


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

WG* N° D1.58	Name of Convenor : Stefan Kornhuber (DE)	
Technical Issues # ⁽²⁾: 3		Strategic Directions # ⁽³⁾: 1
The WG applies to distribution networks ⁽⁴⁾: Yes		
Title of the Group: Evaluation of dynamic hydrophobicity of polymeric insulating materials under AC and DC voltage stress		
Scope, deliverables and proposed time schedule of the Group :		
Background :		
<p>There is an increasing use of polymeric materials in HV AC and DC outdoor applications. In this context, materials with new types of fillers or surface structures start to play an important role, which results in a need to precisely define their physical and long-term properties. The important material properties for the use in non-ceramic outdoor insulation have earlier been identified in CIGRE TB 255. The following studies, presented in CIGRE TB 442, have indicated for a necessity to further continue investigations of the dynamic hydrophobic properties (mainly hydrophobicity retention and recovery) of new and non-ceramic materials, especially under exposure to DC voltage stress. Such the knowledge is needed for the coming revision of IEC/TR 62039 "Selection guide for polymeric materials for outdoor use under HV stress".</p>		
Scope :		
<p>Defining suitable test procedures for determination of the retention and recovery of hydrophobicity under AC and DC voltage stresses.</p> <ol style="list-style-type: none"> 1. Based on the earlier performed studies within WG D1.27 that delivered multiple results from a series of RRTs, the work shall concentrate on exact definition of the test arrangements, test parameters and evaluation criteria for all relevant material groups. 2. Verification of reproducibility of the elaborated test procedure by a RRT activity. 		
Deliverables : Report to be published in Electra or technical brochure with summary in Electra		
Time Schedule : start : February 2014		Final report : 2017
Comments from Chairmen of SCs concerned : B2		
Approval by Technical Committee Chairman :		
Date : 08/01/2014		
Update rev a: 18/02/2020: Change of Convenor		

(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