

Supplemental Project Notice

APPLIED GRID MODEL DATA MANAGEMENT (GMDM) FOR DISTRIBUTION



PROJECT HIGHLIGHTS

- Develop an enterprise strategy to support grid modernization and implementation of grid model data management across planning, protection, operations, and market functions
- Prepare utilities to deploy new analysis techniques and tools more easily and effectively
- Leverage vendor interfaces for integration with the Grid Model Data Management
- (GMDM) data architecture approach
- Promote information exchanges across the Transmission-to-Distribution interface.

Background, Objectives, and New Learnings

The distribution grid is becoming increasingly complex as it is transformed by new grid-connected equipment from a one-way delivery pathway into a dynamic two-way energy system. As a result of this transformation, sophisticated power flow-based simulations are becoming an integral part of effective grid planning, protection, and operation. Such simulations require a degree of data accuracy, completeness, and currency that the existing processes at most utilities cannot support. Distribution utilities need a new approach to managing their grid model data that frees users from siloed software systems, fractured data storage, duplicated data entry, 'one off' point-to-point interfaces, and the convoluted business processes which typically exist today.

A pair of predecessors EPRI initiatives, the utility-focused Distribution GIS, and Grid Model Data Management project and the GMDM Vendor Forum project, have developed an industry architecture for the effective enterprise-wide management of grid model data. Vetted by utilities and being tested by vendors, the architecture relies on advanced modeling languages to describe the information and enable the design and implementation of quality approaches to managing grid model data.

The objective of the Applied GMDM for Distribution project is to help a utility apply the data management architecture developed by EPRI's Grid Model Data Management research. The Applied GMDM project will analyze a utility's requirements and develop strategies for integrated distribution grid model management that will enable faster and more seamless model updates across multiple utility business domains. This project affords a utility the opportunity to:

- Understand its current grid model data management practice across grid planning, protection, and operations.
- Develop a vision and approaches for improved grid model data management based on the data management architecture being articulated by EPRI's GMDM research.

Project results are intended to effectively position utilities to plan and implement major distribution grid data model management initiatives. The project will synthesize learnings developed through the application of the GMDM architecture at multiple utilities. The project aims to realize an industry-level approach to grid model data management that allows utilities and their vendors to implement the foundational data management solutions needed to meet the complex challenges presented by the changing electric distribution grid.

Benefits

- The Applied GMDM for Distribution project may help a utility implement a grid model data management solution to:
- Reduce grid model maintenance labor (and cost).
- Improve both the accuracy of individual application grid model databases and the timeliness of their updates, thereby improving the usefulness of analysis results.
- Better meet the data requirements of grid simulation applications as they are used for a variety of studies of past, current and potential future grid scenarios, including non-wires alternatives (NWA) studies and more advanced economic simulation analyses.
- Reduce the effort to add, upgrade or replace planning or operation applications.

Project Approach and Summary

The project will use a combination of site visits, workshops and webcasts to develop an understanding of the basic requirements of grid model exchange within the participating utility and envision how the standards based GMDM architecture could be applied to streamline the utility's grid model data management processes.

For each participating utility, the approach is expected to include:

- 1. Data Gathering Workshop Two-day on-site workshop with participation from utility subject matter experts across the planning, operations, protection, and IT domains to explore and document the existing grid model information flows at the utility. Follow-up interactive web sessions will help complete the documentation of current state.
- 2. *Current Practice Findings* A summary of existing grid model data management practice and benchmarking of the utility's maturity.
- 3. Visioning Workshop A workshop (two-day on-site or multi-week remote) with participation from utility subject matter experts across the planning, operations, protection and IT domains to explore, validate and refine the integrated approach.
- 4. *Final Report* A final report reflecting the outcome of the Data Gathering and Visioning Workshops.

Deliverables

Each participating utility receives a final report covering:

- *Existing Situation* Documentation of the utility's existing grid model information flows and evaluation of the utility's grid model management maturity.
- Developing a Solution Vision Guidance on how to use a business function-based approach to develop the utility's grid model data management vision based on the GMDM data management architecture.
- Implementation Strategy Overview of several 'next steps' the utility might take to start down the path toward improved grid model data management.

Price of Project

Price of this project is \$150,000 per participating utility. This project qualifies for self-directed funding (SDF) and co-funding.

Project Status and Schedule

The project will take approximately 6-8 months.

Who Should Join

This project is of value to distribution utilities who require or are engaged in implementing improvements to their grid model management practices. It may be of particular interest to utilities contemplating implementation of an Advanced Distribution Management System (ADMS) or facing the need for additional distribution planning analysis, non-wires alternatives (NWA) studies, or heightened regulatory requirements for hosting capacity.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (<u>askepri@epri.com</u>).

Technical Contact

Varun Perumalla, at 650.855.1051 (vperumalla@epri.com)

To join, contact your Information, Communication, and Cyber Security Technical Advisor

West: Brian Dupin bdupin@epri.com

Northeast: Barry Batson <u>bbatson@epri.com</u>

Southeast: Chuck Wentzel cwentzel@epri.com

Product ID: 3002014739

FPRI

Project ID: 01-107152