

**CIGRE Study Committee C4**

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

<p><b>JWG* C4.40/CIRED</b></p>	<p><b>Name of Convenor :</b> Mark Halpin (USA)  <b>E-mail address:</b> <a href="mailto:HALPISM@auburn.edu">HALPISM@auburn.edu</a></p>
<p><b>Technical Issues # (2): 8, 1</b></p>	<p><b>Strategic Directions # (3): 1</b></p>
<p><b>The WG applies to distribution networks (4): Yes</b></p>	
<p><b>Title of the Group: Revisions to IEC Technical Reports 61000-3-6, 61000-3-7, 61000-3-13, and 61000-3-14</b></p>	
<p><b>Scope, deliverables and proposed time schedule of the Group :</b></p> <p><b>Background :</b></p> <p>The Technical Reports 61000-3-6, -3-7, -3-13, and -3-14 deal with the assessment of emission limits for the connection of disturbing installations to the power system. These documents are approaching their maintenance cycle. The present versions were prepared by a SC C4 CIGRE WG (C4.103). There is a need to consider proposed revisions to each of these documents in light of significant changes in power grids, emissions from equipment, and equipment immunity. Changes in supply systems that could impact the subject Technical Reports include the reconfigurability features of so-called “smart grid” technology and systems and the incorporation of distributed generation at various voltage levels (but particularly LV and MV and other traditional radially-operated systems). Changes in emissions include high-frequency harmonics which are presently out-of-scope of the Technical Reports. Immunity characteristics, especially those associated with modern lighting with regard to voltage fluctuations, have appreciably changed. Lastly, the methods for allocation of planning levels to establish emission limits for users may become overly complex (or even inappropriate) for use in systems containing reconfigurable elements or distributed resources.</p> <p><b>Scope :</b></p> <p>The proposed scope of the task force is to:</p> <ol style="list-style-type: none"> <li>1. Evaluate the suitability of the general limit allocation process in systems containing distributed resources and develop recommended changes (this applies to all four reports).</li> <li>2. Evaluate the suitability of existing indices and limits (e.g., 95th percentile) for use in reconfigurable systems and recommend changes (this applies to all four reports).</li> <li>3. Evaluate the suitability of the existing approach for allocating harmonic limits for higher-frequencies (above 2 kHz) and recommend changes (this applies largely to 61000-3-6 and -3-14).</li> <li>4. Assess the effectiveness of 61000-3-7, -3-13, and -3-14 when fluctuating or unbalanced distributed resources are present (at any voltage level) and recommend changes.</li> <li>5. Review industry experience with the present versions of the Reports and recommend changes as needed based on recent usage and experiences (this applies to all four reports).</li> </ol> <p><b>Deliverables:</b> Revised versions of each Technical Report with highlighted changes for review by IEC. Summary paper for publication in Electra. Panel sessions and presentations at CIGRE and CIRED session, colloquia and symposia.</p> <p><b>Time Schedule :</b> start : January 2015 <span style="float: right;"><b>Final report :</b> 2018</span></p>	

**Comments from Chairmen of SCs concerned :**

**Approval by CIGRE Technical Committee Chairman :**  
**Date :** 21/11/2014

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

**Approval by CIRED Technical Committee Chairman :**  
**Date :**

- (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)**

<b>1</b>	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
<b>2</b>	The application of advanced metering and resulting massive need for exchange of information.
<b>3</b>	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.
<b>4</b>	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.
<b>5</b>	New concepts for system operation and control to take account of active customer interactions and different generation types.
<b>6</b>	New concepts for protection to respond to the developing grid and different characteristics of generation.
<b>7</b>	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
<b>8</b>	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
<b>9</b>	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.
<b>10</b>	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)**

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