

Deploying New Supervision Tools on the Distribution Network



The Distribution Challenge

Today's utility company is facing tomorrow's choices for the best supervisory control and data acquisition systems (SCADA) for the distribution grid. While SCADA has a long history of productive use on the transmission arteries of the electric grid, the extensive network of distribution veins have not allowed such easy adaptation: there was prohibitively expensive monitoring equipment, too much data, and little incentive to deploy distribution SCADA, since the prevailing regulatory perspective required excess capacity, not smart distribution.

That landscape has changed dramatically. North American and European regulators want to see that utilities are utilizing their entire infrastructure – from generation, to transmission and distribution, to customer service – as close to full capacity as they responsibly can. The forces of cost control, performance based rates and deregulation are driving better operations management, as is the quest for optimized and profitable assets by companies seeking merger or acquisition. Now distribution SCADA is viewed as one important tool for utilities to take control of the distribution network, as they never have before.

Indeed, there has been a strong move to distribution SCADA in the United Kingdom. There's tremendous evidence of lower cost of operations because the UK examples show how an aging infrastructure can be managed with distribution SCADA. The lesson: If a company is just starting to deploy smart meters then it will not have to wait 4-5 years to start getting operational value. Using smart meters as part of a distribution SCADA initiative can start to yield benefits with only 1 to 2% of the meters deployed, provided the deployment plan looks at key locations.

The Vision

Tomorrow's distribution infrastructure must deliver. First, the distribution SCADA must give customers more power to manage their energy consumption, given the eventuality of smart metering. Outages should also be communicated *to the customer*, with concomitant notifications of the repair schedule. The new data that's created in terabytes by an intensified distribution SCADA must be reported and analyzed, for access by the corporate offices and eventually by shareholders and regulators. Given today's systems, this is a pipe dream. While there's no shortage of distribution SCADA monitoring equipment, software or IT system options available to upgrade the utility, how does the utility wisely choose?

Accomplishing Now

The Smart Energy Alliance™ (SEA™), comprised of six of the world's leading technology companies, was created in 2006 to help utilities turn such transmission and distribution challenges into opportunities.

The SEA believes that there are nine primary benefits to installing a Distribution SCADA system: monitoring and control; advanced power flow analysis; network switching; load management; fault detection, isolation, and restoration; volt/VAR control; integrated outage management systems; integrated trouble call system; and mobile workforce management. And since regulators are beginning to assign penalties against power quality indices and distribution metrics, there's no incentive not to invest in the types of systems that will deliver these benefits.

In fact, companies already are seeking the SEA solution and receiving it. One utility company with 3.2 million customers needed to improve its network performance 19 percent in two years, and 31.5 percent in seven years. The solution provided met the customer's targets a year ahead of schedule and saved some 55,000 customer interruptions each month. The SEA has also been working with UK utility companies, delivering near-term financial results.

The Smart Energy Alliance has the right mix of deep industry experience coupled with a broad understanding of the technology solutions needed for tomorrow's utility distribution SCADA. It has a very defined process for engaging with a utility to understand its current situation, its goals and tolerances for change, and its investment limitations. Using a collaborative process with the utility and the six SEA members – Capgemini, Cisco, GE Energy, HP, Intel, and Oracle Corporation – there is a proven methodology for creating a distribution SCADA system that makes sense.

The Smart Energy Alliance combines deep industry experience with a broad understanding of technology solutions from Capgemini, Cisco Systems, GE Energy, Hewlett-Packard Company, Intel and Oracle Corporation to accelerate adoption of new technologies in the utility industry worldwide.

For more information on the Smart Energy Alliance, visit <http://www.smart-energy-alliance.com>.

For more information please contact a representative of the Smart Energy Alliance member companies listed below:

Capgemini: Doug Houseman (doug.houseman@capgemini.com)

Cisco: Bob Khorey (rkhorey@cisco.com)

GE Energy: Frank Hoss (frank.hoss@ge.com)

HP: Cindy Blake (energy@hp.com)

Intel: Terry Cutler (terry.c.cutler@intel.com)

Oracle: Karen Edge (karen.edge@oracle.com)

Visit us online: <http://www.smart-energy-alliance.com>

The Smart Energy Alliance from Capgemini, HP, Intel Corporation, GE, Cisco Systems, and Oracle Corporation. © Copyright 2007, Capgemini, HP, Intel Corporation, GE, Cisco Systems, and Oracle Corporation. All rights reserved. The Capgemini logo is a registered trademark of Capgemini. HP and the HP logo are registered trademarks of HP. Intel and the Intel logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. GE and the GE logo are registered trademarks of GE. Cisco Systems and the Cisco Systems logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. Oracle and the Oracle logo are registered trademarks of Oracle Corporation. *Other names and brands may be claimed as the property of others.