

The Itron logo is located in the top left corner, featuring the word "Itron" in white lowercase letters on a red rectangular background with a small yellow lightning bolt icon above the letter 'o'.

Itron

A man in a green and white plaid shirt is seated in a black office chair, working at a desk in a control room. He is surrounded by multiple computer monitors displaying various data visualizations, including maps, charts, and live video feeds of power equipment. The room is dimly lit, with the primary light source being the screens. The man is looking intently at the monitors, with his hands on a keyboard and mouse.

Grid Operations



Market forces and new technologies are driving you to transform your operations and business capabilities. An increasingly interactive grid, rising public expectations and accountability, government mandates and faster outage restoration are just some of these factors.

According to the Energy Information Administration (a division of the DOE), utility customers experience an average of 143 outage minutes per year due to typical interruptions, but an average of over 327 outage minutes per year when major events (such as storms, hurricanes, etc.) are a factor. Reliability and resilience are everything. A stable and resilient power grid, as well as balanced grid assets can mean the difference between a brief outage and a lasting, catastrophic failure. To adapt to grid reliability challenges, you must embrace new technologies and strategies that will improve grid intelligence and employee productivity. Through Grid Operations, you can quickly leverage the power of the grid to reduce operational costs, improve efficiency, increase customer satisfaction and satisfy regulatory pressures.

Grid Operations allows you to:

- » Identify anomalies in order to automatically reroute electric paths away from failed devices or links
- » Restore service rapidly, efficiently and safely
- » Reduce the need for site visits through automated, remote meter reading and billing
- » Improve visibility into the status of networks and devices
- » Strengthen communication with customers
- » Save millions in operational costs

RISING TO THE CHALLENGE: GRID RELIABILITY

Grid Operations supports data intelligence and helps you reach a state where data analytics enable more proactive management strategies and optimization. Through a combination of both software and services, such as Outage Detection, Reliability Analysis, Transformer Load Management and Voltage Analysis, you are given the tools to gain valuable insight into your operations.

Outage Detection

Delivering consistent and reliable energy to your customers is a priority. When service is interrupted, you are expected to restore service as quickly and efficiently as possible. Outage Detection interprets the tsunami of raw power outage and restoration notifications to deliver an accurate, continuous feed of information to you on the state of your distribution grid. Ongoing, precise updates enable crews to quickly and efficiently target their response during all phases of outage operations. Results are achieved by combining traditional outage exception alarms with “location awareness” via Itron’s patented Grid Connectivity outcome, which provides an accurate and updated connectivity model of your utility distribution phase and transformer connectivity. Outage Detection identifies duplicate alarms and momentary interruptions and applies results to this grid topology to accurately determine outage extents, even in cases when a subset of PONs or PRNs are received.

- » Target outage response quickly and effectively
- » Determine accurate outage extents, even with subset of alarms
- » Eliminate duplicate alarms and momentary interruptions from OMS
- » Validate and continuously updating outage extents with automated, strategic meter pings
- » Discover nested outages during restoration
- » Support full-AMI or bellwether meter deployments

Reliability Analysis

With more frequent and powerful storms, you have a renewed focus on improving power reliability and being as efficient as possible with restoration efforts. Using Reliability Analysis, your operators can monitor and report the exact times of service interruption at each customer and use results to measure improvement in restoration time from automated distribution processes. Operators can also track and report on key performance indicators according to feeder, region and service territory. Reliability Analysis allows you to analyze all of the outage data generated from a smart grid network in order to proactively improve overall reliability.

- » Resolve outages faster
- » Improve response to customer inquiries
- » Identify locations at risk of future failures by monitoring momentary outages
- » Create reports of industry-standard performance indicators such as SAIFI and CAIDI



Transformer Load Management

Changing weather patterns, aging infrastructure and increased adoption of electric vehicles and other new technologies are creating new challenges for you to sustain grid reliability and effectively manage distribution assets. Transformer Load Management utilizes smart meter data and weather data to monitor and analyze secondary transformer loading levels and accurately report on asset health at a scale never before possible. Loss-of-life calculations are performed to assist your planners in effectively allocating capital for proactive transformer replacement where necessary. Transformer Load Management also includes what-if-scenario analysis capabilities so your operators can accurately predict the impact that new loads, such as electric vehicles, will have on transformers.

- » Provide up-to-date load detail on distribution transformers
- » Identify over-utilized, under-utilized and at-risk transformers
- » Assess unanticipated load increases that may result in asset failure
- » Evaluate transformer sizing using loading history and peak seasonal loads

Voltage Analysis

Power quality is becoming an increasingly critical factor for the utility industry. Customers' needs are changing, distributed energy generation is more and more prevalent and utility-owned alternative energy sources are growing more diverse in nature and geographic location. These are just some of the factors pushing you toward a more proactive approach to guarantee quality voltage delivery.

Voltage Analysis monitors voltage at every delivery point in the distribution network, allowing analysts to evaluate and understand the impacts of this changing landscape. Trends can be monitored and system improvements developed with a holistic approach using measured data, rather than reacting to individual customer complaints or relying solely on system models. Voltage Analysis gives you insights into the quality of your power delivery on the grid. This leads to proactive, condition-based decision making related to endpoint voltage delivery.

- » Monitor precise voltage at every delivery point in your network
- » Proactively identify deficient equipment; reduce technical loss
- » Identify problem areas and CVR/VVO opportunities
- » Quantify and justify voltage management initiatives
- » Validate issues prior to action
- » Management of collection, storage and spatial visualization of voltage data



FAST DEPLOYMENT AND TIME TO VALUE

Grid Operations outcomes are offered as Software as a Service (SaaS) outcomes utilizing the Microsoft Azure cloud platform. Itron's SaaS-based approach helps you realize value quickly and, at the same time, supports scaling deployments at a pace that is comfortable.

END-TO-END ACTIVE GRID SOLUTION

Grid Operations outcomes are pre-integrated with Itron's market-leading smart grid solutions to reduce risk, lower implementation costs and provide faster time to value. With this integration, Itron provides you with a complete smart grid solution including meters, sensors, networking, data collection, data management and consulting services—to ultimately solve your business challenges and deliver value-based outcomes.

Grid Operations outcomes also include data integration adapters which integrate to third-party systems such as GIS, workforce management, SCADA, CIS systems and third-party AMI and MDM systems.

FOCUS ON CONTINUING INNOVATION

Our roadmap is ambitious and aggressive. We strongly believe that analytics is a key component to extending the value of smart metering and smart grids. Itron is making significant investments in research and development to discover and productize new analytics use cases and algorithms. By leveraging our Grid Operations outcomes, you will benefit from this continuous investment in innovation.

ENSURE GRID RELIABILITY & RESILIENCY

You are now faced with more rapid change and increased expectations than before. The grid is more participatory (two-way), there are ongoing increases in the reliability, service and engagement level that customers expect, and regulators have high expectations that utilities will meet those mandates.

Itron's years of industry insight and experience, combined with our Grid Operations outcomes, will provide you with the cutting-edge analytic capabilities of today and prepare you for the emerging priorities of tomorrow. We enable you to realize the full value of your smart grid.



Join us in creating a more **resourceful world**.
To learn more visit **itron.com**

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