OpenSCD proposal

Open Substation Communication Designer

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About Alliander and me

Electricity grid length
92,000 km
91,000 km in 2019

Gas grid length
42,000 km
42,000 km in 2019

Ing Sander Jansen
Product Owner virtual substations
CoMPAS TSC member
The problem with current IEC 61850 SCL tooling

The challenge

- 61850 engineering process varies
- Desktop (exe files) oriented
- Limited choice in IED vendor agnostic SCL tools
- Not built for integration
- Vendor lock-in (Tool vendor decides on development)
- Variation in tool implementations
- Limited flexibility (e.g., limited automation)
Solution

- Open-source approach
- Plug-in/flexible architecture
- "Easy" to use
- Browser application
- Ability for local install
- Plug-in architecture
OpenSCD vs CoMPAS

**OpenSCD**
(Browser) front-end only
Many plug-ins already available (also outside the project)

**CoMPAS**
Using OpenSCD as front-end
Add’s backend services e.g.:
  - Databases with SCL files
  - IEC CIM import
  - Auto allignment (PowSyBl based)
  - Libary (java) to edit SCL files

We would like to keep the projects separate (for now) in order to benefit from the OpenSCD promotion and different focus
Why joining the LF energy?

• Neutral positioning
• Being part of a larger community
• Infrastructure e.g. website, tooling
• Governance
• Promotion support
• Legal infrastructure
LF Energy substation architecture

Merging unit / IO / Digital instrument transformer
- IEC 61869-13
- IEC 61869-9

Substation functions e.g. protection

Gateway

61850 processbus

61850 stationbus

61850 SCL

Central systems
Current features
Current capabilities of LF energy CoMPAS

- Basic SCL editing
- GOOSE/SV
- Reporting
- 104 support (80-1)
- Compare IED's/SCL files
- SCL cleanup
- Library for SCD generation process
- Services section

- Many more..
Contributors

Who can contribute?

Who are the potential benefactors of this project?

- DSO's - Distribution System Operators
- TSO's - Transmission System Operators
- IED Vendors
- Engineering/integration companies e.g. building systems for DSO/TSO etc.
- Other IEC61850 SCL users (e.g. in the DER control domain)
Where to start?

**LF energy slack**: #openSCD

Github.com/OpenSCD

lists.lfenergy.org CoMPAS

Youtube tutorials
Thanks for your attention!

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