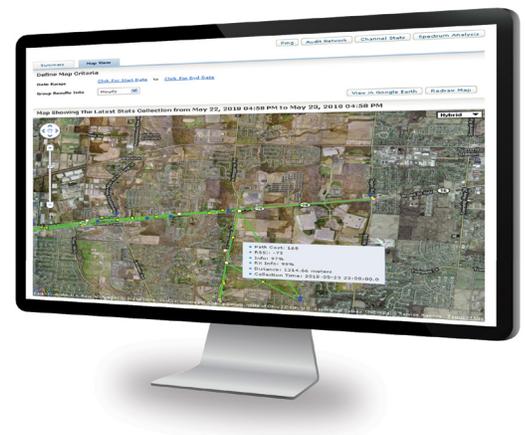


GridScape for Distribution Automation

Data sheet



NETWORK MANAGEMENT FOR DISTRIBUTION AUTOMATION (DA) COMMUNICATIONS:

- » Enables central management of an Itron-based DA communications network, including over-the-air configuration and upgrades
- » Supports end-to-end security configuration and management at the link, network, and application layers
- » Provides grid-aware communications networking, including device relationships and geographic location of assets
- » Supports utility-grade scalability and performance
- » Provides configurable real-time and historic network statistics, depicted on Google Maps/Earth
- » Analyzes spectrum on any part of the managed network
- » Enables flexible deployment, supporting separate or combined DA and AMI networks and offering Ethernet, serial, or mixed interfaces

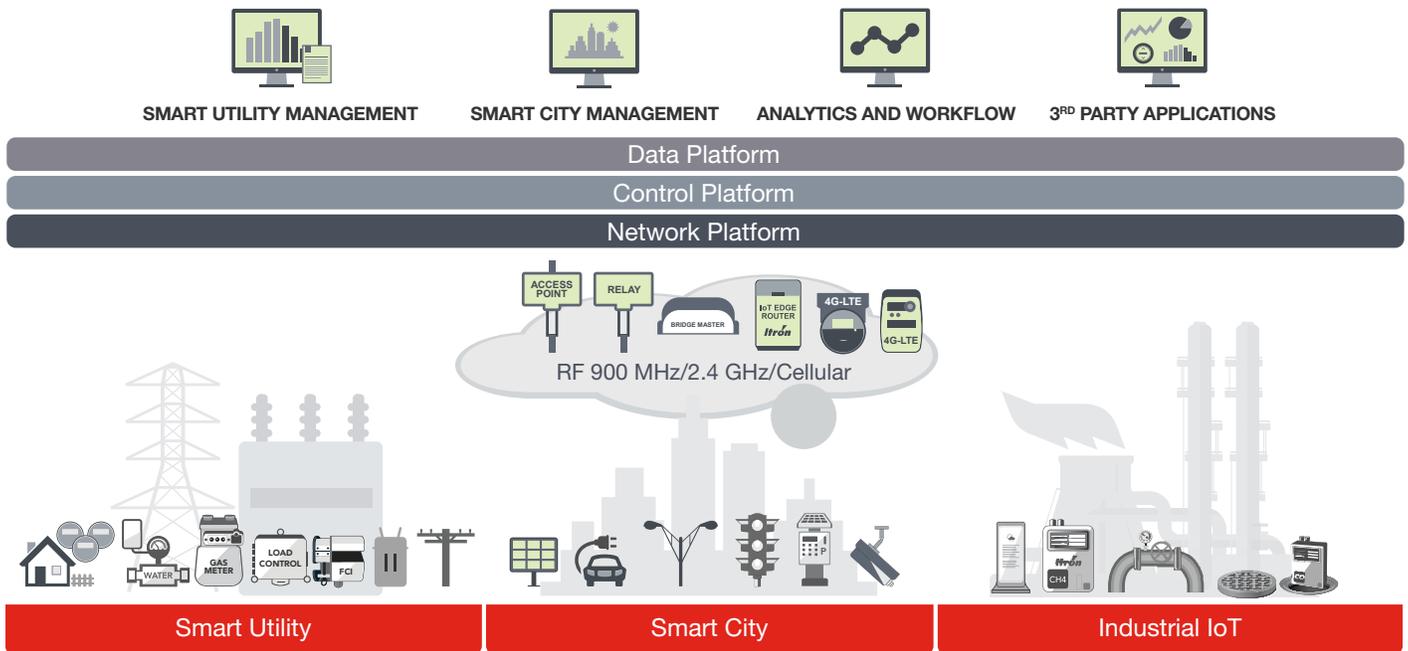
FULL CONFIGURATION AND MANAGEMENT OF THE DA COMMUNICATIONS NETWORK

The Itron platform combines network infrastructure, software, and professional services to enable a range of smart grid applications. GridScape network management software enables utilities to configure, manage, and secure Itron network devices.

For DA networks, GridScape not only actively manages Bridges and Relays, but also provides utilities with the broader context of the IEDs connected to the network, the traffic flow going over it, and the physical location of the assets – allowing the operator to be more aware and make better decisions. Designed to minimize truck rolls, GridScape allows network design professionals to be more effective by providing centralized set up and maintenance while retaining flexibility.

THE ITRON GEN5 SOLUTION SUITE

Any application server: not dependent on Itron head end



The Itron platform supports a range of smart grid applications on a single open standards-based network.

GridScope provides utility staff with the following capabilities for setting up and running the communications network serving Distribution Automation:

Centralized management of an Itron-based DA communications network

- » Fully centralized design and deploy workflow
- » Over-the-air firmware upgrades
- » Over-the-air configuration with configuration audits

Grid-aware communications networking

- » Understanding of communications, substation, and IED relationships, including physical location and IP and DNP3 addresses and communications
- » Geographic locations of all assets

End-to-end security management

- » Configuration and auditing of security at three critical layers of the networking stack: link layer, application layer, network layer
- » Network configurations are secured because all networks and devices are locked by default and must be unlocked to change configurations

Utility-grade performance

- » Support for two million endpoints
- » Complete application redundancy

Complete access to real-time and historic network statistics

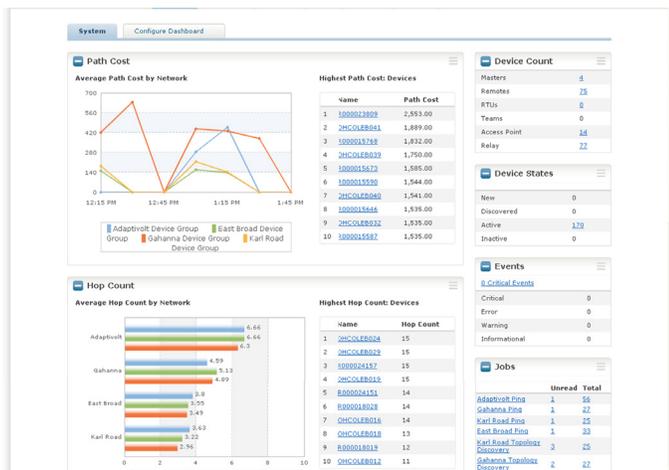
- » Google Maps and Earth visualization
 - Automatic maps with color-coded link status
 - Context-aware mouse-over statistics, with link and asset details
- » Fully configurable statistics-gathering jobs via time, device, group, and statistic type
- » Graphical charts, tabular reports, and exportable data

Spectrum analysis from any part of the managed network

- » Bar chart display of spectrum from any part of the managed network

Flexible deployment

- » DA-only and combined DA/AMI Bridge networks
- » Configuration of DNP3 over serial, IP, or mixed networks
- » Configuration of SCADA-to-IED, IED-to-IED, or mixed traffic flows



This GridScope dashboard provides an at-a-glance view of the overall health of the Bridge deployment.

Utility-class management application

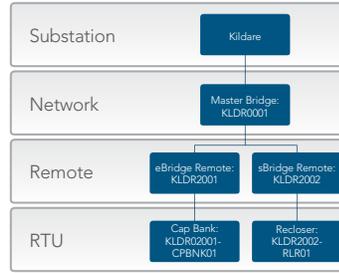
Based on the same technology as Itron's UtilityQ suite of advanced metering applications, GridScape provides the scale and redundancy capabilities demanded by utilities. GridScape's ability to scale to support two million nodes and support for full data center redundancy and an integrated scalable database enables a utility to depend on the application to handle its current and future distribution grid requirements.

Full utility awareness

GridScape offers more than just communications management; it provides a complete grid context for the operator, with full geographic visualization and full awareness of the underlying telemetry and control devices it supports. This integrated context helps the operator prioritize responses based on an accurate understanding of the criticality of a given problem.

Centralized lifecycle management for communications devices

To simplify initial network build-out, GridScape uses the Itron network to push a full configuration to a factory-standard Bridge. This approach allows the network design engineer to focus on designing and operating the network rather than spending time in the field. This model also facilitates change control such as RMAs and adds and moves. Operators can also schedule configuration deployments, including retries and audits, to ensure that GridScape and the network are always synchronized.



Network Name	KLDRO-001	
Master SSN RF Routing Prefix	fd2e:239f:7912:f001::/64	Master RF IPv4 Address
	10.172.1.1 / 24	Master Ethernet IP Address
	192.168.1.1/24	Destination Networks
	192.168.2.0 /24 next hop: 192.168.1.2	SCADA Systems
DNP3: 0 IP Address: 192.168.2.10 (standalone)		Description
Kildare Substation		
Name	MAC Address	RF IP or DNP3 Address
KLDRO01	00:13:50:ff:fe:08:21:44	IP: 10.172.1.1
KLDRO2001	00:13:50:ff:fe:08:21:66	IP: 10.172.1.20
KLDRO2001-CPBNK-1	null	DNP3: 1232

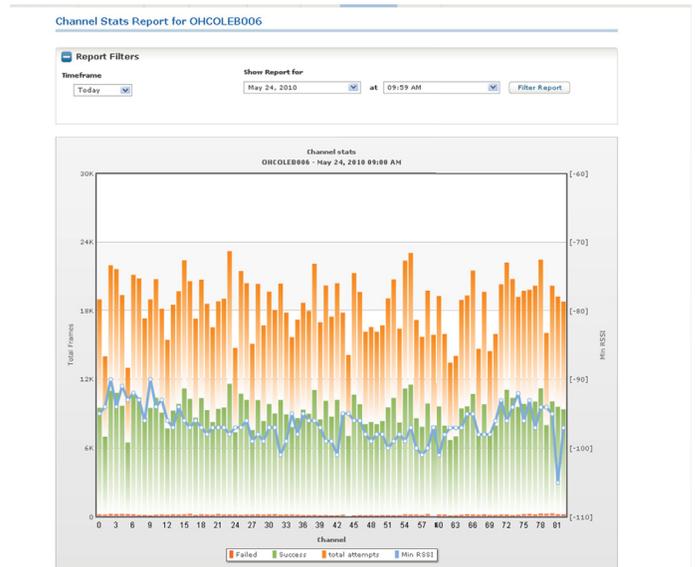
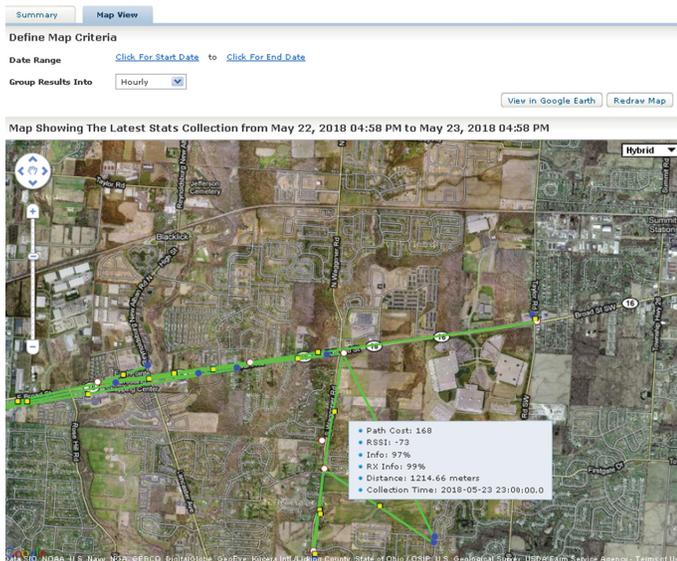
GridScape operates on a notion of hierarchy in organizing Bridge devices into a network. Master Bridges are associated with substations and with a set of Remote Bridges that tie to that Master Bridge.

Real-time and historical statistics

GridScape allows the network operator to determine what statistics to gather, how often to collect them, and which devices to query. This flexibility allows the operator to establish a baseline of desired information and drill down for more granular information only in areas that require it. The operator can search statistics through time and have data displayed graphically or in tables or be exported for analysis in other systems. In addition, operators can query the network in real time to gain immediate insight into events.

Services for smart grid Bridge deployments and GridScape

Consistent with all of its offerings, Itron offers a complete set of Bridge network design, testing, training, and deployment services to take the project from conception to conclusion or to augment existing staff at a utility. GridScape can be a fully independent system deployed separately from the AMI metering applications, or it can reside inside the same data center.



GridScape provides a number of ways to visualize network health, including placing devices on Google Maps/Earth and displaying spectrum analysis.



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