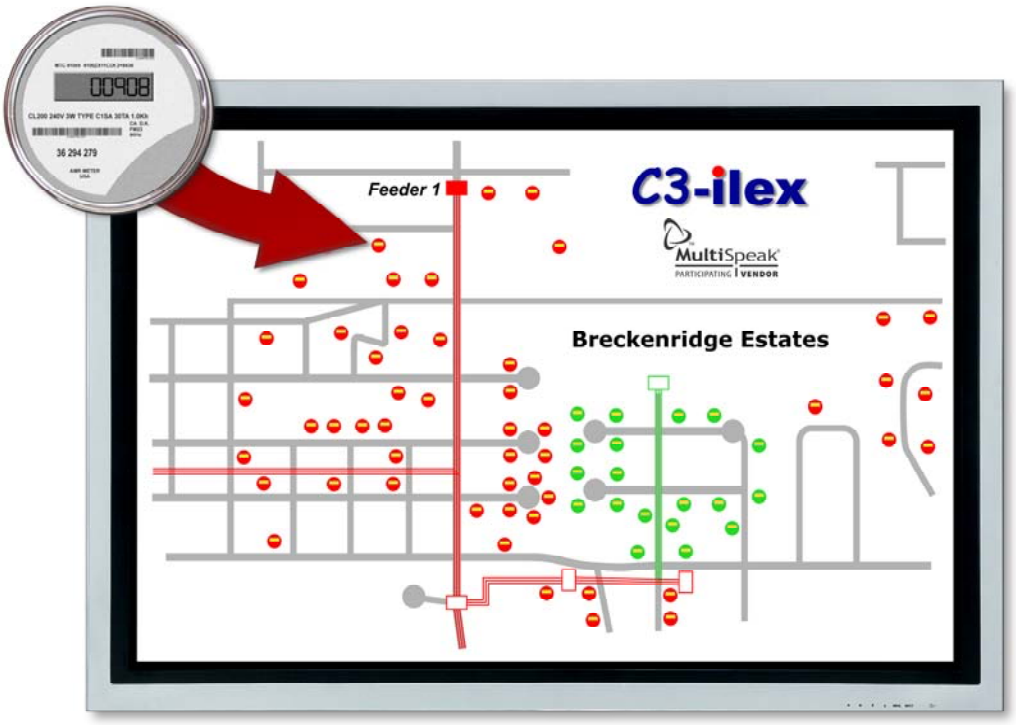
C3-ilex, LLC

EOScada
AMR Outage Visualization

Visualize AMR outages on EOScada

C3-ilex has created an extension to our Power Data Interface Services, a MultiSpeak® compliant product that allows status information from an AMR system to be displayed and used as a standard SCADA point. This low-cost solution connects Automatic Meter Reading systems like DCSI's TWACS and Hunt's Turtle systems to EOScada. This extends EOScada's outage knowledge past the substation breaker down to the individual residential or industrial meter. Since EOScada uses AutoCAD dxf files for its display system, digitized maps of the area can be overlaid with dynamic elements that change color based on the status of points from both SCADA and AMR. Visualizing outages on a single graphic display easily isolates outage locations. The AMR Outage Visualization feature is fully integrated with our EOScada system.



Example of an overlay map of SCADA and AMR status points

Improve Outage Detection using EOScada

Typical AMR systems monitor large number of meters. Bandwidth limitations and the meter reading periodicities can result in delays of many hours, possibly days, before a problem is detected. EOScada, on the other hand, detects events nearly instantaneously. When an outage occurs, there is a high probability that a change in a SCADA-monitored substation device will also be detected.

An example would be the reclosure of the feeder breaker supplying power to the outage area. Upon detecting the operation of the breaker, EOScada automatically issues directives to the AMR system to sample the subset of meters which are downstream from that particular protective device. The system has the ability to define an unlimited number of telemetered or calculated SCADA points to act as triggers for reading any meter. When a status trigger changes state, or an analog trigger crosses a limit boundary, SCADA automatically instructs AMR to refresh all meters associated with that trigger.

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In some cases, an outage may occur without a detectable change in a SCADA monitored point. Upon notification of a trouble call, the SCADA operator may simply select the reported meter on his over-view map and initiate an AMR poll of all meters that share the same distribution circuit(s) where the problem has been reported. The end result in either case is an "at a glance" map-view showing the locations of meters which have power and those which are lacking power. This enables the dispatch of the field crew to the precise location of the problem.

During restoration, the SCADA dispatcher may reissue directives to the AMR system to verify that the entire problem has been corrected. If not, the crew may be re-dispatched to the next location with maximum efficiency, as the SCADA dispatch center now has visibility, down to the meter level, of where the remaining problems are located.

Effortless automatic build of database and displays

Adding thousands of meters to your database would be a daunting task. Our AMR Outage visualization feature provides an easy way to automatically build and maintain the EOScada database and displays. The interface allows an upload of information to both initially build the representative icons and then update your metering points as they change. This maintains your meter point ID information in a single location.

Instantly create dynamic geographical displays

If GPS mapping coordinates are available for the meter points, a representative icon of the meter can automatically be drawn on your AutoCAD map file. These icons will be automatically linked to the database points created from the meter spreadsheet upload. This, thousands of meter icons can be overlaid on your existing display, providing you with added visualization down to the meter level for outages.

Dynamically display meter status in GIS

An extension of the AMR Visualization feature is available that allows the output of Meter Indication status to the Dynamic Viewers available in GIS systems like ESRI. EOScada will update an interface to the GIS system with meter status as the meter status changes as well as SCADA monitored points. The GIS viewer will dynamically change the visual appearance of displayed meters based on this status information.

Obtain end of line voltage readings

This option adds the capability to display Meter Voltages in EOScada in addition to the “On / Off” status indications as defined in the AMR Visualization feature. These voltages are processed as standard EOScada analog points and all operations available for standard analog points such as alarming and logging are available. Updates of the meter voltages are processed periodically, based on the AMR system configuration. This is ideally suited to measuring long term voltage changes of the system. Instantaneous or “on demand” reading based on the status indication or alarm limit of a parent device such as can be done for the meter status indications is not available for the analog measurements.

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Leverage your SCADA and AMR investments

If you are planning to invest in both AMR and SCADA, C3-ilex has the resources and experience to support your needs. Thinking about two separate communication systems? Let us help specify communication line multiplexing technologies to minimize your radio or communication infrastructure. Have AMR now and not SCADA? Simply add EOScada with the AMR Visualization package and let us show you why our EOScada system has been rated as one of the easiest to learn and use. Using modern tools with a Multispeak backbone can allow you to increase the value of your existing or planned investments by sharing of data between the AMR, SCADA, GIS and Outage management systems.

FAQ

Q. Can SCADA be set up to automatically request meter status for specified meter groups on a user selected frequency independent of a change in a parent point?

A. Yes, The frequency of automatic updates is defined during set-up of the interface.

Q. How do you deal with an automatic or manual rerouting of a feed to the outage area?

A. The EOScada system allows multiple parent devices like breakers to be associated with a meter. In the event of a rerouting of the feed the change from open to close of the new feed would automatically trigger a directive to the AMR system to poll those meters associated with the breaker. A manual request can also be issued.

Q. I am concerned about pinging the meters too frequently

A. The EOScada system has checks in place that prevent repeated pinging of the meter until the TWACS system responds with the status.

Q. Why should I put AMR data into SCADA vs. directly to my outage management system?

A. An EOScada system is designed for 24/7 use. Your SCADA system is central to your operations and is already used to manage your power distribution system. Adding AMR data to EOScada provides you with consolidated information on a highly reliable system. The automatic pinging of the meter status by EOScada provides near “real time” up-to-date meter status on a system designed for continuous operation. Integration of this data provides a highly reliable means to visualize, detect and restore outages.

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