DIGITIZATION OF ASSETS FOR THERMAL AND ENVIRONMENTAL MONITORING IN MANUFACTURING, PHARMA AND PROCESS INDUSTRIES

MULTITECH, ONENETWORK, FACLON LABS

LoRaWAN® Live!
New Delhi, India
October 17, 2019
Faclon Labs is a Mumbai-based IoT company started by IIT-Bombay graduates. Faclon provides multiple IoT applications using their cloud based product I/O Sense to drive operational excellence & digitization.

MultiTech designs, develops and manufactures data communications equipment for the industrial Internet of Things — connecting physical assets to business processes to deliver enhanced value.
## Key Applications

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| Cold Chain                      | Ambient Temperature   | • To maintain and improve the shelf-life & quality of temperature-controlled pharma & agro-products  
• Real-time monitoring and alerts for enabling pro-active management in order to reduce wastage |
| Substations and Electric Panels | Surface Temperature   | • To reduce downtimes, electrical failure & equipment damage due to heating  
• Data monitoring, trends & alerts of switch gears, bus-bars will help the electrical operator to smartly prioritize the maintenance |
| Offices, Classrooms             | Ambient Temperature,  | • Air quality monitoring to ensure health, productivity & performance for the employees & students  
Humidity, VOC & CO2              | • The data also serves as in important metric for HVAC and air conditioning operators to prioritize their maintenance and reduce operating cost |
LoRaWAN® Solution Architecture

… As many data concentrators to increase the network coverage.

LoRaWAN 865MHz Wireless Range up-to 7 km

4G/WiFi/Ethernet

On-premise/Cloud Based Server

Data Monitoring
SMS – Email Alerts
Time series data trends
Scheduled MIS Reports
Data Spread Analysis
Multiple hierarchy
Drag-drop widgets

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USP

- **Energy Efficient**: Battery Based Runtime > 5 years. No external power required.

- **Installation Effectiveness**: No location constraints due to long range. No wiring/cabling for communication and power supply.

- **Stable Data Connectivity**: Private Wireless LoRaWAN Network with 100% uptime.

- **Long Range**: LoRaWAN offers very long range compared to other RF-technologies. Providing much needed flexibility and network coverage.

- **Wireless Communication**: Wireless and long range offers cost-effectiveness. Also, star topology offers lesser number of internet connections (gateways).

- **Cost-effectiveness**: Lesser stakeholders, equipment, skill & time required for end-to-end implementation.

- **Value focused features**: Easily consumable UI/UX, features are enabled to drive clear value & ROI.
Case Study: L&T

Surface Temperature profiling of Busbars in HT-LT panels using enterprise private LoRaWAN network for data collection

Key Advantage

- **Problem:** Equipment damage & un-planned trips in Busbars due to over heating & high currents
- **Implementation:** Cost effective & Maintenance friendly with battery based nodes (Temperature transmitters), long range & wireless LoRaWAN network
- **Solution:** Alerts & escalation to proactively resolve the critical temperature conditions
- **Results:** Reduced electrical downtimes and equipment damage
- **ROI:** 6 Months
CASE STUDY: HERO

Ambient Temperature, humidity & VOC profiling of paintshops of Hero using enterprise private LoRaWAN network for data collection

Key Advantage

• **Problem:** Damage caused painted vessels due to un-favourable ambient conditions

• **Implementation:** Cost effective & Maintenance friendly with battery based nodes, long range & wireless LoRaWAN network

• **Solution:** Data monitoring, trends, reporting, alerts & escalation to proactively resolve/manage the critical ambient conditions

• **Results:** Reduced wastage

• **ROI:** 3 Months
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