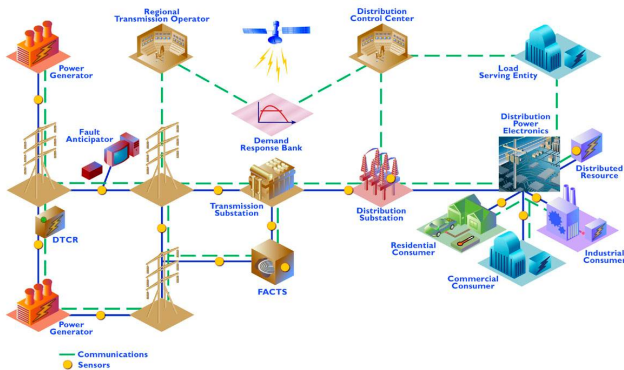


IntelliGridSM Architecture

Fact Sheet



BACKGROUND The goal for the Electric Power Research Institute’s (EPRI’s) IntelliGrid Architecture project is to assemble an integrated energy and communications system architecture to support a self-healing grid. The IntelliGrid Architecture project lays the foundation for specifying and integrating advanced intelligent equipment across the electric energy industry as well as within individual companies. The benefits of the open systems based Architecture approach include both Capital and Life-Cycle cost savings. Capital savings arise from the ability to competitively procure advanced intelligent equipment from a variety of vendors, and have that equipment interoperate. Life-Cycle savings arise from the ability to effectively integrate systems from different vendors and be able to maintain them through a long term life-cycle. Open systems architecture enables the development of more uniform systems across the enterprise, which are easier to maintain than a disparate array of proprietary systems.

The foundation of this new system is the IntelliGrid Architecture – an open-systems-based comprehensive reference architecture. It will integrate intelligent equipment and data communications networks into an industry-wide distributed computing system. It is the fundamental basis for enhanced system capabilities.

OBJECTIVES OF THE INTELLIGRID ARCHITECTURE PROJECT FOR 2005

- **Education and Tech Transfer**—educating and obtaining feedback from all stakeholders

The IntelliGridSM Architecture provides key accomplishments in the development of an overall industry-wide infrastructure for advanced automation and consumer communications.

- **Field Demonstration and Testing**—Identify and initiate projects at utility sites that implement and further develop IntelliGrid results and methods
- **Collaboration** with key industry projects and initiatives
- **Perform** technical work necessary to complete critical elements of the architecture

APPROACH

- Education and tech transfer includes tasks such as holding training workshops at utilities, publishing joint articles, speaking at industry events, developing tutorial materials, improving the usefulness of the IntelliGrid website and industry model, and providing examples of how to apply the results to specific industry applications.
- History has shown that the best technology and knowledge transfer is through field application at a host company. We will work with our utility partners to identify and plan projects that showcase one or more of the IntelliGrid Architecture recommendations. Initial engagements with utilities will be two-pronged: gaining corporate commitment to being an IntelliGrid showcase, and workshops to assist them to implement the IntelliGrid Architecture in their organization. This is followed by the development of a plan with key personnel from interested participating companies. Projects will meet the immediate needs of the host company as well as contribute to the resolution of one or more key technical issues remaining within the architecture. Examples of candidate projects may range from enterprise-wide integration development to a narrowly scoped automation project.

- Coordination with and contribution to key industry projects and initiatives that can benefit from the use of IntelliGrid methods and promote the adoption of IntelliGrid. Industry projects in this category include Long Island Power Authority's advanced automation, consumer communications, and enterprise architecture development and TXU's advanced metering infrastructure development. Initiatives targeted for collaboration are the industry standards bodies such as IEC TC-57 Working Groups and the GridWise Architecture Board.
- Follow-on development of the Architecture will be defined by known existing gaps, feedback from first users, and recommendations from vendors and IT companies and standards bodies. The project will also deliver an advanced industry model that can be downloaded for general use by the energy industry. This model is seen as one of the key technical tools by which the industry can effectively integrate applications and products.

PROJECT TEAM The project is managed by EPRI, and a team of contractors.

DELIVERABLES

- Identify, define, and begin three field demonstrations
- Conduct training workshops at each utility partner site
- Issue Version 2.0 of UML industry
- Update the IntelliGrid architecture web site quarterly
- Launch IntelliGrid subcommittee within UCA International Users Group
- Establish working liaisons with key industry standards organizations and consortia

PROJECT ADVISORY GROUP & SCHEDULE The Project Advisory Group (PAG) is made up of technical managers at utilities and manufacturers. They provide technical oversight to ensure that the objectives of the projects are met, that the planning and execution of the projects are done in a professional manner, and to facilitate the transfer of technology to the partners. We expect all our advisors to provide input to the projects and act as ambassadors of the IntelliGrid concept throughout the industry.

ACCOMPLISHMENTS TO DATE (DETAILS AVAILABLE AT www.EPRI-Intelligrid.com)


- Published final report – August 2004
 - [Volume I: IntelliGrid User Guidelines and Recommendations](#)
 - [Volume II: IntelliGrid Functional Requirements](#)
 - [Volume III: IntelliGrid Model](#)
 - [Volume IV: IntelliGrid Technical Analysis](#)
- Developed interactive website
- Developed industry model
- Performed numerous training workshops at partner utilities
- IntelliGrid Architecture used by California Energy Commission to develop reference design for demand response

CONTACT INFORMATION For more information, contact the EPRI Customer Assistance Center (EPRI CAC) at 800.313.3774 (askepri@epri.com).

TECHNICAL CONTACT For details on the described projects, please go to the www.epri-intelligrid.com Web site or contact Marek Samotyj, IntelliGrid Program Director, at 650.855.2980 (msamotyj@epri.com).

The IntelliGridSM Consortium is a collaboration of utility, manufacturers, researchers, and government leaders, all working together to make the intelligent, self-healing power system of the future a reality.

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