



CIGRE Study Committee B5

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP¹

WG N° B5.66	Name of Convenor: Dennis Holstein (US) E-mail address: holsteindk@ocg2u.com
Strategic Directions # (2): 1	Technical Issues # (3): 6 & 8
The WG applies to distribution networks⁴: Yes	
Potential Benefit of WG work #⁶: 5, 6	
Title of the Group: Cyber Security requirements for PACS and the Resilience of PAC Architectures	
Scope, deliverables and proposed time schedule of the Group: Background: <p>Cybersecurity has recently dominated the news. At risk are critical infrastructures including, but not limited to, the energy sector's electric power systems. IEC 61850 vulnerabilities are addressed by IEC 62351 and IEC 62443. Both standards are multipart documents that provide detailed cybersecurity requirements and specifications applicable to IEC 61850. SC B5's technical brochure #427, August 2010: Impact of implementing cybersecurity requirements using IEC 61850 should be updated to reflect recent work in IEC 61850 and 62351. Assessment of other standards used in the technical brochure also require to be updated. Reference should also be made to TB 603 (Application and Management of Cybersecurity Measures for Protection and Control) and any update of information or requirements provided.</p> Scope: <p>To update the assessments and supporting data in technical brochure #427 but also investigate the following additional subjects:</p> <ol style="list-style-type: none"> 1. Current work performed in TC57 WG 10 and WG 15 (responsible for IEC 61850 and IEC 62351 respectively) and TC65 WG 10 (responsible for IEC 62443) and how to comply with these standards. 2. Update the cybersecurity assessment and impacts based on other documents that address potential vulnerabilities of IP-based systems that are like IEC 61850 systems. 3. Analyse impact of recent events and potential future risks 4. In addition, consider the impact of the following topics on cybersecurity: <ol style="list-style-type: none"> a. Definition of parameters to be measured (metrics) for use case assessment b. Emerging technical solutions for cloud computing services and IoT (Internet of Things) environment – hybrid architecture, privacy governance, and telecom requirements c. Cybersecurity protection offered by time sensitive network (TSN) technology. d. Detection of intrusions e. Access to PAC equipment during maintenance, testing etc. (e.g. USB) Deliverables: <input checked="" type="checkbox"/> Technical Brochure and Executive summary in Electra <input checked="" type="checkbox"/> Electra report	

Tutorial⁵ Proposal Forms and Power Point slides

Time Schedule : start : January 2018

Final report : December 2020

Approval by Technical Committee Chairman:

Date: 20/11/2017

A handwritten signature in black ink, appearing to read "M. Wald".

Notes: ¹ or Joint Working Group (JWG), ² See attached Table 2, ³See attached Table 1,
⁴ Delete as appropriate, ⁵ Presentation of the work done by the WG, ⁶ See attached table 3

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
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 (ref. 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

Table 3: Potential benefit of work

1	Commercial, business or economic benefit for industry or the community can be identified as a direct result of this work
2	Existing or future high interest in the work from a wide range of stakeholders
3	Work is likely to contribute to new or revised industry standards or with other long term interest for the Electric Power Industry
4	State-of-the-art or innovative solutions or new technical direction
5	Guide or survey related to existing techniques. Or an update on past work or previous Technical Brochures
6	Work likely to have a safety or environmental benefit