Vibes

An IoT Platform

Accelerometer · Strain · Tilt · ECO · Temperature · Gaman · Ventilation

Fire/Smoke · Dioxygen · Air Quality · Rodent Presence · Door Ajar · Fumigation

Bridging Gaps in IT & OT

make IIoT Implementation easy

SeethaRam
Mechatronics Pvt Ltd

Bridging Gaps in Technology

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Connect · Monitor · Control

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Vibes AgriWarehouse

Ambient Condition Monitoring for warehouse

Vibes Agriculture

Soil & Ambient Condition Monitoring for Agriculture

Vibes Healthcare Industry

Ambient & Energy Monitoring for Healthcare Industry

Vibes Span

Structural Monitoring of Bridges

Vibes Maintenance

Condition Monitoring for Rotating Machines

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Vibes Inside

Bridging Gaps in IT & OT

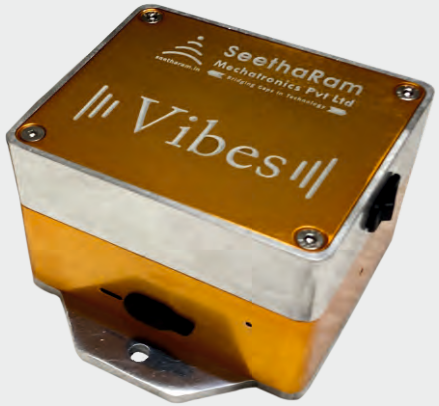
Sensor Input	*"Listed below ... Umm ... Not here? !, Talk to our team"*
Digital Input	*Ok/Nope , In/Out "Make your status known"*
RS485	*"Pair up - Wired devices also"*
Memory	*"Huge Memory – No Problem"*
Battery	*"Work / Communicate, even if someone pulls your plug".*
Display (Opt.)	*"Flash it"*
USB C	*"Use me anyways"*

Make IIOT Implementation easy with our Vibes Platform

Accelerometer · Strain · Tilt · ECO · Temperature · Gaman · Ventilation · Fire/Smoke · Dioxygen · Air Quality · Rodent Presence · Door Ajar · Fumigation

Vibes

An IoT Platform



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Build quality

Tough Industrial Grade Aluminium Enclosure

USB - C

User friendly & Latest Gen

High Resolution Sensor

Connected with high resolution & reliable sensors

Truly wireless

No need of extra gateway

Multi Protocol

http://
MQTT

Support both HTTP & MQQT

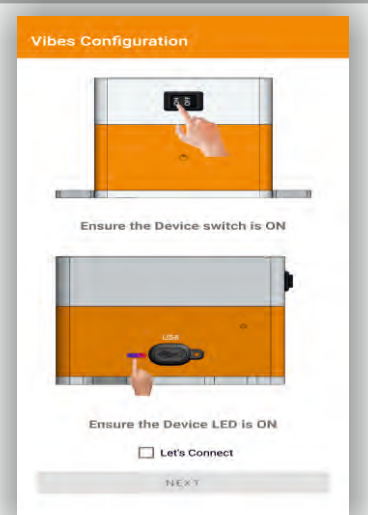
FOTA Updates

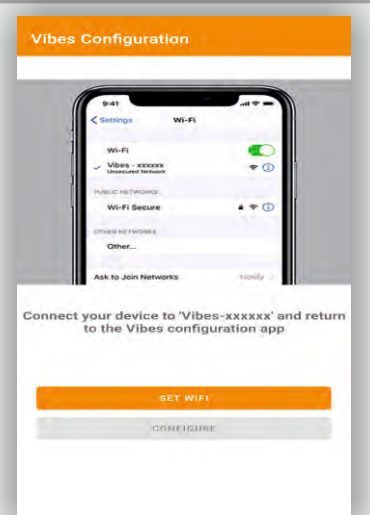
FOTA

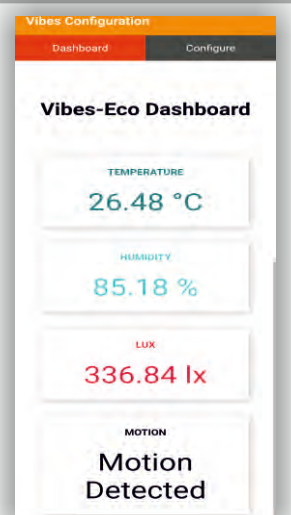
Enable Vibes upgrade the firmware remotely & seamlessly

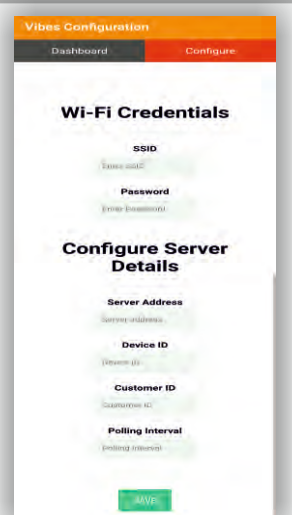
User Friendly Device Configurator App

Easily configure Vibes with cloud server and also can view device data locally on APP Dashboard



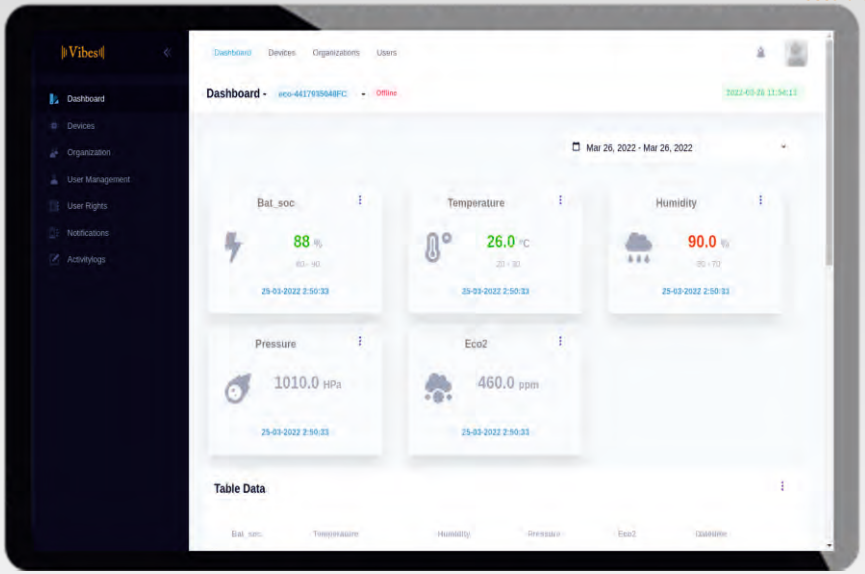






Views for our Vibes Platform

Views is a browser-based solution which enables a ready dashboard for all types of VIBES IoT Devices registered online.



Multi Protocol

Connect with both HTTP & MQTT Protocol devices

Multi-view Dashboard

Minimalistic & User friendly multi-view dashboard

Data Log

Data is secured in structured database; Download in multiple formats

Event / Push Notifications

Get instant alerts and notifications from connected devices.

User Rights Management

Easily assign new users and specific user rights

Activity Logs

Admin can view all applications activity logs.

Data Set Points

Set Alarm set points for individual parameters of device.

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Vibes Warehouse Solution

Air Quality

This Probe is meant for industry-proven quality and reliability in measurement of humidity, temperature & eCo2 parameters with accuracy, continuously, 24 x 7 for many years.

Fumigation & Dioxygen

The Dioxygen & Fumigation Sensor employs electrochemical technology. Fumigation in warehouse, release toxic Phosphine gas during which human entry should be prohibited. Levels of toxicity is sensed by fumigation sensor. Post fumigation normal air quality can be determined from dioxygen sensor readings.

Ventilation

This measures the adequacy of ventilation within the warehouse so that aeration is maintained.

Fire/Smoke

Flame & Smoke Detector ensure immediate detection of fire hazard and ping server of imminent danger.

Door Ajar

Door Lock Sensor give the status of door being open or closed. The door ajar status can be used to monitor entry restriction during fumigation or ensure authorized entry by warehouse personnel.

Rodent Presence

Rodent motion sensor detect the presence of Rodents activity The device is small and can placed for detecting different types of the target. These are placed at strategic places to detect rodent activity

Vibes Warehouse

Warehouses must be constantly monitored for prevailing Ambient Conditions within. The parameters of interest may differ based on the goods stored in the Warehouse. Monitoring the warehouse involve monitoring the temperature and humidity conditions, ventilation, detection of rodents, fumigation intensity, monitoring obnoxious. It may also involve safety and access monitoring ensuring safety within the premises.

Vibes Warehouse is the monitoring solution for such scenarios. Vibes Warehouse has a host of sensors for Warehouse monitoring and wireless data transmission on IOT platforms. The data can be made available for custom solutions for OEMs.

Talk to us for complete solution right from sensors to data visualization on your palm top / desktop and connectivity with software utilities.

Ease of Use & Deployment:

Deploying the solution is extremely modular and simple. No special gateway. Thanks to our WI-FI sensor node solution each sensor can be configured easily to the on-site office /warehouse internet. You could direct the data to your/our/leased servers on HTTP / MQTT Formats. Firmware updates can be pushed over the air (FOTA) for any modifications.

OEMs Applications:

If your solution warrants special sensor and or connecting with field devices, please share with us detail. Our development and sales will be too happy to work around. We do build OEM electronics specific to your use case if the quantities warrant.

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Vibes Agriculture - Soil & Ambient Condition Monitoring Probes for Agriculture

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Digitalization is slowly revolutionizing the vast and complex Agriculture sector that remains the center of world economy. The agricultural industry is changing fast. New technologies have created opportunities to make farm management simpler and more efficient. However, ***Limitless Possibilities on cloud start from reliable data on the ground.*** *Vibes Agriculture* intiates the ***Ground zero data*** for all solutions that make up the architecture for the Digital Agriculture, providing the dynamic variation in soil characteristics data and the ambient weather condition data at the farming location on a continuous basis throughout the farming cycle. The monitoring kits can be applied over a variety of soil types, different types of farming, various growth / feed schedule. *Vibes Agriculture* consists of the ***Soil probe*** and the ***Ambient probe***. Multiple ground parameters can be monitored, logged, compared, trended and historic data can be analyzed and used for better control, visualization, and prediction. The ***Dashboard software & trending Analytics*** gives a dynamic preview and overview of the farm land. Soil, Plant & Ambient conditions at the farm can be shared with stakeholders and experts for review, suggestions & growth plant activation / modification.

Soil Probe

Vibes Soil is a premium-grade probe for soil moisture measurement and recording. The instrument is built to exacting standards - ensuring ruggedness, longevity, and optimum performance throughout their life.

Features on Soil Module

- Multi Parameter, MultiLevel Modular Sensor
- Next Gen "Easy Connect-Detach" Design
- LED Indicators for Sensor Failures / Battery Failures.
- Find my probe (devices)
- Reset Facility

Row Crops | Horticulture Crops | Protected Crops

Ambient Probe

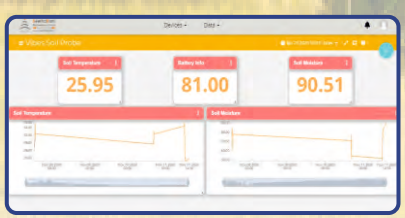
Vibes Ambient is a simple-to-use device, suitable for sensing Ambient conditions and CO concentrations in the air.

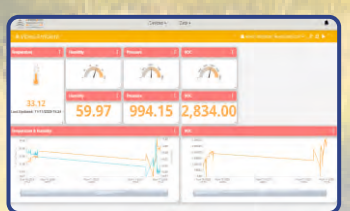
TEMPERATURE | RELATIVE HUMIDITY | eCO2 CARBON DI OXIDE | PRESSURE

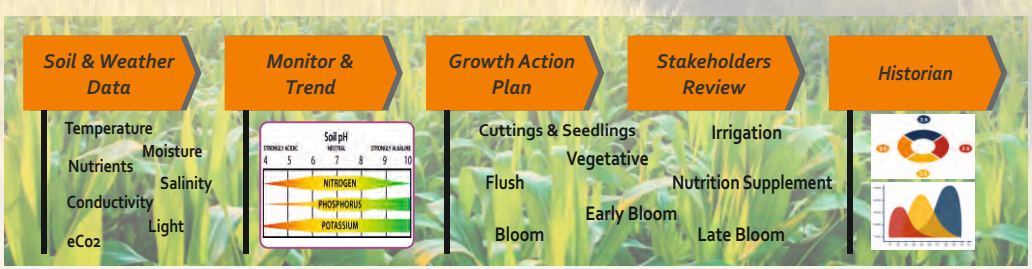
Features on Ambient Module

- Colour Touch Screen
- RTC for Time Stamp.
- Wall mount / Handheld
- Battery or Mains Powered (With Adaptor)
- Status Indication & Alarm Indication for Each Parameter

Dashboard & Trending Analytics







Individual Large Farmers | Co-Operative Society | Rental Agencies | Contract Corporate Farmers | NGO's | Agriculture University | Government Bodies

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Vibes

Use Case in HealthCare Industry

Vibes Eco

Vibes ECO is meant for reliable measurement of ambient conditions in the Office / Home / Utility and common area with great accuracy & continuously. Vibes ECO monitors the Humidity, Temperature, Light intensity and Human Occupancy within the room. Vibes ECO uses Capacitive humidity sensor with a bandgap Temperature sensor with measurement capability of humidity range of 0 to 100 %RH, & temperature range of - 40 °C to 125 °C with a typical accuracy of ±2 %RH and ±0.2°C.

Vibes Energy

Vibes Energy can be used to measure current in 3 channel 1phase or 1 channel 3phase four-wire (Y or Δ) systems. Current is sampled over Current Transformer (CT) or Rogowski coil (di/dt coil). Measurement abide by Poly-phase energy meters of class 0.2S, 0.5S and class 1 which are used in three-phase four-wire (3P4W). It is used for High-Performance Wide-Span Energy Metering.

Vibes Fire & Smoke Sensor

Vibes Flame & Smoke Detector ensure immediate detection of fire hazard and ping server of imminent danger.

Vibes RhT

Vibes RhT is meant for industry-proven reliable measurement of ambient room conditions. Humidity and temperature parameters are the primary parameters to be measured constantly to ensure healthy environs. This device uses Capacitive humidity sensor with a bandgap temperature sensor and covers a humidity measurement range of 0 to 100% RH & a temperature measurement range of - 40 °C to 125 °C with a typical accuracy of ±2 %RH and ±0.2°C.

Vibes Ventilation

Vibes Ventilation measures the adequacy of ventilation within the room so that aeration is maintained.

Vibes Ambient

Meya Ambient is a Colour TFT indicator cum IoT enable device with built in Multiple ambient sensors. Each sensor has industry grade precision for continuous long time operation.

Vibes Span *Structural Monitoring of Bridges*

Structural monitoring invoves the process of implementing a damage detection and characterization strategy for engineering structures.Structural health parameters such as corrosion, cracking, strength, tension, location of rebar / delaminations are measured with physical parameters measuring sensors.

Smart sensors with inbuilt power supply, primary sensors and transmitters enable wireless sensor network which helps in remote structural health monitoring.

Structural Parameters	Physical Parameters	Sensor Used
Corrosion	Acceleration	Accelerometers
Cracking	Strain	Strain gauge
Strength	Climatic Conditions	ECO sensors
Tension	Curvature	LVDTs & Inclinometer
Location of rebar/	Displacements	Precision displacement sensor
Delamination	Load	Load cell
	Tilt / Slope	Inclinometer

Accelerometer

The Vibes Accelerometer is an extremely sensitive 3-axis acceleration sensor. It is especially designed for measurements of vibration in structural monitoring (vibration) of whole or parts of buildings, vibration measurement of rotating machinery, for monitoring tower vibration at wind power plants etc.

Accelerometer	The triple-axis MEMS sensor
Frequency response	10 to 4000 Hz
Measurement range	±2g, ±4g, ±8g, ±16g
Transverse Sensitivity	<10%
Cross-Axis Sensitivity	+/-2%
AD conversion	16 Bit

Strain

Possible Sensor Use Cases: Strain, Load, Stress, Wear on Structures

Sensor Type	Strain Gauge, Rosette, Loadcell
Input Signal	Up to 8mv/V
Output Low Resistance	350 ohm ± 20 ohm

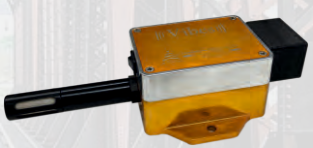
Typical Vibes Span Architecture

Tilt

The tilt sensor is packaged in a rugged enclosure with simple mounting features. It's designed to be immune to harsh conditions.

Tilt Meter	Biaxial MEMS sensor
Biaxial Angle	±15°
Resolution	0.001°

ECO



This Probe is meant for industry-proven quality and reliability in measurement of humidity and temperature sensors and constant accuracy Continuously, 24 x 7 for many years.

Humidity	0% ~ 100% Rh
Temperature	-40°C ~ 125°C
Accuracy	±2% Rh, ±0.2%°C

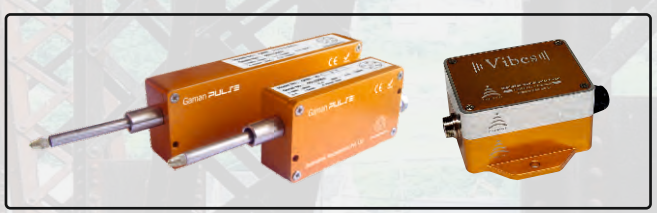
Temperature

Semi-conductor-based Temperature Sensor for

- Sustained high performance characteristics
- Low power consumption especially battery operated Application

Temperature	-55°C to +125°C (-67°F to +257°F)
Accuracy	±0.5°C from -10°C to +85°C

Gaman

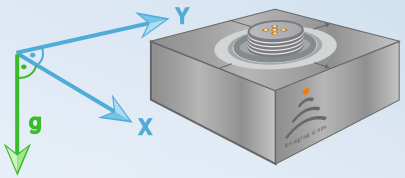


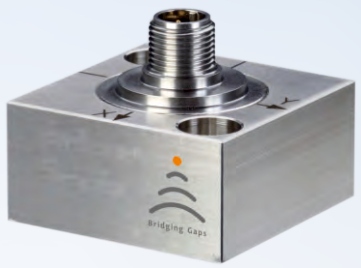
The **VIBES GAMAN** series linear displacement pulsed probe is a spring loaded plunger type precision linear measurement sensor.

Stoke Length	25mm, 50 mm
Resolution	12/6/3µm

Vibes Maintenance

Fortunately, most types of failures on Rotating machines can be predicted by measuring, observing and comparing the pattern of vibrations experienced on the machines on continuous basis. The signature analysis of the typical distorted vibrations as against regular pattern convey the type of emerging fault scenario. (bearing failure, shaft misalignment, loose mounting etc) This helps in Predictive maintenance which is more efficient and cost effective in comparison to the typical periodic maintenance.





DATA

- Historical baseline vibration values
- Start-up / Shut-down or load-change values
- Pocket-Passing Frequency, (PPF)
- Overloads, Misalignments
- Low lubrication, Worn out bearings
- Axial & Radial vibrations of shaft
- Mechanical mounting and coupling problems

APPLICATIONS

Parameters

Bearing

Shafts

- ☑ Vibration
- ☑ Acceleration
- ☑ Temperature
- ☑ Displacement
- ☑ Frequency
- ☑ Speed
- ☑ Velocity
- ☑ Alignment

Gear Mesh

Gear Profile

Motors

Pumps

Compliance Traceability Network with - Vibes

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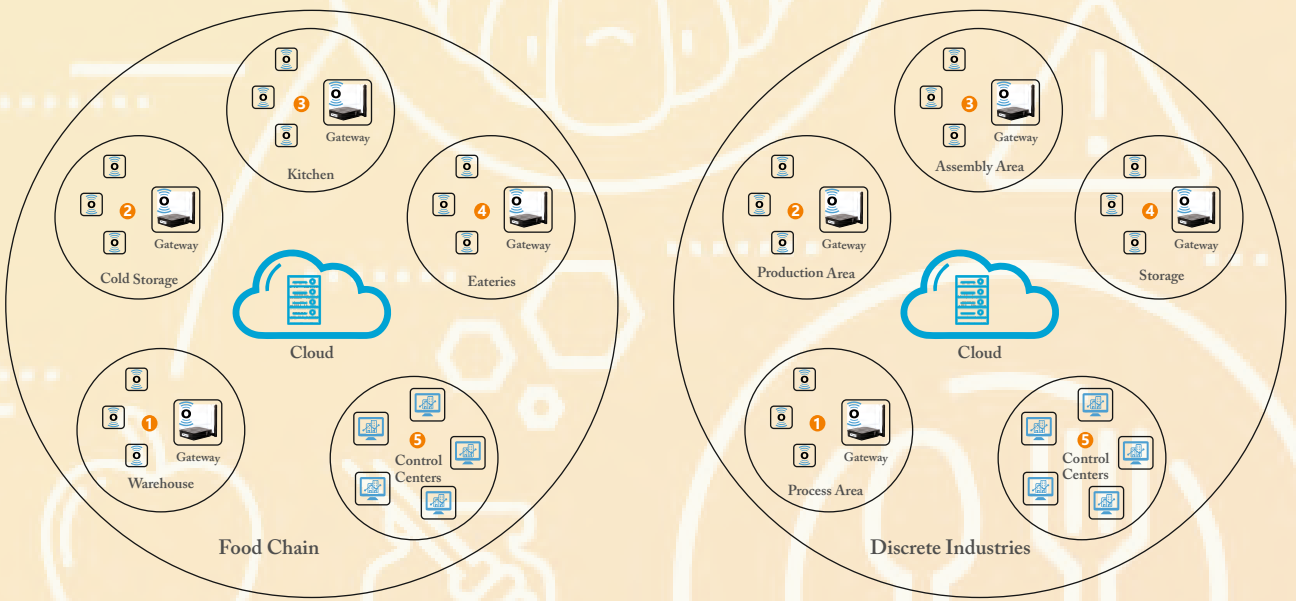
Need to prove compliance?

Compliance regulations can be complicated. But when you track requirements from those regulations in a compliance matrix, it's makes process monitoring easier track your tests and test results in relation to those requirements professional.

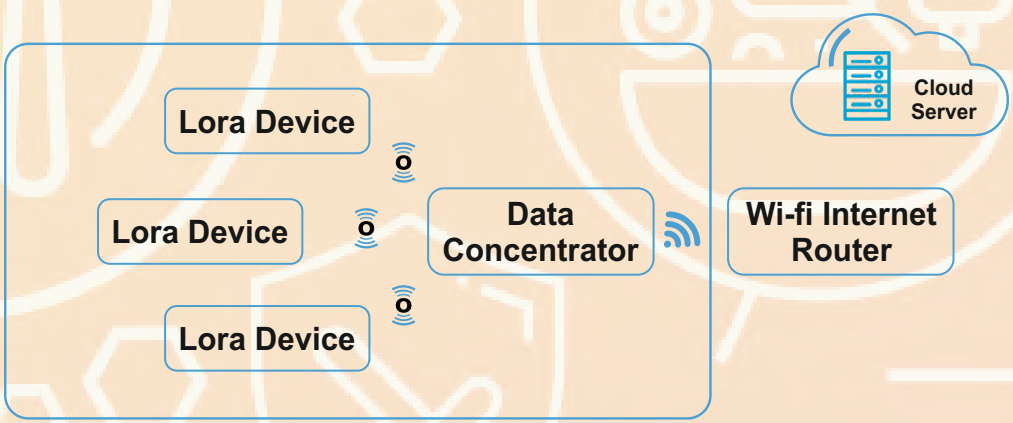
For heavily regulated industry, creating a compliance matrix can also take the pressure off your next audit. Creation of the traceability matrix for maturing industries makes it much easier to document alarms, deviations, and changes (e.g., requirements).



Complaince Traceability Network

Typical Connectivity Architecture

- ✓ LORA over local network to Data Concentrator.
- ✓ Data Concentrator relay transmits data on Wi-Fi through Wi-Fi Internet router to MQQT cloud Server
- ✓ In case of Wi-Fi unavailability, the Concentrator will store past data of all the connected nodes to relay transmit after resumption of Wi-Fi



This ensures to :

- ✓ Get visibility across process / development.
- ✓ Make better decisions and accelerate release cycles.
- ✓ Rest easy knowing your requirements are fulfilled.
- ✓ Prove compliance faster.
- ✓ Pass audits without fear.

Intelligent WorkShops

Intelligent & Connected Workshops

Asset Management in Workshops/Factories

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Production Machines | Testing Machines | Material Handling | Fixed Assets | Emergency Eqpt. | Trainers & Simulators

Modernized Workshops require data on every Asset in the plant. Data v.i.z it's location, KPIs, Health Condition and many other critical inputs than can enable compute Asset Reliable Lifecycle Management. This enables the Factory Manager and the Senior Management to have a bird's eye view on the ***Overall Equipment Effectiveness (OEE)*** & Profitability of the assets in Workshop. Asset Management, Connected Machinery on IoT makes the intelligent data available on cloud and data historian of Events and Policy Execution. This evolved Data over reasonable time frame is the greatest input for any informed decision making and evaluation.

Remote Asset Tracking, Asset Health/Condition Monitoring, Asset Lifecycle Management can pave way to further automation as Predictive & Preventive Maintenance and link Material Management & Asset Workflow Automation. Our solutions can bring in data and visualization for:

Asset Management in Workshops/Factories

Remote Asset Tracking: Retrieve information on the various assets anytime, anywhere.

- Asset Location & Listing
- Availability indicators.
- Functional indicators.
- Reliability indicators.

Asset Condition Monitoring: Cost-efficient and proactive method to evaluate the various health indicators, performance thresholds, associated risks, events, and recommendations for improved asset health.

Asset Lifecycle Management: Comprehensive record of asset portfolio optimizing the profit generated by the various assets throughout their lifecycle.