

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

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| WG N° B5.51 | Name of Convenor : Li LI (CN) | |
| Technical Issues # (2): 5 | | Strategic Directions # (3): 1, 2 |
| The WG applies to distribution networks (4): Yes | | |
| Title of the Group: Requirements and Use of Remotely Accessed Information for SAS Maintenance and Operation | | |
| <p>Scope, deliverables and proposed time schedule of the Group:</p> <p>Background:</p> <p>With the increase in availability of communication technologies, the scope of application of remote access to Substation Automation Systems (SAS) and data is now increasing beyond the "conventional" download of event and disturbance records for fault analysis. Remote access provides a number of benefits, such as reduced site visits and costs, quicker access to data and the ability for engineers to access the systems and data from a variety of modern fixed and mobile devices from virtually anywhere. This opens the field for use of remote access in the asset management of substations. However, remote access could also render systems and data vulnerable to unauthorized access attempts and security breaches.</p> <p>Scope :</p> <p>The WG will identify existing and possible future use of remotely access data and the implications of remote access to Protection and Automation systems. The WG will consider the complete chain of remote access, i.e.</p> <ul style="list-style-type: none"> • Data Acquisition from different sources, • On-site data pre-treatment • Data transmission (up- and download) • Remote data storage • Remote data treatment and analysis • Visualization and restitution • Download of parameters and configurations <p>In this context, the WG will focus on:</p> <ol style="list-style-type: none"> 1. Recommendations how to deploy remote access facilities (organization, proprietary information), how to access the data, file synchronization and efficient handling of data from protection and SAS. This includes a discussion about the different possible locations of treatment of the data (process level, substation level, remote) and the associated advantages and drawbacks. 2. Use of IEC 61850 and, in a more general way, identification and review of other standards applicable in the data acquisition and treatment (e.g. CIM, COMTRADE, COMFEDE, ...) for Remote Access. The WG has to evaluate these aspects in particular from the viewpoint of interoperation of devices or applications of different vendors. | | |

3. Recommendations for the migration and use of legacy devices for the data acquisition for Remote Access.

4. Use of Remote Access for asset-management, maintenance purposes and fault analysis/location (standardization of the data and information available to remote centre operators). Information required for automatic post fault analysis, short report generation from remotely accessed data shortly after the event.

5. Use of Remote Access for Protection settings, SAS configuration and updating, carrying out upgrades to existing systems (software/firmware updates).

Limit of the Scope

- Mode of access (GSM, Wi-Fi, etc) and cyber security are not the main focus (out of scope) but reference can be made to existing material such as CIGRE Paris 2012 SC B5 Session PS2 (Utilization and Application of Remote Access for Protection and Automation Systems) and working group B5.46 (Application and management of cyber security measures for Protection & Control systems) where relevant and for completeness.
- Algorithms, approaches and rules to perform incident analysis are out of scope of the WG. The WG should only consider the way to make the proper information available.
- The WG has to concentrate on the use and organization of remotely accessed data and should not go into depth for details like data conversion between standards or standards to be used. Issues or problems in this context can be identified and described as input for IEC or subsequent CIGRE WG.
- The structure of the communication network is not the main subject of the WG. The WG should however give indications on the required performance of the communication links.

Deliverables :

- A Technical Brochure (TB)
- A 60 words Abstract of the TB
- An Executive Summary of the TB
- A Tutorial presenting information in the TB

Time Schedule: Start : January 2013

Final report : 2015

Comments from Chairmen of SCs concerned :

Approval by Technical Committee Chairman :

Date : 11/11/2012



(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)

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| 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)

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| 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 |