

SUSTECH

INTEGRATED TECHNOLOGIES


LoRa
Alliance[®]
Member



Smarter Operations in Oil & Gas

The LoRaWAN logo. The word 'LoRa' is in a dark grey, sans-serif font, and 'WAN' is in a blue, sans-serif font. A blue wireless signal icon is positioned above the 'o' in 'LoRa'. A registered trademark symbol (®) is located to the right of 'WAN'. The background features a network of white nodes connected by lines, overlaid on a blue wireframe sphere.

LoRaWAN®

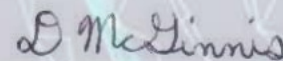
End-To-End LoRaWAN Solution

**SUSTECH is a
LoRa Alliance
Member**

 **LoRa Alliance**®

**Official Certification of Membership
Sustech Integrated Technologies**

The LoRa Alliance Inc. hereby certifies Sustech Integrated Technologies is in good standing of Adopter membership for the May 2023 to May 2024 term.



Debbie McGinnis
Account Director
LoRa Alliance, Inc.

Why do you have to Get started with LoRaWAN. . .

Low Cost

In LoRaWAN, the devices that are usually in greater quantity are the gateways and terminals. Since the gateway only serves as a data forwarder, its price is relatively cost-effective.

No need for a frequency license

LoRaWAN operates on a free public spectrum, available for anyone to use, LoRaWAN networks are deployed on free ISM bands (EU868) in UAE & GCC Countries allowing any service provider or enterprise to deploy and operate LoRaWAN networks without a frequency license.

Low Power Consumption and Long Life

Compared to 4G , LoRaWAN boasts ultra-low power consumption, whereas 4G lacks low power features. In outdoor settings such as agriculture and forestry, 4G cannot be battery-powered like LoRaWAN.

Wide Coverage Range

Using CSS and ADR, LoRaWAN can communicate with a gateway up to 15 km away in unobstructed open areas or up to 5 km away in urban areas. This means that a single gateway can cover all devices in an area of approximately 700 square kilometers.

Strong Penetration Capability

LoRa wireless modulation technology can penetrate indoor depths, with the ability to reach underground water and gas meter sensors.

AUTHORIZATION CERTIFICATE

This is to certify that
SUSTECH INTEGRATED TECHNOLOGIES

is an Authorized System Integrator of
Altus Sistemas de Automação S.A.
for the Category - End User Specialist

March 27th, 2023 - São Leopoldo, Brazil

Augusto Hoffmann
Higher Information Marketing Manager

Altus Sistemas de Automação S.A.
altus@altus.com.br | www.altus.com.br



Sustech Integrated Technologies Limite

is authorized as a
System Integrator
with recognized capability to engineer, develop and install solutions featuring Emerson's Industrial Automation & Control portfolio of product



Jeff Householder
President
Machine Automation Solutions
Emerson

David Kraft
Vice President, Sales
Machine Automation Solutions
Emerson

ISSUE DATE: 12 SEP 2023
AGREEMENT NUMBER: 16356
EXPIRATION DATE: 10 SEP 2024
CUSTOMER SERVICE NUMBER: 69846

Authorization Certificate

This is to certify that
Sustech Integrated Technologies
has been appointed as an authorized
Distributor
and is approved certified partner under the terms and conditions of the Agreement
with a validity of 2022-06-15 to 2025-06-15
to promote and sell Wellintech Products & Services
in GCC countries and Sudan market.



Letter of Authorization

To Whom It May Concern:

The company **SUSTECH INTEGRATED TECHNOLOGIES**
P.O. Box 7123, Abu Dhabi, UAE
Tel: +971 2 626 8774
E-Mail: info@sustechme.com

is Value added reseller and solution provider for **HAUK & SASKO** the developer of MBS application

For the territory of United Arab Emirates

SUSTECH as IOT solution Provider is entitled to configuration, integration, installation and commissioning complete system directly from **HAUK & SASKO** / Germany and sell those products into the territory of UAE.

Together **HAUK & SASKO** and **SUSTECH** integrated technologies look forward to serving all of **HAUK & SASKO** product needs, and **HAUK & SASKO** fully support **SUSTECH** integrated Technologies in products, technical support, and sale services if any, and deliver warranty materials when required.

Hopefully, this will satisfy and meet your requirements for a future relationship.

Signature & stamp

David Sasko
Managing Director

Imad Hassan
Sales & Business Development
Director

HAUK & SASKO
INGENIEURSGESSELLSCHAFT MBH
Eisenstrasse 17, 70838 Stuttgart
Tel: +49 7143 3331-1 Fax: +49 7143 3331-4



Letter of Authorization

To Whom It May Concern:

The company **Sustech Integrated Technologies**
Gazizadey Avenue Building, Madinet City,
P.O. Box 1223, Abu Dhabi, United Arab Emirates
T: +971 2 626 8774 E: info@sustechme.com

is Authorized Service and Application Provider Company for our products Adeunis IoT Products & Solutions in United Arab Emirates and Associate Partner for Adeunis IoT Products & Solutions Located in 281, Noida - Phase Technology Park Road, 389201 Chhatrapati Shivaji Maharaj, Mumbai, India

any is entitled to import directly from Adeunis IoT Products & Solutions in France and sell those products into the territory of GCC & Sudan with supporting Service when applicable.

Adeunis IoT Products & Solutions and Sustech Integrated Technologies look forward to let our product needs, and we fully support Sustech Integrated Technology products, catalogue, technical support, services after sale and deliver warranty materials when required.

Product will be under warranty for 24 months from delivery.

This will satisfy and meet your requirements for future relationship.

Signature & stamp

deunis

deunis
Address:
281, Noida, India
Phone: +91 99100 99100
Fax: +91 99100 99100
E-mail: info@deunis.com



Libelium Comunicaciones Distribuidas, SL
Avenida María Zambrano, 31
WTCC, torre este, planta 7, oficina Libelium
50018 Zaragoza (SPAIN)



Authorized Value Added Reseller

The Things Industries Certificate that
Value-Add is our mission
SUSTECH
INTEGRATED TECHNOLOGIES
will provide the complete Things Industries Software and II and distribute the complete Things Industries Software and II and distribute the complete Things Industries Software and II

Valid duration 01-08-2022 - 31-12-2027

Signature & stamp

deunis



Manufacturer Authorization Form

Contract No: 02-202323
4th July, 2023

To who it may concern,

We, Xiamen Milesight IoT Co., Ltd., are an official manufacturer of Industrial Cellular Routers, LoRAWAN Gateways & Sensors, etc., with registered address at A991, Floor 3, Zone C, Innovation Building, Xiamen Software Park, Xiamen Torch Development Zone for High Tech Industrial Industries.

Integrated Technologies (located at Babtain Mall, Entrance No. 3, /UAE) as a certified partner of Xiamen Milesight IoT Co., Ltd to United Arab Emirates Urban Projects from July 4 to 2025 July 4 for devices and Gateway technologies

Integrated Technologies led service for Steam Control lette Stream Controls product

Integrated Technologies has met the necessary ized solution provider for our ring the period from 2022 to

General Manager
Ayman Mohamed

Signature & stamp

Four-Faith

grad Technologies
er with recognized capability to engineer, develop our-Faith Portfolio of products

Xiamen Four-Faith Communication Technology Co.,Ltd.

Stream Controls
Commercial Registration: 156198
Tax Card: 602-156-745
Email: info@streamcontrols.com



VAR Certificates

Why Solution Provider ?

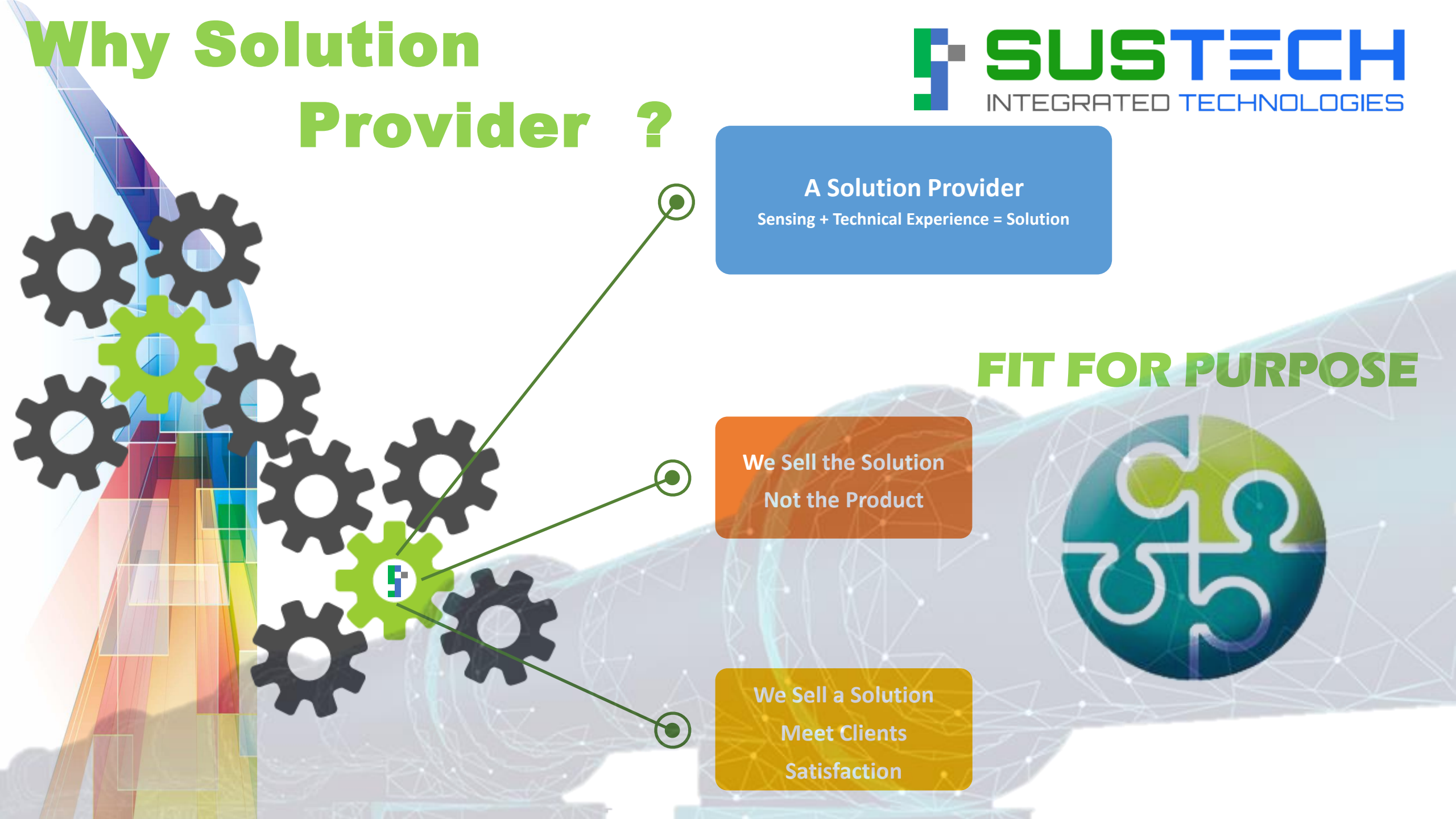
A Solution Provider

Sensing + Technical Experience = Solution

FIT FOR PURPOSE

We Sell the Solution
Not the Product

We Sell a Solution
Meet Clients
Satisfaction



SUSTECH

...has...



SMARTER OPERATIONS UTILIZING LORAWAN



**Smart data
collection via
Modbus /
HART**

**Smarter
Metering
Solution**

**Smarter
Wellhead
Monitoring**

**Smarter
Asset
Monitoring**

**Smarter
Non-Critical
Control & Alarm**

**Smarter
System
Architecture**

DID YOU KNOW

.....that you can send Modbus & HART data via
LoRaWAN?



Modbus-to-LoRaWAN

Partial Stroke Test (PST) is a functional test that is performed on a valve to check its operability without affecting the process controlling.

Being **PST** is a critical element of the **Safety Instrumented Systems (SIS)**. The **PST** ensures that the valve is working correctly, thus reducing the risk of equipment failures or accidents when is needed.

This where **Modbus LoRa converter** interfaced **PST** via **RS485 Modbus connection** systems can provide significant advantages by allowing for real-time monitoring and control the **PST** by reducing the human interface.

Sustech can interface and collect the data from the remote area via Modbus to LoRaWAN

Partial Stroke Test (PST)



Modbus-to-LoRaWAN

LoRaWAN is designed to provide long-range communication with low power consumption, which makes it ideal for applications where data is transmitted infrequently and over long distances such as in MOV

MOV and valve diagnostic with Modbus interface to existing systems have different data control/ collection can send by Modbus all data for predictive.

Sustech can interface and collect the data from the remote area via Modbus to LoRaWAN

Motor Operated Valve Diagnostics



HART-to-LoRaWAN

The controller maintains a precise chemical injection rate under changing process conditions and reports injection data to a central location.

The HART device variables are made available for remote operation and monitoring.

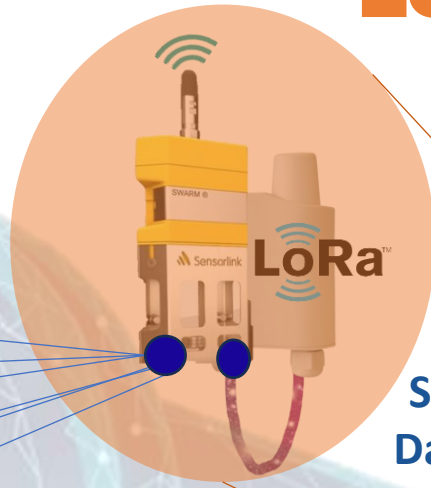
Sustech solution uses a Certified HART to LoRaWAN Class 1 Div 2 hazardous converter: so you can take the signal measurements of equipment in the sensitive zone and transform them into a LoRaWAN® wireless signal

**Wellhead chemical injection
skid diagnostics via Modbus or Hart to LoRa**



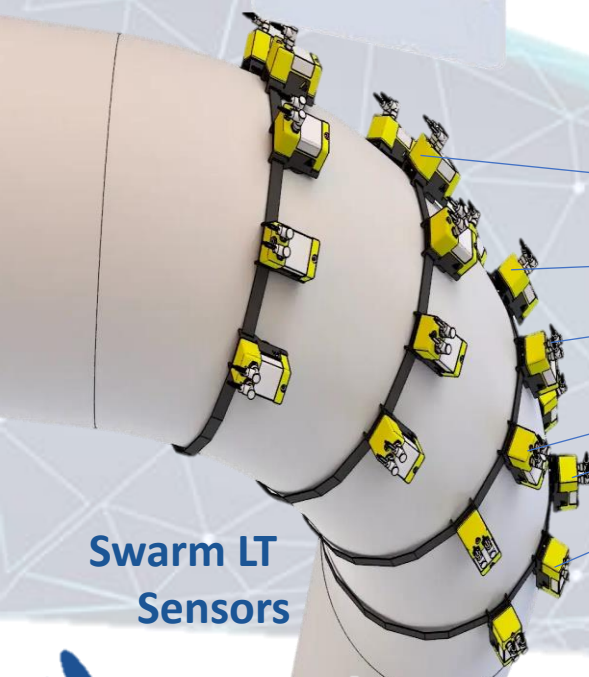
Modbus-to-LoRaWAN

Corrosion Monitoring LoRaWAN made it easy



Swarm S2
Data Logger

Modbus to
LoRaWAN to send
the logging data



Swarm LT
Sensors



**Gas, Electricity, Water, and Cooling Meter Remote Reading
&
Plant accounting and settlement systems
(PASS)**

 **LoRaWAN**®



SUSTECH
...have the...
SOUL

LoRaWAN®

Gas Metering

SUSTECH
INTEGRATED TECHNOLOGIES

LoRa Alliance® Member

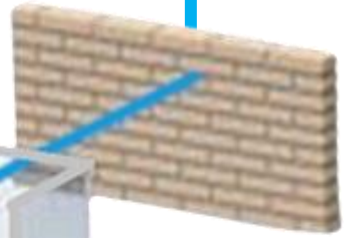
Smart Gas Reeding & Billing System.

ACCOUNTING AND SETTLEMENT SYSTEMS FOR IPP AND IWP

MBS

Plant accounting and settlement systems (PASS)

- Integrated smart metering solution for independent power/water producers
- Settlement systems for power purchase agreements (PPA) and water purchase agreements (WPA)
- Automated billing and invoice verification
- Consulting, support & maintenance



Plant Accounting Settlement System (PASS)

HAUK & SASKO

INGENIEURGESELLSCHAFT MBH

SUSTECH Associate Partner in related PASS



LoRaWAN®

LoRa™

LoRa™



SUSTECH

...have the...

SOUL



LoRaWAN

Smart Metering
&
Settlement System

Solutions for Gas plants with Sulfur Recovery

MBS Bulk solid and bulk liquid

Faster and easier for reliable and correct accounting

- Digital twins for bulk stockyards and material handling for liquids and solids
- Material balances through IoT sensor integration
- Automation solutions for stackers/reclaimers, train loaders, and ship loaders
- Reduces costs and optimizes operation stackers and easier



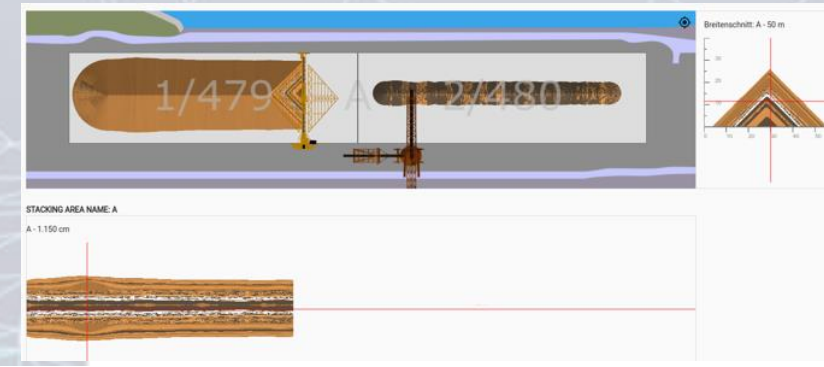
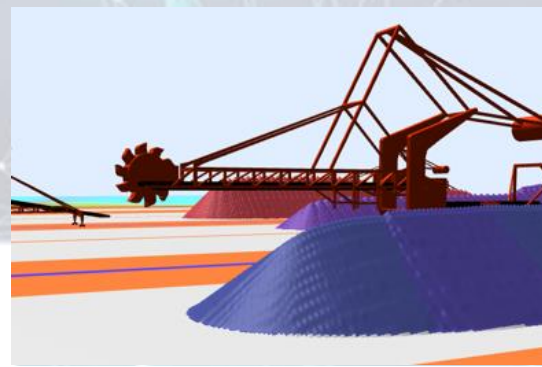
MBS

Plant Accounting Settlement System (PASS)

HAUK & SASKO

INGENIEURGESELLSCHAFT MBH

SUSTECH Associate Partner in related PASS



Electricity, Gas, Oil, hydrogen, Heat, Water & Process steam

Plant Accounting Settlement System (PASS)

MBS Benefits and Value-Added

- Management system for the most important process in commercial plant operation: invoicing and settlement
- Integrated database solution for plant and back-office teams
- Strong reporting capability, high transparency delivered
- Acquisition of production and consumption meter data from digital control systems (DCS)
- Database for plant availability and capacity, load scheduling, and outage events
- Automatic calculation of invoices for electricity and water as per the contract clauses of PPA and WPA
- Generation of invoices and notices
- Comprehensive reporting
- Optional -Invoice verification for inputs: natural gas, fuel oil, coal, additives
- Optional -Fuel efficiency calculations / Fuel Demand Model

Smart Metering
&
Settlement System

LoRaWAN®

SUSTECH

...have the...

SOUL



ADMINISTRATION

PROCUREMENT

order, registration of quality and quantity

PLANT

PLANNING

per year, month in terms of use, stock ...

INPUT

stock logistics, registration of consumption

BILLING

fuels, materials, freight, additional charges

ANALYSIS

quantity, quality, costs



Plant Accounting Settlement System (PASS)

HAUK & SASKO

INGENIEURGESELLSCHAFT MBH

SUSTECH Associate Partner in related PASS

SUSTECH

...have the...

SOUL



LoRaWAN

**Smart Metering
&
Settlement System**

MBS Smart Metering for Electricity, Gas, Cooling & Water



Gas Meter M3 Meter RTU Meter KW Meter



LoRaWAN

LoRa



Gas



Water

LoRa



Electricity



Cooling



Plant Accounting Settlement System (PASS)

HAUK & SASKO

INGENIEURGESELLSCHAFT MBH

SUSTECH Associate Partner in related PASS

Smarter Wellhead Monitoring

 LoRaWAN[®]



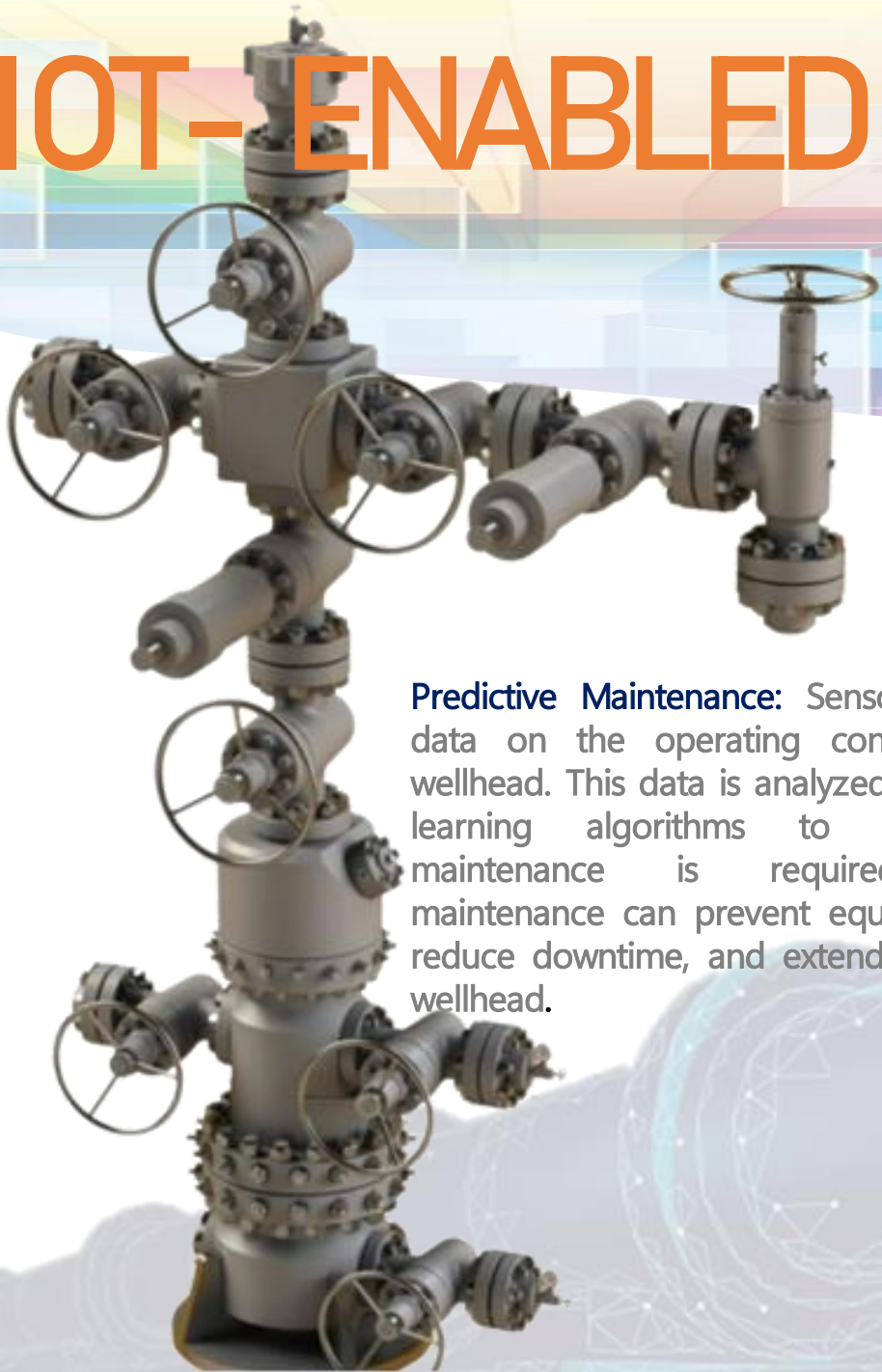
CONVENTIONAL WELLHEAD



Wellhead and Christmas tree products are used to monitor well pressure, adjust oil/gas well flow and have been in use for many years and proven to be effective for drilling and production operations.

However, they typically require a significant amount of manual labor and maintenance.

IIOT-ENABLED WELLHEAD



Smart Wellheads consist of sensors, control systems, and communication networks, to enable real-time monitoring and control of the wellhead operations. Smart wellheads provide operators with better visibility into wellhead performance, enabling them to optimize production, reduce downtime, and enhance safety.

Predictive Maintenance: Sensors that collect data on the operating conditions of the wellhead. This data is analyzed using machine learning algorithms to predict when maintenance is required. Predictive maintenance can prevent equipment failures, reduce downtime, and extend the life of the wellhead.

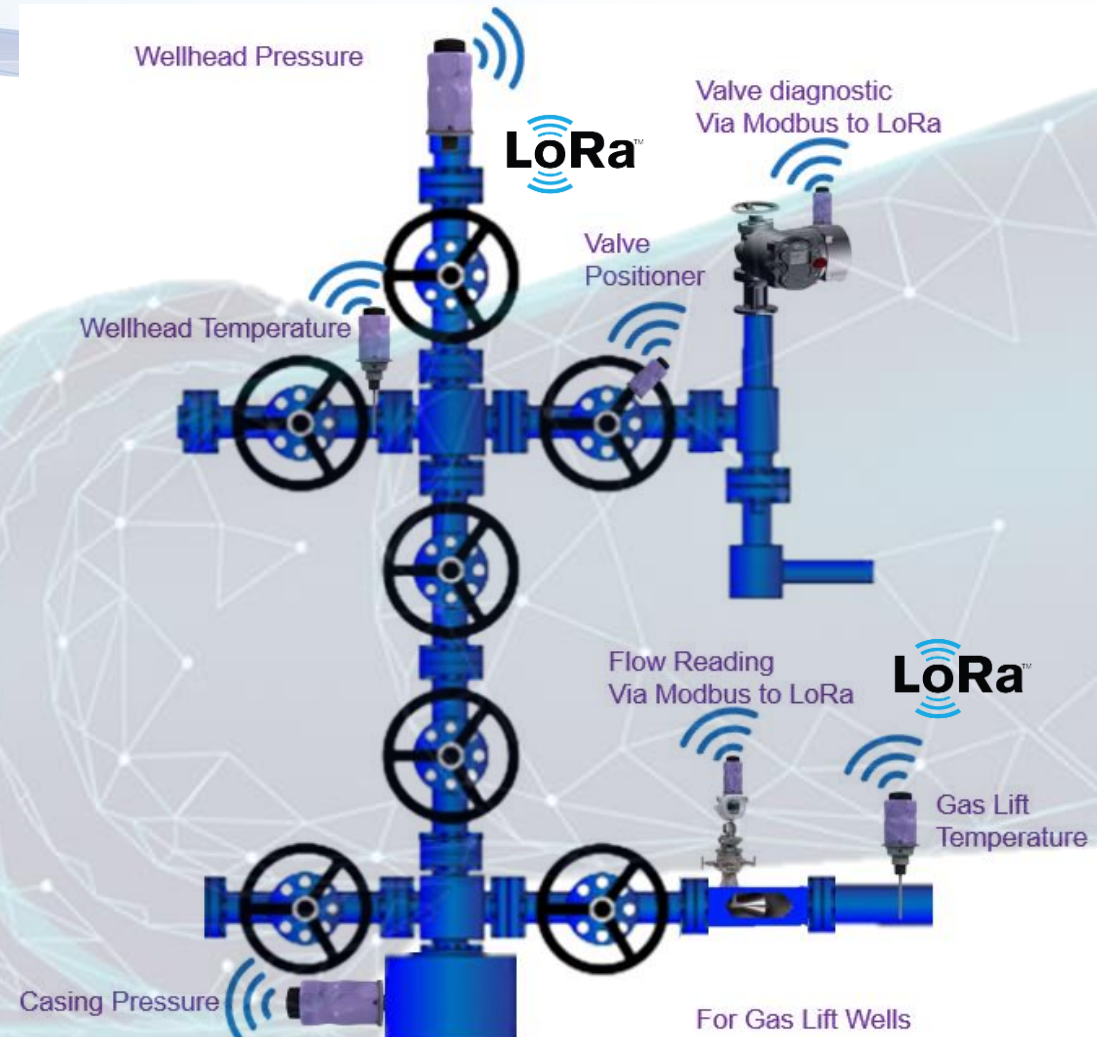
Enhanced Safety: IIoT-enabled wellheads have improved safety features, such as ESD and automatic monitoring of pressure, temperature, and other critical parameters. It also enable operators to detect potential safety hazards before they occur, preventing accidents and minimizing risks.

Remote Monitoring: IIoT-enabled wellheads can be remotely monitored from a centralized control room, allowing operators to monitor multiple wellheads simultaneously. Remote monitoring improves operational efficiency and reduces the need for on-site personnel, which enhances safety.

IIOT-ENABLED WELLHEAD

With the advent of newer technologies, such as ,

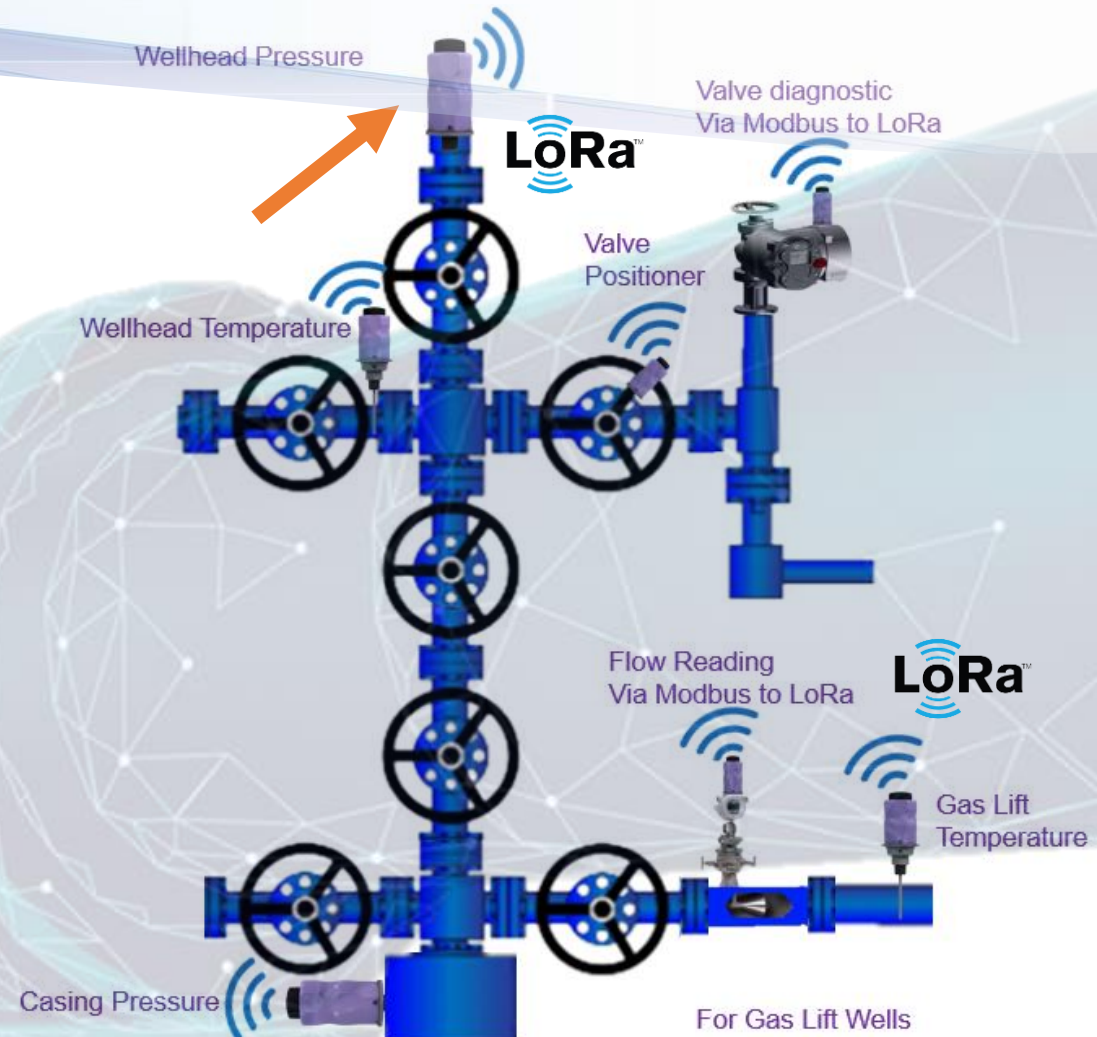
IIOT-enabled wellheads, for real-time data or monitoring capabilities, are being developed to improve efficiency, safety and productivity in the oil & gas industry.



IIOT-ENABLED WELLHEAD

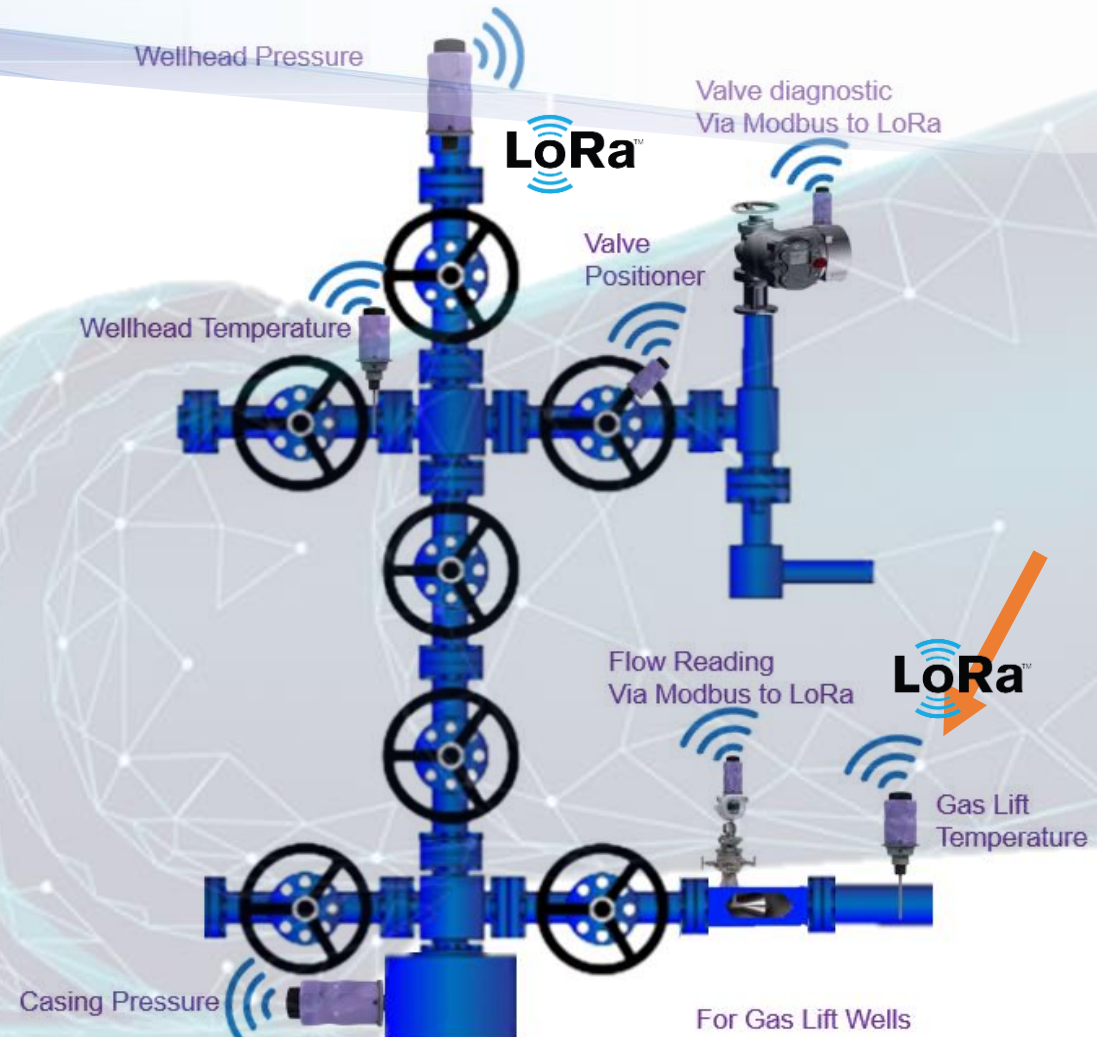
Implementing IIoT in wellheads requires the use of various field instruments to collect, transmit, and analyze data, e.g.,

Pressure Sensors: to measure the pressure of fluids in the wellbore and at the surface. They provide critical data for well monitoring, control, and optimization.



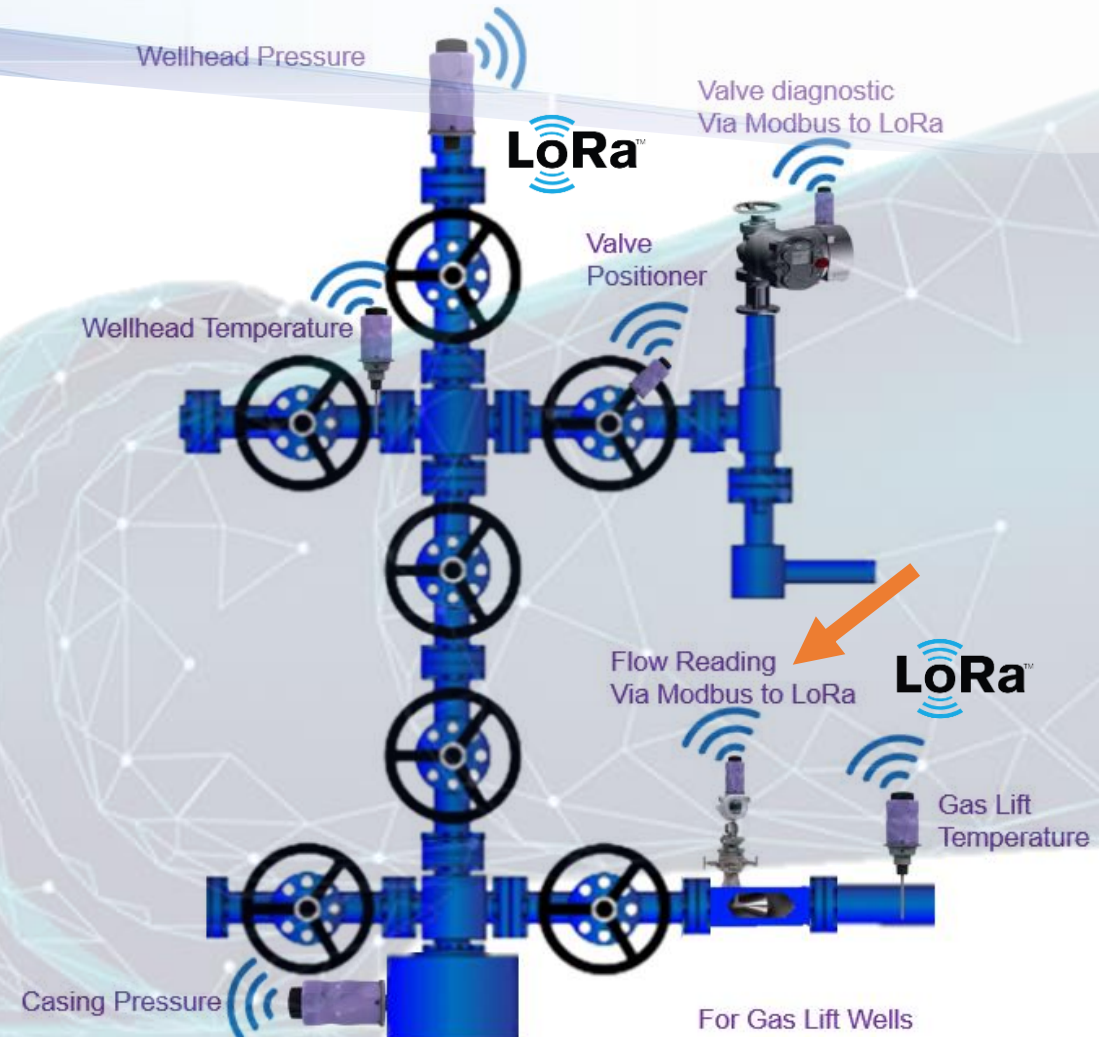
IIOT-ENABLED WELLHEAD

Temperature Sensors: to measure the temperature of fluids in the wellbore and at the surface. They provide critical data for well monitoring, control, and optimization..



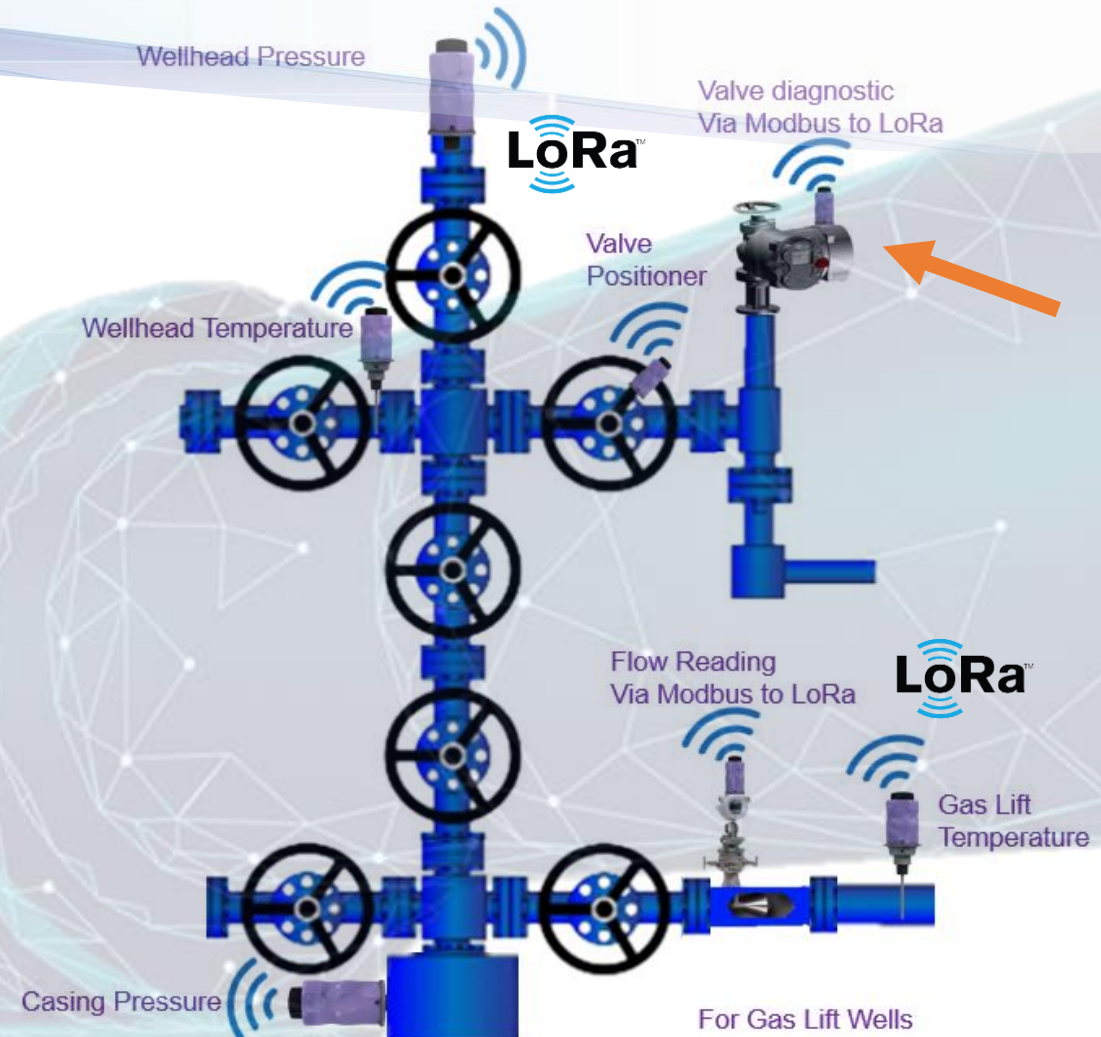
IIOT-ENABLED WELLHEAD

Flow Meters: to measure the flow rate of fluids in the wellbore and at the surface. They provide critical data for well monitoring, control, and optimization.



IIOT-ENABLED WELLHEAD

Valves & Actuators: Control valves (choke) are used to regulate the flow of fluids in the wellbore and at the surface. Actuators are used to move valves and chokes. They are controlled by IIoT-enabled control systems to optimize well production and ensure safety.



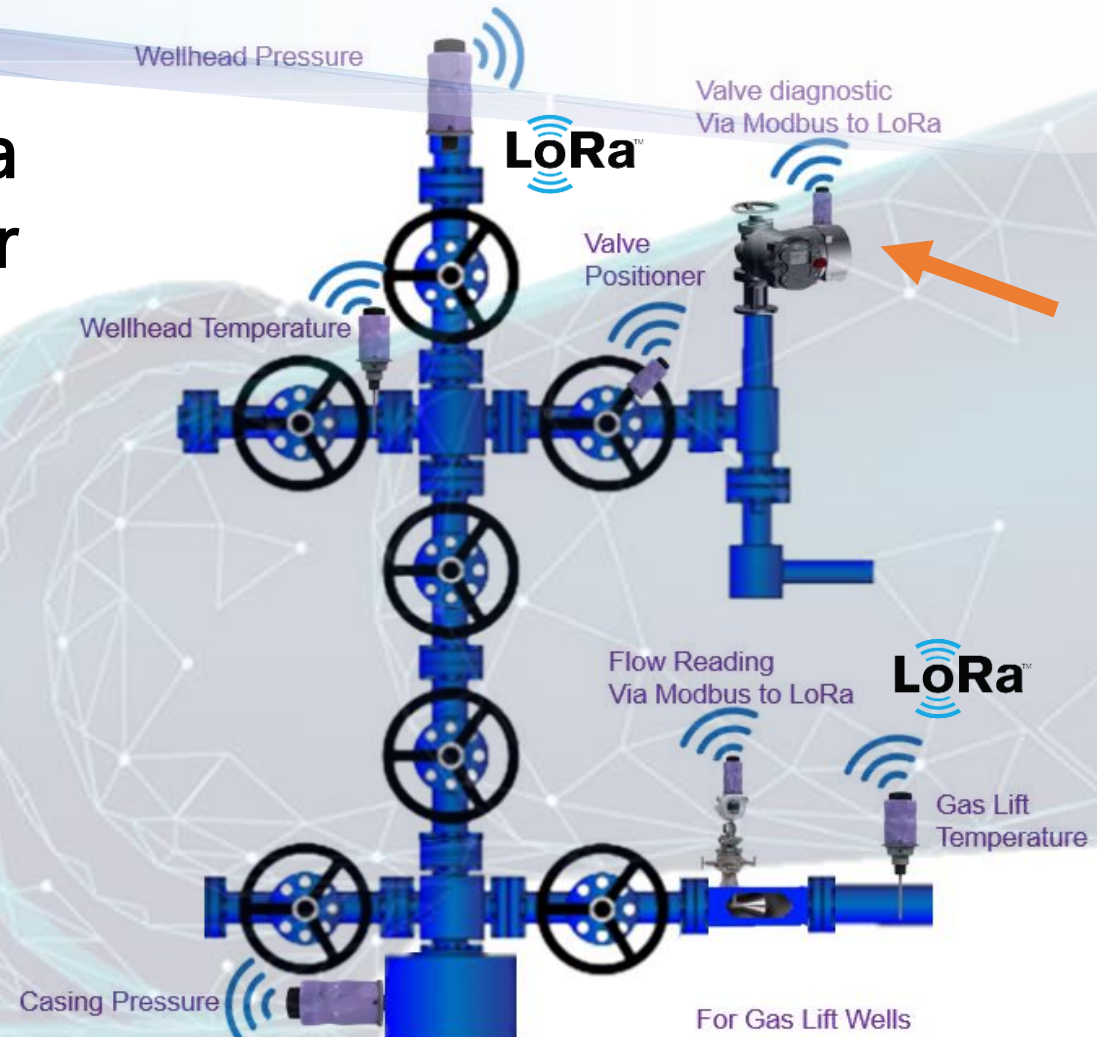
IIOT- ENABLED WELLHEAD

Communication Device & Data Loggers:

1. LoRa End Nodes: to transmit data from the field instruments to control system

2. Data Loggers: to record and store data from the field instruments for later analysis.

Our end-to-end solution is based on LoRaWAN technology as shown next....



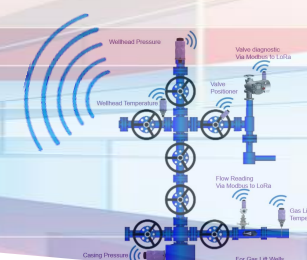
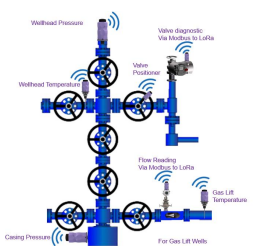
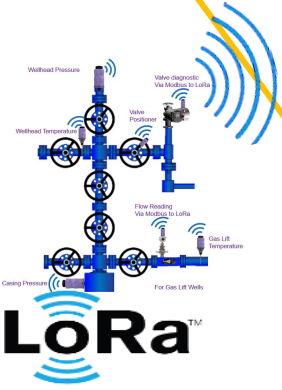
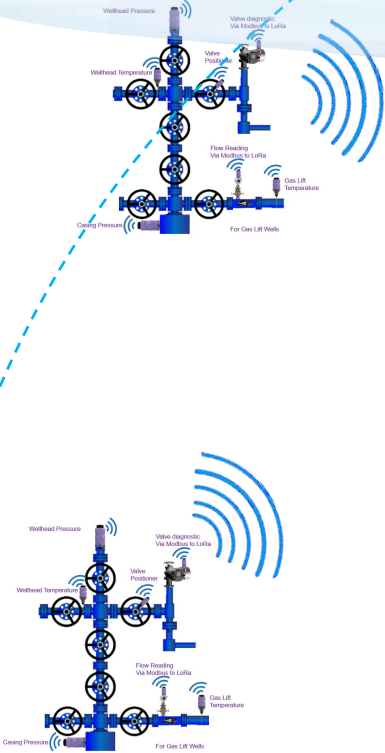
OUR SMART WELLHEAD

5 - 10 KM
LoRaWAN
coverage

Built-in LNS with
Backhaul
Ethernet TCP/IP

LoRa™

LoRa™



Smarter Assets Monitoring

 LoRaWAN[®]





Applications we can Provide:

- Heat exchanger
- Steam trap
- Pumps Vibration
- Manual Valve Positioner
- Pressure Release Valves
- Pipes corrosion monitoring
- Valves leak monitoring
- Heat exchanger Condition
- Cooling condition
- Motor-operated valves
- Emergency shutdown system
- Motor current reading
- Filters and strainers

SMARTER SOLUTIONS

FOR YOUR COMPLEX
ASSET-INTEGRITY
CHALLENGES



**NEON
Vibration
Sensor**



**NEON
Pressure
Gauge**



**NEON
Temperature
Sensor**



**NEON
Pressure
Sensor**



**NEON
Valve
Positioner**

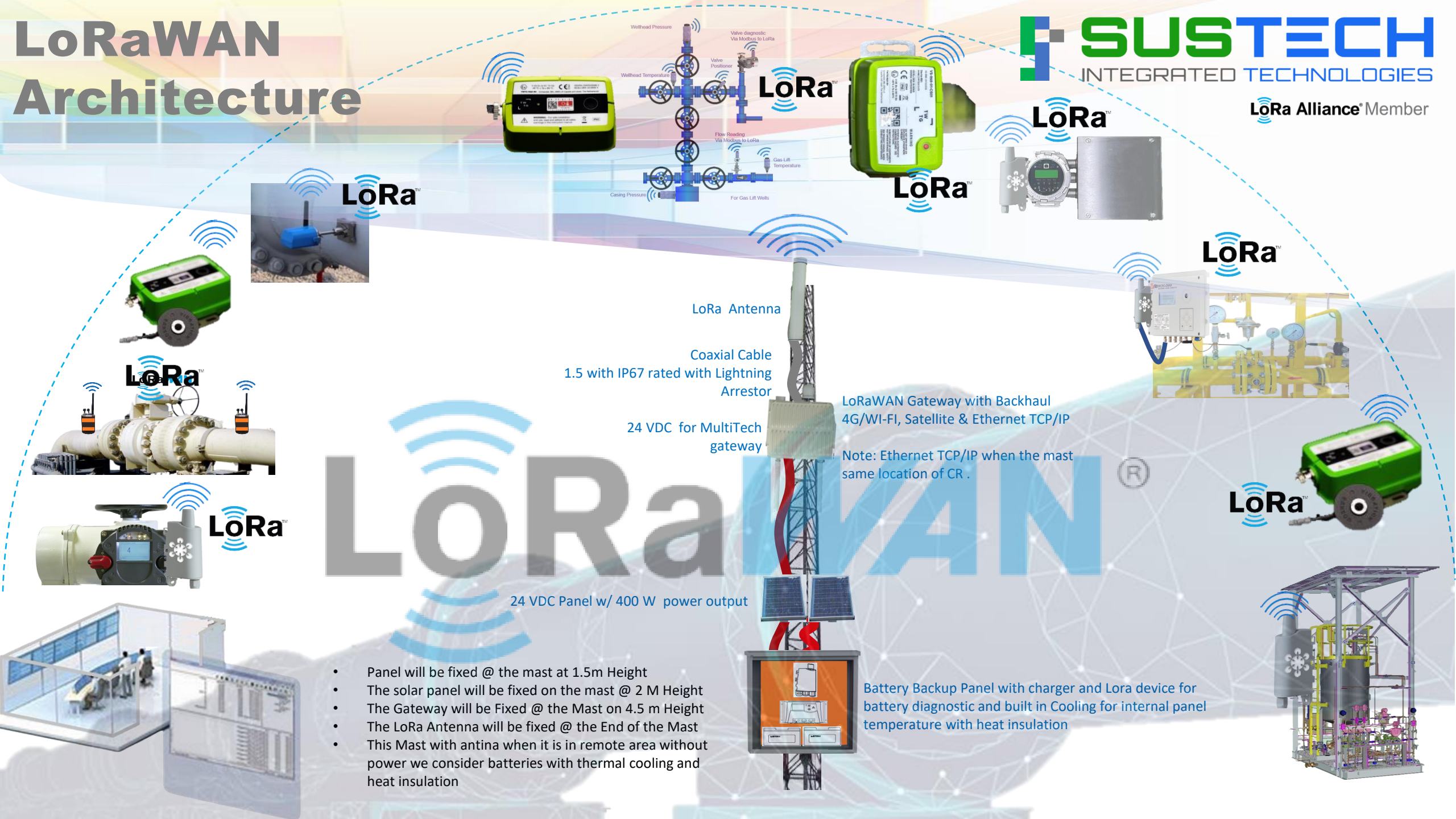


**NEON
Temperature
Transmitter**



**NEON
Contact
Sensor**

LoRaWAN Architecture



LoRaWAN

24 VDC Panel w/ 400 W power output

LoRa Antenna

Coaxial Cable
1.5 with IP67 rated with Lightning
Arrestor

24 VDC for MultiTech
gateway

LoRaWAN Gateway with Backhaul
4G/Wi-Fi, Satellite & Ethernet TCP/IP

Note: Ethernet TCP/IP when the mast
same location of CR .

Battery Backup Panel with charger and Lora device for
battery diagnostic and built in Cooling for internal panel
temperature with heat insulation

- Panel will be fixed @ the mast at 1.5m Height
- The solar panel will be fixed on the mast @ 2 M Height
- The Gateway will be Fixed @ the Mast on 4.5 m Height
- The LoRa Antenna will be fixed @ the End of the Mast
- This Mast with antina when it is in remote area without power we consider batteries with thermal cooling and heat insulation

Smarter Non-Critical Control & Alarm

LoRaWAN[®]

The LoRaWAN logo features the text "LoRaWAN" in a blue, sans-serif font. To the left of the text is a blue signal icon consisting of three curved lines radiating upwards and downwards. A registered trademark symbol (®) is located to the right of the text. The logo is superimposed on a background of a colorful, stylized industrial cityscape with various towers and structures under a blue sky with white clouds.

Non-Critical Control & Alarm

LoRaWAN

MQTT

Static IP address

Chemical Injection Skid
HART to LoRaWAN



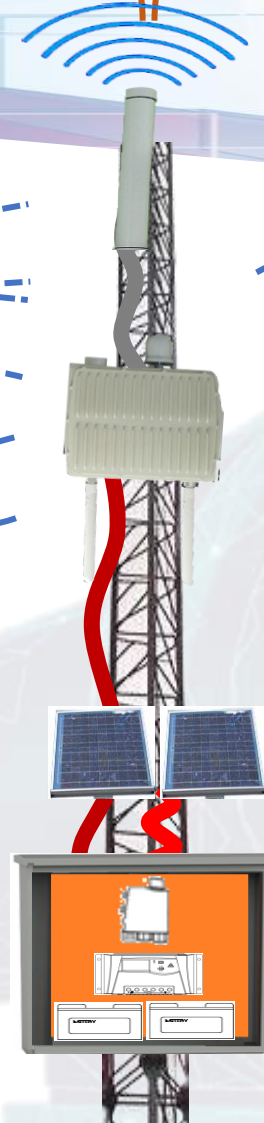
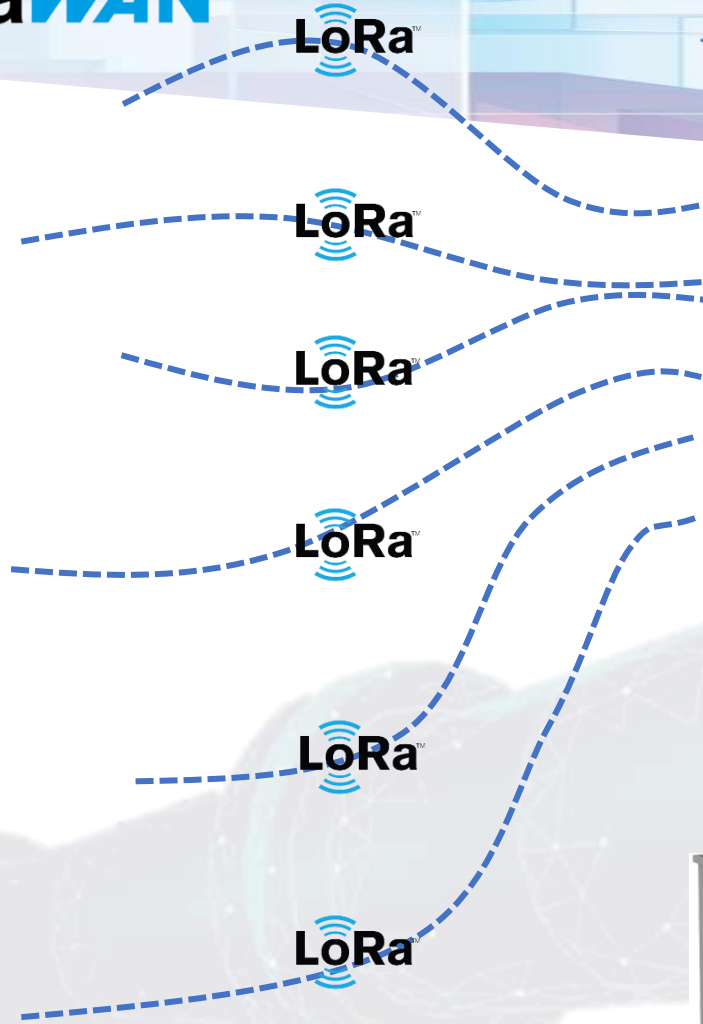
Corrosion datalogger
Modbus to LoRaWAN



Motor Operated Valve
Modbus to LoRaWAN



Input/output Lora



Gateway with Built-in LNS with MQTT Client

MQTT Broker Server



PLC with MQTT Client





- **Main Office in Masdar – UAE**
- **Abu Dhabi Office - UAE**
- **Backoffice support – Manila**
- **Backoffice support – Jordan**

Abu Dhabi Office | Office 101, gate 3, Rabdan Mall, Abu Dhabi
Masdar Office | Accelerator Building, Masdar, Abu Dhabi
P.O Box 7123 | Tel +971 2 626 8774 | E-mail info@sustechme.com
United Arab Emirates