

CASSINI SYSTEM Comprehensive Asset Health Monitoring System for Medium/High Voltage (MV/HV) Underground Networks



Unprecedented Online Electrical Network Visibility

A reliable, uninterrupted stream of electricity is critical in today's world. Fortunately, outages and failures happen infrequently, but when they occur, they can result in serious consequences including extended production downtime leading to significant financial loss. This has created a need for early warning of future failures.

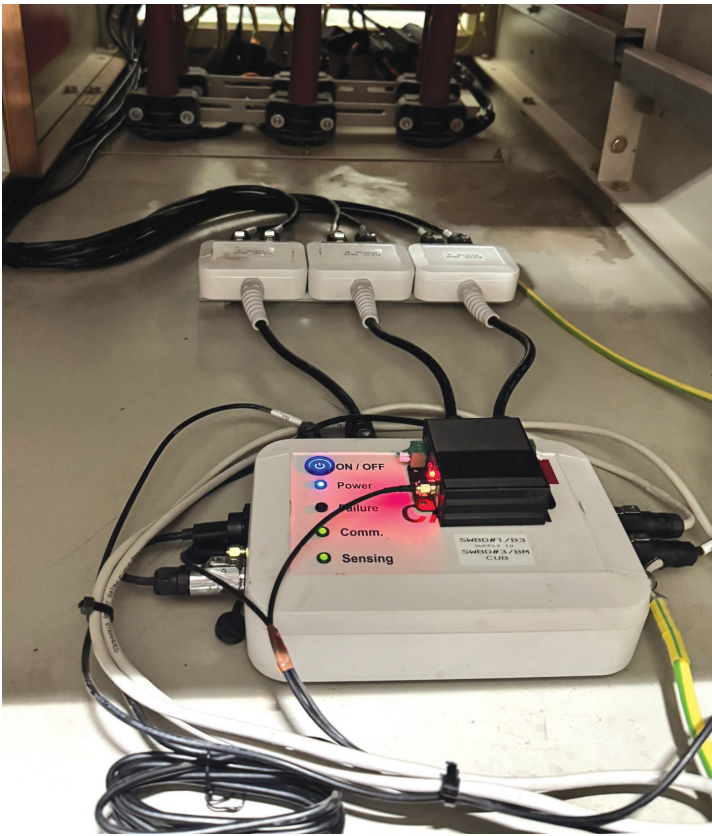
Addressing this need, CONINT has developed the CASSINI System. It is a novel, end-to-end asset health monitoring system for MV/HV underground networks with a permanent online sensing capability that delivers advance alert of outages as well as fault prediction and location.

By combining robust multi-sensor inputs with cloud-based analytics, CASSINI enables a shift from reactive fault handling to planned, preventive maintenance. The system's recording of events in their entirety allows an in-depth understanding of events and their implications.

CASSINI is ideal for medium and large-scale MV/HV operators including industrial facilities, municipalities, and renewable energy suppliers.

Benefits

- Allows comprehensive online visibility & clarity regarding electrical network health
- Alerts to potential network failures with minimum false alarms
- Enables thorough understanding of events & implications
- Helps to prevent significant damage
- Increases network reliability
- Reduces fault recovery time
- Decreases maintenance expenses
- Small footprint: 15 cm x 21 cm x 5 cm; 0.4 kg
- Easy to install and operate
- Integrates with customer systems such as SCADA, DMS, GMS, etc. - or operates as a standalone system
- Customizable configurations available



Utilizing Today's Most Advanced Technologies and Proprietary Innovations

The CASSINI System provides permanent online multidimensional sensing capabilities that enable ongoing monitoring and analysis of MV/HV networks.

CASSINI implements a number of sensing modalities for advanced analytics, including data fusion, that provide in-depth network clarity. The system detects, predicts, locates, and alerts to future faults with minimum false alarms, enabling prevention of unexpected outages.

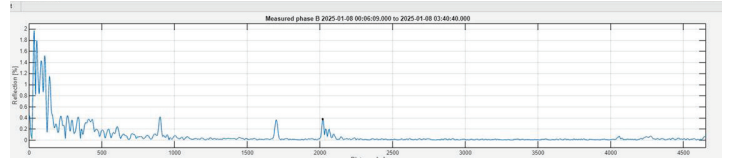
A range of parameters are monitored including 3-phase voltage and current sensing (similar to IEEE 1159, IEC 61000-4-30 Class A - with additional analytics), cable shield current behavior, and partial discharge activity.

The system also checks reflectometry and spectral impedance via unique Radio Frequency Analysis (RFA) technology developed in-house by CONINT for localization.

CASSINI integrates with the customer's power network via a high-resolution sensing suite including: (1) voltage inputs via a variety of options such as existing voltage transformers or capacitive tap; (2) current sensing through existing current transformers or Rogowski coils; (3) shield currents, partial discharge, and reflectometry monitoring enabled using the Direct Shield Coupler (DiSC) - the company's proprietary, patent pending, dedicated sensor placed over the shield of the cable.

The CASSINI Kit contains a base unit, 3 DiSC sensors, 3 current transformers, a voltage interface unit, and a cellular modem antenna for cloud sync.

CASSINI is already deployed by several major operators, successfully detecting early signs of potential failures that other systems failed to identify.



Main Capabilities

- Permanent online multidimensional sensing provides real-time online status of system networks
- Captures interruption events, enabling identification of frequency instability
- Provides insights unobtainable by other systems, enabling informed decision-making
- Utilizes multiple sensing modalities
- Provides advanced analytics including data fusion
- Enables connection via Direct Shield Coupler dedicated sensor over cable
- Monitors reflectometer & spectral impedance via proprietary RFA technology, providing additional data such as cable temperature

About CONINT



Established in 2017, CONINT is a center of excellence and innovation with a focus on medium and high voltage (MV/HV) electrical networks. The company develops systemic/multidisciplinary solutions (digitization programs) with a bottom-up approach. All products developed in-house have been successfully deployed at major customer sites.

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