

Smart Grid Integration

Utility organizations are challenged with creating a Smart Grid solution that meets the regulatory, business and technical requirements unique to each jurisdiction, utility and IT environment. With constantly changing variables, utilities require a flexible and adaptable solution.

CGI's Smart Grid Integration framework can help utilities overcome these challenges. Built from deep industry knowledge and technology know-how, it includes the essential building blocks to meet a utility's unique needs and enable a faster time to market.

SMART GRID SERVICES

Utilities continue to look for ways to improve customer service while reducing operating costs. The distributed intelligence offered by an AMI network provides important information to the utility's distribution operations, and is an important part of the Smart Grid infrastructure initiative. As the popularity and use of an AMI network increase, so does the realization that the AMI network configuration provides significant value to the utility, helping address numerous utility distribution concerns.

Combining its business knowledge and expertise with experienced professionals, CGI's integration team is positioned to bring you lower integration costs, tailored to meet the complexity and budget for your project.

Utility Functions and Processes

Business and operational functions and processes, including automated meter reading and field network control, meter data management, customer care and billing, outage management, and power restoration verification.

Smart Grid Systems

Systems and components including both functional and non-functional aspects of Advanced Metering Infrastructure, Meter Data Management, Customer Care and Billing, Outage Management, GIS and other entities.

Information Models

Smart Grid information models including industry standards, logical aspects, and physical implementations. Information models combine those implemented in the core repositories, as well as the import/export interfaces associated with Advanced Metering Infrastructure, Meter Data Management, Customer Care and Billing, Outage Management, and GIS.

Service-Oriented Architecture & Web Services

SOA and Web Services-based development and integration paradigms, with specific areas of expertise that includes service definition, registration, governance, WS* standards, SOAP, XML-RPC, and UDDI among others.



BUSINESS FOCUS

CGI understands that ultimately Smart Grid is about deriving expected business benefits. Our business process-based approach ensures that business process drives the technology.

TECHNOLOGY EXPERTISE

- Utility Functions and Processes
- Smart Grid systems
- Information Models
- SOA architecture & Web services
- ESB expertise
- Off-site Development
- Solution Development Process
- Solution Instrumentation & Monitoring
- Secure Development
- Comprehensive Testing
- Project Management

Enterprise Architecture and Enterprise Service Bus (ESB) Expertise

Extensive knowledge and expertise with custom development and integration using industry leading ESB solutions. Specific product capabilities include, but are not limited to, Business Activity Monitoring (BAM), Business Process Management (BPM), Enterprise Integration, SOA Infrastructure & Governance, XML Data Management, etc.

Off-site Solution Development Environment and Process

CGI provides and uses its own representative systems and environments at their location for development, unit level testing, stub testing, and smoke testing. Under controlled conditions and management, CGI will then port their integration solutions for additional testing in the client's development and test environments. CGI adheres to a mature development process and lifecycle, with key aspects including detailed solution architecture and design methodology with example artifacts.

Solution Instrumentation & Monitoring

Detailed understanding and expertise with developing solution components that include instrumentation and monitoring functionality. Key aspects of such expertise include detailed solution component designs that provide appropriate instrumentation utilizing mechanisms such as Windows, syslog and other logging components, SNMP, alerting, etc.

Secure Development

A mature Security Development Lifecycle (SDL) process is a core component of our broader solution development process and lifecycle. Key aspects of secure development include but are not limited to detailed security architecture and design methodology, artifacts, use of specific validation techniques such as code profiling, use of vulnerability testing tools, etc.

Comprehensive Testing

Functional and non-functional (e.g. performance, capacity, security, etc.) testing, and successful delivery of integration projects requiring this knowledge. Key aspects include test case development, use of testing tools, defect tracking and remediation, etc.

Project Management

Core project management methods, practices and tools. Key aspects include project planning, WBS development, dependency management, critical path management, resource leveling, Microsoft Project-based tools, etc. Experience with Integration, Utilities and Smart Grid in particular is key to project success.

SMART GRID INTEGRATION IN ACTION

CGI's smart grid integration portfolio provides immediate value, bringing best practices and lessons learned to provide reliable electric service, improving operational efficiency, and saving money for its customer-members:

"With CGI's commitment and depth of experience, SMECO will move forward with the implementation of a Smart Grid that helps our customers to better understand and control their energy use," David Johnson, SMECO's Meter Operations Director. "This integration will assist SMECO in reaching the EmPOWER Maryland goal set forth by Governor Martin O'Malley, which targets a 15 percent reduction in total electric usage on a per capita basis by 2015."

NEXT GENERATION GRID

- Distributed Power Generation
- Reduction in Peak demand
- Lower Energy Consumption
- Increase in Energy Efficiency

AUTOMATED METER INFRASTRUCTURE

Establish a two-way communication network between electric grid network devices and the back office systems.

ABOUT CGI

Founded in 1976, CGI is a global IT and business process services provider delivering a portfolio of industry-centric software solutions coupled with high-quality business consulting, systems integration and outsourcing services. With 69,000 professionals in 40 countries, CGI has an industry-leading track record of on-time, on-budget projects.

We partner with utilities across the globe to provide the knowledge and expertise to enable automation of the industry's best practices for enterprise asset and resource optimization.

For more information about CGI, visit www.cgi.com/utilities or email us at info.util-sol@cgi.com.