CIGRE Study Committee D2

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

WG* N° D2.38	**Name of Convenor :** Dennis Holstein (US) **E-mail address**: holsteindk@ocg2u.com
Technical Issues # (2): 2 and 8	**Strategic Directions # (3): 2**
The WG applies to distribution networks (4): Yes	
Title of the Group: A framework for Electric Power Utility (EPU) operators to manage the response to a cyber-initiated threat to their critical infrastructure	

Scope, deliverables and proposed time schedule of the Group :

Background : Cyberspace is the collection of computer networks utilizing a variety of wired and wireless connections, a multitude of protocols, and devices ranging from host machines to intelligent electronic devices (IEDs). EPU operators do not have sufficient tools to respond to a serious cyber-initiated threat to their critical infrastructure.

A framework for tool development is needed. Such a framework must provide the capability to receive, store, model, retrieve and send cyberspace information to all system components. Implementation of the framework must receive real-time information from various network components and operational overlay sources. The object is to automate the response to a cyber-initiated threat and provide sufficient oversight information to manage the response by measuring, quantifying, and visualizing the situation and response options.

Scope : Overall the scope of this working group is to produce a framework for a tool that EPU operators can use to automate their response to a cyber-initiated threat. Specific components include:

1. A global survey of EPU interest in a tool that can be used to automate their response to a cyber-initiated threat.

2. Specification of capabilities required to design a tool set that can create, model, simulate and control the response to a cyber-initiated threat.

3. Characterize example system architectures which can be used as guidelines for developing analysis techniques to assist human understanding of the cyberspace and measures needed to respond to a cyber-initiated threat. Data sets will include logical network topologies and node/link attributes.

Deliverables : Technical brochure with summary in Electra

Time Schedule : start : February 2014 **Final report** : 2016

Comments from Chairmen of SCs concerned :

Approval by Technical Committee Chairman :
Date : 24/01/2013

(1) Joint Working Group (JWG) - (2) See attached table 1 – (3) See attached table 2
(4) Delete as appropriate

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