



CIGRE Study Committee D2

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

WG* N° D2.35	Name of Convenor: Marco Janssen (NL) E-mail address: m.c.janssen@utinovation.com	
Technical Issues # (2): 1,2,5	Strategic Directions # (3): 1	
The WG applies to distribution networks (4): Yes		
Title of the Group: Scalable Communication Transport Solutions over Optical Networks		
Scope, deliverables and proposed time schedule of the Group:		
<p>Background: The introduction of smart applications in the electrical power utility and consequent dispersed intelligence result in a tremendous growth of information exchange across the power system. This implies in many cases a change of scale in the requirements of the telecommunication infrastructure and often the deployment of a core data transport network which may be implemented through a number of different technologies and architectures.</p> <p>The present network of most power utilities is extensively composed of SDH technology. Packet communication and in particular Ethernet connections are growing very fast and may bring the necessity to adapt and /or replace network technologies.</p> <p>This working group aims to identify and analyze alternative solutions and migration plans in the light of data network technology evolutions, new application requirements and Utility's capability to maintain the system's operation. The present scope is in continuation of the previous work performed by WGD2.28 on the communication architecture for IP-based applications in the electrical substation.</p> <p>Scope : The scope of the Working Group shall include the following aspects:</p> <ul style="list-style-type: none"> • Replace, refurbish, extend and migrate decisions • Assessment of technologies and their associations in the transport solution: <ul style="list-style-type: none"> ○ D- and C-WDM ○ ITU-T OTN ○ Layer 2/3 technologies such as PBB-TE, MPLS-TP, etc. • Ease of implementation and simplicity of operation • Capability to support required services, scale and size issues, IPv6 conversion issues • Lifecycle issues for these technologies • Network Management associated to different solutions <p>Deliverables: Technical brochure with summary in Electra.</p> <p>Time Schedule: start: February 2012 Final report: December 2013</p>		
Comments from Chairmen of SCs concerned:		
Approval by Technical Committee Chairman: Klaus Fröhlich		
Date: 30/03/2012		

(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	Interactive communication with the public and with political decision maker