



VADiCT

Enterprise IoT Solutions

www.vadict.com

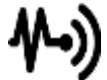
Ready to deploy IoT Solutions with Proven ROI

- Avoiding downtime of Industrial Equipment
- Enhancing Safety in Industrial Environments
- Tracking Enterprise-wide Sustainability KPIs
- Optimizing Industrial Process Operations
- Optimizing Energy Consumption
- Image/Video Analytics

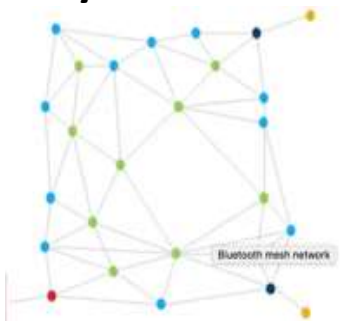
Modular, Scalable, Adaptable Architecture

Smart Networked

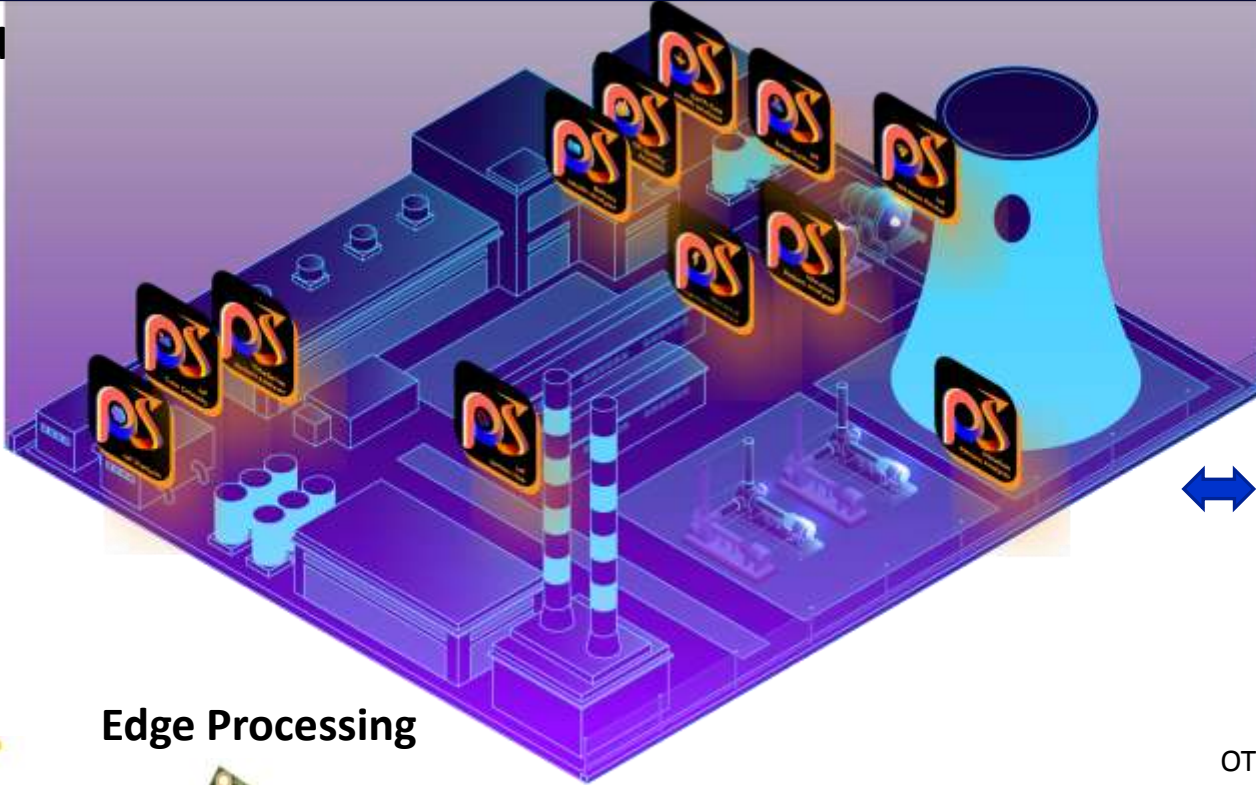
Sensors



Short Range
Networking -
Hybrid Mesh



Edge Processing



IoT Gateways +
Long Range
Networking



OT-PLC/DCS/SCADA



IT



IoT Platform



Designed and Certified for Harsh Industrial Environments – Zone 0

Vadict Products

PrognoSense : Enterprise Grade Modular IoT Sensor Platform

- Advanced sensing combined with specialized edge processing
- Certified for ATEX/IECEX Zone 0
- Battery Powered/ Wireless

PrognoSoft : Enterprise IoT Software Platform

- Multi-site/multi-region scalable Enterprise Secure Platform
- On-Prem/Cloud support
- OT-IT Connectivity
- Pre-trained AI/ML Models

PrognoStack : Ready to deploy IoT Solutions

- Fully-integrated and tested hardware & software solutions
- Delivered with IoT network design

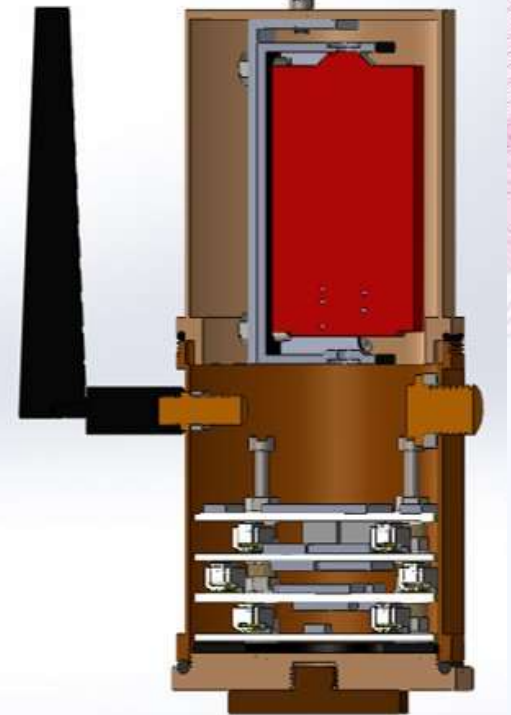


PrognoSense Modular Sensor Platform

- Modular architecture with multiple options for power, communications, sensing, edge-processing
 - Power: Battery, 24V DC
 - Communications: Wireless(Zigbee), Wired(RS-485)
 - Sensing: Vibration, ESA, Earth-pit, Motion Tracking
- Designed to meet ATEX Zone 0 Certification
- New sensor use-cases can be accomplished quickly



PrognoSense



Example Use Cases and Value Proposition





Predictive Maintenance With IoT



Automated Predictive Analytics = Helps to resolve issues before they become problems

Predictive Analytics Dashboard

Status:

Showing 21 to 30 of 38 entries Search: Show entries

ID	Site	Equipment	Due for	State of Health	Date Time	RUL (Days) *	Probable Failure Causes	Pred. Conf. (%) **	Supporting Data
PEV-36b495	Bhubaneswar	Compressor 1	Reviewed Acknowledge Review	ABNORMAL	Dec 20, 2020 3:06:00 PM	0	Unbalance	80.25	Supporting Data
PEV-5e4f95	Bhubaneswar	MS TLF Pump 2	Reviewed Acknowledge Review	DEGRADATION_STATE_2	Dec 15, 2020 3:04:09 PM	18	Unbalance, Off-BEP pump operation	77.75	Supporting Data
PEV-502134	Bhubaneswar	Compressor 1	HANDLED REVIEWED	DEGRADATION_STATE_2	Nov 9, 2020 10:02:45 PM	16	Unbalance	79.5	Supporting Data

1. **Rule based analytics** – derived from established standards/best-practices
2. **Pattern based analytics** – derived from AI/ML models trained for specific operating conditions at customer site

Product Pumps

Early identification of electrical and some mechanical issues - rotor damage, winding failures, bearing failures, power efficiencies, etc.

**Electrical
Signature**



**Vibration &
Bearing Temp.**



Early identification of mechanical issues - misalignments, unbalances, bearing damage, rotor damage, etc.

Diesel Engines



Vibration &
Bearing Temp.

Early identification of mechanical issues
- misalignments, unbalances, bearing
damage, rotor damage, etc.

Battery Health

Identifies problems with individual batteries
and the battery bank. Helps ensure the
engine has healthy batteries for startup.

Lube Oil Health
& Level

Identifies internal engine
problems using real-time lube-oil
analysis. Identifies sludge,
contamination, soot etc.

Compressors

Early identification of electrical and some mechanical issues - rotor damage, winding failures, bearing failures, power efficiencies, etc.

**Electrical
Signature**

**Vibration &
Bearing Temp.**

Early identification of mechanical issues - misalignments, unbalances, bearing damage, rotor damage, etc.

Diesel Generators

Early identification of electrical and some mechanical issues - rotor damage, winding failures, bearing failures, power efficiencies, etc.

Electrical Signature



Vibration & Bearing Temp.



Early identification of mechanical issues - misalignments, unbalances, bearing damage, rotor damage, etc.

Battery Health



Identifies problems with individual batteries and the battery bank. Helps ensure the engine has healthy batteries for startup.

Lube Oil Health & Level



Identifies internal engine problems using real-time lube-oil analysis. Identifies sludge, contamination, soot etc.

Power Transformers



**Transformer
Electrical Signature**

Spectrum Analysis provides early identification of internal transformer faults.



**Transformer Oil
Health**

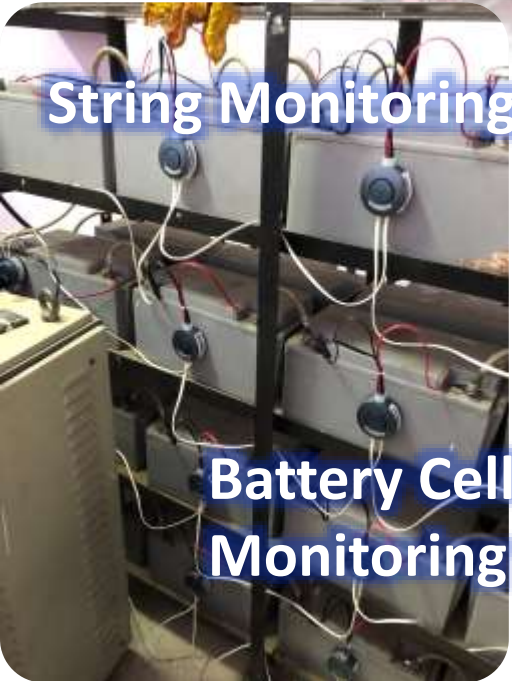
Monitors the hydrogen gas levels, moisture and temperature of oil – abnormal values are indicators of impending failure.

Real-time UPS Battery Bank Health



Identifies problems with individual batteries and the battery bank. Helps ensure the UPS has healthy batteries for providing power backup.

String Monitoring



Battery Cell Monitoring

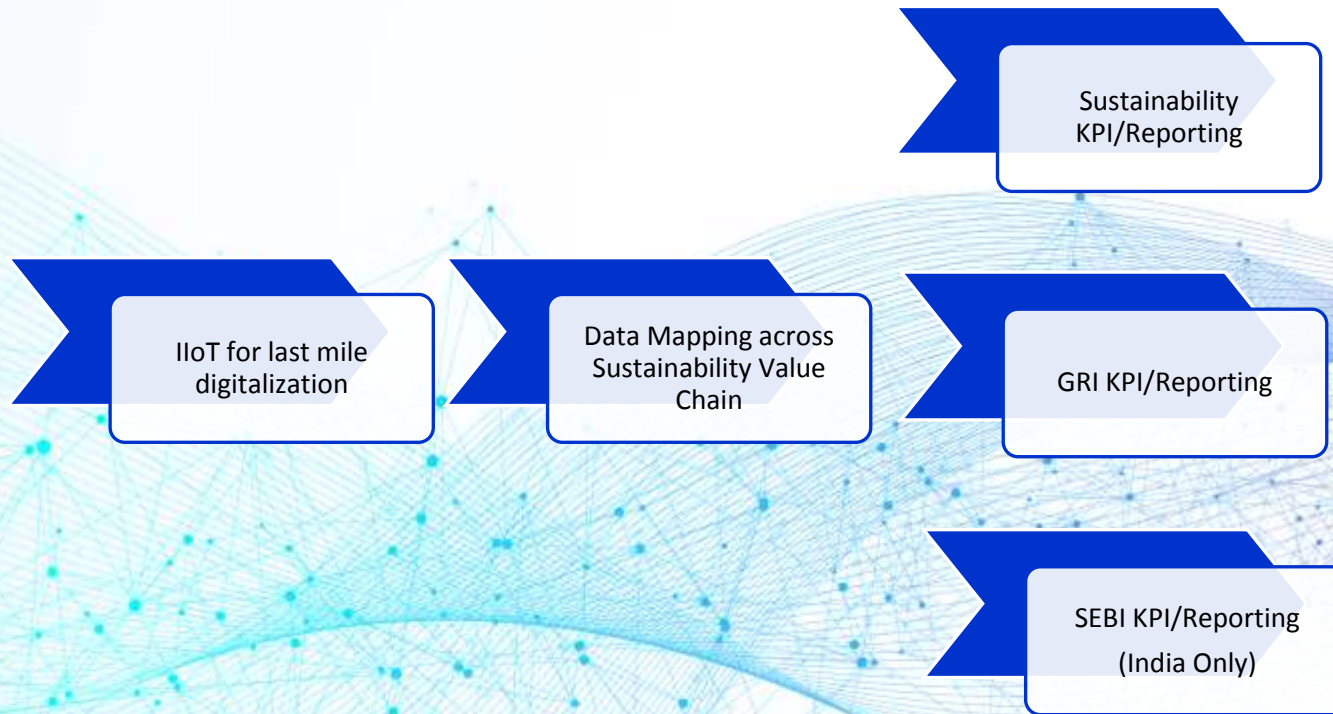


Safety Enhancements - Real-time Earth-pits Monitoring



Provides early warning of earth-pit deterioration,
and prevent earthing hazards.

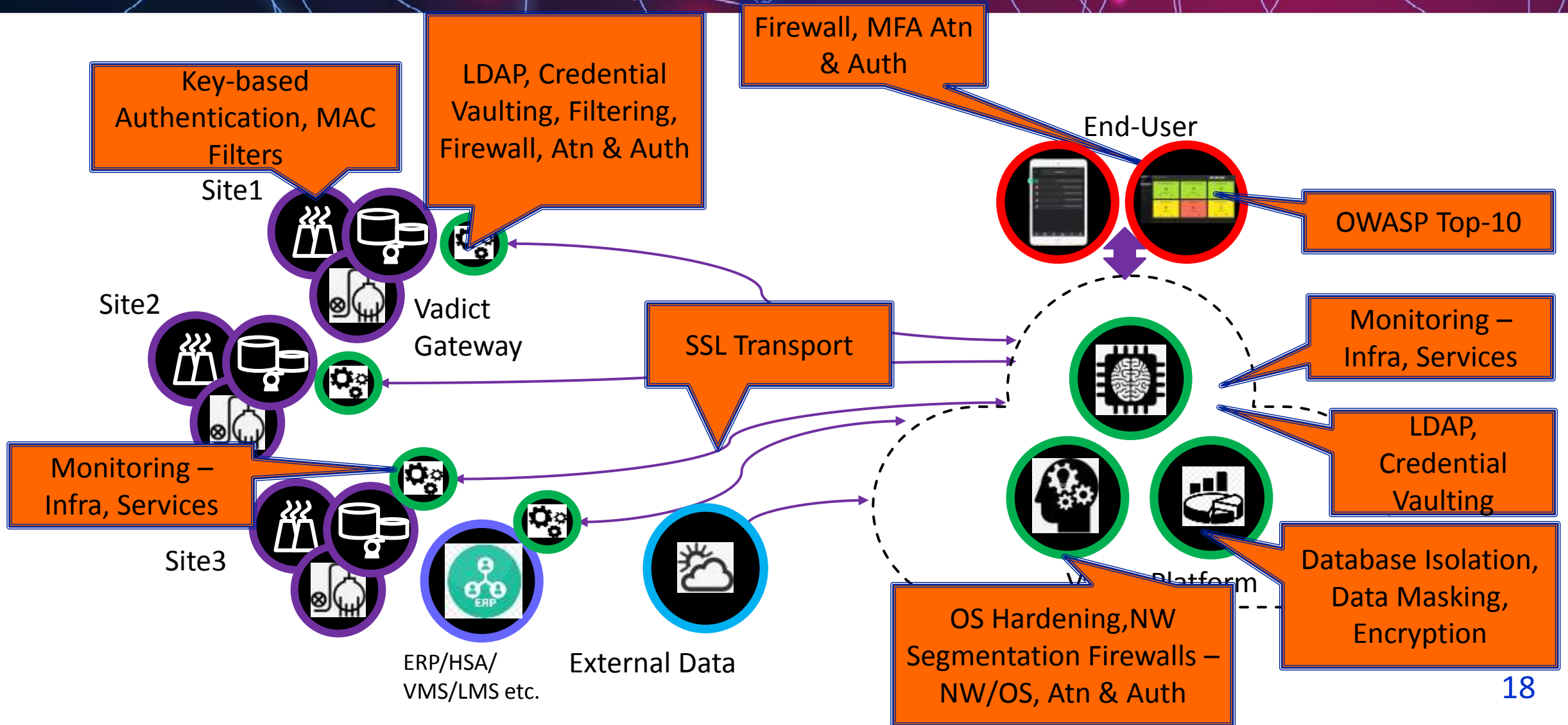
Sustainability Solutions



Process Optimization

- Using specialized AI/ML models, we optimize processes resulting in huge cost savings.
- **Case Study:** Autoclave used for batch Sterilization
 - AI/ML models were developed solely on historical data fetched from existing automation systems
 - The autoclave batches were failing due to vacuum leaks
 - Batch failure data was co-related by the models with the process parameters
 - The models will predict the batch outcome before the batch starts

IIoT Platform Security



The possibilities are endless...

**Discuss your use-cases today:
sales@vadict.com**