



YOUR PLANT IS TALKING, ARE YOU LISTENING?

CIMCON Digital's iEdge 360 is a modern edge platform that transforms your company, enabling Industrial IoT, Industry 4.0 and Digital Transformation.

CIM IoT Edge Gateway



ABOUT US

WE ENABLE DIGITAL TRANSFORMATION



SMART MANUFACTURING

Utilizing data from the production lines of machines, CIMCON iEdge 360 IoT Platform helps increase yield, efficiency, capacity utilization and asset availability.

Use cases : Quality Analytics, Predictive Maintenance, Operational Intelligence



SMART WATER

Data from flow meters, energy meters, Vibration sensors, Pressure sensors and water quality sensors provide valuable insights into the operational efficiency of the plant. Our solutions enables water utilities to manage asset performance and increase operational efficiency using data and analytics.

Use cases : Pump Anomaly detection & diagnostics, Digital Twin of WWTP, WTP



SMART BUILDINGS

Integration of all building assets, including sensors, HVAC equipment, and appliances onto iEdge 360 Platform and deployment of trained machine learning models to identify trends such as unusual energy consumption patterns compared to building occupancy patterns.

Use cases : Machine Anomaly detection & diagnostics, Real-time Energy Analytics



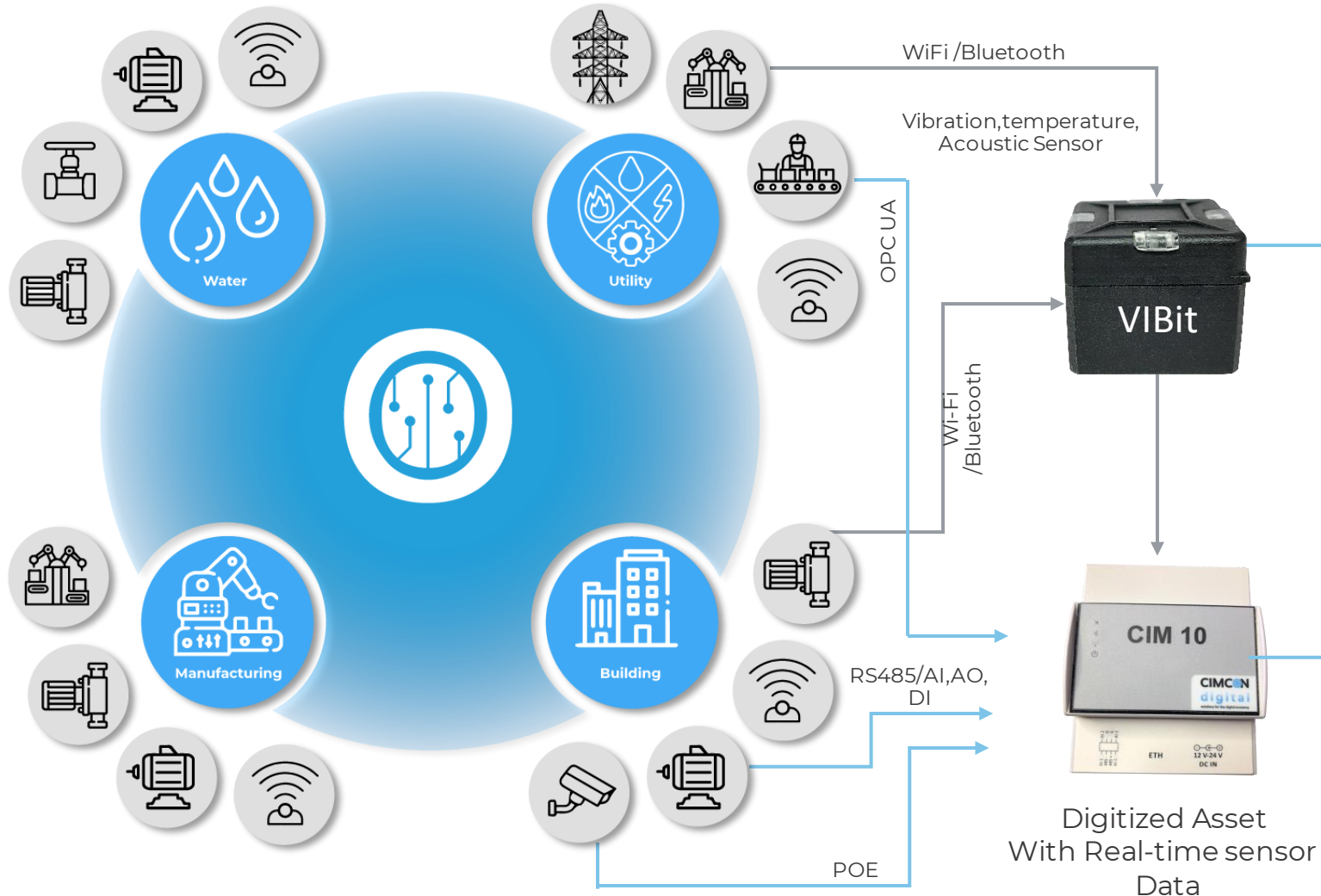
OUR VISION

ONE CONNECTED INDUSTRIAL WORLD

Digitization of the Physical World to create a Digital Economy

CONNECTING THE INDUSTRIAL WORLD – STEPS AND OUTCOMES

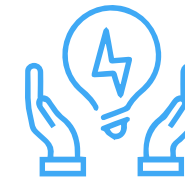
Physical World with Assets



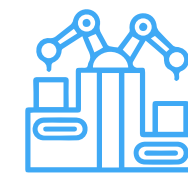
iCloud & iData



Outcome



Energy Efficiency



Machine Efficiency

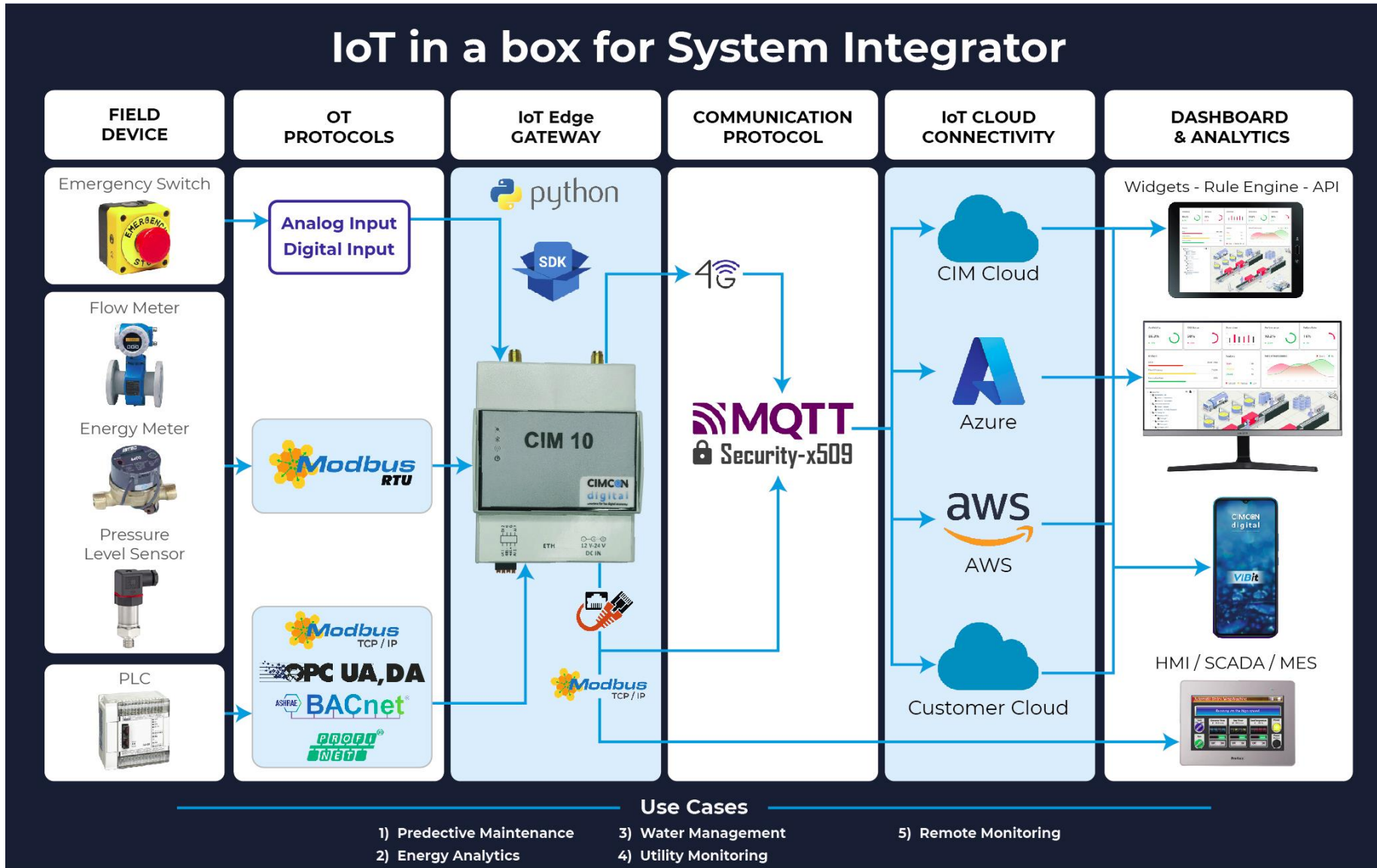


O&M Savings

Digitization Requires:

1. Edge IoT Device
2. Wireless Sensors
3. IoT Platform

CIM 10 IOT EDGE GATEWAY SOLUTION



CIM 10 KEY SPECIFICATION

PROCESSOR

ARM Cortex-A8	Single core, 1GHz
RAM	512 MB
Flash	4 GB
microSD card slot	x1, for additional data storage
RTC	Yes

PERIPHERAL

Digital Input	x2
Analog Input	x2, 12-bit resolution, 0-10V DC/ 4-20mA input
IO expansion	Yes, Modbus IO (External on RS-485)

WIRED CONNECTIVITY OPTIONS

RS-485 port	x1
Ethernet port	x1, 10/100 Mbps

WIRELESS CONNECTIVITY OPTIONS

Cellular modem	2G/4G LTE CAT-1
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POWER SUPPLY

DC operated	12~24 VDC, 20W
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ENCLOSURE

Plastic	ABS/PC
Mounting	Panel Mounted
Dimensions	91mm x 62mm x 68mm

INTERFACE LAYOUT



MECHANICAL DIMENSION



* All Product Specifications are subject to change without Notice.

EDGE DEVICE 360 KEY SPECIFICATION

PROCESSOR

ARM Cortex-A9	Quad core, 1GHz
RAM	2 GB
Flash	4 GB
RTC with battery backup	Yes

PERIPHERAL

Digital Input	x16, Isolated, 24V DC operated
Digital Output	x8, Isolated, 24V DC switched output
Analog Input	x4, 16-bit resolution, +/-10V / 4-20mA input
IO expansion	Over high speed RS-485 bus

WIRED CONNECTIVITY OPTIONS

RS-485 port	x2, Isolated
Gigabit Ethernet port	x1, 10/100/1000 Mbps
USB Device	x1 (Console)

WIRELESS CONNECTIVITY OPTIONS

Cellular modem interface	Options of 4G/2G/NB-IoT
	Type A standard

POWER SUPPLY

DC operated	12V DC, 50W for Core
	24V DC, 50W for isolated Digital IOs

Plastic

Mounting

ENCLOSURE

ABS
Panel/Wall mount

INTERFACE LAYOUT



MECHANICAL DIMENSION



Edge Management Software



Field Device Management

Configuration
Connection Status
Real time Telemetry view
Import and Export



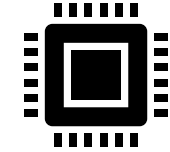
User App management

Install, Remove and Configuration



Package Manager

Over The Air upgrade



System Health Monitoring

CPU, Memory and Network usage
Troubleshooting



Cloud Integration

AWS, Azure
Store and Forward
Troubleshooting



Security

MQTT with X.509 certificates
VPN with X.509 certificates



External Data Storage

Micro SD card storage through
user application

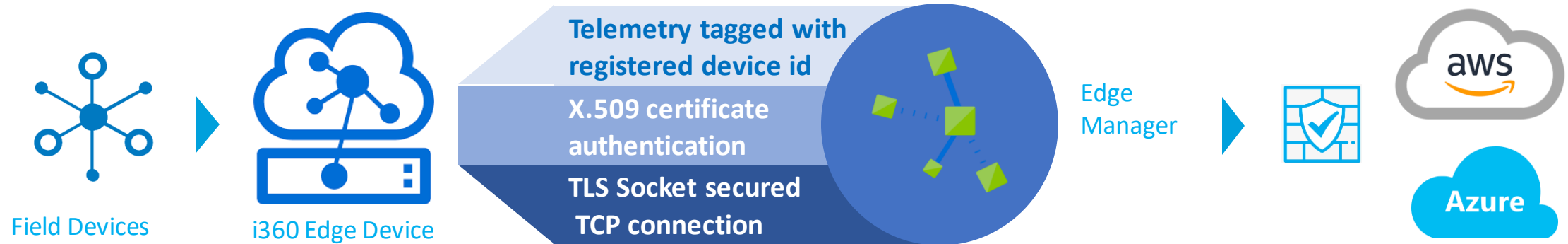


Network Management

Ethernet and 4G
Port Forwarding
Firewall
VPN access

SECURITY OUT of THE BOX

- Edge to Cloud connection over TLS sockets
- Session authentication using X.509 certification
- Device authentication using pre-assigned Device ID



CIM PLATFORM UNIQUE FEATURES

1. IoT Security Focus

- IoT security protocol X.509

2. Diverse Industry Applications

- Manufacturing, Energy, Water and Wastewater monitoring

3. Easy IT-OT Integration

- OPC UA & DA, Profinet, BACNet, Ethernet/IP, Modbus

4. Advanced Machine Learning

- ML at edge for predictive maintenance, anomaly detection, data-driven insights

5. Edge Computing Excellence

- Low latency, reduced data transfer costs, and real-time decision-making

6. Customization and Scalability

- Tailored to specific client needs, small and large deployments



CASE STUDIES

OEE HIGH SPEED PACKAGING LINE

Problem Statement :

Improve productivity of high-speed (300 parts per minute) packaging line by measuring Overall Equipment Effectiveness (OEE).

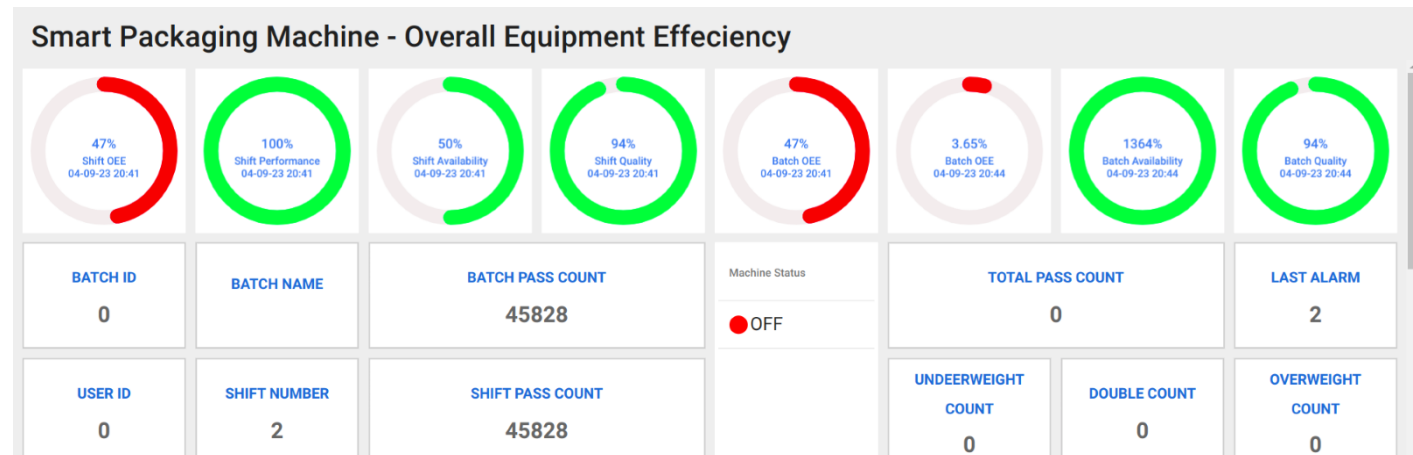
Solution :

CIM10 Edge computing device collect data from PLC at every 200 msec and calculate OEE, Availability, Quality and Performance.



Benefits :

- Improved Operational Efficiency
- Reduced Downtime
- Quick Decision Making
- Remote Monitoring for OEM
- Easy PLC troubleshooting



PUMP ANOMALY DETECTION

Problem Statement:

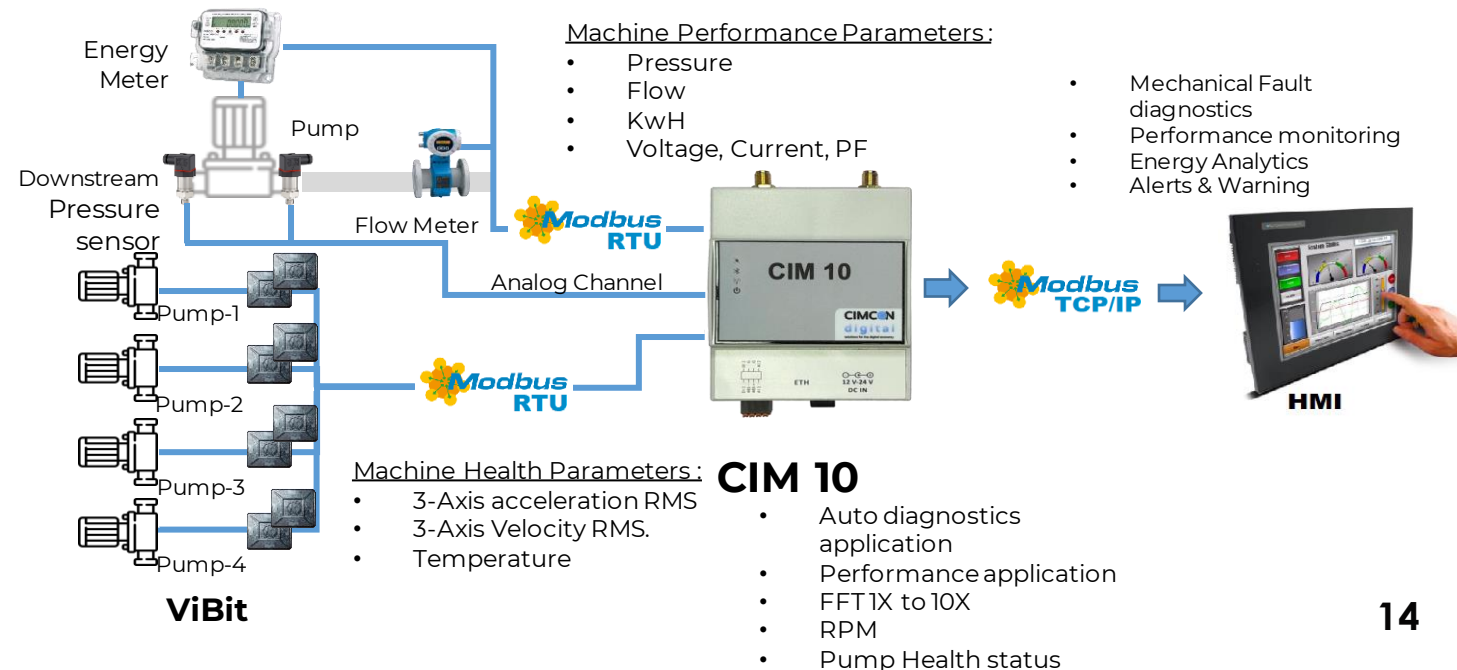
Reduce downtime of Pump system for Pump OEM.

Solution :

CIM10 Edge gateway monitor Pump Triaxial Vibration and parameters such as Head Pressure, Flow and Energy. Machine Learning model deployed on CIM enabled early anomaly detection and vibration monitoring enabled various pump fault modes such as Seal failure or Bearing failure.

Benefits :

- Improved System Reliability
- Early Anomaly Detection using Machine Learning
- Real-time Reporting in HMI
- Data Security
- Ease of configuration
- Pump Mechanical Faults



SMART WATER PUMPING STATION

Problem Statement :

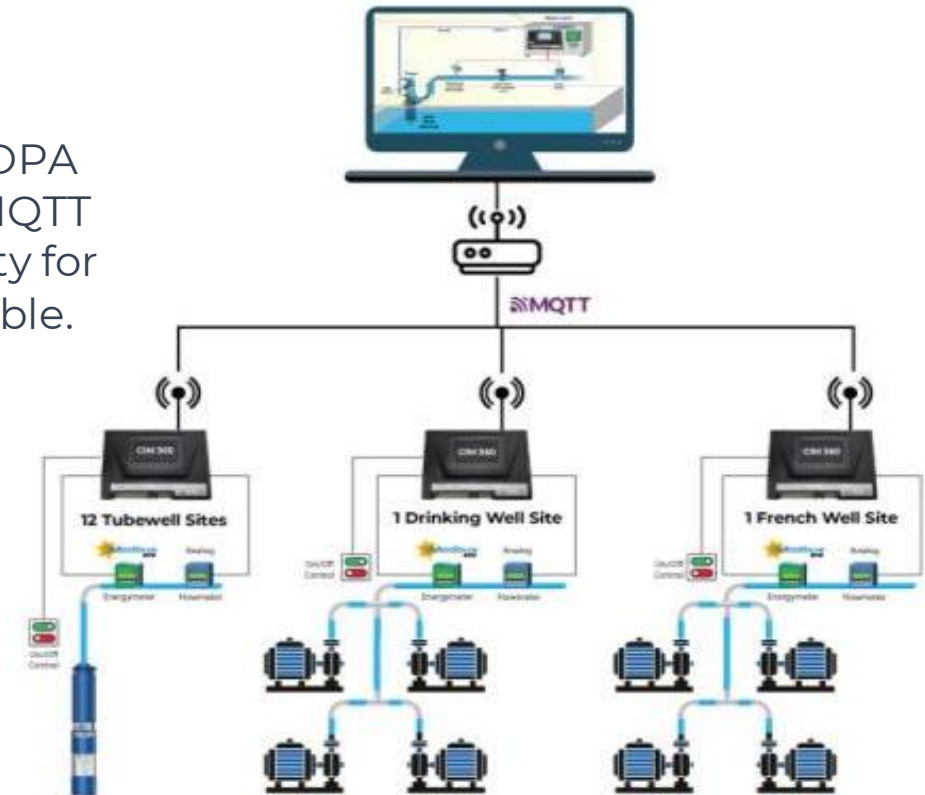
Upgrade legacy water SCADA system for accessing the latest and accurate status of pumping systems and deploy scalable IoT architecture to meet their future needs.

Solution :

CIM360 Edge gateway, offering support for various OT protocols like OPA UA and Modbus TCP/IP. It seamlessly connected to the cloud using MQTT protocol, ensuring reliable data delivery. Architecture allowed flexibility for easy addition of new field devices in the future, making it highly scalable.

Benefits :

- Improved System Reliability
- Simplify Water Industry Operations
- Real-time Reporting in HMI
- Data Security
- Ease of configuration
- Custom Logic like PLC



VIDEO ANALYSIS OF DOWNTIME

Problem Statement :

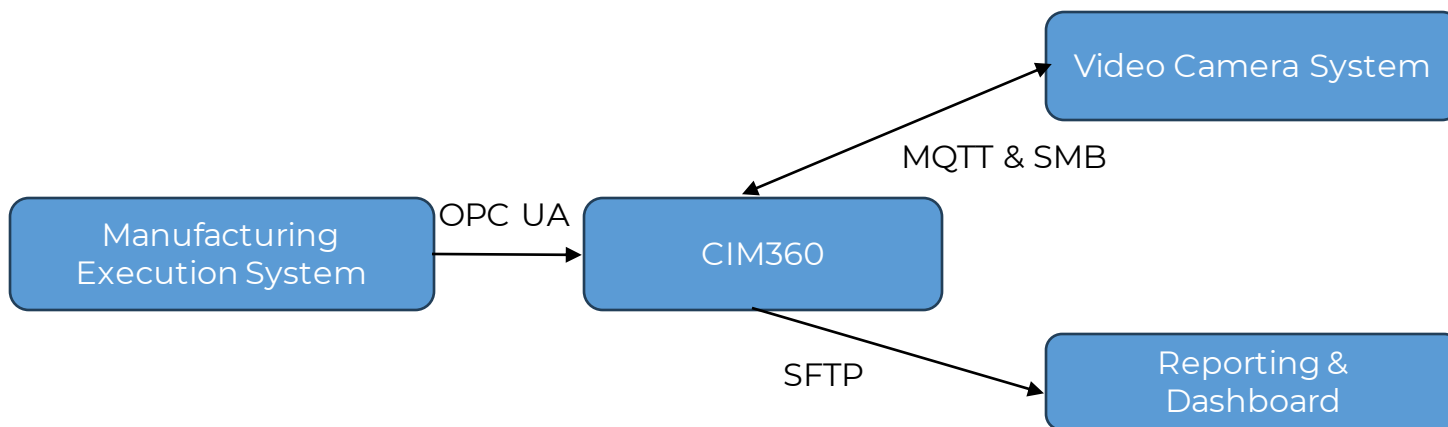
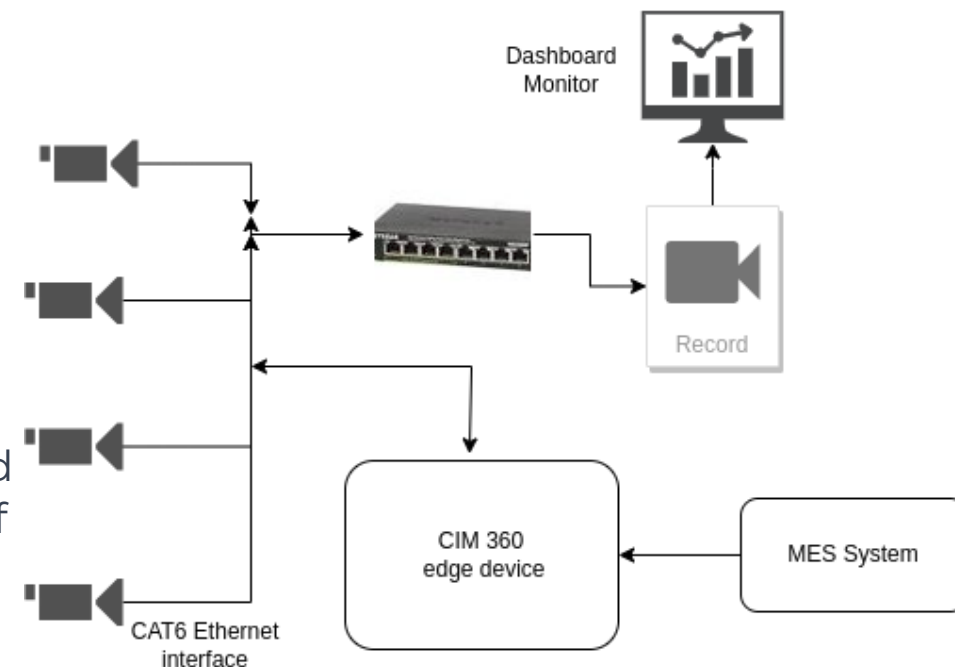
Video Monitoring of high speed (720 parts per minute) line to analyze downtime events and eradicate machine issues.

Solution :

CIM360 Edge computing device connect with MES over OPC UA and then send trigger to video camera system to capture video events of downtime. Video event dashboard and Historical reporting for analysis was provided.

Benefits :

- Improved Line Utilization
- Precise Fault Detection
- Reduced Downtime
- Increase in productivity



LORA BASED REMOTE MONITORING & CONTROL

Problem Statement :

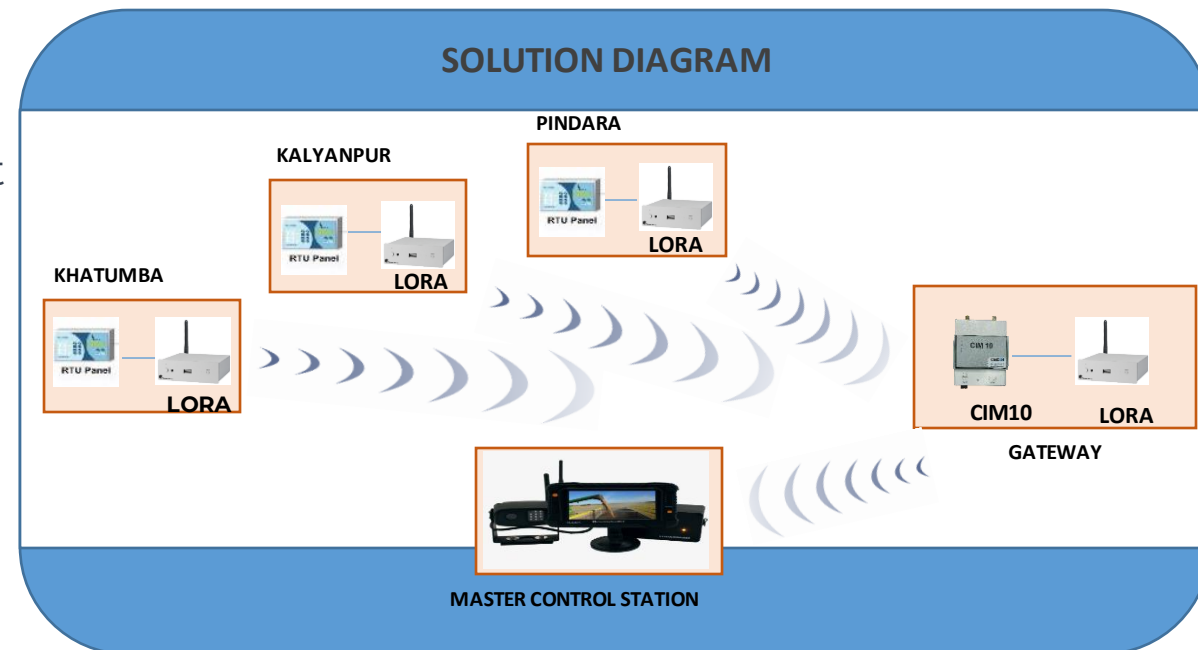
Remote monitoring of seashore pumps without internet connectivity.

Solution :

CIM10 Edge computing device and LoRa networks enable remote monitoring of seashore water pumping sites for efficient, reliable operation in areas without internet connectivity.

Benefits :

- Improved Operational Efficiency by Data-Driven Decision Making
- Cost Optimization
- Proactive Maintenance and Reduced Downtime
- Enhanced Equipment Lifespan
- Enhanced Safety and Compliance





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THANK YOU