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

STUDY COMMITTEE D2
INFORMATION SYSTEMS AND TELECOMMUNICATION

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2017 Colloquium
September 20 to 22, 2017
Moscow – RUSSIA

Preferential Subject N°PS2

(I)IoT: Industrial Internet of Things: Building the future Grid?

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Introduction

Most Electric Power Utility (EPU) are using some forms of Industrial Internet of Things: (I)IoT / IoT. The most straightforward form is the Advanced Metering Infrastructure (AMI). IoT is nowadays wide spread in the Smart Home Automation and more and more within the industry particularly in the health. We expect it's wide use within the EPUs as well as its huge impact on Operational Technology (OT) organisation.

Challenges deploying and securing (I)IoT

The paper will describe the actual state of the art concerning IoT and its future use within the electrical industries and EPUs, the impact on deploying Smart Grids and some challenges in managing those devices, securing them to enhance the resilience of the grid.

To deal with those challenges we have to review our vision concerning securing our OT organization, services, adapt our security strategy and above all to have a futureproof vision on Energy Transition.
Securing IoT is at the moment mostly based on preventing an attack and investing rather in technology such as firewalls, Intrusion detection and prevention.

Building an IoT resilient network is dealing with new challenges concerning People, Technology and Processes. Compared to the actual situation within the most EPUs, IoT are characterised by:

- Huge amount of devices
- Cheap devices with limited functionality
- Weak physical security

IoT will generate a huge amount of data. Data needed for monitoring and managing the next generation grids and to enable the energy transition to the renewable energy sources. This have an impact on the restricted communication between operational networks and existing and new IT systems and applications such as data hubs, analytics, forecasting systems (weather, energy supply…)