by Rod Hughes Consulting Pty Ltd will be fully refunded.
9. The course is aimed at current engineering practice for systems integration and hence the program may vary slightly to the advertised content in order to present up to date processes.

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