

## **ABSTRACT OF THE DRBIZNET PROJECT FINAL REPORT**

The Demand Response Business Network (DRBizNet), envisioned and architected as part of this R&D project, is a highly flexible, intelligent, communications-coordination-control network that leverages modern distributed business process integration technologies and open standards to simplify and automate the California Demand Response (DR) value network (i.e., supply chain).

The project is a Demand Response Enabling Technology Development (DRETD) project funded under the California Energy Commission Public Interest Energy Research (PIER) program. As a DRETD project, it was undertaken as a high risk/high reward, collaborative R&D effort with a long-term view. It is aimed at developing “disruptive” enabling technologies for a state-wide demand responsive electric power delivery system with “10/10 improvement” objectives—potentially leading to order of magnitude (i.e., 10X) improvements in both performance and cost of DR in California.

Wide-scale acceptance of the proposed DRBizNet architectural principals and standards will facilitate an efficient electronic collaboration, workflow, and transparent exchange of information among the participants in the California DR value chain, enabling significant levels of DR at drastically reduced integration and operations costs.

The project final report presents a high-level blueprint for constructing DRBizNet based on a Service Oriented Architecture, orchestrating standards-based Web services across a business network built on the Internet. The utility industry Common Information Model (CIM) is leveraged where applicable. DRBizNet includes distributed Registries, DR Collaboration Exchanges, Intelligent Agents (IA), and standardized Web services interface with DR participants. The Web services include the services that will be provided by utilities, customers, aggregators, and other service providers, using standardized, secure, protocols. Utilities can readily introduce new DR programs through DRBizNet. Participants can readily register and participate in various programs. Many of the participants’ actions are automated through Intelligent Agents that can take actions on behalf of the participants based on the specifics of the DR programs obtained from the DR Collaboration Exchanges and the parameters specific to each participant. Implementation of each DR Program is highly automated through configuring Workflow Engines at DR Collaboration Exchanges, minimizing the need for inflexible and expensive- to-change, hard-coding of DR programs.

The DRBizNet can be implemented by the California DR stakeholders in a decentralized manner to the extent that their efforts are harmonized through a self-funding user group providing central support for 1) Architecture , 2) Buy-In from stakeholders, 3) Coordination of activities, and 4) Direction for evolution of DRBizNet. A multi-phase implementation plan is proposed leading to production operation of DRBizNet by 2010.

As part of this project, the Project Team prototyped a software system that demonstrates the key innovations introduced in this DRBizNet R&D project. Additional field demonstrations are recommended as the next phase of the project to prove the novel concepts introduced in this project and to gain DR marketplace participants’ buy-in.

For more information please see the Executive Summary of the DRBizNet Final Report.