PowSyBl Roadmap

Documentation

- Improve our functional documentation
- More and more user stories
- More and more tutorials
- A more logical plan for the website

Demonstrator

We have started to create a web-based demonstrator packaged as docker images to show the world what PowSyBl is: https://demo.powsybl.org/study-app/ . It is available for everyone to experiment, with some great features:

- Import networks (we are working on TSOs part of the European network)
- Display networks on a map using CIM-CGMES Geographical Location (GL) profile
- Display substations (single line diagram) using CIM-CGMES Diagram Layout (DL) profile
- Apply simple modifications to the network topology (tap changes, setpoints changes, status of switches)
- Run power flows and display the calculation results
- Run security analyses and display violations on the network map and in a synthetic table

Converters

CIM-CGMES

Importer

- End of basic importer (operational limits and HVDC conversions improvement)
- Diagram layout (DL) profile management
- Geographical location (GL) profile management
- Generation and Load Shift Keys (GLSK) and Contingency list, Remedial Actions and additional Constraints (CRAC) management
- Merging through the merging view

Exporter

- Incremental export: Export back to a CIM-CGMES file, a network imported from a CIM-CGMES file.
- Full export: Export to a CIM-CGMES file, a network imported from any supported format.

XIIDM

Importer

- Version management (backward and forward compatibility).
- The C++ implementation is almost finished and will be in open source in February 2020. Then, we have planned to work on version management.

Exporter

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UCTE

Exporter

- Done !

JSON

Importer

- to be done

Exporter

- to be done

Grid modeling

The backward compatibility management has been done last year. We have now a strong basis to change the core network model:

- Three windings transformers modeling improvement: almost done.
- HVDC modeling improvement
- Operational limits modeling
- Linear and non linear shunt compensators
- Extensions for automatic generation control and for monitoring
- DC network modeling (maybe for 2021)
- Merging view when several networks are merged.
- A listener that records events occurring on the network has been implemented. We have planned to functionally validate it.

Simulators

- Integration of Dynawo: work in progress.
- Improving our open load flow used for tests, experimental and collaboration purposes. For more information, please read the README file.

Data management

- A persistent implementation of the network core model (IIDM) based on Apache Cassandra
- A persistent implementation of the triple store
- A Persistent implementation of the extensions
- A permissions and quotas management in the AFS
- A log collector in the AFS

Viewing

- Voltage level view: display clean, pretty and interactive drawings of voltage levels
- Substation view: display clean, pretty and interactive drawings of substations
- Improvement of the graphical charter of electro-technical components
- A geographical web view of the network

Grid Study Environment

- A nice view of dependencies between objects
- Provide the new features of AFS in the Grid Study Environment

High level services

- Package and distribute computation services based on spring, as docker images

Functional tests

We plan to validate a CIM-CGMES based workflow, focusing on the functional validation, the computation time and the memory consumption. The CIM-CGMES workflow consists in importing networks (also called Individual Grid Model), running a power flow, merging the networks (topologically at least), running a power flow on the merged network (also called Common Grid Model), applying modifications and exporting the updated network(s).