TECH OFFER

Ai-Based Electrical Asset Monitoring And Data Platform

KEY INFORMATION

TECHNOLOGY CATEGORY:
Green Building - Sensor, Network, Building Control & Optimisation

TECHNOLOGY READINESS LEVEL (TRL): TRL8
COUNTRY: SINGAPORE
ID NUMBER: TO175079

OVERVIEW

The proprietary solution is a data acquisition and analytics system that employs non-intrusive clip-on current transformers which are easily installed at electrical distribution boards. This enables AI algorithms to detect subtle changes and patterns in the electrical signature of each connected asset or device.

Monitoring electrical assets has traditionally been complex and costly, requiring multiple sensors and expensive systems. This has led to widespread under-monitoring, resulting in expensive maintenance and significant energy inefficiencies.

The solution extracts a proprietary set of deep energy data from electrical devices, assets, and machines, and can be easily installed on both new and existing electrical assets or building infrastructure. It offers real-time monitoring and reporting on important metrics such as real-time power usage effectiveness (PUE) and enables automation of sustainability reporting.

The technology offers an industry-changing solution: a non-intrusive cost efficient AI-powered monitoring system that is easy to install. It generates a proprietary data set that fuels machine learning algorithms, enhancing efficiency and reducing total cost of

ownership for all connected assets.

The technology owner is seeking test-bedding partnerships with real estate businesses, data centre companies or service providers, facility management businesses.

TECHNOLOGY FEATURES & SPECIFICATIONS

- Only a current transformer is required for each device, greatly reducing cost and increasing reliability.
- The proprietary current transformers are easily clipped onto electrical circuitry. The system can be installed into new or retrofitted into existing buildings and operates from its own independent network. Installation can be done by a locally qualified electrician.
- High-frequency electrical signature collection. The circuit transformer sensors are tethered to electrical circuits. These sensors acquire high-frequency electrical data, and the data is then fed into the intelligent monitoring system. The system has specialised machine learning algorithms specifically designed to provide valuable insight into the unique challenges of the built environment.
- Proprietary hardware/software platform to make data acquisition and installation as un-intrusive, easy and cost-effective as possible.
- Web console for easy data visualization and open API for integration with other systems.
- Growing knowledge base and algorithm library to add value to the unique building environment.
- Dedicated in-house data solutions team with exceptional data science expertise that can understand and solve the bepsoke challenges of specific buildings and assets.
- All data is also made available for direct download and local processing via a comprehensive Application Programming Interface (API).

POTENTIAL APPLICATIONS

Opportunities provided by the system

- Electrical device condition monitoring for predictive maintenance
- Fault prediction and detection for maximising availability
- Energy optimisation, cost savings and carbon footprint reduction
- Arc detection capabilities for identification of fire hazards
- Power quality monitoring
- Real-time warning and notifications

MARKET TRENDS & OPPORTUNITIES

The system can be deployed in many different sectors and locations where electrical assets and infrastructure are not comprehensively monitored or understood. It has been deployed in sectors including data centres, key infrastructure such as wastewater, mining, manufacturing, leisure and office environments.

Typically the system is best suited for real estate companies, companies with facility management responsibilities, building management businesses, carbon reduction companies or building owners who have reasonably sized property portfolios and require a proper insight into their electrical infrastructure.

UNIQUE VALUE PROPOSITION

The solution gathers an unprecedented level of data, simultaneously monitoring thousands of different data points at any one time. The level of granularity provides a rich level of insight hitherto deployed at scale in most sectors.

Typically alternative technologies, such as sensors can be costly, require regular configuration, and are not always part of a scalable solution where things such as condition-based monitoring have to be done on a site-by-site basis as opposed to a learn and deploy model.