

Value Added is Our mission



**LoRaWAN<sup>®</sup>**  
**Value Added Solutions**

**LoRa**  
**Alliance<sup>®</sup>**  
Member

# END-TO-END LORAWAN SOLUTION PROVIDER

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LoRa Alliance  
Member**



## Official Certification of Membership Sustech Integrated Technologies

The LoRa Alliance Inc. hereby certifies Sustech Integrated Technologies is in good standing of Start-Up Adopter membership for the January 1, 2025 – December 31, 2025 term.

A handwritten signature in dark ink, appearing to read "D McGinnis".

Debbie McGinnis

Account Director

Jan 3, 2025

Date



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# IIOT wireless Connectivity

**LoRaWAN®**



**NB-IoT**

**4G , 5G**

**WiFi**

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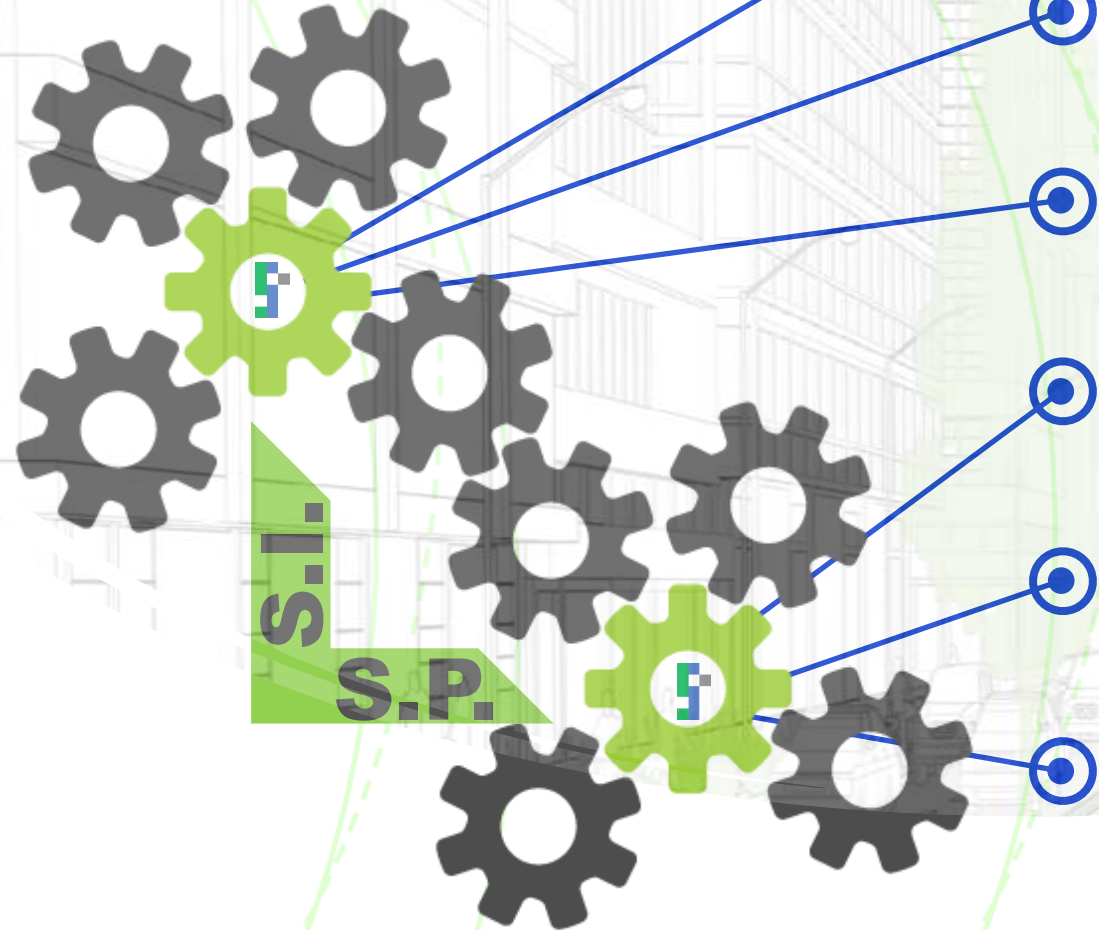
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# Why SUSTECH

# WHY SOLUTION PROVIDER



Instruments + Technical  
Experience = Solution

We Sell the Solution  
Not the Product

We Sell a Solution to Meet  
Client's Satisfaction

Improving Operations

Reduce Costs

Enhance Performance  
& Sustainability

*Leverage Open Innovation  
for Ultimate Value  
Amplification*

**FIT FOR PURPOSE**



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# Quality Assurance & Quality Control

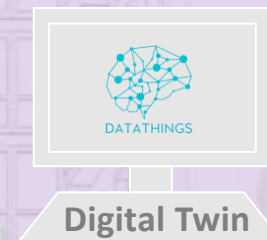
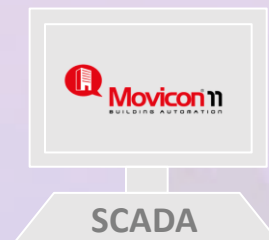
## QA/QC



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**Water &  
Wastewater  
Management**

**Energy  
Management**

**Environmental  
Management**

**Asset  
Management**

**Security  
Management**

**Smart Irrigation**

**Smart Metering**

**Air Quality  
Monitoring**

**Remote Control  
and Automation**

**Personal, vehicle  
& Equipment  
Tracking**

**Electrical  
LV GRID  
Monitoring**

**Waste &  
Cleaning  
Management**

**Equipment and  
Condition  
Monitoring**



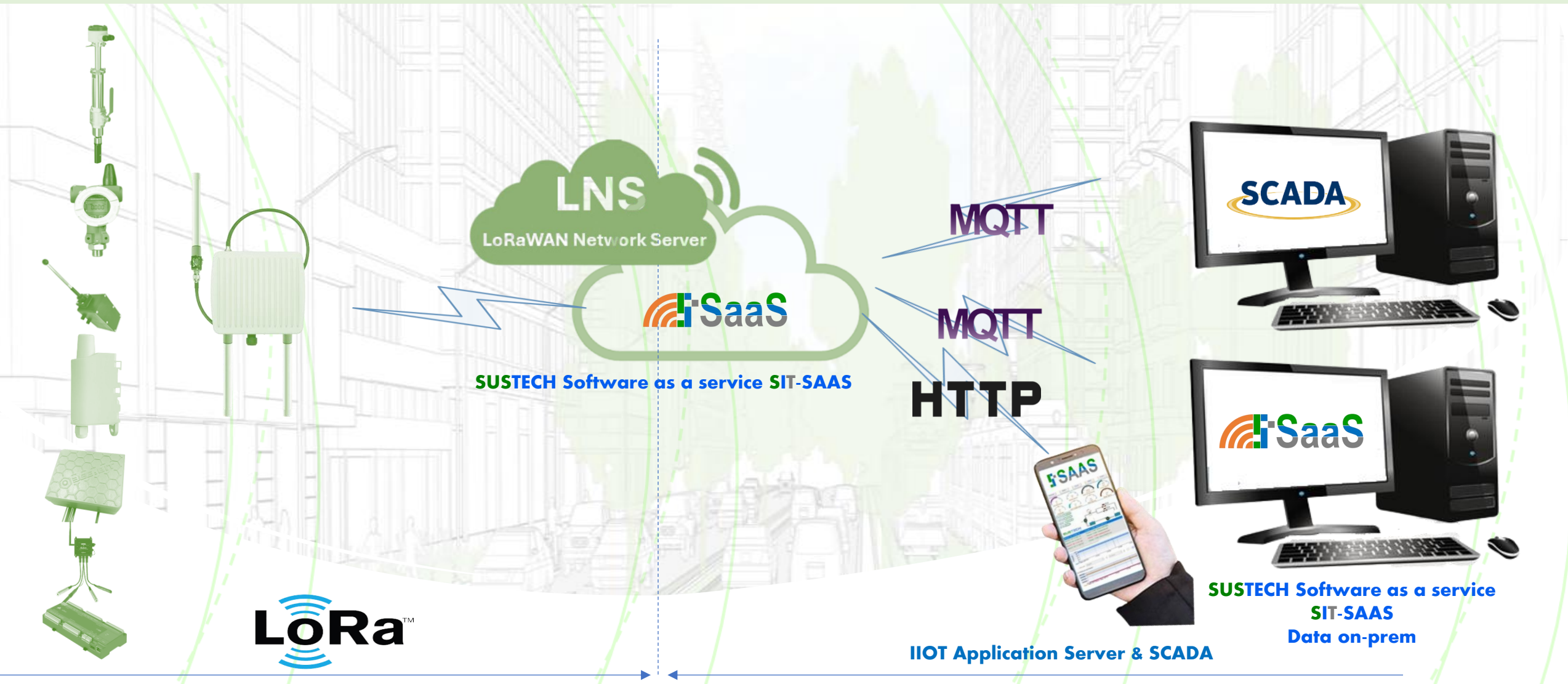
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# End-To-End LoRaWAN Solution



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# 12

# Reasons



WHY use **SIT-SAAS** Software as a Robust IIOT Platform & SCADA



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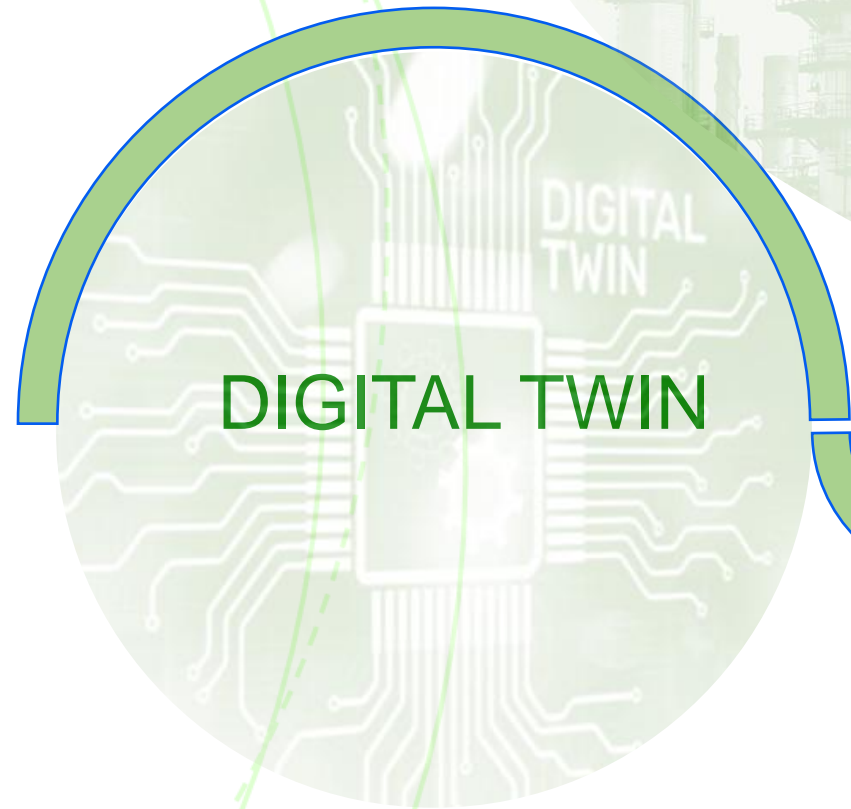
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DATATHINGS

Where Knowledge Meets Technology To Elevates Your Application with Academic Excellence in Every Byte



RESEARCH

BIG DATA ON  
REASONABLE  
HARDWARE

DIGITAL  
TWIN &  
SIMULATION

ANYWHERE

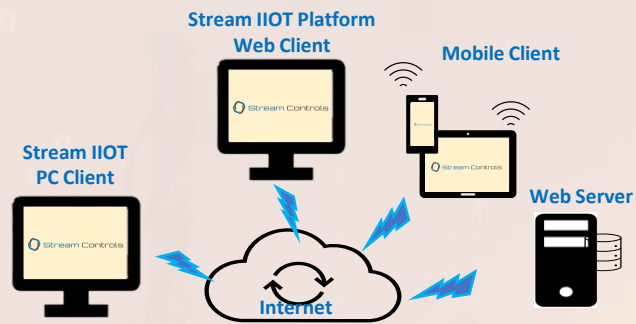
CONTINUOUS  
LEARNING

ANALYTICS  
AND MACHINE  
LEARNING

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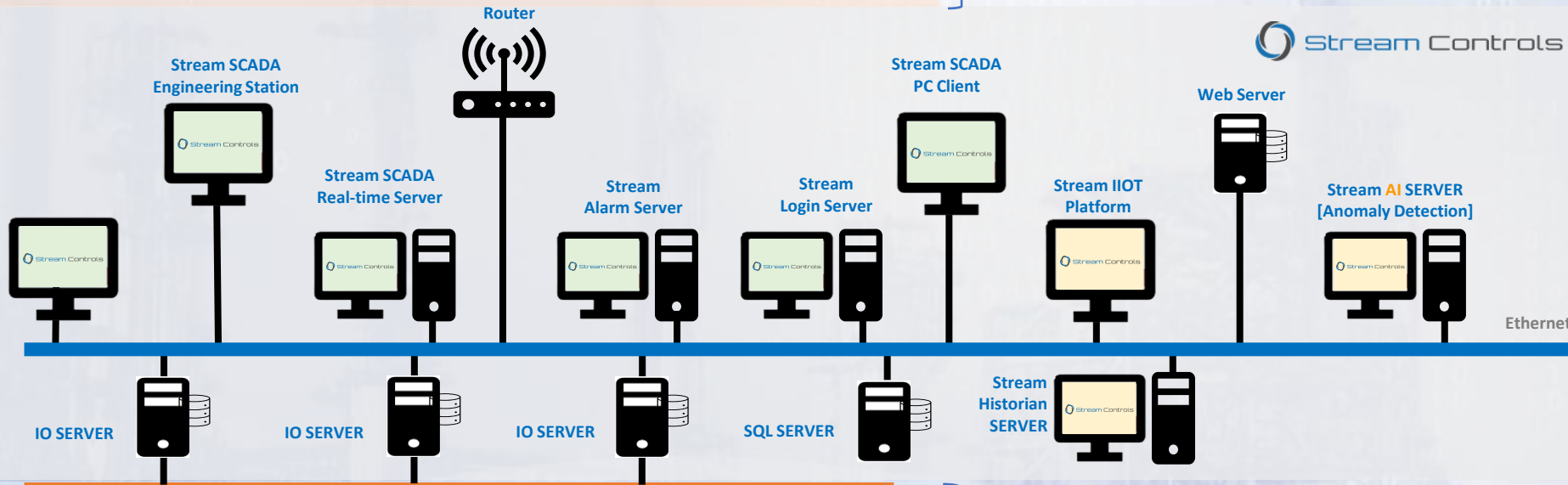
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DMZ Level  
Enterprise integration [ IT ↔ OT ]

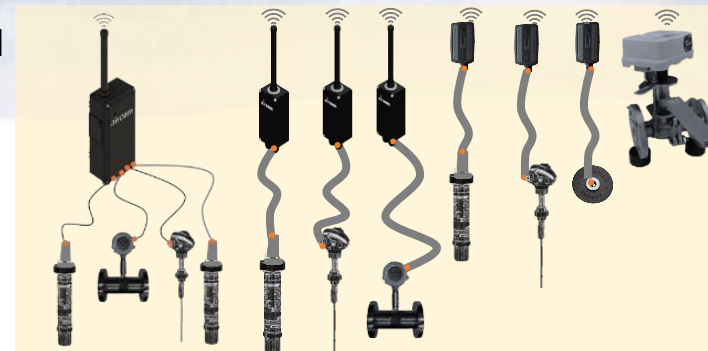
**Sustech** with its partners one of the Proven in there Know How ALTUS ( RTU & PLC Hardware), Stream (IIOT& SCADA Application) Provide a complete solution from IIOT monitoring to remote control



Level 2 or 3



Level 1



Level 0

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# **DEPLOYMENT LoRaWAN TECHNOLOGY IN OIL & GAS**

# SMARTER OPERATIONS UTILIZING LoRaWAN

**Assets and  
condition  
monitoring**

**Assets Corrosion  
Monitoring**

**Manual Valve  
Remote monitoring**

**Wellhead  
Monitoring**

**H2S and other  
gases**

**Chemical Injection  
Skids**

**Monitoring Pig  
Launchers &  
Receivers**

**Remote Weather &  
Noise Stations**

**Security Oil Field  
Monitoring.**

**Personals &  
Vehicles Tracking**

**None Critical  
Control [ irrigation  
controller, street  
and plant lighting  
control**

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# Existing Asset Connectivity via Modbus/LoRa or I/O to LoRa



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# Asset & Condition Monitoring

## SMARTER SOLUTIONS

FOR YOUR COMPLEX  
ASSET-INTEGRITY  
CHALLENGES



NEON  
Pressure  
Gauge



NEON  
Pressure  
Sensor



EDGE  
Pressure  
transmitter



NEON  
Temperature  
Sensor



AMS  
A/O



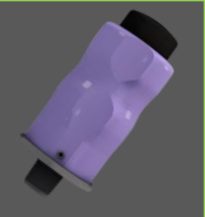
NEV  
CH4  
Detector



NEON  
Vibration  
Sensor



NEON  
Pressure  
Sensor



EDGE  
DP  
transmitter



AMS  
A/O



NEV  
CH4  
Detector



NEON  
Temperature  
Transmitter



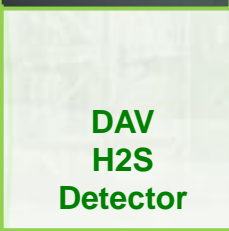
NEON  
Contact  
Sensor



EDGE  
Temperature  
Transmitter



EDGE  
Valve  
positioner



DAV  
H2S  
Detector



SNI  
Corrosion  
sensor



TEK  
Ultra. Level  
Sensor



NEON  
Valve  
Positioner



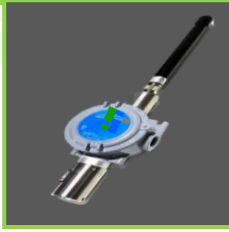
NEON  
Contact  
Sensor



EDGE  
Temperature  
Transmitter



EDGE  
Valve  
positioner



DAV  
H2S  
Detector



SNI  
Corrosion  
sensor



TEK  
Ultra. Level  
Sensor



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# STORAGE TANK FARM

## Manual Valve Positioner

water drainage in Oil Tank

Our client has an issue when draining the water drainage manually from the oil tank, sometimes operators leave the valve open and will allow the oil to leak after water is finished from the tank.

Installing a wireless LoRa Device can monitor if the valve is forgotten to remain open by sending an alarm message.



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# Upstream Deployment



5 - 15 KM



LoRa



LoRa



LoRa



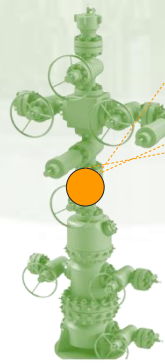
LoRa



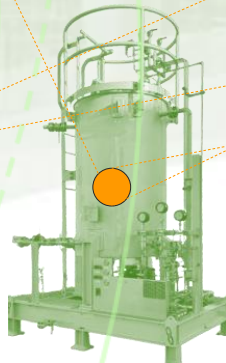
LoRa

## COMPLETE SOLUTION FOR AUTOMATION OF WELL PADS AND SINGLE WELLS

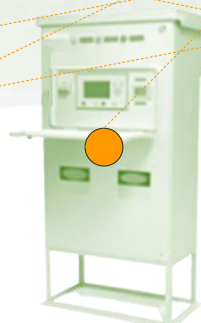
- Covers all process facilities of oil production (wells with different methods of operation, reagent dosing units, purification devices, metering units, and fluid meter, mass meter).
- Autonomous data collection from measuring instruments (pressure, temperature, dynamic level, dynamograph)



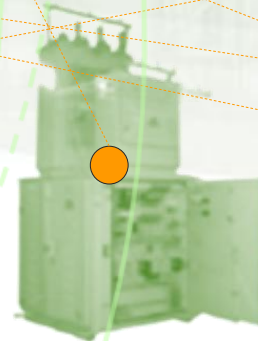
Wellhead



Chemical Injection Skid



Electric Submersible P/P



Transformer. RMU



Early product Facility Skid



Beam Pump

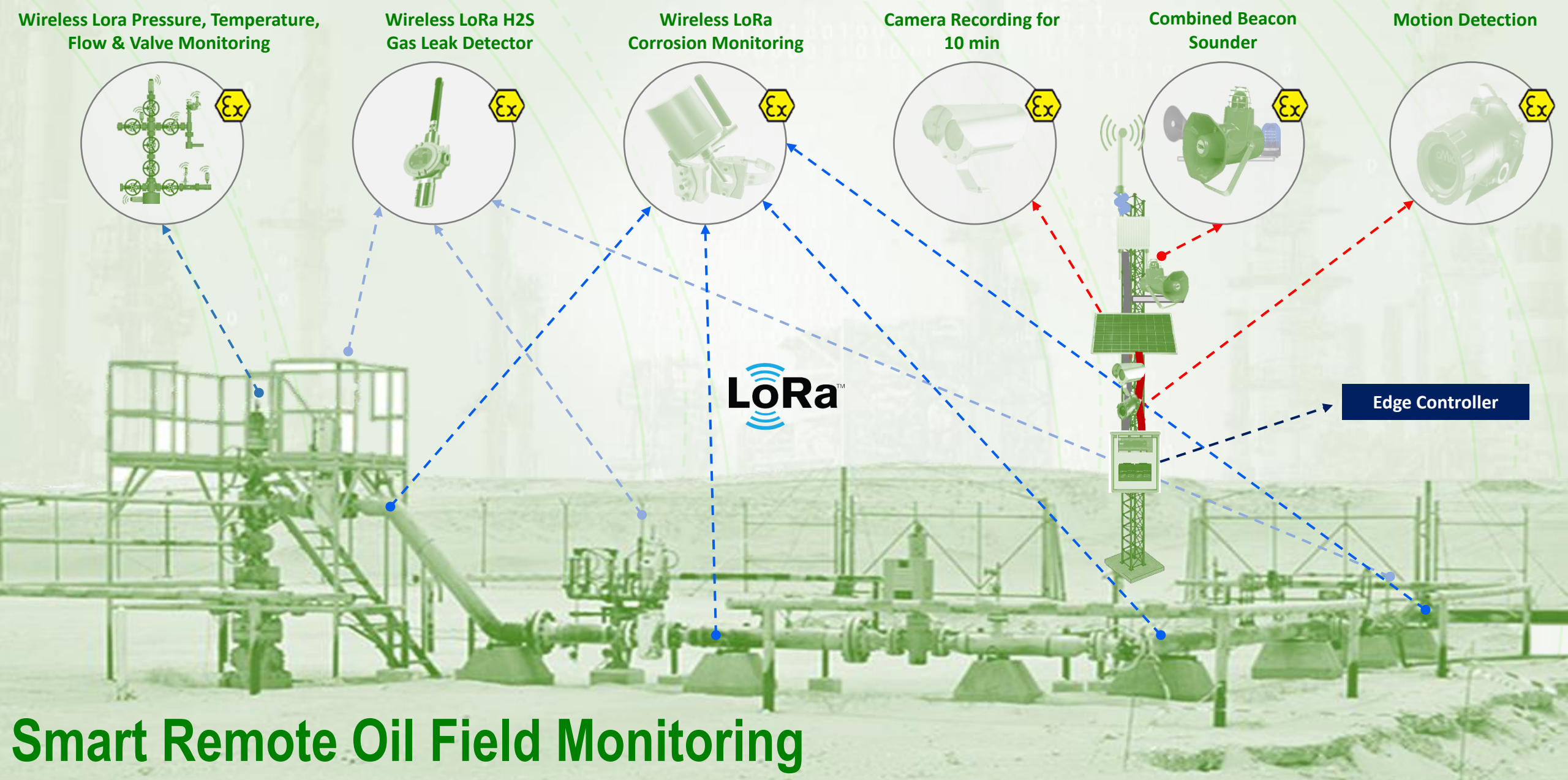


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# Smart Remote Oil Field Monitoring



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# Smart Wellhead

Wellhead Pressure



Wellhead Temperature

Manual Valve Positioner

Differential Pressure

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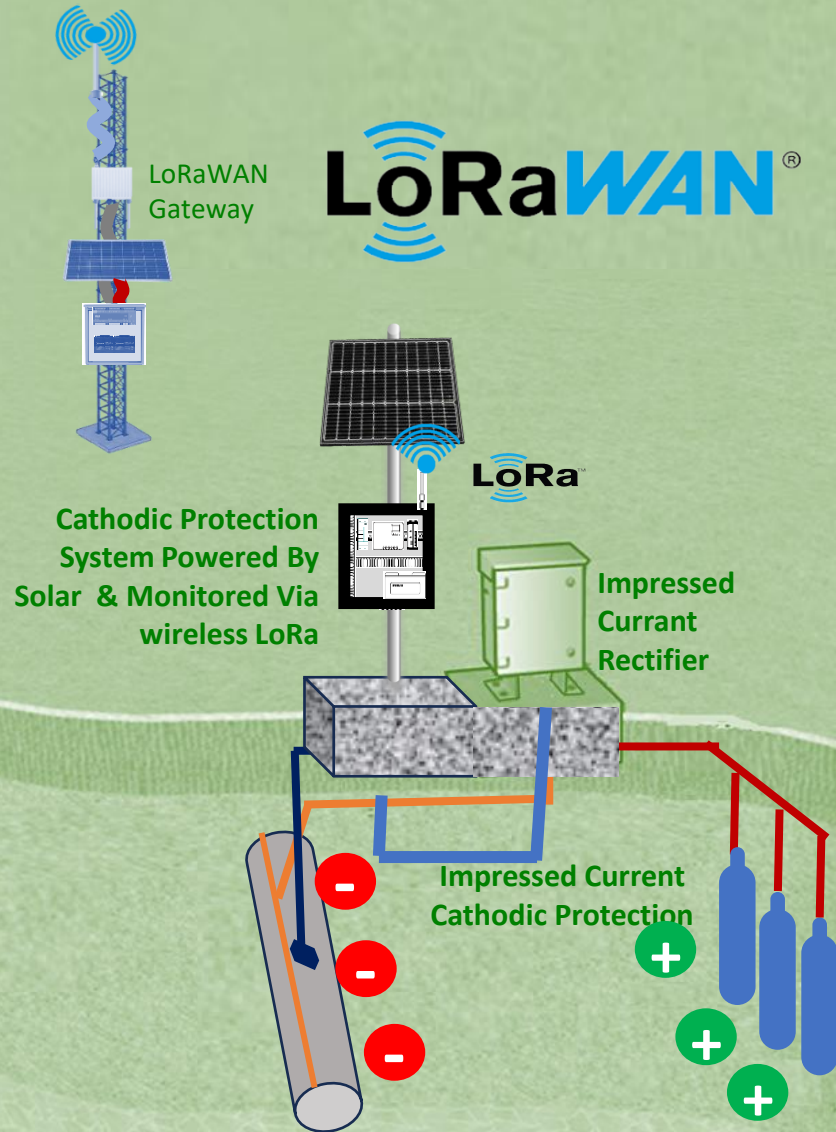
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# Cathodic Protection System Monitoring

## CP standard I/O to Monitored

S.N	Signal	I/O	Signal Type
1	CP DC Output Voltage	AI	4-20mA
2	CP DC Output Current	AI	4-20mA
3	Structural Potential (DC)	AI	4-20mA
4	Structural Potential (AC)	AI	4-20mA
5	PV Array Voltage (MPPT)	AI	4-20mA
6	PV Array Current (MPPT)	AI	4-20mA
7	Battery Voltage (MPPT)	AI	4-20mA
8	Battery Current (MPPT)	AI	4-20mA
9	Cabinet Temperature (MPPT)	AI	4-20mA
10	Battery Terminal Temperature (MPPT)	AI	4-20mA
11	Cabinet Proximity Status	DI	NO /NC
12	Spare	DI	NO /NC



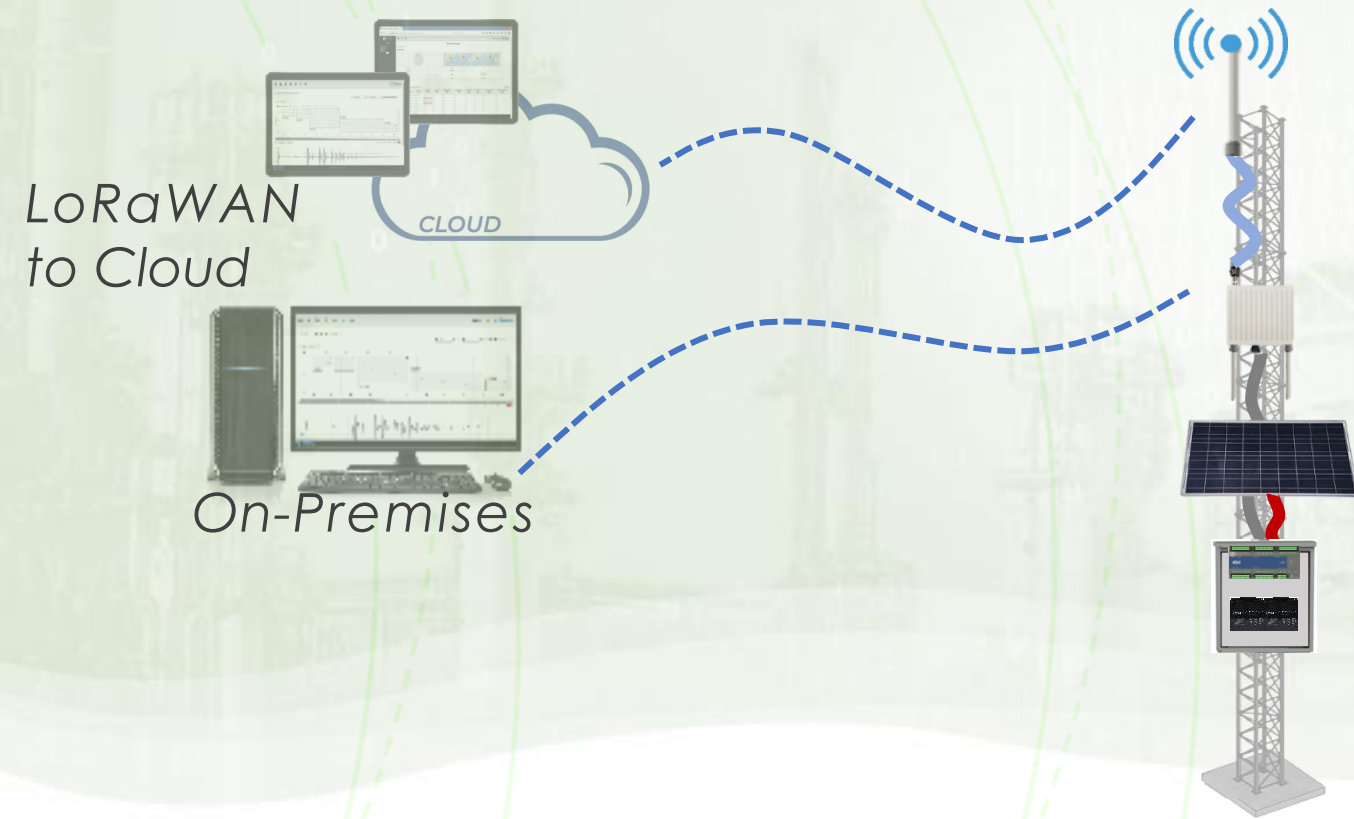
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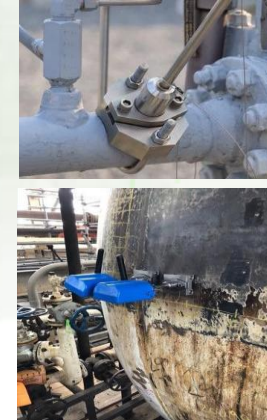
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# Ultrasonic Corrosion/Erosion Wireless Monitoring System



LoRa™



microPIMS SENSORS

LoRaWAN Gateway

webPIMS Data Management



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## Edge Controller Main Features

- Up to 64 Kbytes of %I points and 64 Kbytes of %Q points
- Large memory capacity for user application and user data
- Up to 1 Mbytes of retained or persistent memory
- High-speed ARM 64-bit processing
- 3 Ethernet interfaces 10/100/1000 Mbps
- 1 micro SD card interface
- 1 USB2.0 host interface
- 1 RS-485 serial interface
- 1 CAN interface with CAN open and J-1939 protocols
- OPC DA/UA, IEC 60870-5-104, PROFINET, Ether CAT, SNMP and EtherNet /IP Protocols
- Support clock synchronization via SNTP or via IEC 60870-5-104
- Web server features
- User web pages (Webvisu)
- Integrated power supply
- One Touch Diag
- IEC 61131-3 compliant
- Real-time clock (RTC)
- Compact and modern design
- Free of moving parts (fans, active cooling, etc.)

In this architectural design, All LoRa Devices send the data via LoRa Gateway, the gateway has Built-in LNS with backhaul ethernet interfaced to the edge controller and sends back command D/O or Via Modbus A/O

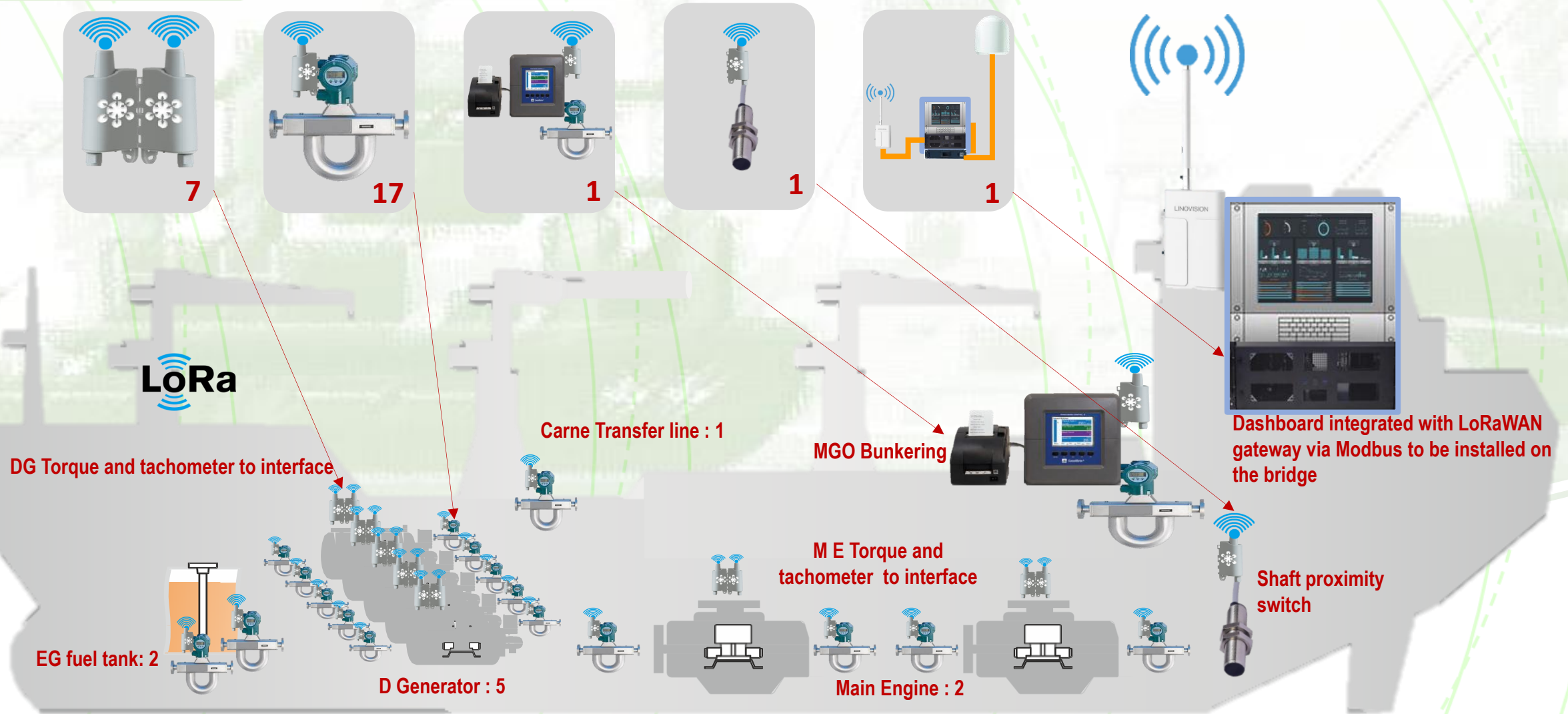
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# Deployment of LoRaWAN Technology in Marine Fleet Monitoring & Management







# LoRaWAN®



Coriolis FM interfaced with the LoRa Communication protocol  
The data will be sent wirelessly to the exiting gateway on the bridge.

The gateway connected to the edge computer for data analyses and interfaced with the supervisor's screen

Static IP address



LoRa

LoRa



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# LoRaWAN IN FACILITY MANAGEMENT APPLICATION



# sit-SaaS Deploy For All



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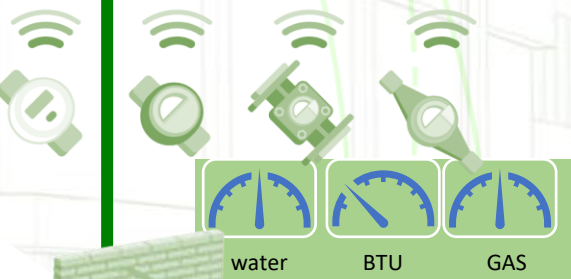
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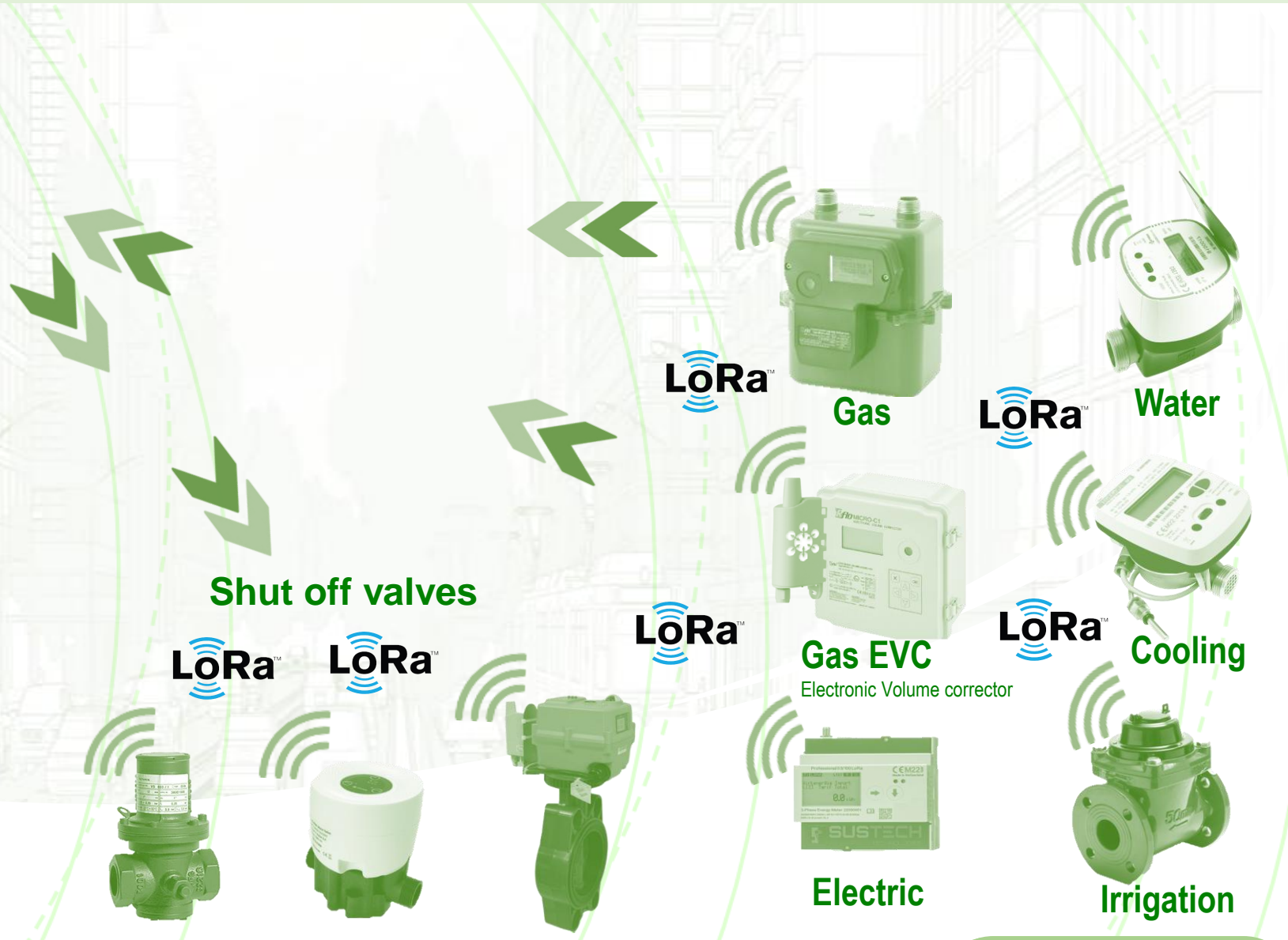
# Smart Metering for Gas, Electric, Cooling & Water



SaaS  
CLOUD  
METERING



LoRaWAN System Connectivity Architecture



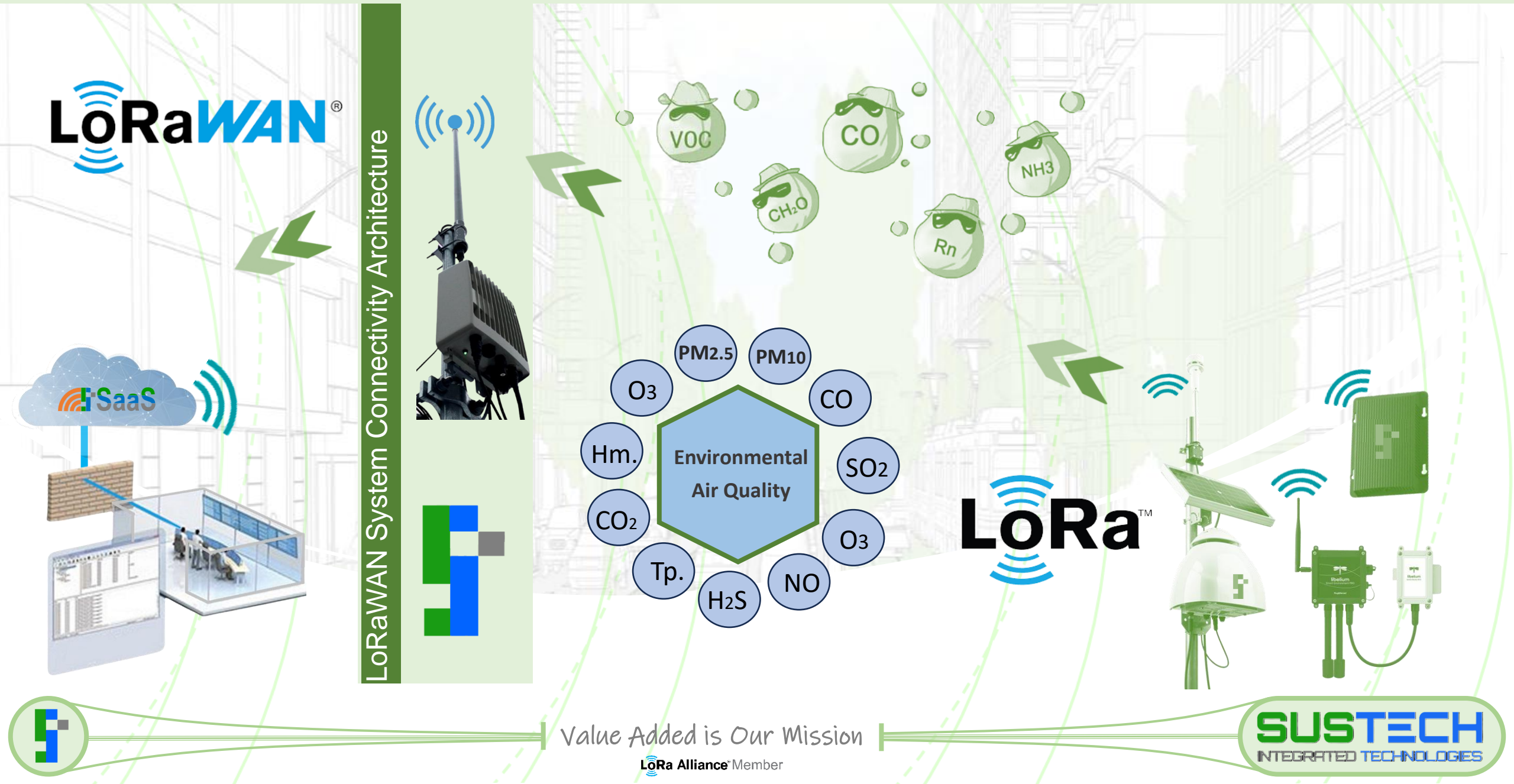
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# Smart Air and Noise Quality Monitoring





# Electrical Equipment Monitoring

## LoRa Dry Contact

RMU Output Status (On, Off, or Trip)  
Transformer Alarms  
Earthing & line cut detection



Distribution Transformer  
Temperature Measurement



## LoRa Smart Current Sensor

Accurate Current Measurement  
Energy Efficiency  
Customizable Alarms  
Non-Intrusive Installation  
Single & 3-phase up to 3000A



## LoRa Circuit Breaker

Real-Time Monitoring  
Remote Control  
Fault Detection and Alerts  
Energy Monitoring



## LoRa Smart Meter

Data Logging and Reporting  
3-Phase Energy Measurement  
Real-Time Data  
Customizable Alarms  
Load profile storage



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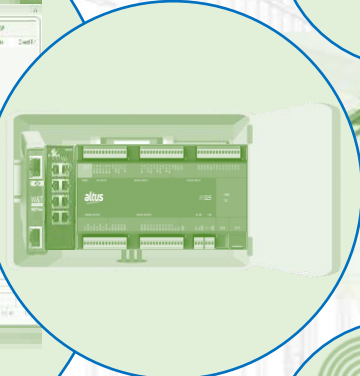
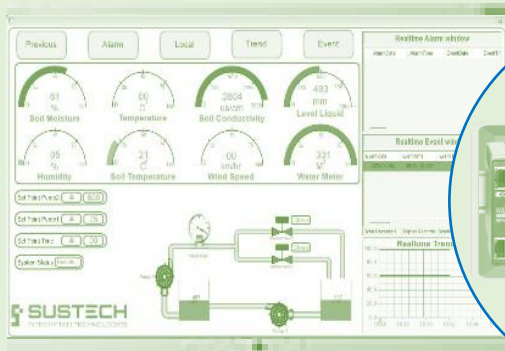
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END-TO-END LORAWAN WIRELESS SOLUTION

# The Autonomous Operation Of Irrigation Controller



*When Sustainability Matters*



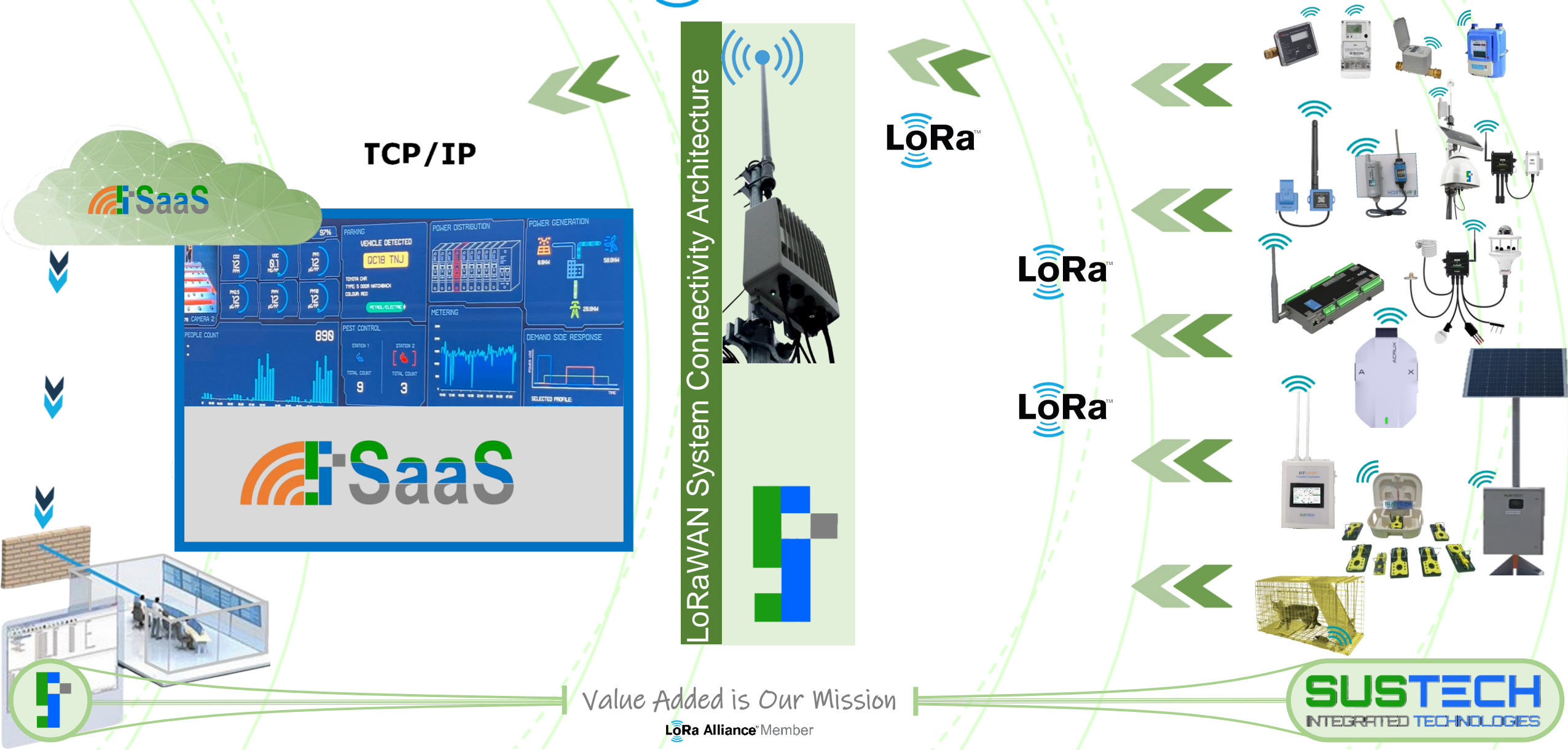
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# Smart Facility Management System Architecture

In One Platform you monitor all **LoRaWAN®** in one gateway you collect all

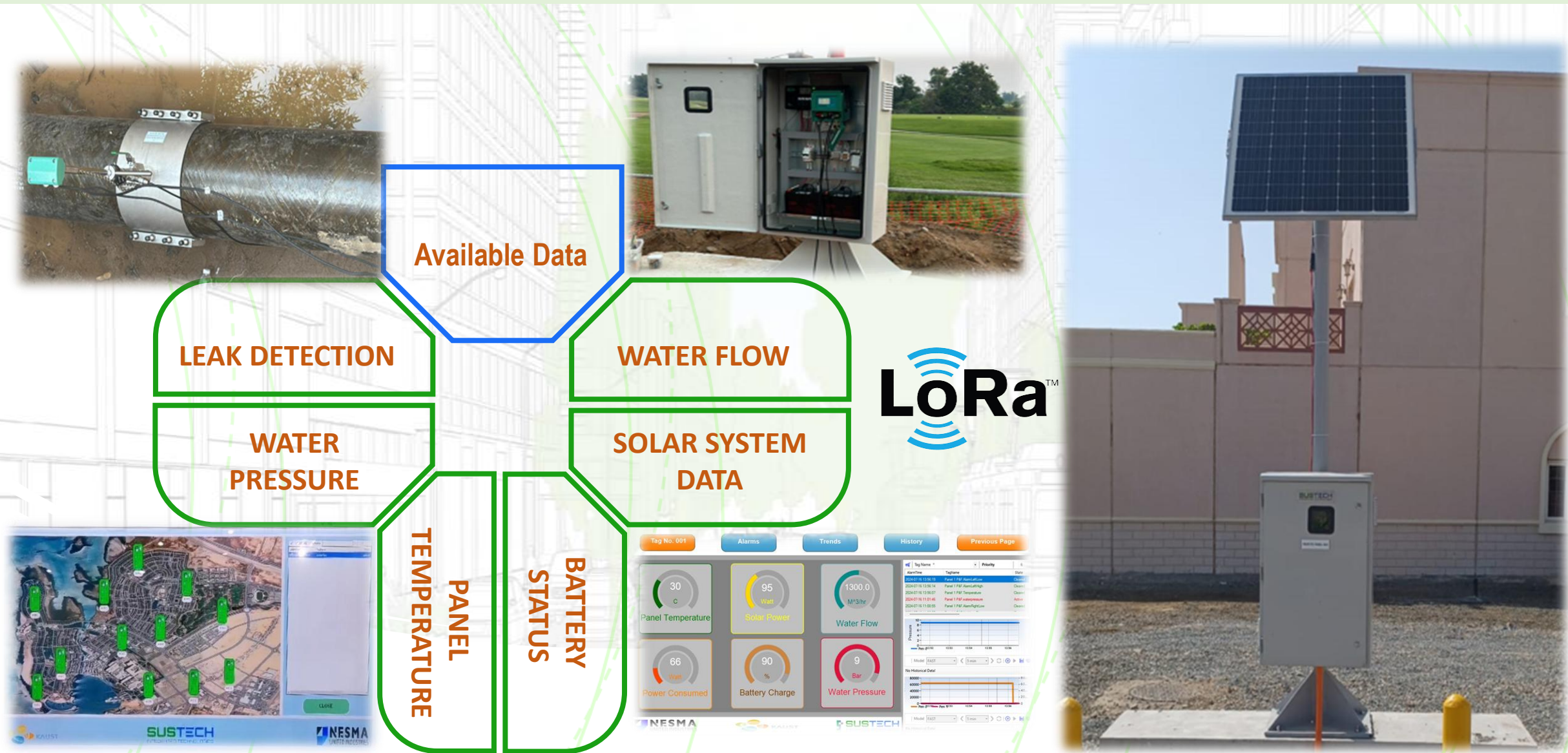






# **LoRaWAN IN UTILITY MANAGEMENT**

# WATER NETWORK MONITORING MANAGEMENT



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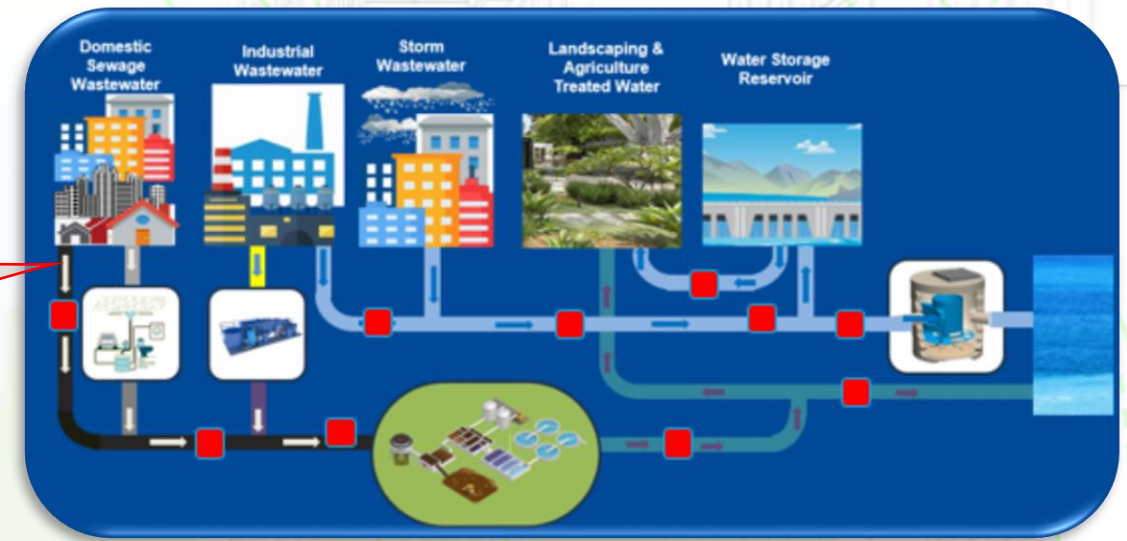
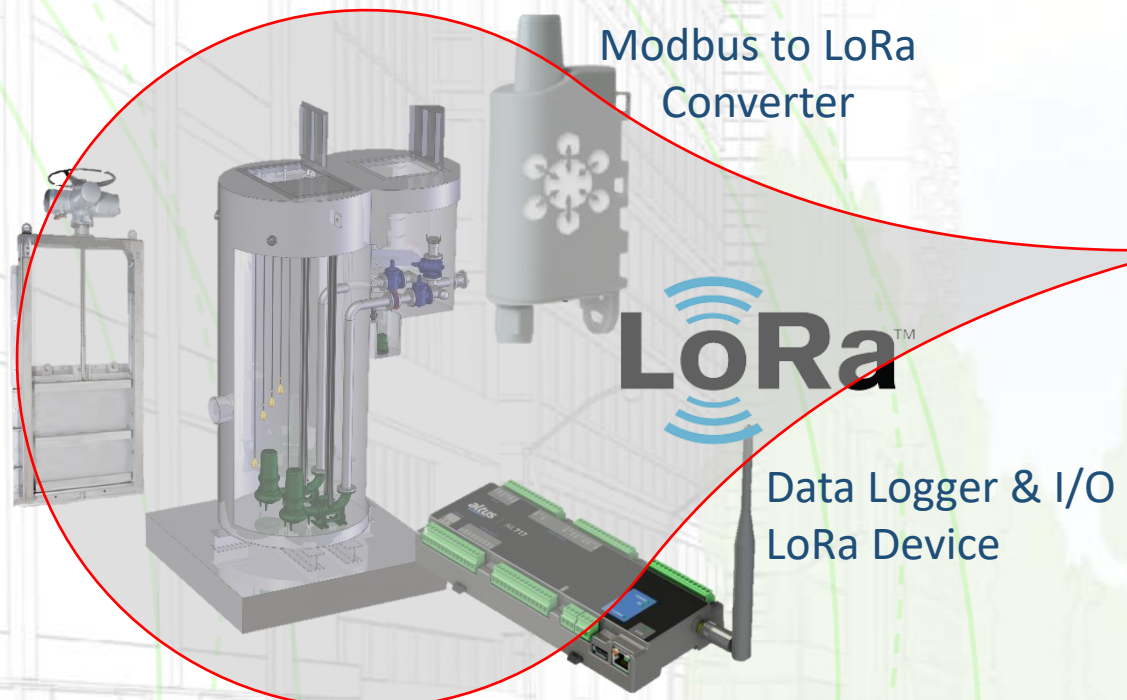
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# Wastewater Lifting Station & Manhole Monitoring

- Level
- MOV
- Vibration
- Current



Manhole Cover, H2S, Water Level Monitoring Platform

Manhole 1/Zone 1

H2S 8 ppm	Manhole State Manhole is Opened	Water Level 1500 mm
--------------	------------------------------------	------------------------

No of Manholes : 4000	No of Opened Manholes : 3500	No of Manholes under Maintenance : 250
No of Closed Manholes : 250	No of Manholes have Level high: 1500	No of Manholes have H2S high: 2500

LoRa™ NB-IoT

H2S Monitoring

Wastewater Quality Monitoring

Manhole cover Monitoring

Level Monitoring



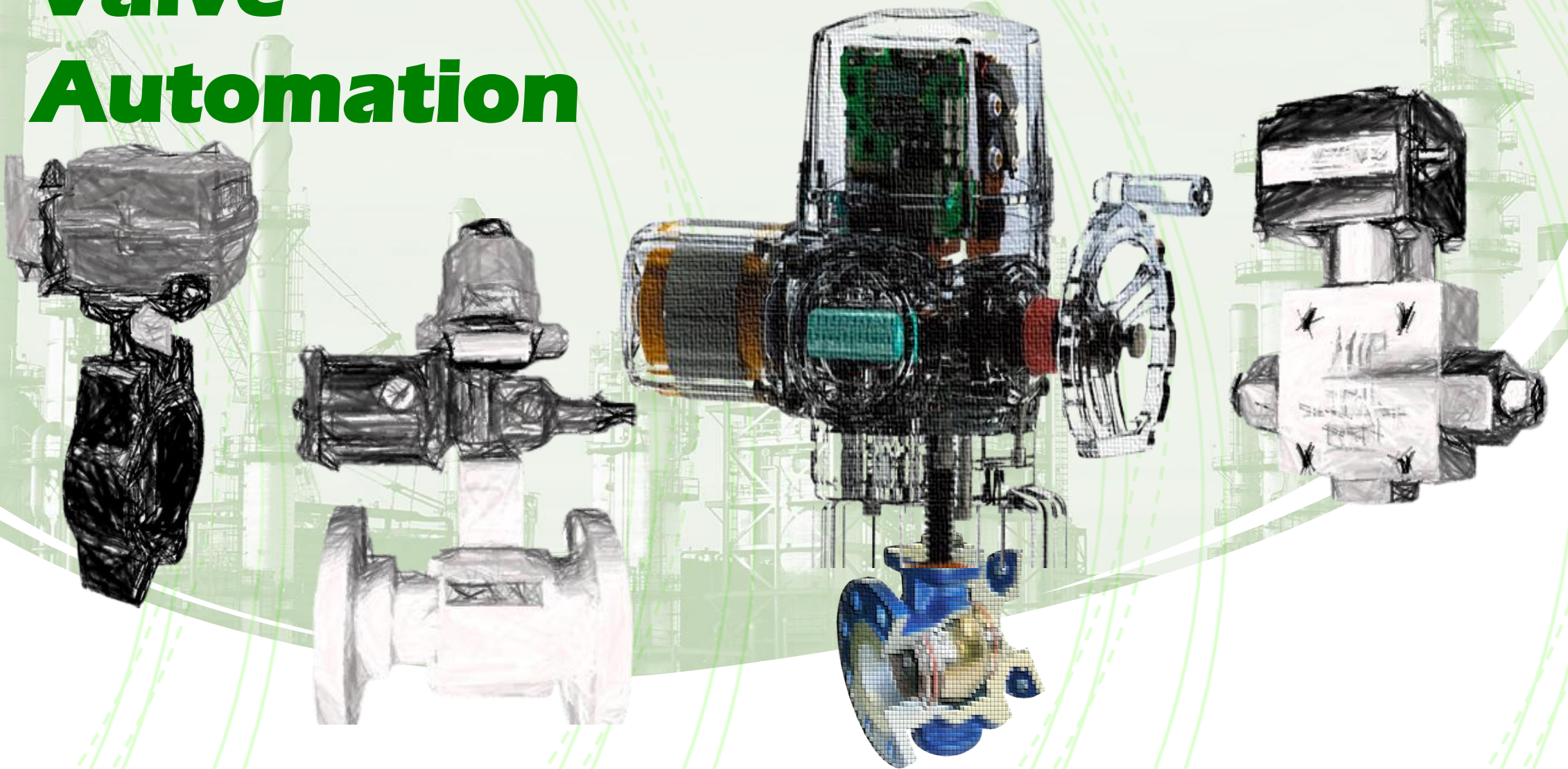
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# Valve Automation



# Complete Package Assembling Of Micro Flow Control Valve

The micro control metering valve assembly is available for 1/4 in, 3/8 in, valve.

This unique stem design operates on the principle of a right-hand threaded component operating in an opposite direction of motion to a left-hand threaded component. As the pitch sizes of these threaded are different from each other, a very fine and precise stem travel is made possible.

This provides exceptional control that is not possible with ordinary fine-pitched stem designs. Each complete revolution of the stem provides 0.005in stem travel.

The vernier indicator allows readings in increments of one-tenth of a revolution (0.0005in stem travel)

The non-rotating lower section stem is ground to a 9-degree included angle to insure maximum control.

While this valve may be turned to the fully off (closed) position, it is always preferable to provide a separate on-off valve in the system to protect the precise control of the metering valve

The precise electric actuator can a doubt the very fine and precise stem to achieve the micro flow

The precise piston Flow metering ranges from .005 cc/min with a maximum operation of 10,000 PSI

The specification compliance with CE Certification, Ex-proof version available with ATEX/IECEx II 2 G Ex db IIB Tx Gb as well as UL, cUL certifications for class 1, Division 1, Group C & D, Tx

Highly precision Actuator  
12-24VDC actuator with RS-485  
Modbus control with positional  
feedback

Signal connection to ex controller  
And connection to 24 VDC power  
source ex connection

10000 Psi micro  
flow meter

Direct double nipple  
connection 10000 Psi  
fitting

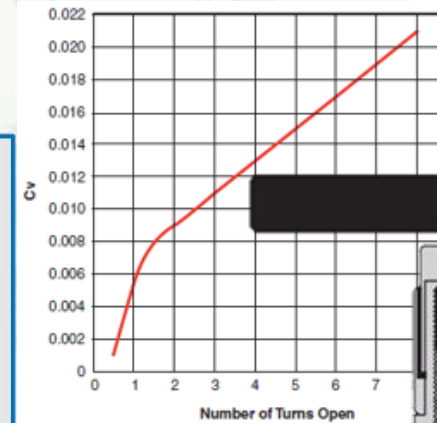
Reducing connection 1 in  
to 3/8 in 10000 Psi fitting

EX Approved Touch  
screen control Panel

316 SSL Panel

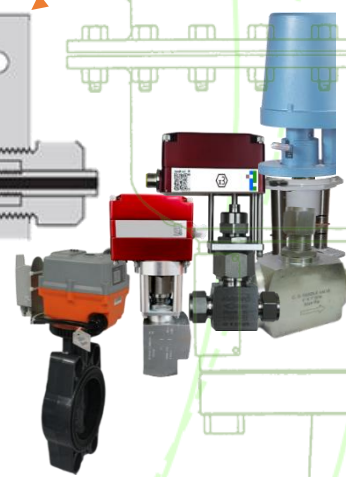
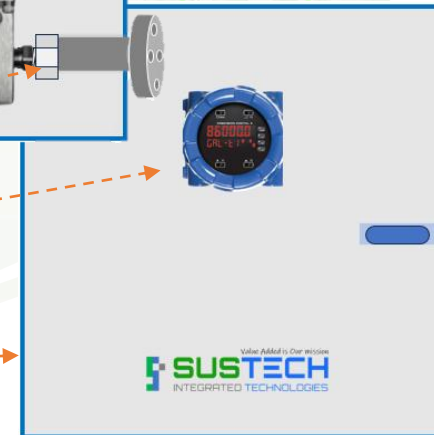
When Precise  
Metering  
Matters for  
chemical injection Skid

When  
Precision & Accuracy  
Matters



The Square Section  
prevents stem tip  
rotation

10000 Psi high  
pressure for  
microflow Valve



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# Valve Actuation & IIOT diagnostics

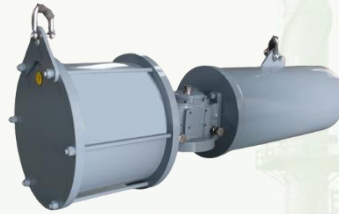
We actuate the valves with different types of actuators subject to the Application



Vane Actuator



Electric actuator



Pneumatic Actuator



Rack & Pinion Actuator



Hydraulic Actuator

With IIOT LoRa Communication We Also Monitor the Manual Valves



With IIOT LoRa Device we Monitor Open / Close Manual Valve



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# Engineering To Order



*No matter how complex your application is, share it with us, and we'll offer a solution that exceeds your expectations*



SMART CITY



OIL & GAS



HEAVY INDUSTRIES



HVAC & FM



WATER & WASTEWATER



MINING & CONSTRUCTION



LoRa™

LoRa

LoRa



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# Partners we work with

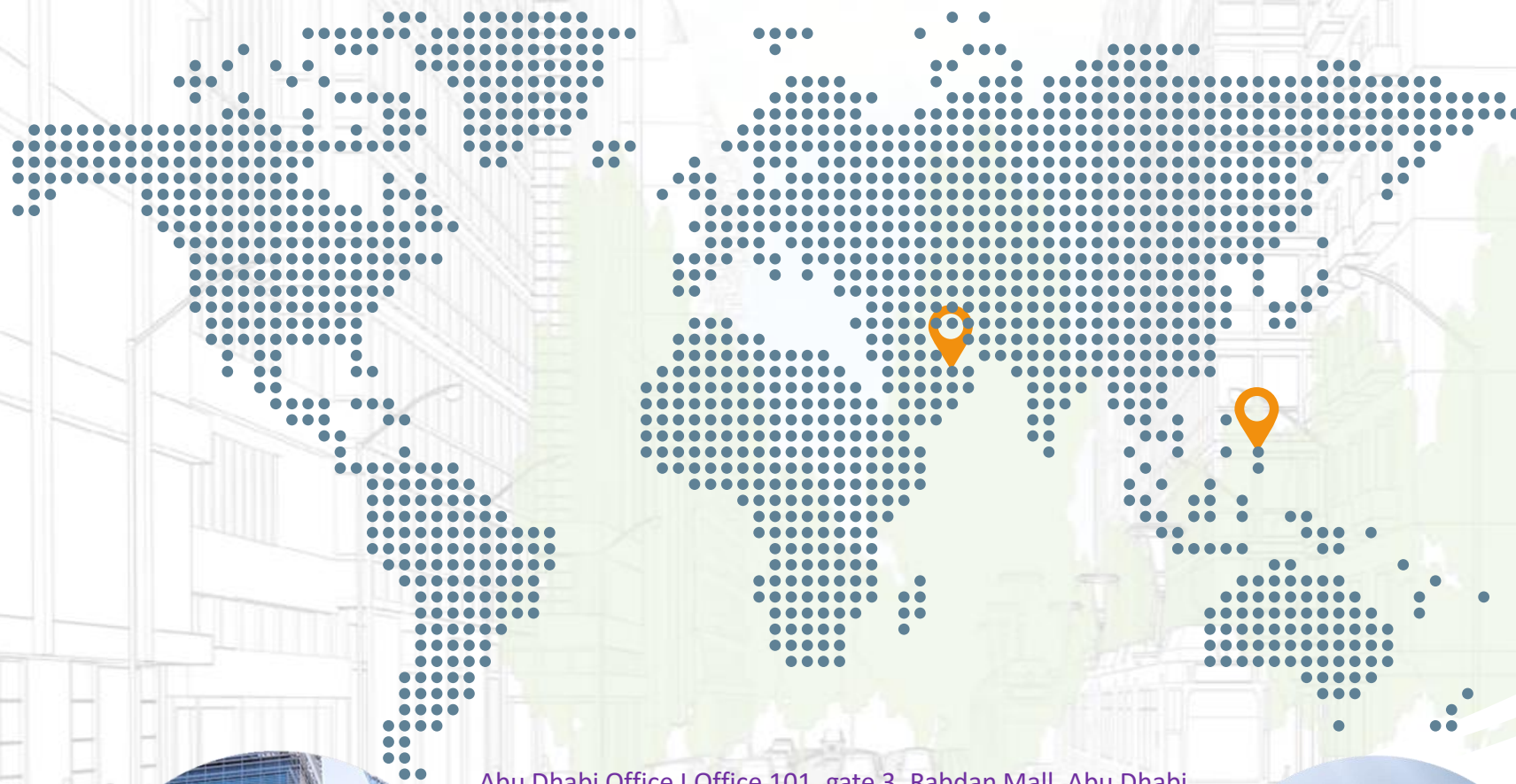


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United Arab Emirates

