UTILITY/T&D
AUTOMATION & ENGINEERING™

PROJECTS of the Year Award WINNERS Honored at DistribuTECH

Best GIS Project

The winner of the GIS Project of the Year Award is this year's DistribuTECH host utility, San Diego Gas & Electric (SDG&E), for the Virtual Integrated Situational Awareness (VISA) project.

This year, SDG&E initiated a project that combined data from wildfires, lightning strikes, earthquakes, wind forecasts and SCADA data to provide a real-time situational awareness dashboard for visualization in the control room and boardroom alike.

The idea came after SDG&E experienced the San Diego wildfires in October 2007. During those devastating wildfires, SDG&E activated the Emergency Operations Center (EOC) in which all key representatives from the company come together to monitor events, communicate and make decisions. Getting current, real-time information in the right form and context, however, was virtually impossible. In many instances, the EOC had to cobble together information gathered by a variety of sources—phone, fax and e-mail.

Today, with the new geospatial visualization, EOC representatives and executives can view the system conditions on demand, eliminating the extra step of asking for updates. The implementation went live with fully integrated visualization in September 2008. By October 2008, SDG&E had hundreds of users across the company, including the vice president of T&D, viewing the project daily from their desktops and revolutionizing how outage and restoration information is distributed.

SDG&E already has seen the benefits of VISA in its ability to monitor system and weather conditions, according to Daniel Zaragoza, director of electric distribution operations. Having access to that information while being able to view specific utility infrastructure and data has improved operational efficiency and effectiveness. VISA showed its value during the 2008 fire season when SDG&E launched proactive fire-preparedness efforts. Using the application, the utility could view and track multiple wind monitors and their associated data, receive alerts when wind speed thresholds were exceeded and have this information easily compiled on the dashboard.

SDG&E

"We believe the project will improve our overall ability to respond to, or even avert, potential system emergencies in the future and help us achieve our mission of providing safe and reliable energy to our customers," Zaragoza said.

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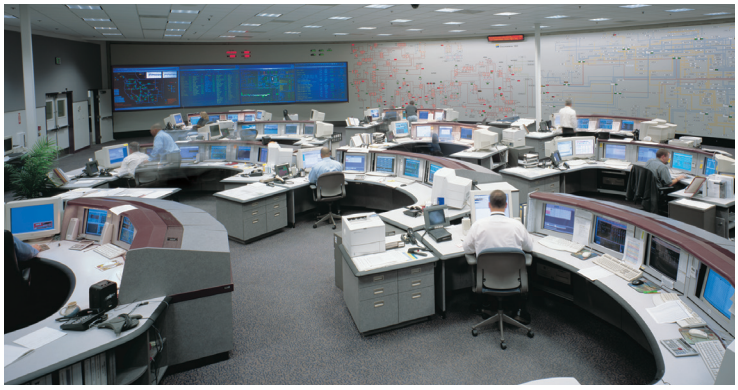
2007 Projects of the Year Award Winners Break New Ground

By Steven M. Brown, editor in chief, and Kathleen Davis, associate editor

California ISO Uses Google Earth to Visualize Grid Conditions

The California ISO's job is not an easy one. The ISO is charged with ensuring the safe and reliable transport of electricity on the California power grid. Its control area includes more than 80 percent of the state's total electrical load and serves more than 30 million residents. More than 90 transmission companies and generators participate in the ISO markets. What makes the ISO's job even more difficult is the fact that transmission lines in California often operate at near congestion capacity.

But for every challenge there is a solution. Beginning April 10, 2007, the ISO began implementing technology that lets them visualize transmission line congestion in 3D on top of satellite imagery that shows natural events like wild fires and hurricanes as well as system outages. The innovative technology garnered the California ISO *Utility Automation & Engineering T&D*'s 2007 Geospatial Technology Project of the Year award.



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Using a product called MAGMA from Enterprise Horizons, the Cal-ISO combines data from SCADA systems, weather data, forecast data, substation load data and wild fire information, to get a theatrical, time-animated, 3D view of congestion and consumption on the grid utilizing Google Earth.

The Cal ISO implemented this system in just over four months, going live in mid-August 2007, and it's helping them ensure electrical demand is met around-the-clock for consumers and that reasonable wholesale costs are fostered. It also proved valuable during wildfires that occurred in Southern California during the fall of 2007.

Wildfires can pose a significant threat to the high-voltage transmission lines that the California ISO oversees. Knowing where a fire is burning in relation to the lines is critical. The California ISO used this new technology to merge four different information sources into one composite display to help manage the grid during fires. Google Earth's satellite mapping system is overlaid with data that shows precisely where transmission lines are located in California. The system then blends in weather data—including temperature, humidity, wind speed and direction. The final piece is real-time information from California fire services that pinpoints active fires.

"With all four information streams merged onto one screen, we know where a fire is, how close it is to our lines, and we have a pretty good idea of how fast it's moving and in what direction," said California ISO director of grid operations Jim McIntosh. "Our guys put this together over several months last spring and it really helped during the Southern California firestorms in October (2007)."

The fires in Los Angeles and San Diego forced outages on several key transmission lines. The Southwest Power Link running between Arizona and San Diego was out for several days and other lines were also tripping in and out of service on a minute to minute basis due to smoke, soot and ash that can foul the insulators. "It was absolutely imperative to have good information about the changing threats to the lines that were still in service," said McIntosh. "The system we developed delivered the information we needed to decide how to manage power flows and even to request fire retardant air drops in critical locations to protect threatened lines. It helped us keep the lights on."

Several California ISO employees share the credit for developing the system; lead operations support specialist Steve Gillespie, operations support specialist Brian Murray, and from the Information Technology group, critical systems lead Eric Mscichowski, senior engineering specialist Devin Miroy, senior engineering specialist Jim Hiebert and engineering specialist Tim Willenberg. ‹‹

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