

Do you see similarities or differences in the approach of Australian utilities to the implementation of IEC 61850?

PAC World Conference PPT

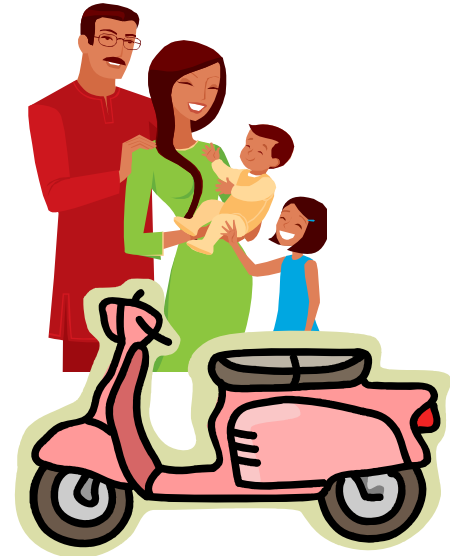
Rod Hughes, Rod Hughes Consulting Pty Ltd
22 June 2010, Dublin, Ireland

**Australia:
From wires to datasets**



Wires to Datasets – the Australian experience

- Specify compliant devices
 - No context of requirements
- Learn from first principles
 - Create a “sandpit”
 - Limited to IEDs provided
 - Even IEDs from same vendor sometimes not interoperable
 - “Building a sand-castle doesn’t mean you can build a castle”
 - Learn what you shouldn’t do
 - Not necessarily learn what you should do



Utility approach spectrum

- “Only we know our system – we’ll work it out for ourselves”
- We need experience to guide us
 - Buy a system
 - “...our standard template but using GOOSE”
 - “State-of-the-art substation with 200MVA capacity”
 - Create
 - Intellectual Property (specifications/designs)
 - Intellectual Capability (processes, tools)
 - Intellectual Capacity (skill development)

Engineering the system

- IED tools vs. System Integration tools
 - “SSD + ICD + Comm = SCD ” >> “CID1 + CID2”
 - Documentation outputs
 - (new CIGRE WG B5.39)
- Functional specification
 - Control & protection “what if ..”
 - Reliability objectives & FMEA
 - Is it really duplicated & segregated?
 - Isolation
 - *“The relay & the HMI are complex beasts and to expect field operators to pick there way through the maze is unreasonable and risky...we will want a mechanical, visual device to mimic the functions of links for isolation purposes”*
..Executive Manager Transmission



Projects to watch

- Transpower (transmission – NZ)
 - RTU only replacement project – legacy interfaces
- TransGrid (transmission – Aus)
 - Hardware specs
 - Tool specs
 - System solution development in 2011
- Integral Energy (sub transmission – distribution Aus)
 - “No wires between panels or IEDs”
 - multivendor station bus No.1 and No.2 systems
 - No.3 multi-vendor ‘9-2’ switched network process bus
- Energy Australia (sub transmission – distribution Aus)
 - “state of the art substation”
- Transmission utility process bus trial (transmission – Aus)
 - Australian & international sensors

Need an answer

E-mail: rg@rodhughesconsulting.com
Direct: +61 8 7127 6357
Mobile: +61 419 845 253
Skype: rodhughes-consult
Address: PO Box 757
Blackwood
SA 5051
Australia



- 🔗 IEC 61850 and associated standards
- 🔗 Automation & Control
- 🔗 Protection design 11kV to 500kV
- 🔗 Training
- 🔗 Cyber Security
- 🔗 Smart Grid and Smart Metering
- 🔗 Telecommunications
- 🔗 Substation LAN

Rod Hughes

- >Over 29 years in protection engineering
 - GEC, ALSTOM: P&C Engineer, Engineering Manager, General Manager – Australia
 - ALSTOM: P&C Product Director - France
 - ElectraNet: Protection & Telecoms Manager, Plant Strategy & Technology Manager
 - SKM: State Manager - South Australia
 - AECOM: Technical Director - South Australia
 - **Rod Hughes Consulting Pty Ltd: Managing Director & owner**
- CIGRE
 - AP B5 Protection & Automation 1985 - 1998, 2001- current (Convener since 2004)
 - AP D2 2001 – 2004 Information & Telecommunications
 - Technical Brochure 326 Implementation of IEC 61850
 - WG B5-39 Documentation for Digital Substation Automation Systems – Convener
 - South East Asia Protection & Automation Conference
- UCA® International Users Group
- IEEE Power Engineering Society
- Publications and Technical Papers
- Training courses – Protection & IEC 61850

