Proposed Plan (DRAFT) to Transition PAP 14 “T&D Power Systems Model Mapping” to the Transmission and Distribution Domain Expert Working Group

Summary

Priority Action Plan 14 “Transmission and Distribution Power Systems Model Mapping” was initiated with a large scope that included some specific tasks as well as broader strategic topics. PAP 14 has in effect a dual charter to develop the high priority smart grid use cases for transmission as well as developing strategies for semantic integration/harmonization of smart grid standards. While progress has been made in some focused areas, the PAP remains large in scope and strategic in nature. The PAP includes more than a dozen major smart grid standards. The PMO proposes that PAP 14 activities move under the T&D DEWG for restructuring into more tactical tasks. PAP 14 will now focus on the few tactical standards that were a part of its original charter and migrate more strategic activities such as priority setting of smart grid applications to the T&D DEWG.

Background

The PAP 14 initial scope was focused on the development of application level communications across both T&D operations. It was soon recognized that PAP 8 was focused on the overlapping area of distribution operations. PAP 14 shifted to Transmission operations but maintained a cross cutting perspective with distribution. However, the PAP 14 scope still remained large and strategic which included activities to prioritize among transmission system related use cases/requirements.

In addition, PAP 14 includes the charter to develop integration/harmonization/unification strategies across several standards that include their own sets of application communication “semantics”. This charter is similar to the SGAC Semantic Working Party charter.

It should be noted that PAP 14 has some focused “tactical” tasks. One of which has been completed to the point of a completed Standard: IEEE C37.239 “Common Format for Event Data Exchange” (COMFEDE) which is proposed as a candidate for the SGIP Catalog of Standards. The other focused tasks include development of standardized configurations for settings for protection relays. It should be noted that even these focused tasks can support a variety of smart grid applications.

Proposed Plan for PAP 14 Restructuring

Overview

The PAP 14 migration plan includes a combination of reducing the scope of the PAP and turning over the more strategic tasks to the T&D DEWG and/or other SGIP groups. Plans for these changes were presented to the PAP and the T&D DEWG and inputs received over the course of the last two weeks. The following plans for PAP 14 represent the latest iteration from these meetings.

Migration of PAP 14 Strategic Tasks to T&D DEWG

Use Case Priority Setting

PAP 14 Tasks to develop a priority tool for identifying high priority use cases and standards needs will be contributed to the T&D DEWG. This tool includes a spreadsheet and a scoring system to rank use cases.
for priority smart grid development. The tool is general purpose and can be used by others seeking to focus use cases within a technical area.

Harmonization/Integration/Unification of Major SG Standards

PAP 14’s initially broad scope included several standards that have semantic “application level” language taking place within them. A PAP 14 objective included integration/harmonization across these standards. The extent of this harmonization effort is large enough that it is proposed for moving to the T&D DEWG and/or the SGAC Semantic Working Party.

Transmission Bus Load Model

Development of the Transmission Bus Load Model was proposed under PAP 14 but this is to be moved to the T&D DEWG. The TBLM is a large effort that effectively frames the nature of cross domain interactions between Transmission and Distribution operations. This work is now proposed for the T&D DEWG since it will be effective in creating a strategic framework for integrating underlying use cases.

Time Management Across the Smart Grid

PAP 14 initially included efforts to further the work of time management in T&D systems. Consistent time management is a strategic issue across the smart grid and currently the IEEE PSRC H3 Committee working on the P37.237 Standard “Time Tagging for Protection and Data Recorder Events” and other standards are working on time. This effort needs to be brought up to the T&D DEWG and is a candidate for SGAC

Continuation of PAP 14 under reduced scope

Current plans are to keep PAP 14 moving forward with two “tactical” tasks that were a part of the original PAP 14 Charter. Each of these tasks is associated with an IEEE Committee under the Power Systems Relay Committee. The roles of PAP 14 include coordination among these and other standards, developing use cases specific to the implementation of these standards for smart grid applications, education to stakeholder communities about the nature and value of the standards and the integration of key administration and management functions such as security. These committees, and their associated work items are as follows:

IEEE PSRC H16 Committee working on the P37.239 Standard “Common Format for Event Data” (COMFEDE). The heart of COMFEDE is a common format that can be used to integrate “events” from systems installed that may have used different standards. This includes what are known as “legacy” systems. The standard can enable a variety of use cases that make use of events. COMFEDE has now become a full IEEE Standard and is proposed for integrating with IEC Standards and SGIP Catalog of Standards. Work proposed under PAP 14 can further assist the development of guidelines to use the standard and through use cases that serve to further define how the standard should be implemented for specific uses, including integration across disparate systems. PAP 14 would also work on the management and security elements of integrating smart grid events.

IEEE PSRC H5 Committee working on guidelines titled; “A common format for configuration of Intelligent Electronic Devices (IED’s)”. These guidelines are needed for obtaining consistency in how protection relay settings are communicated and managed across smart grid systems. PAP 14 can contribute to the further development of these guidelines and in the development of supporting use cases.