SUSTECH
INTEGRATED TECHNOLOGIES

LoRa Alliance® Member

SMART AMR & SETTLEMENT SYSTEM

LoRaWAN®

End-To-End LoRaWAN Solution

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SUSTECH is a LoRa Alliance Member

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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.

D McGinnis

Debbie McGinnis
Account Director
LoRa Alliance, Inc.

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VAR Certificates

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

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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.

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.

Low Power Consumption

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.

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.

Strong Penetration Capability

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

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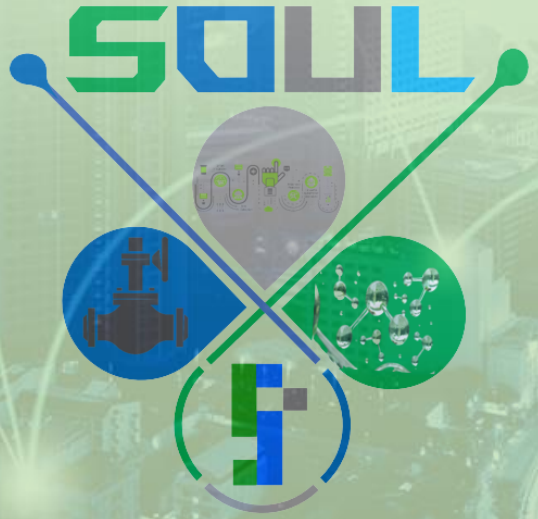
SMARTER OPERATION UTILIZING LORAWAN



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- Smarter landscaping and irrigation
- Smarter water network monitoring
- Smarter water quality
- Smarter air quality
- **Smarter metering with Billing System**
- Smarter street lighting

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AMR

SMART AUTOMATIC METERING READING & SETTLEMENT SYSTEMS

What is AMR

SUSTECH AMR is an integrated system Based on LoRaWAN technology connectivity and settlement system. This enables Automatic communication of data between the Smart Meters and the Billing system as well IIOT Platform. The analytics on data available can be used for billing the customers on the actual usage of the thermal energy and to identify opportunities for energy savings and optimization.

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AMR

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SMART AUTOMATIC METERING READING & SETTLEMENT SYSTEMS

LNS Cloud

LoRaWAN System Connectivity Architecture

LoRaWAN®

Wireless Metering reading

Shut off valves

Electric

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WATER & ELECTRIC METERING

SMART WATER & ELECTRICAL AMR SYSTEM COMPONENT

- Domestic water and electrical meters fitted at the point where the enters the building or Flat.
- Standalone, smart remote solenoid Valve for water or electrical switch for electricity for command to open/close.
- Remote communications LoRa with the operations center for centralized monitoring and management.
- Software components running on servers at the Operations Center and peripherals.

CLOUD METERING

System Component

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Water METERING

SMART WATER METERING

SMART metering with Remote Valve-Control

SUSTECH SMART metering with Remote Valve-Control offers the client a good solution for financial advantage. A meter embedded with a ball valve (residential) or Butterfly valve enables the water authority department to control the valve remotely once the client cannot take good control of water users. With this solution, the utility's financial situation will be enhanced significantly.

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BTU METERING

SUSTECH SMART BTU METERS

Billing and settlement

BTU Meters are used for thermal energy consumption metering. SUSTECH BTU Meters are linked to its Gateway for sending the meter readings. Our Metering solutions are completely wireless avoiding any hassles related with wiring issues. Our Thermal Energy solutions can be integrated with our software MBS offering complete billing and monitoring solutions. For BTU Meters we support LoRaWAN Technologies. The meter reading data is secured through data encryption technologies. The Metering system can be integrated with our MBR and the client can roll out their billing and monitoring system with very less time.

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BTU METERING

SMART BTU AMR SYSTEM COMPONENT

System Component

- Domestic or commercial BTU meters fitted near the cooling unit or at the point where the cooling medium enters the building or Flat.
- Standalone, smart remote shut-off valves with electric motors can open and close remotely
- Remote communications LoRa with the operations center for centralized monitoring and management.
- Software components running on servers at the Operations Center and peripherals.

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GAS METERING

GAS AMR SYSTEM COMPONENT

System Component

- Domestic or commercial diaphragm meters fitted with a microelectronic smart pressure sensor.
- Standalone, smart remote shut-off valves with electric motor, and gearbox.
- Magnet-proof optical sensors for volume detection for mechanical encoders.
- Remote communications LoRa with the operations center for centralized monitoring and management.
- Software components running on servers at the Operations Center and peripherals.

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AMR

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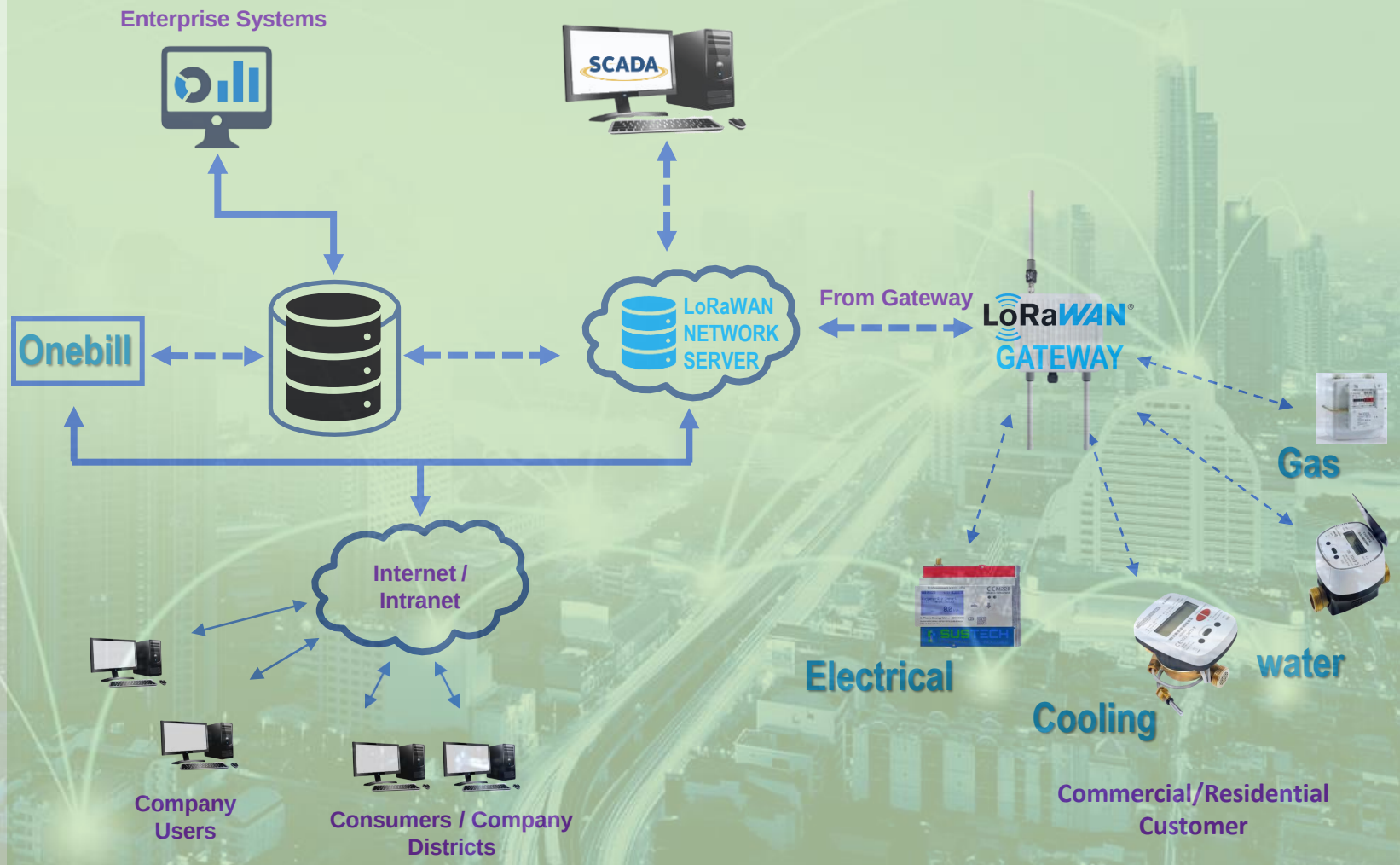
SMART METERING SYSTEM ARCHITECTURE / INFORMATION FLOW

AMR System



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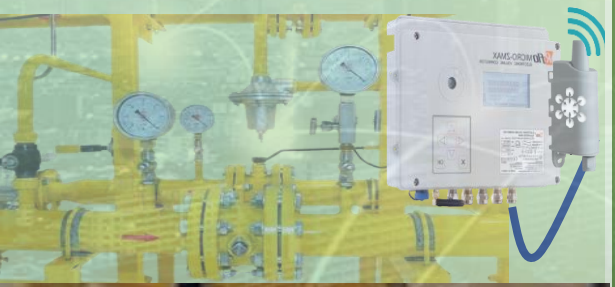
PASS

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



PASS Service Coverage

MBS

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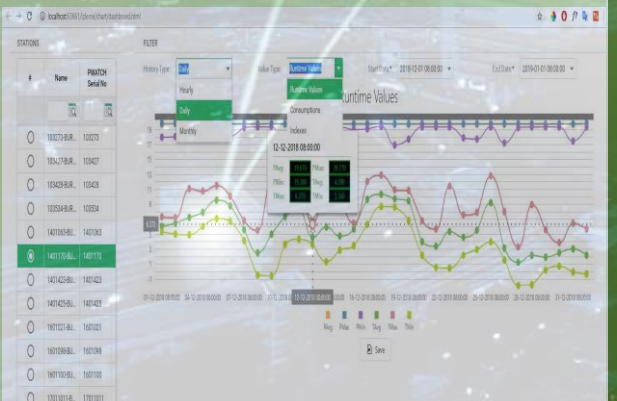
PASS BENEFITS AND ADVANTAGES



The 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

MBS

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

Abu Dhabi Office I Office 101, gate 3, Rabdan Mall, Abu Dhabi

Masdar Office I Accelerator Building, Masdar, Abu Dhabi

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United Arab Emirates