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Avoiding ENSTO-E Experiences in IEC 61850 deployment

Paper Reference
129_CH_Brunner-Hughes

Author	Company	Email	Presenter
Christoph Brunner	it4power LLC	christoph.brunner@it4power.com	
Rod Hughes	Rod Hughes Consulting	rgh@rodhughesconsulting.com	✓

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ENSTO-E European TSOs

- Europe - first deployments of IEC 61850
  - 8 years experience
  - Laufenburg
  - ...
- ENSTO-E 41 Transmission utilities
- Largely vendor specific projects initially

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Letter to the industry
http://tinyurl.com/ENSTO-E-Statement

- Instantaneous interoperability between suppliers
- Engineering efforts
  - mature standardized third-party tool
    - market to clearly move to a top-down approach
  - TSOs are unable to cope
    - technical knowledge and skills that are required
- Interoperability over the lifetime

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Punch List
http://tinyurl.com/ENSTO-E-Report

- Specific issues to be resolved
- Most categorized as :
  - part of the requirement spec of the utility
  - Vendor implementation issues – need to enhance the conformance testing
  - Clarifications in the standard required
  - Standard to limit options and / or to define profiles

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TF user feedback

- Note: "50%" of the issues are due to incomplete specifications of the users, incomplete implementations in products and lack of knowledge of the key issues of the standard with limited (no) investment in tools

- TC57 / WG10 Task Force created for user feedback to the Standard
  - Not TISSUE database
  - Includes ENTSO-E punch list

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Deployment Strategies

- Specify what is required
  - Detail
- Engineering Process
  - 3rd Party Tools investment – they do exist
  - Integration
  - Management
- Training
- Project planning
  - "3 days to write a specification" !!!!!

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Required Knowledge

- Project Management
- Function Modelling
- The engineering process
  o Role of different tools
  o Scope and purpose of different files
    ▪ SEAPAC 2011 37D
- The elements of the IEC 61850 data models
  o Specification of requirements
- The principles of the information exchange – purpose of control blocks and data sets
- What Conformance means/does not mean

| Part 4 | Part 5 | Part 6 | Part 7 | Part 8/9 | Part 10 |

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Proper Specification

- All IEDs shall be compliant ?
  o Which Parts?
  o Which Edition?
  o Which models?
  o Which options? .....
- GOOSE shall be used
  o To do what with what other IEDs?
  o Avoiding GGIO routing?
    ▪ TISSUES 864, 880, 900
  o What about MMS?
  o LAN architecture? .....

- Don't expect to get what you don't specify!

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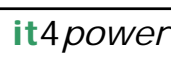AP B5
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Investment

- Tools
  - o Vendor Independent
  - o Vendor specific
- Process development
  - o Multiple engineers in multiple departments in multiple organisations over multiple stages
- Solution development
  - o Proof of Concept
  - o Proof of Interoperability
  - o Usability
  - o Standardisation

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Thank You

Hold that thought for question time at the end of this session ….