ISO/RTOs Task Force Create Standards for Next Generation of Grid and Market Operation Software Tools

North American Electricity Grid Operators Collaborate On Shared Application Architecture Vision

Holyoke, MA—April 9, 2007—A task force formed last year by a group of American and Canadian bulk power system operators has completed the first phase in creating standards for grid and market operation software systems—a architectural blueprint for how the industry’s software applications should be developed and integrated.


The ISO/RTO Council, made up of top ISO/RTOs executives, charged the task force with eliminating some of the structural differences in the numerous software applications used in the wholesale electric power industry, first by developing a common, overarching software application architecture and then by creating standards for specific applications.

“We’ve made an important first step in moving the industry towards a more flexible and cost-effective software architecture,” said Gordon van Welie, President and CEO of ISO New England and chair of the ISO/RTO Council. “ISOs and RTOs should see shorter project implementation timelines and lower software integration costs as these standards become incorporated in our systems.”

ISO/RTOs use complex computer software applications to run their wholesale electricity markets and bulk power system operations. While many of the applications used by ISO/RTOs are based on similar software solutions, variations in market designs and historically different development paths have led to major discrepancies in software architecture. These differences often force ISO/RTOs to incur high customization costs when integrating other ISO/RTO applications into their own systems or integrating software purchased from different vendors.
Leveraging Industry Knowledge

The EAS task force began the architecture development process by looking to similar initiatives, such as an effort undertaken by electric utilities and the International Electrotechnical Commission (IEC) on distribution management. The task force also referenced the IEC’s Common Information Model.

In developing the architecture document, the EAS task force adopted service-oriented architecture (SOA) concepts to describe the technical aspects of the project. SOA, which is commonly used among software solution providers, is well suited for describing interactions among disparate systems. Many of the system operators have already adopted SOA for their internal development initiatives.

One of the major objectives of the initiative is to achieve interoperability of software components from different vendors. Therefore, to optimize effectiveness of the architecture and the forthcoming standards, the task force is accepting input from software solution providers, such as energy management system vendors and other interested parties.

Standards Development and Adoption Plans

With the primary architecture document complete, the EAS task force will next develop standards for a subset of internal software applications currently outlined in the scope of the project. Teams of ISO/RTO software architects will work with software solution providers and other interested industry parties to create a targeted set of standards each year. The task force will assess each initiative as it is completed and update the base architecture document and any other previously drafted standards as necessary.

The EAS task force will also begin to help the ISO/RTOs develop plans to adopt and implement the architecture and standards. As early as this year, software solution providers will be expected to comply with aspects of the architecture in new requests for software.

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About the IRC

Founded in 2003, the ISO/RTO Council (IRC) is an industry organization comprised of ten Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs) in North America, responsible for delivering two-thirds of the electricity consumed in the United States and Canada.

In addition to coordinating electric generation and transmission across a wide geographic area, ISO/RTOs provide non-discriminatory transmission access, facilitate competition among wholesale electricity suppliers, and conduct regional planning to ensure a reliable grid for the future.

The IRC works collaboratively to develop effective processes, tools, and methods for improving competitive electricity markets across North America. The IRC’s goal is to balance reliability considerations with market practices, resulting in efficient, robust markets that provide competitive and reliable service to electricity users.