Vadict Earth-pit Monitoring Solution Case Study

June 22

Vadict Innovations Pvt. Ltd.

Case Study: Safety compliance using real time earth-pit monitoring solution

AN OIL MARKETING COMPANY WANTED TO MONITOR REALTIME EARTHING IMPEDENCE FOR SAFETY OF CRITICAL INSTRUMENTS

Challenges

As a compliance, the oil marketing company used to measure ground impedance at every earth-pit, using manual process, at half yearly intervals. However, over a period due do moisture, corrosion and other factors, earth rods & their connections, could get degraded, resulting in:

- **Higher ground impedance**
- **Risk of equipment damage due to fault currents**
- **Risk of lightning strike**
- **Vulnerability of fire hazards**

Automated process of measuring earth impedance at frequent interval was needed, without deployment of human resources. The customer explored various enterprise solutions and found that, they were cost prohibitive. The situation needed a different way of thinking about both the problem and solution.

Vadict approach

To solve these issues, Vadict conceived an IIoT solution, which consisted of electronic hardware sensors, edge computing devices and cloud application. Since, the earth-pits were located in hazardous areas, the sensors needed to be intrinsically safe. To make matters easier for deployment, Vadict developed wireless sensors, in accordance with PESO standards.

- **Wireless sensors, deployed at every earth-pit, collect impedance data daily (configurable)**
- **Data is processed at edge computing device, located at site**
- **Edge device reports exceptions to the Vadict cloud platform**
- **Vadict platform generates alerts, when impedance crosses threshold level**

Customer success

Real time impedance level monitoring for critical earth pits is proving to be measurable success for the oil marketing company. The company's site ecosystem:

- **Mitigates the risk of higher ground impedance due to early alerts**
- **Reduced equipment failures caused by fault currents**
- **Savings in human resource**

• Safety • Compliance • Digitalization