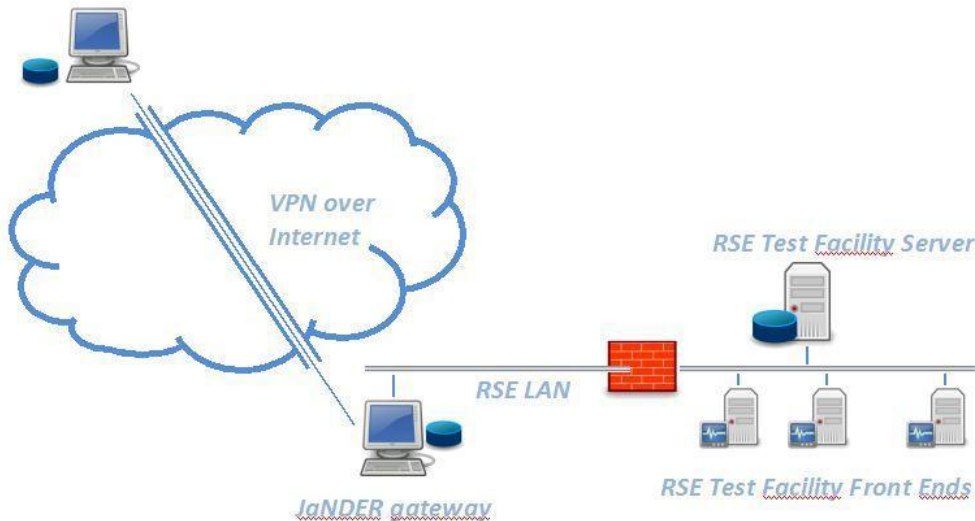


# Joint Test Facility for Smart Energy Networks with DER (JaNDER)

## Test Facilities Interoperation



JaNDER remote user



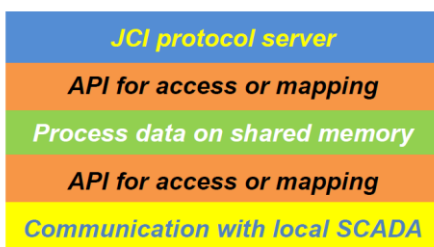
### Specification of a Joint Common Interface for Test Facilities Interoperation

The objective is to establish a virtually, pan-European demonstration lab. The JaNDER gateway works as a SCADA, providing the operator with an immediate view of the topology and of the principal electric values of the Test Facility (TF) grid. This both for the on-line status of the grid rather than for the status at the moment of a particular experiment.

For the specification of a Joint Common Interface (JCI) two different approaches are described.

#### 1<sup>st</sup> approach based on IEC61850

to remote user via VPN over Internet



to TF SCADA via local bus

The first approach is based on the standard IEC61850 and a pragmatic solution, mostly based on available software packages, is presented. Its core is constituted by a gateway between the MMS protocol and a simple ad hoc protocol (XMC) to interface the test facility from the local LAN. This gateway is contained in a virtualized disk image, configurable by each partner to comply his site needs.

Core of the structure is a memory area shared among the various applications. In that area resides a small hierarchical data base that models the data that we can think to pertain to a remote user of the Test Facility.

#### 2<sup>nd</sup> approach: web services

The second methodology adopted for the description of the interface is based on the concept of "Web services" as this structure is surely well suited to harmonize the different models of data representation and access procedures of the SCADA systems already installed in the various test facilities.

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### Results:

- Two approaches of a Joint Common Interface are specified.
- The first approach is based on the standard IEC61850.
- The second approach makes use of the concept of "web services".
- The JaNDER gateway is installed at six test facilities having access via VPN to RSE.

The project is funded by the European Commission, DG Research. It is part of the 7<sup>th</sup> Framework Programme (FP7) Grant agreement number: 228449 Duration: 01.09.2009 - 31.08.2013

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