Decentralized Feeder Automation solution

Smartly minimize outages with self-healing grids

Business Context:

With diminishing operational margins over time, utilities are looking to eliminate outages, or in the least restored rapidly, so that downtimes and consequential losses are reduced, while workforce productivity is maximized. 98% of organizations surveyed by ITIC report losses of 100,000 USD or more per hour of downtime, in addition to scheduling losses. On the other hand, utilities do not have control over causes of outages – weather, vegetation or disruptive forces in nature. This makes eliminating outages so that end customer satisfaction is not affected, extremely critical, but at the same time, challenging.

Drivers for smart, self-healing grids:

67% of commercial and industrial (C&I) businesses report outages that last from at least a few minutes to more than an hour

Mfg. (71%), LSH (42%) and DC (77%) suffer financial losses ranging from a few thousand USD to upwards of 100,000 USD per outage

73% businesses suffer outages a few times every year. 52% businesses expressed dissatisfaction at their power provider's reliability

*S&C's 2018 State of Commercial & Industrial Power Reliability Report (US), in collaboration with Frost & Sullivan.

About the solution:

Decentralized Feeder Automation (DFA) solution by IoT WoRKS™ leverages our partner's platform capabilities, utilizing existing power infrastructure of utilities organizations, and automating rapid fault location, isolation, and service restoration (FLISR) post outages – reducing service restoration times drastically and delivering enhanced end user satisfaction. The fully automated solution requires no GIS or operator intervention, comes with Integrated Volt/VAR Control (IVVC) and can be integrated with existing SCADA, DMS or OMS systems. DFA incorporates IoT-sensors, and communication with Substation and Field Intelligent Electronic Devices (IEDs) to ingest, process and analyze real-time data – utilizing a unique model-driven application that helps design smart, self-healing feeders individually or in groups, enabling maximum service uptimes and minimal operational losses for the end customer.
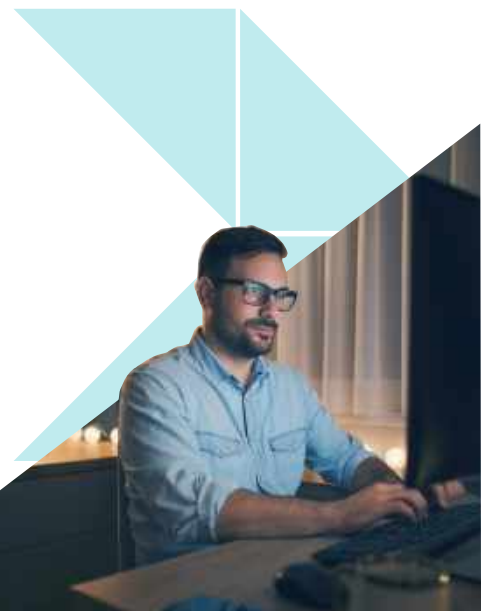
- Single host work-station with Centrix base system license
- Pre-defined for quick and easy deployment
- FLISR and/or IVVC license for up to 5 feeders
- DNP interface to existing SCADA/DMS
- Up to three IED device profiles per application
- On-site installation and training support
- Additional feeder licenses and device profiles may be added incrementally as required
- Available options include redundancy and serial communications

Solution Highlights:

Self-healing feeders for reduced outage times and increased customer satisfaction

Faster fault location and improved operational efficiency

Feeder optimization with Integrated Volt/VAR Control (IVVC)

Historic and real-time visualizations available for analytics

Features:

Rapid Response: Quickly isolate faults and restore power both upstream and downstream, analyzing switching options and choosing the one that maximizes the restored load without violations

Flexible Model: Disables automation following a loss of communications, but only to the affected device or feeder, including six definable device-level flags for disabling automation on active islands

Return-to-Normal function: Enable rapid restoration of services eliminating outages with no violations or further service interruptions

Integration & Automation: Two-way SCADA/DMS interface via DNP3 – no expensive or custom interfaces necessary, and a sequence–of–events logging feature

ADMS Override: Enables override by ADMS if centralized restoration is needed for any reason

Pre-existing Feeder Templates: Easily modifiable templates, training available on feeder changes

Rapid Restoration: Reduce outages from hours to seconds through automatic FLISR, including the "return to normal" function – delivering reliability to critical end customer requirements

Operational Efficiency: Reduce losses and improve power factor, optimize feeder with Volt/VAR control, reduce operational costs and bring in consistent service delivery

Improve Delivery Consistency: Dramatically improve permanent outage stats – SAIDI, CAIDI and SAIFI – transforming most service interruptions to momentary outages

Scale & Deploy: Rapidly deploy, scale and integrate with SCADA, DMS & OMS – can be implement on a virtual server. Remotely configure and update

Best of Both Worlds: Does not require GIS or operator intervention, can switch to human-driven ops on communication loss – central override function

Enhance Customer Satisfaction: Eliminate power outages, reduce restoration times from hours to seconds, build reliability and drive higher end-customer satisfaction

Recognitions, IPs + Accelerators

LEADER
IDC MarketScape, IoT Consulting and Systems Integration Services, 2020
IDC

LEADER
Zinnov Zones for Connected Assets & Connected Logistics, 2019
Zinnov

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ISG Provider Lens™ for IoT managed services, USA 2019
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ISG Provider Lens™ for IoT consulting and services, USA 2019
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ISG Provider Lens™ for IoT in Manufacturing, USA 2019
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ISG Provider Lens™, ISG Research Quadrant for Overall Iot Services, Usa Market 2018
ISG

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The Forrester Wave™, Global IoT Services For Connected Business Operations, Q4 2018
Forrester

Winner Circle
HfS Blueprint Guide: Industry 4.0 Services, 2017
HfS

LEADER
IoT Services Peak Matrix™ assessment, 2017
Everest Group

DDX
Accelerator for device IoT-ization

PANGEA
Data Analytics platform

IDEA GATEWAY
Reference Design for an intelligent device

PLATFORM ACCELERATION SUITE
Build next generation cloud services

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