

Dynamic, interactive, real-time visualization for proactive reliability analysis and informed decision making.

Increase your ability to monitor and visualize electric assets and their performance to support reliability and maintenance using a spatially enabled operational dashboard and the utility systems you already have in place.

Feeder Sentinel™ is the leveraged software component for building out your Reliability Analysis solution using the data and systems your utility relies on.

Built on the Esri Enterprise, Feeder Sentinel is an Esri Web AppBuilder application for condition-based maintenance, predicted maintenance and reliability analysis. Feeder Sentinel provides the views your asset managers and reliability engineers want and need. It is unique in its ability to interactively display historic operational and non-operational data, current real-time data and forecasted engineering and reliability data.

The solution provides considerable cost savings by leveraging Esri and OSIsoft PI condition data to enable the utility to design capital improvements based on feeder performance, feeder condition, asset condition and feeder loads overlaid with the company's preventative maintenance program status and weather events.

Relying on your data to drive the application, it can work with many of your operational systems including AMI, OMS, CIS and SCADA Historian.

Key Features & Benefits

Provides visualization of utility historic, current and forecasted operational performance for maximum effectiveness

Interfaces with AMI data for analysis of poor power quality events, outage durations, outage frequencies, customer outage durations

Interfaces with OMS for outage events, outage frequencies, outage event durations, customers outage counts and outage root causes

Provides ability to compare actual behavior to forecasted feeder behavior for the utility

Assists in capital improvement project design and planning

Enables analytical historic event playback, rewind, fast forward and pause

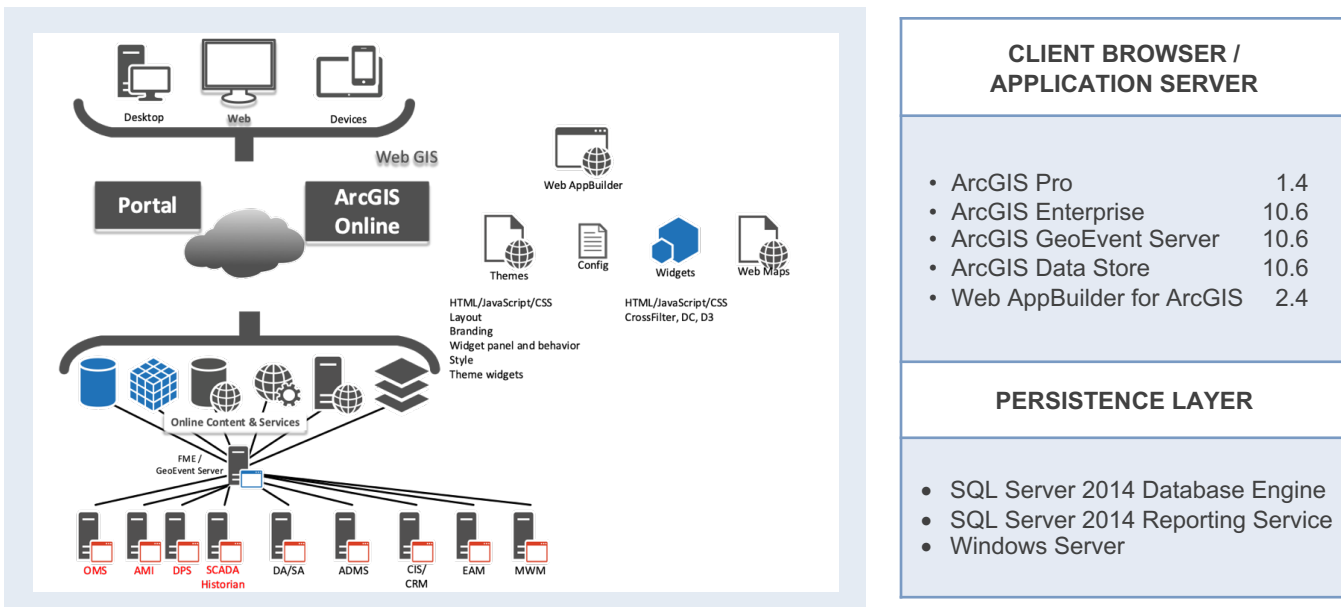
Primary Capabilities

“More than a KPI dashboard, Feeder Sentinel is a valuable tool for today’s reliability engineers.”

Capabilities	Feeder Sentinel™ Dashboard
Dynamic auto updating of map and widgets to display historic, real-time, and forecasted data and provide a complete, consistent view of the feeder’s behavior	✓
Quickly Configurable dashboard views for reliability engineers	✓
Quickly Configurable dashboard views for asset managers	✓
Interactive User capabilities for all dashboard information panes	✓
Graphic display of load range and peak load by feeder	✓
Four week running view of feeder load profile	✓
Dynamically auto updates and displays AMI power quality issues, outage durations, outage frequencies, usage	✓
Dynamically auto updates and displays feeder level impacts on outage indices: SAIFI and SAIDI	✓
Graphically displays historic feeder and device behavior and condition information	✓
Graphically displays outage cause codes, frequency, duration, location, customer count	✓
Leverages investment in OSIsoft Vision analytics, charts and graphs	✓
Displays year-to-date outage indices	✓

Esri Technology

Architecture & Technical Requirements



Potential Interfaces

Digital Utility® - Feeder Sentinel™ allows your utility to easily correlate, visualize and bring together the information from your desired systems for analytics including the following:

- Outage Management Systems
- OSIsoft PI System™
- Customer Information Systems / CRM
- Enterprise Asset Management
- Mobile Workforce Management
- Distribution Planning Systems
- Reliability Forecasting Systems
- Advanced Distribution Management Systems
- Demand Response Management Systems
- Advance Metering Infrastructure / Meter Data Management Systems
- Distribution Automation / Substation Automation
- Distributed Energy Resource Management
- SCADA Historian

Dashboard Applications and Uses

Opportunities to leverage your operational systems and data

Reliability

- The Feeder Sentinel dashboard supports these reliability centric views:
- Historic Outage Causes vs. Preventative Maintenance vs. Environmental
- Historic power quality issues at specific locations
- Historic feeder impacts on outage indices
- Predicted feeder reliability
- Predicted system reliability indices
- Forecasted system reliability performance

Asset Management

- The Feeder Sentinel dashboard supports these asset management centric views:
- Historic power quality issues at specific locations
- Historic status of Preventative Maintenance
- Historic asset condition information at both asset level and feeder level
- Predicted DER capacity along a feeder
- Historic system utilization
- Forecasted system utilization

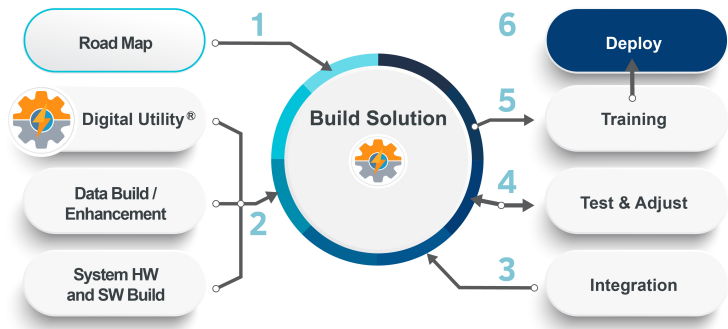
The flexible nature of its widget-based design allows UDC to customize reliability and asset management dashboards based on our client's reliability, asset management policies, analytical and reporting requirements for monitoring feeder reliability and feeder utilization and analyzing events to gain insight, enhance performance and achieve business goals.

Scope of Work

Reliability Analysis Solution Implementation

The Reliability Analysis solution is flexible and adaptable to include your desired systems and meet your needs.

The first step in implementation is based on mutually preparing an initial Road Map of what the solution will look like for your utility as well as a detailed plan and budget. Once your Road Map has been created, we move together with you through the remaining steps including any components or interfaces identified in your Road Map.



Licensing and Support

Digital Utility® - Feeder Sentinel is provided to UDC clients in conjunction with a software license agreement. Cost of licensing is based on implementation and integration services. Once installed, it remains with your organization under a perpetual license for the software.

UDC will support the application and can support the development of any desired system interfaces.

The Feeder Sentinel license comes with initial services and training as well as year-one support. Additional support levels are available – *options noted at right.*

LEVEL 1
<ul style="list-style-type: none"> Feeder Sentinel updates and phone support
LEVEL 2
<ul style="list-style-type: none"> Support - Includes troubleshooting in addition to Level 1
LEVEL 3
<ul style="list-style-type: none"> Level 2 support services plus patches out of cycle or other individual support

Next Steps

Take the next step towards a more proactive reliability approach for informed decision making.

We invite you to contact us to talk about your reliability and asset management programs and to schedule a functional walk-through of the Feeder Sentinel base application dashboard.

Bill Larkin, VP Business Development
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