

ENERGY

Latest developments within the IEC TC57 WG10 and the UCAIug

Niels Heijker

First... Who am I?

Niels Heijker

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Expertise:

- Embedded engineering
- Software development

Experience:

- Conformance tests for IEC 61850 and DNP3.0
- (Test tool developer)
- IEC 61850 Trainer for utilities and manufacturers
- International business development (China, Russia, etc.)



Second, what happens in de WG10?

WG10(1/2)

- Task forces 61850-90-xx
 - Parts 11-20, FACTS, Power quality metering, alarm handling etc.
 - Part 19, Role Based Access Control
- Part 61850-7-500, how to use concepts of IEC 61850
- Edition 2.1, Tissues, UML, parts 6-7-2, 7-3 and 7-4
- IEC 61850-7-6, guideline for Basic Application Profiles
 - improve interoperability
 - improve effectivity in engineering
 - How to do this in the same way?
- WG17: IEC 61850-8-2 mapping on web services

WG10(2/2)

- User feedback task force
- PRP/HSR and PTP 9-3
- Part 61850-80-5 Modbus mapped to IEC 61850
 - many manufacturer already implement Modbus-IEC 61850 conversion functionsHow to make it interoperable?
 - provide basic conversion rules
- TF 90-10: Using IEC 61850 for FACTS, HVDC and Power Conversion data modeling

Last, what happens in the UCAIug?

UCAIug: Interoperability IOP

- Important: IOP in 2 weeks!
 - Interoperability for Manufacturers
 - Every 2 years, this year in New Orleans (USA)
 - Different topics (MMS, GOOSE, SCL, SMV, R-GOOSE, etc.)
 - Informal event
 - Followed by WG10 meeting

Purpose of the IOP

- To provide an environment that allows for “implementation” and standard improvement as well as learning.
 - Implementations may be products or prototypes at the discretion of the vendor.
- To look for and cause failures. It is through analysis of the failures that the standard, implementations, and industry will be improved.
- Give a neutral technical snapshot of the products and tools to document (by confirming/informing/extending) the interoperability issues mentioned by some end-users (i.e. ENTSO-E, Entergy, SCE)
- Suggest solutions and coordinated responsibilities (i.e. UCA, IEC)

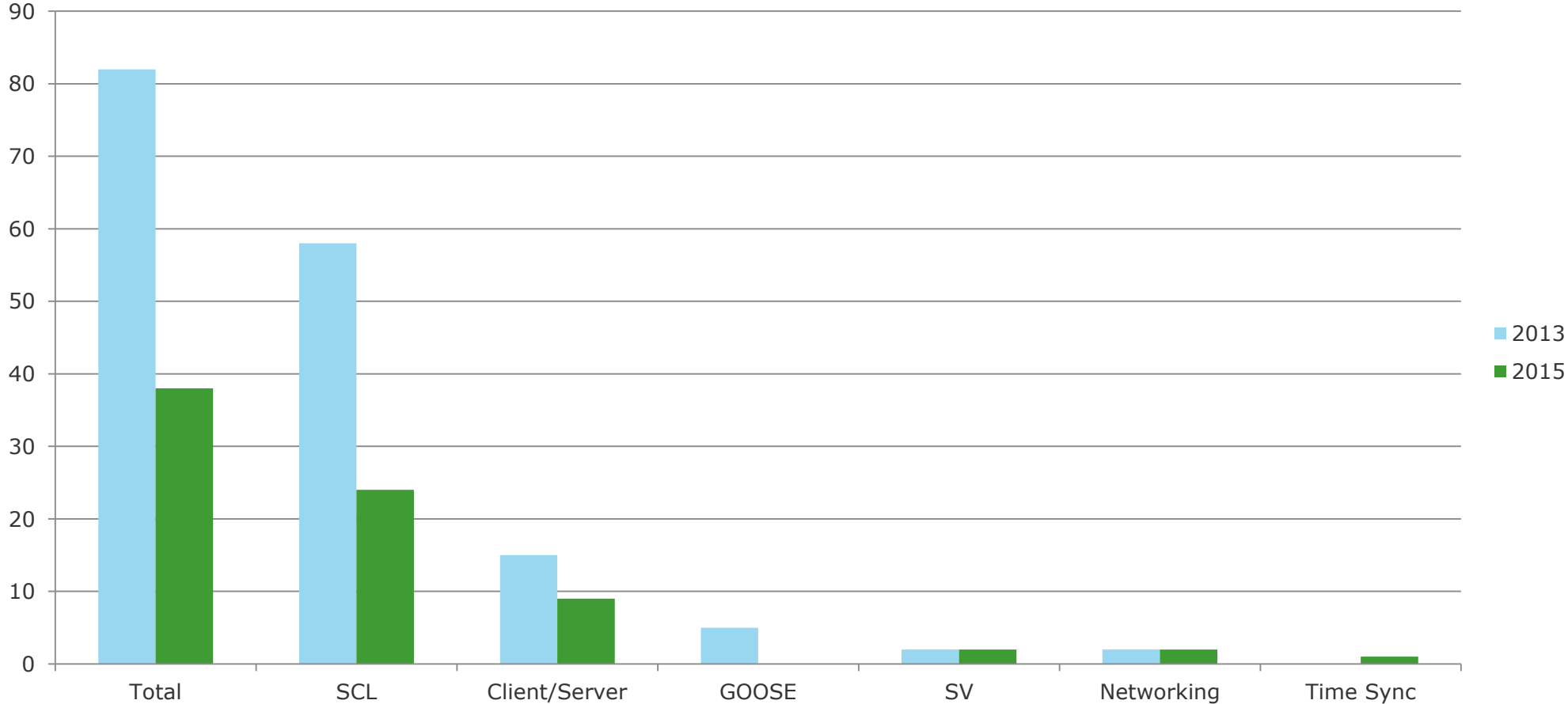
IOPs bring about Standard Improvement

Testing Area	Misunderstanding	Clarification	Technical	Open as of 02/2016	Still Open
SCL	8	3	11	6	0
Client Server	2	2	2	3	0
Sampled Value	1	2	0	0	0
Time Sync	0	1	0	1	0
HSR and PRP	0	1	1	1	1

Resolutions and improvements provided by IEC TC57 WG10 and IEEE

Will eventually be technically addressed by IEEE

Past IOPs have done their job



Lessons learned from IOP

- In 2005-2009 many mismatches between SCL and the IED causing interoperability issues
- In 2013 the UCAIug interoperability test showed
 - Exchanging SCL files cause many issues, most are being solved in 2014
 - Bottom-Up engineering is common practice
 - Top-Down engineering is problematic
- In 2015 the UCAIug interoperability test showed
 - SCL tool interoperability has improved a lot
- In 2016 Engineering Tools can and are certified using SCL tool conformance test procedures developed by DNV GL and UCAIug

Thank you

Niels Heijker

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