



Cisco Services Field Area Networking

Today's utilities increasingly rely on a variety of new field services to improve efficiency and productivity both on and off the utility site. These are enabled by wireless field area networks (FANs) designed to integrate existing systems with increasingly widespread applications such as advanced meter infrastructure (AMI), distribution automation (DA), and protection and control. Such capabilities support the automatic gathering of information; monitoring and security of distributed systems; and faster fault location, recovery, and automated sectionalization.

To help leverage these powerful capabilities, Cisco offers a portfolio of services for the industry's first multiservice communications FAN. Cisco's expert teams analyze, plan, and design a complete IPv6-based network based on a combination of core, edge, and access layer products and solutions. By delivering multiple applications over a single secure platform, electric utilities benefit from lower total cost of ownership as well as create value from new services and functional integration.

Cisco Services for Field Area Networking

The Cisco® GridBlocks architecture provides a comprehensive reference design for the wireless field communication network. Our FAN services use a design framework certified by Cisco that provides a wide range of benefits to the utility, including:

Scalability:

- IPv6-based hierarchical designs
- Future scalability through simple platform additions at the aggregation layer
- Designed to large-scale metering and DA deployments

Security:

- Fully secured wireless networking from the field to headquarters
- Monitoring and report of hardened communications devices
- Full access control to the services zones for regulatory compliance

Availability:

- Redundant architecture with headend path redundancy
- Support for disaster recovery deployments



Network management:

- Operational readiness for gathering, analyzing, and utilizing FAN data
- Infrastructure design to support management tools
- Management of communications with the combined smart grid solution

Cisco FAN Services and Deliverables

Cisco has developed a step-by-step methodology to help lead utilities through the FAN planning process, including business and technical consulting to help examine project-level planning and design as well as full information communication technology strategy development. Our services experts work closely with utility operations teams to create an architecture and roadmap to meet the needs of the utility for decades to come.



Cisco Services Field Area Networking

Network Architecture Discovery

The discovery process facilitates and documents company initiatives and business needs to create a plan to begin addressing communication network planning:

- Align the smart grid transformation to business and communications objectives and priorities
- Unite operations, engineers, technicians, management, integrators, and other stakeholders to determine architecture strategy
- Gather information from a wide range of resource to consider every aspect of the project and how they relate to each other

Optional deliverables include:

- Discovery workshop and presentation summary
- Alignment and scoping plan document
- Business case and ROI model report
- Priorities and planning constraints report
- High-level requirements description report



Business Priorities Assessment and Use Case Development

Cisco experts conduct a detailed analysis of business priorities and objectives and examine the development and assessment of options to address these needs:

- Objectives mapped to current and future use cases
- Identifying architectural options to implement the use cases and establish an operational and management framework
- A qualitative financial and ROI analysis to determine the architecture that best helps to cut costs and promote new sources of revenue

Optional deliverables include:

- Test cases development for CGR and ASR design functionality

Network Architecture Assessment

Cisco Services evaluates the functional strengths of existing networks to accelerate architectural planning and design. The team also examines and documents critical readiness factors such as infrastructure design, investment, environmental issues, and security, making recommendations to proactively resolve gaps and enhance performance:

- Review technical objectives and requirements, proposed topology, protocols and features, resiliency, scalability, availability, performance, and scalability
- Assess current infrastructure and build a gap analysis based on future requirements
- Assess technical controls

Optional deliverables include:

- Architecture framework document
- Business diagnosis report
- Gap analysis report

High-Level Planning, Architecture, and Design Development

Cisco's Assessment and Architecture Services teams review the current state of each network and areas for improvement to align the utility to the needs of its business, unify network-based services, and ascertain the most effective architecture for the organization:

- Map business and technical objectives to a proposed high-level architecture and network design
- Create "future-state" use cases, high-level designs, and requirements for communication and security



Cisco Services Field Area Networking

Optional deliverables include:

- High-level architecture and design document
- Business roadmap and release strategy report
- Financial plan
- Operational and governance model report

Network Planning and Design

Cisco's experts perform in-depth technology requirements development to create high-level network designs as well as the low-level network configuration templates and guides to support utility implementation, pilot, and testing programs.

Optional deliverables include:

- Translation of designs into detailed design recommendations based on hardware, software, topologies, and as-built configurations
- Detailed design plan including network logical and physical topology, IP addressing scheme, software protocols and features configuration, configuration templates, and recommendations for software versions or releases based on hardware

Benefits

Cisco builds upon its Connected Grid portfolio with new powerful solutions, services, and partnerships to help utilities modernize the electrical grid to provide the following benefits:

- Meet workforce enablement requirements for remote access, timely maintenance, and monitoring
- Optimize current workforce in the face of the industry's chronic skills shortage, finding new ways to access expertise remotely
- Gather secure, real-time information for better visibility, analysis, and problem solving
- Manage costs more effectively by reducing operating expenses and capital expenditures with well-planned and designed network architectures
- Improve regulatory compliance by integrating security features across the communications network
- Add business services that help to integrate field operations and support, including mobile data and voice
- Provide improved incident response, better worker safety, and stronger loss prevention

Why Cisco?

Cisco brings more than 30 years of industry networking experience to each utility project. The Cisco Connected Grid Services team has the experience, expertise, and portfolio of technology solutions to improve how the energy industry serves its customers and manages its day-to-day business. By uniting disparate networks through the field and out to the customers, Cisco enables utilities to manage assets more efficiently and secure information across the grid, optimizing business functions and simplifying grid operations for the future.