HORVATH RESEARCH

POWER LINE MONITORING SYSTEM

The Power Line Monitoring System (PLMS) was developed to monitor the transition lines of the aging National Grid. Real-time monitoring can significantly increase the line carrying capacity, decrease congestions, and provide reliable power transmission. This novel sensor technology is able to identify different type of loadings and degradation mechanisms (temperature/current variations, corrosion, lightning strikes, Ice accumulation, wind loading, etc.). The results of continuous measurements are wirelessly transmitted to a centralized data center where it is processed and early warning signs are Identified.

Benefits

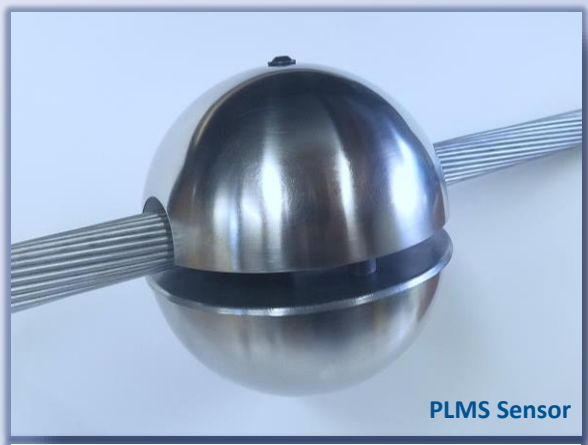
- Cost-Effective Monitoring: **10USD**/Sensor/Month
- Increased Power Carrying Capacity
- Reducing Congestion
- Increased Market Efficiency
- Effective and Reliable Power Transmission
- Predictive Maintenance, Optimized Inspections
- Real-Time Load Variation Map
- Dynamic Line Rating (DLR)

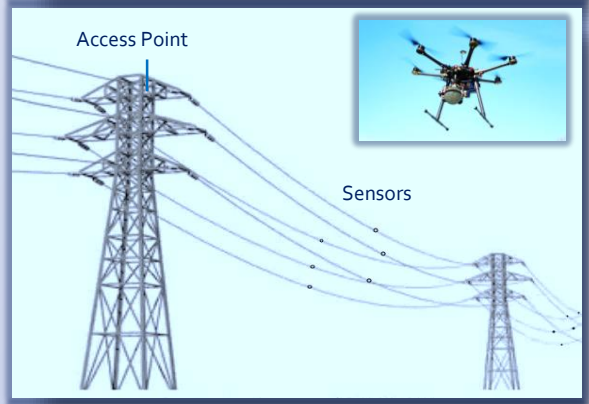
Features

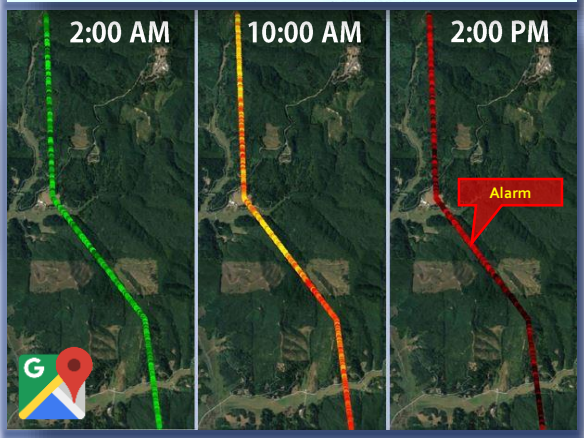
- **Warning and Alarm Generation**
  - Excessive Line Sag
  - Damaged Insulators
  - Loose Parts (dampers, marker balls, spacers…)
  - Current Leakage/Discharge
  - High Line Temperature
  - Excessive Vibration, Wind Excitation: Galloping
  - Lightning Strikes, Flashover
  - Foreign object, Tree Contact
  - Ice Accumulation
  - Hot Splice
- **Rapid Installation by Drones**
- **Long Range Radio (9-12miles, 15-20km)**
- **Cloud-Based Data Center (IoT)**
- **Interactive Graphical User Interface (Google Maps)**

On Board Sensors

- Accelerometers, GPS, Current Sensor, Temperature Sensor


PLMS Sensor





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