

Advanced communication
solutions for the smart grid

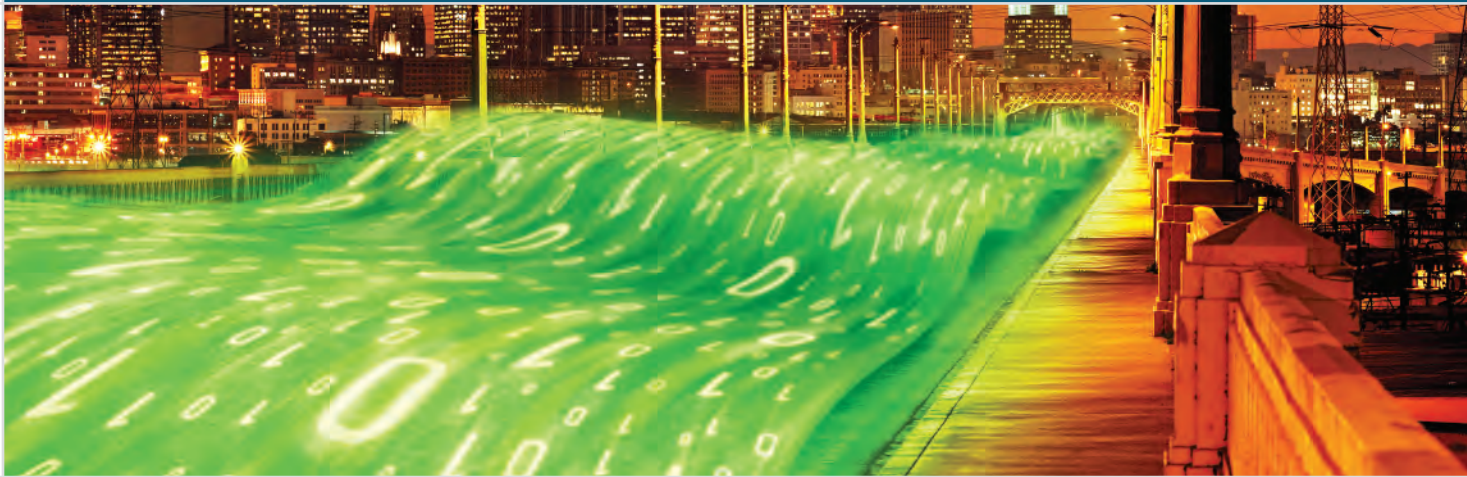
Gridstream
RFmesh



Landis
Gyr+
manage energy better

RF Mesh Network Solution

The Landis+Gyr Gridstream™ RF Mesh solution is a proven platform for advanced metering, distribution automation and personal energy management that delivers enhanced connectivity to every application within the utility – all from a single network.



One Network, Infinite Applications

Supported by a 100-year legacy of providing quality products and service that stay on the cutting edge of technology, the Gridstream portfolio of energy management technologies delivers advanced metering, distribution automation and personal energy management systems that have been implemented by utilities worldwide.

The Gridstream RF Mesh solution is a full two-way wireless mesh communication system that delivers the promise of the future smart grid by supporting the monitoring and control functions necessary to improve power delivery, control costs and promote efficiency – all on one network.

Any advanced metering and diagnostic information that the electric meter provides can be sent over the network to the Command Center™ operating system and displayed, reported and interfaced to a utility's Meter Data Management (MDM) system, Customer Information System (CIS), Outage Management System (OMS) and other applications. At the same time, commands can be sent to direct load control and disconnect switches, or pricing information passed on to consumers – all at the touch of a button.

Key Benefits:

- True wireless, peer-to-peer mesh network
- Remote programmability
- “Plug-and-work” auto-registering endpoints and devices
- Dynamic routing, self-healing network
- Support for 15-minute interval data
- Integrated disconnect meter option
- ZigBee®-enabled home area network capability



The only network providing a proven platform for the entire spectrum of smart grid communications.



A Multi-Functional Network

At the center of the Gridstream RF Mesh solution is a true mesh, peer-to-peer network in which each endpoint, device and router communicate in a peer-to-peer fashion, extending the coverage and reliability of the network. The asynchronous, multi-channel communication structure allows for increased data throughput and opens more paths to the data collector.

The network is self-healing, featuring dynamic routing messages that automatically adjust for changes to endpoints and the introduction of obstructions, such as foliage or new construction. System routers utilize

one Watt of power to increase transmit distance and throughput, while data collectors support up to 25,000 meters, further minimizing infrastructure and maintenance costs.

Just as it provides a comprehensive network for advanced metering, Gridstream RF Mesh also provides the backbone for distribution automation and personal energy management communications.

Gridstream endpoints form a powerful mesh network that utilizes multiple channels to provide more throughput and less latency.

A choice of meter platforms and variable power outputs ensure maximum efficiency, and 256-bit AES encryption provides maximum security.

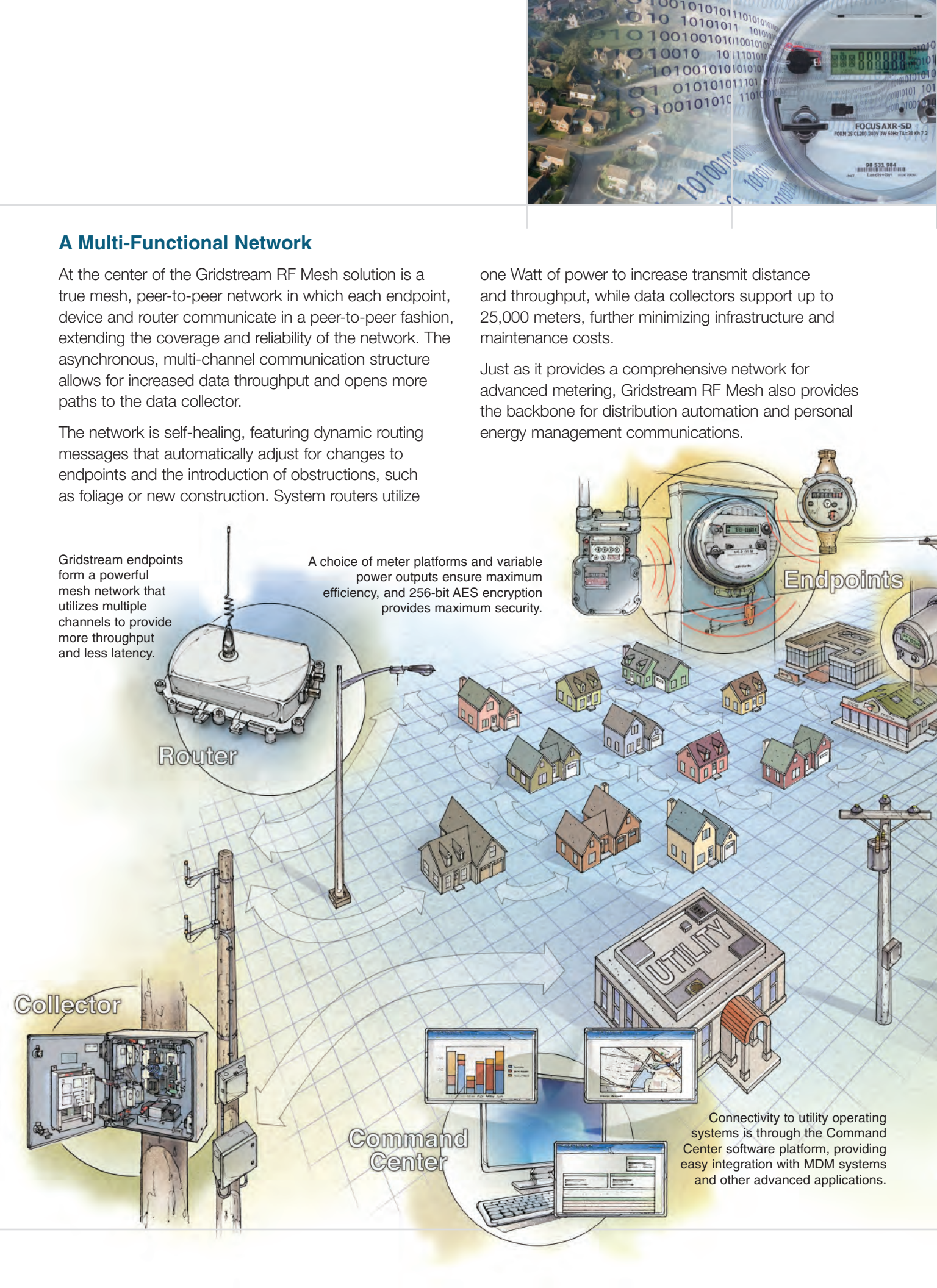
Router

Endpoints

Collector

Command Center

Connectivity to utility operating systems is through the Command Center software platform, providing easy integration with MDM systems and other advanced applications.

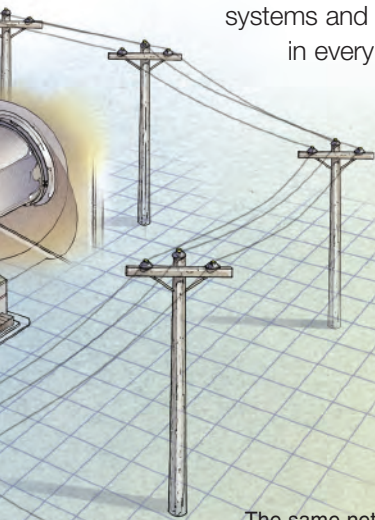




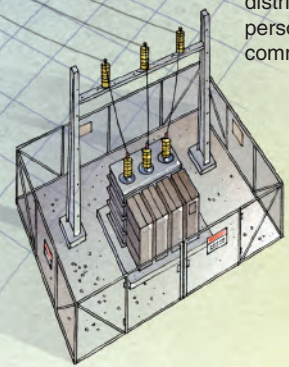
Promoting energy efficiency with demand response and personal energy management capabilities built-in.

Enhanced Connectivity

With support for open standards at the meter and multiple protocols on the network, the Gridstream RF Mesh solution provides long-term viability for current and future device communication applications. Landis+Gyr not only supports current standards, but can quickly adopt new standards with remotely programmable radios that eliminate the need for on-site firmware upgrades. The Command Center operating software provides an easily integrated, open platform for connecting the solution to the center of utility operations. Application programming interfaces (APIs) enable trouble-free connection to MDM systems and support for utility applications in every department.



The same network provides distribution automation and personal energy management communication capabilities.



A Proven Path to the Future

Not only are Gridstream solutions designed to adapt and grow as technology changes, they are also engineered to provide a migration path for customers to upgrade existing technology. Backward compatibility, remotely upgradeable firmware and a standards-based architecture allow utilities to deploy systems with the confidence that their investment won't become obsolete.

With an installed base of 13 million RF endpoints and a 12-year history of successful mesh network deployments, Landis+Gyr also provides the peace of mind that comes from working with a proven solutions provider.

System Support

Investing in an advanced metering system is a long-term commitment. As with any technology a utility deploys, the measure of an advanced metering program's success is directly related to the ongoing support it receives. Landis+Gyr brings more than 100 years of customer support experience to each smart grid project. As a pioneer in program management and deployment services, the company offers 24/7 technical service, training, project management and software integration support to all of its customers.

A proven solution with multiple capabilities, Gridstream RF Mesh has been deployed around the world.



Gridstream provides analytical capabilities to optimize distribution network performance and maintain power quality.

System Applications



Demand Response

Whatever the interval data needs of the utility, the Gridstream RF Mesh solution is able to respond with 5, 15, 30, or 60 minute interval data available by request. Endpoints in kWh-only meters are capable of storing 35 days worth of data, which can be used for determining TOU or demand billing structures. And support for on-demand load shedding is provided both with appliance load control and personal energy management solutions.

Analytics

Advanced metering goes beyond demand and usage data to provide analytical data, such as voltage and power quality, that utilities can use to optimize distribution network performance and prevent potential outages. Gridstream RF Mesh provides direct access to the meter register and reports hundreds of data variables for use in engineering and outage management applications. Real system data provides a more reliable benchmark for modeling, planning and troubleshooting.

Remote Disconnect

The ability to remotely disconnect a meter not only improves operational efficiency for the utility, it also enables consumer directed programs such as pre-payment of electric service. And with the RF mesh network, utilities have the added advantage of the FOCUS AX SD endpoint with integrated disconnect, that enables immediate load-side disconnects and reports status back to the utility.

Personal Energy Management

As consumers become more involved in energy efficiency, Landis+Gyr provides the tools for in-home networking, off-peak recharging of hybrid vehicles and monitoring distributed generation. The RF mesh solution is available with an integrated ZigBee HAN radio. Using the ZigBee Smart Energy Profile, these meters can serve as a HAN gateway for applications such as in-home displays, smart thermostats, real-time pricing programs, prepaid metering and other applications that may be developed in the future.

Multi-Service

In addition to electric meters, the Gridstream RF Mesh solution provides communication options with a variety of devices, including, gas modules, distribution automation devices and direct load control switches. RF mesh enabled endpoints act as two-way nodes in the wireless mesh network and actively route data to and from the data collector.

Outage Detection

Intelligent outage detection starts with a super capacitor in the endpoints that provides 60 seconds or more of communication time after power is lost. Not only does this allow a solitary outage message, but also enables endpoints to collect and transmit from other endpoints to better report the extent of an outage. System routers and collectors can continue reporting for 24 hours after an outage to ensure communication gets through.

Software Integration

The benefits of advanced metering are driven by data management. Landis+Gyr provides integration with both Oracle and SQL databases. Command Center, the operating software for the Gridstream RF Mesh system, is tested to perform with the leading MDM, CIS and Engineering/Operations applications. This high level of integration improves deployment speeds and provides immediate out-of-the-box benefits.

Providing powerful options for building the smart grid of the future, Gridstream is supported by a global team of experienced personnel dedicated to your success.





Landis+Gyr – Your Smart Grid Partner

Landis+Gyr offers a combined portfolio of advanced metering and smart grid automation solutions to utilities in more than 30 countries. The company's global experience includes deployment of over 1,000 advanced metering systems, supporting an installed base of over 300 million meters, and managing over 15 million meters under contracts.

With smart grid solutions from Landis+Gyr, utilities streamline processes, improve energy efficiency and reduce peak load. Consumers benefit from personal energy management technology, which empowers them to monitor and manage their energy usage. And communities benefit through the smarter use of energy resources.

This is what it means to manage energy better.



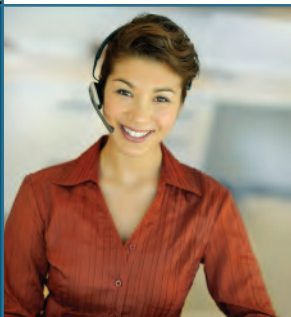
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