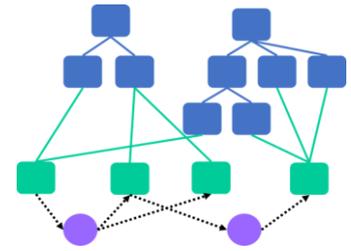


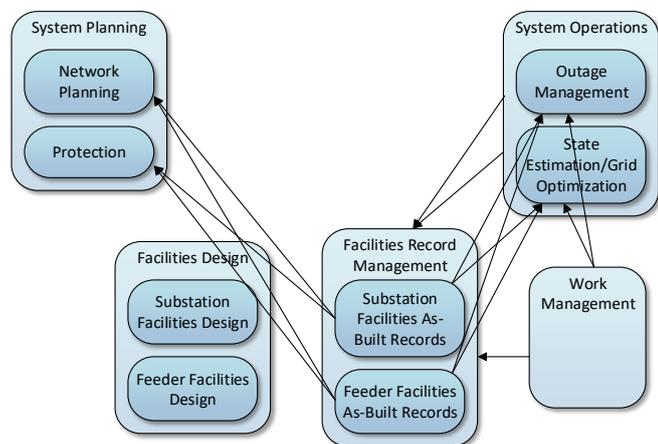
Distribution GIS & Grid Model Data Management Project

Project Update - January, 2019



Electric distribution systems are facing unprecedented challenges. New grid-connected equipment is transforming radial load-serving systems into two-way energy highways. Planning, protecting and operating the distribution grid requires more frequent, more complex, and more accurate network analysis.

Grid models are an essential input into this analysis. Data from multiple sources must be assembled into cohesive, 'electrically logical' models for use by multiple, independent network analysis tools. Current solutions for gathering and assembling grid model data are often ad hoc, with source applications connected to consuming applications by a tangle of one-off proprietary data flows.



This brittle and expensive approach cannot scale to supply the data needed for the complex analyses increasingly required by distribution.

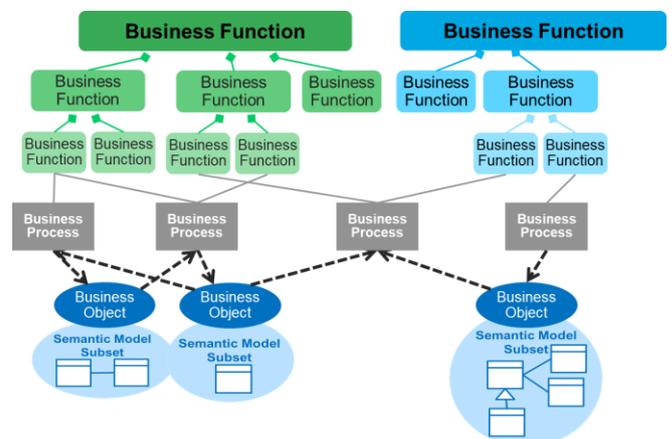
The industry needs an intentional information strategy to enable effective grid model data management.

The EPRI GIS & Grid Model Data Management (GMDM) project is focused on

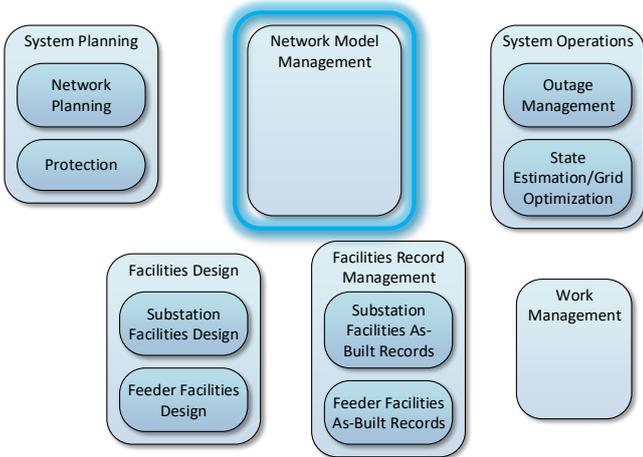
developing exactly this. The project is leveraging prior EPRI network model management research done for the transmission domain. The GMDM project team is comprised of world-class experts, with a wide variety of perspectives, who are passionate about developing industry solutions. Participating utilities provide real-world grounding for requirements and solutions. The results are beginning to be vetted by vendors and utilities and are being introduced into the IEC CIM standards community.

The GMDM project is developing an industry architecture that will allow utilities to implement a new vendor-supported approach to enterprise-wide electric distribution grid model management.

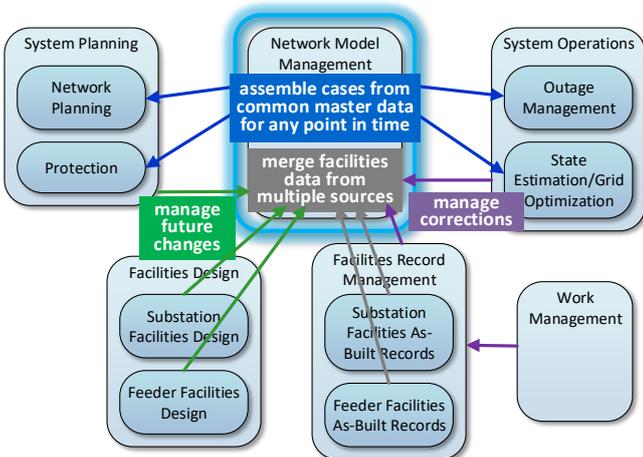
A business function approach is being used in the architecture development. The approach identifies high-level business functions and breaks them down into smaller and smaller subfunctions until the data being produced and consumed can be identified and standardized. These 'chunks' of shared data are the building blocks on which real-world data management solutions can be built.



A critical component of the architecture being proposed by the EPRI GMDM project is the Network Model Manager (NMM) business function.

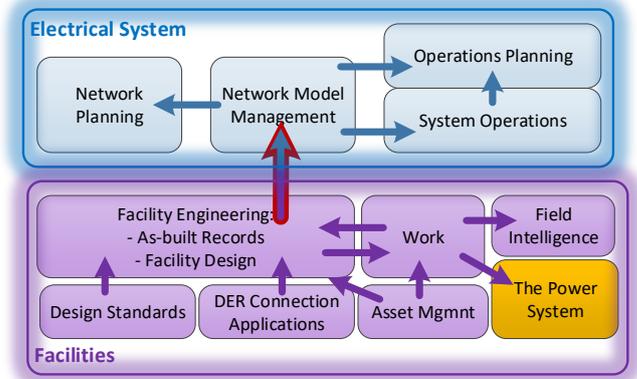


Though it is rarely recognized today, utilities already have a network model management function. But it typically manifests across many departments, in many tools and in a generally uncoordinated, inefficient way. In the face of an increased need for network analysis across the distribution utility enterprise, it is the intentional implementation of a network model data management function that will allow utilities to implement scalable solutions for grid data management.



The GMDM project has begun the work of outlining the business functions that relate to grid model data management. These functions fall into two high-level groupings: functions that consider the electrical system and functions that deal with individual facilities.

While the project will ultimately be exploring the data exchanges across all the functional interfaces surrounding the NMM function, it has chosen to focus first on the interface supplying facilities data into the NMM. This is because of both its complexity and its importance.



The concept of 'fragments', or subsets of network model information, is being proposed as a foundation for the design. A fragment is a set of data expressed in terms of CIM 61970 classes, but with no requirement that it be a cohesive network model. Source functions produce fragments that reflect what they know and the NMM function synthesizes the fragments from multiple sources into a cohesive system view.

A number of artifacts are being produced as a result of the project's exploration of the fragment approach, including:

- a CIM Fragment Specification
- a Feeder Fragment Import use case
- a Generic NMM Fragment Processing use case

Vendor and utility review and feedback on the fragment approach is essential.

For more information on the EPRI Distribution GIS & Grid Model Data Management project or to obtain the current draft artifacts related to fragment design, please contact:

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