



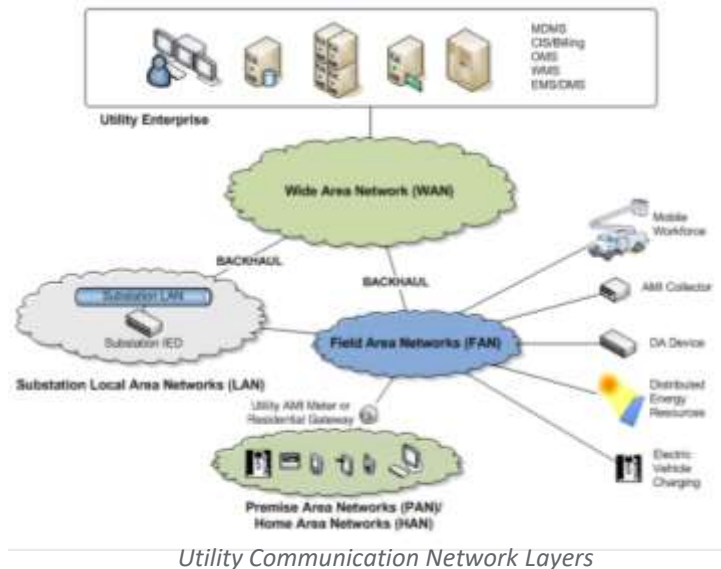
Project 14-6: Best Practices for Integration of Utility Applications

Final Report: April 2014; available online @ www.dstar.org

Project Summary:

Electric utilities are in the business of providing reliable and affordable power to all customers within their service territories and are being driven to do so in more efficient and environmentally friendlier manner. As grid modernization efforts continue, the volume of operational and customer-related data is increasing dramatically which in turn is driving the underlying Information and Communications Technology (ICT) infrastructure to become increasingly complex.

One product of this complexity is that utilities must operate legacy and new infrastructure in a homogeneous manner. In the past, utilities have employed isolated and independent systems for specific purposes and often resorted to customized interfaces between these systems to exchange data. Today, the basic system model utilities have used for decades has been replaced by one utilizing a myriad of technologies that allow increased flow of data, grid control and automation to achieve the utility's specific goals. This model drives the need to connect legacy with next generation communication networks while increasing the level of integration and data exchange between the many applications utilized by utilities. It also presents utilities with many challenges and decisions relating to utility communications and application integration.



The scope is focused on the evolution from an environment where a utility communications system was hard-coupled to the supported application and the data source is coupled to the data consumer to one where all of these elements may evolve independently and included two main topic areas:

- **Maximizing the use of existing and future communications infrastructure** - This includes utility experiences migrating legacy applications to newer communications technology, factors influencing the choice between separate or converged communications infrastructure moving forward, and strategies employed when converging multiple applications onto a single communications system.
- **Access to power system related data outside the traditional system boundary** - This includes utility experiences related to the need for more and more applications to access power system-related data including challenges associated with data formats and accessibility; and how utilities are dealing with cyber security aspects and strategies moving forward for a single data source (e.g. power system IED) to support multiple applications.

The study focusses on applications which support power system operation, including: System Protection, State Estimation DA/SA, AMI, DMS, OMS, , AGC, SCADA, PQ, WAM, DER, and EV.

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Who Should Use:

Distribution Operations, Planning, Standards, Protection, DA.SA/IT, Power Quality and Reliability Groups

For the complete report on Project 14-6: Best Practices for Integration of Utility Applications, visit www.dstar.org.



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