



<http://d2.cigre.org>
/

CONSEIL INTERNATIONAL DES GRANDS RESEAUX ELECTRIQUES
INTERNATIONAL COUNCIL ON LARGE ELECTRIC SYSTEMS

STUDY COMMITTEE D2
INFORMATION SYSTEMS AND TELECOMMUNICATION

2017 Colloquium
September 20 to 22, 2017
Moscow – RUSSIA

Preferential Subject N° - PS2: Resilience to cyber threats of information and telecommunication systems in the power industry

The electric network infrastructure, a large playground for IoT

S CONCHET, F-X SARDOU

Rte

France

Saori.conchet@rte-france.com, francois-xavier.sardou@rte-france.com

Data's nickname is the “new gold” of our society.

Due to our way of living constantly in evolution we are generating more and more data (social networks, technologies improvements, ...). First implementation were focused on end customer (Amazon, Google, ...); now industries are also going more and more Big-data oriented.

According to big-data experts, the very first source of data will be the internet of things “IoT”, about 50 billion in the next years with a massive growth expected in between 2020 and 2030.

As concerns electricity utilities, network infrastructure are getting older and specific operational ICT have been deployed with limited scalability. Electricity utilities ICT is operated through a dedicated telecommunication network, high level for IT security and SLA. Beyond the most common role of a TSO to ensure a reliable and uninterrupted supply of electricity, most of European TSO have to manage their assets.

Currently the French transmission network infrastructure is characterized by large and heterogeneous assets getting older, Rte has to define the strategy for changing or maintaining these assets. To succeed, Rte needs more data to make the right decision and to improve knowledge of its assets in their own environmental conditions.

The need to be as efficient as possible in managing the transmission network leads Rte to decide to carry out an on-the-field assessment of IoT technology. Not only on the “big data” size but also taking into account ICT global security requirements.

These security requirements are highlighted by the recent hacking issues in various industry, e.g. Dyn in October 2016.

This paper will describe the on-the-field experiment of some IoT sensors to bring to the business users data (data valorisation based on business use cases).

This experiment taking place on a real playground allows Rte to learn from experience: ICT architecture, security and uses cases will be tested in various scenarii.

Rte's aim is to assess an industrial IoT deployment on the whole French transmission network infrastructure, taking into account security requirements to comply with business needs.

This article will cover:

- IoT sensors market and associated services under construction for electricity utilities
– focus on security (e.g. security by design)



<http://d2.cigre.org>
/

CONSEIL INTERNATIONAL DES GRANDS RESEAUX ELECTRIQUES
INTERNATIONAL COUNCIL ON LARGE ELECTRIC SYSTEMS

STUDY COMMITTEE D2
INFORMATION SYSTEMS AND TELECOMMUNICATION

2017 Colloquium
September 20 to 22, 2017
Moscow – RUSSIA

- Short description of new IoT-oriented networks and services vs. mature telecommunications for electricity utilities, and initial assessment for TSO usage in particular about security.
- Presentation of the experiment and first feedbacks/assessments.