CIGRE Study Committee D2

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP (1)

WG* N° D2.40	**Name of Convenor :** Jens ZERBST (Sweden) **E-mail address**: jens.zerbst@vattenfall.com
Technical Issues # (2): -	**Strategic Directions # (3): 1**
The WG applies to distribution networks: Yes	
Title of the Group: Cyber risks and cyber security for the next generation of digital systems in Electric Power Utilities (EPUs)	

Scope, deliverables and proposed time schedule of the Group :

Background : This WG follows the work delivered in 2014 by WG D2.31 (Security architecture principles for digital systems in Electric Power Utilities (EPUs)). WG D2.31 has clarified security architecture principles in 3 main areas: “Graded Security“ approach, modelling of cyber-attacks and remote services.

The focus of this new working group is to build on and deepen the conclusions made by WGD2.31. The scope of this work will cover the discussion of general security architecture principles for digital systems, but will mainly focus on upcoming application, connectivity and requirements of digital systems in EPUs and hence cover the evolving technology and continuous rise in the risk landscape.

Scope :

1. Changing threat landscape: Rising cyber risks for EPUs based on current and next generation vulnerabilities of digital systems and new threats.
2. IT security in cloud computing: Cloud computing offers new opportunities for EPUs, but at the same time potentially introduces new risks. These risks have to be assessed and mitigated in an effective manner during implementation and operation.
3. IT security in remote services: In many ways remote services and mobility enable EPUs to drive cost performance, higher availability and open up new business opportunities, but they also introduce new technology and connectivity and with these, new risks which have to be assessed and mitigated.
4. Cyber security regulations: The infrastructure of EPUs is considered in many countries as critical infrastructure and is subject to regulations. Due to the current threat picture, regulatory requirements are developing. Effective implementation should ensure the necessary compliance and protection level.

The WG will have close cooperation with other cyber security related work, e.g. WG D2.38.

Deliverables: The WG will issue some technical reports for ELECTRA and/or at the Session/ Colloquiums. The final report will be published as a Technical Brochure

Time Schedule - Start : 2015 - **Final report** : 2018

Comments from Chairmen of SCs concerned :

Approval by Technical Committee Chairman : M. Wald
Date : 08/01/2015

(1) Joint Working Group (JWG) - (2) See attached table 1 – (3) See attached table 2

Table 1: Technical Issues of the TC project "Network of the Future" (cf. Electra 256 June 2011)

1	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
2	The application of advanced metering and resulting massive need for exchange of information.
3	The growth in the application of HVDC and power electronics at all voltage levels and its impact on power quality, system control, and system security, and standardisation.
4	The need for the development and massive installation of energy storage systems, and the impact this can have on the power system development and operation.
5	New concepts for system operation and control to take account of active customer interactions and different generation types.
6	New concepts for protection to respond to the developing grid and different characteristics of generation.
7	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
8	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
9	Increase of right of way capacity and use of overhead, underground and subsea infrastructure, and its consequence on the technical performance and reliability of the network.
10	An increasing need for keeping Stakeholders aware of the technical and commercial consequences and keeping them engaged during the development of the network of the future.

Table 2: Strategic directions of the TC (cf. Electra 249 April 2010)

1	The electrical power system of the future
2	Making the best use of the existing system
3	Focus on the environment and sustainability
4	Preparation of material readable for non-technical audience