CYME power engineering and analysis software
Brightlayer Utilities suite

Advanced Fault Locator module

Improving operational efficiency with more accurate fault location

The growth of distributed energy resources (DER) and natural disaster incidents has changed the traditional distribution system and introduced complexity in the coordination of protection devices. Existing fault location methods are becoming less effective.

Utilities have started using multiple devices to get field measurements data to help identify the fault location and provide rapid service restoration to those affected.

Part of the Brightlayer Utilities suite, the CYME Advanced Fault Locator **analysis** offers improved operational support by helping engineers locate the faults more rapidly, enabling crews to be dispatched much closer to the fault location. This in turn, reduces line inspection time as well as outage duration and improves SAIDI. This can be extremely effective when used as part of a wildfire mitigation strategy.

The Advanced Fault Locator Analysis module, part of the CYME powering engineering software, offers a rigorous method to calculate and visualize possible fault locations on the detailed network model:

The user can model fault indicators as instruments installed on the network using a drag-and-drop fault indicator icon. The flexibility to specify the type and trip thresholds for fault indicators helps focus in on the area where the fault occurred. Along with fault indicators, the analysis brings a range of methods to analyze different fault situations that impact results such as:

- **Single faults in multiple locations** where it simulates a single fault seen from multiple monitoring device locations. Here the user can input several concurrent measurements for the same fault from different monitoring device locations.
- **Multiple faults in a single location** where it simulates an evolving fault in same monitoring device location. Here the user can input several concurrent measurements for different fault types for the same monitoring device location.

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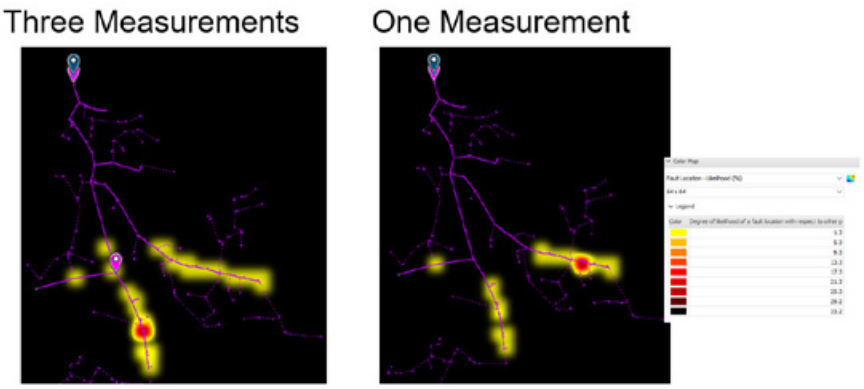

Other inputs to the analysis include:

- **By-phase currents** can be specified allowing to capture the exact faulted phases of the monitoring device.
- **The type of fault recorded** by the monitoring device such as, phase current, sequence current, range of fault impedance.
- **Sliding fault feature** refining the resolution of faults on long lines subdivision of long conductors providing a better precision on the location of the fault by testing cables and overhead lines on their whole length.

This combination of modeling and device measures and allow for a more precise and rapid fault location identification. This can be achieved through:

- **Comprehensive reporting** listing information on fault location, faulted phase, distance from the monitoring device and the fault likelihood
- **Color-coding layers** to visualize the device(s) and fault event(s) critical path(s) on the one-line display and color maps detailing fault likelihood
- **Based on** the IEEE C37.114© and C37.111-2013© standards

Brightlayer Utilities suite is a full complement of software applications that enable utilities to use data to optimize the performance and reliability of the grid, integrate renewables, comply with regulations and plan for the future. As a key solution in the Brightlayer Utilities suite, the CYME power engineering and analysis applications provide advanced network modeling and simulation capabilities, addressing the needs for planning, operation support, protection, DER interconnection and other critical duties.

For more information on the CYME Software, or for a web demo, please reach out to us at **Eaton.com/cyme** or contact us as **cymeinfo@eaton.com**.

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