



Energy Innovation Center

NOKIA

A workplace where Nokia, partners, and utilities are building the foundations for tomorrow's end-to-end Smart Grid solutions

- Integrate and test Nokia solutions and test interoperability with partner technology components to create an end-to-end Smart Grid communications network
- Help utilities maximize ROI with a holistic approach to end-to-end Smart Grid communications versus ad hoc investments
- Enable utilities to make informed technology selections by leveraging lab experience and testing
- Ensure network component interoperability and significantly reduce a utility's implementation and ongoing operational risk with pre-integrated and pretested solutions
- Deliver innovation at a solution level, such as end-to-end security and management



All around the world, utilities face challenges that are driving them to create a smarter grid. The most successful Smart Grid projects address multiple challenges. They improve power delivery, power quality, and operational efficiency while incorporating green energy and increasing customer satisfaction. Utilities achieve the greatest ROI on their Smart Grid when they invest in a system that enables multiple applications and can scale to support future innovations. The Nokia Energy Innovation Center provides a unique environment where Nokia, partners, and utilities will innovate together to create the communications infrastructure that provides the foundation for a Smart Grid.

EIC overview

The Nokia Energy Innovation Center (EIC) includes the award-winning utility telecommunications technology from Nokia and key partners that are integrated together into a live communications network. This enables the integration and testing of different potential technology components that form an end-to-end Smart Grid network. Use-cases are developed and testing is executed to understand the performance and interaction of specific features and situations across an entire solution and on specific components.

Utilities can leverage Nokia's EIC experience to understand the specific benefits and challenges that are related to the different technologies, and apply these to help make the right technology selections based on their specific needs. This will minimize the risk associated with implementing new technologies, and help utilities select technologies that provide the highest ROI.

Different technology components need to interoperate successfully to deliver a reliable, secure and predictable end-to-end network. Partner and utility provided components can be demonstrated and interoperability tested with Nokia solutions to help utilities ensure their communications system provides flawless interoperability and reduces both implementation and ongoing operational risk. By taking a holistic view of the network, utilities have the opportunity to reduce their total cost of ownership in comparison to ad hoc investments.

By working closely with technology partners and incorporating the needs and feedback of utility customers, Nokia will be able to deliver significant innovations at the solution level. This means the innovations will not be specific to only one part of the communications network. Rather, they will benefit the end-to-end communications solution. This can include areas such as consistent security approaches across different products, simplified network management, and interworking across different technologies to ensure performance for mission-critical traffic.

EIC components

The lab was specifically developed to mimic an operational utility environment. It includes sections representing transmission, distribution and operations. Transmission and distribution each include equipment that is typically found in several sizes of substations. Many technology options for field and neighborhood area networks are present for distribution automation and advanced metering infrastructure solutions. Equipment for operations and data centers, network management, and security of the network are accessible in the operations section.

Actual utility equipment or task-specific simulators are incorporated into the environment to model real-world scenarios, such as the loss of a node in an AMI network or a microwave radio link fade during a hurricane. Test equipment allows for testing of specific use-cases, performance, and failure conditions, both within a given section as well as across the end-to-end network.

As a global resource, the center welcomes utilities to visit in person, but also includes video cameras and external access capabilities to enable remote participation by utilities.

Nokia advantage

Nokia has developed a set of “no compromises” design criteria that provides the guiding principles for our Smart Grid solutions. The EIC enables us to ensure the solutions we deliver to utilities meet these six criteria.

Work in this center leverages Nokia’s decades of experience in providing the communications that enable utilities to measure and manage the flow of power in their grid. Nokia is committed to being a trusted communications partner to utilities as they continue to evolve to a smarter grid.

This EIC is a tangible symbol of that commitment — a workplace where Nokia, our partners, and utilities will innovate together to build the foundation for tomorrow’s end-to-end Smart Grid solutions.

For more information and to schedule time in the EIC, contact your local Nokia representative.

For more information on Nokia Smart Grid solutions, visit
www.nokia.com/networks/industries/power-utilities/#high-performance-networking

No Compromises

Communications Design Criteria

FLEXIBILITY

Enable and adapt to new applications
Support legacy applications

PREDICTABILITY

Manage and enforce service quality controls
No starving of a service by others

SCALABILITY

Handle increased bandwidth demands
in an efficient and cost effective way

SECURITY

Implement security by design to isolate traffic,
control access and protect against threats

SIMPLICITY

Provide service-level network management
tools to simplify adoption of new technology

RESILIENCY

Design for no single point of failure at
the nodal or network level

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NOKIA

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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