



*Reliable Performance*

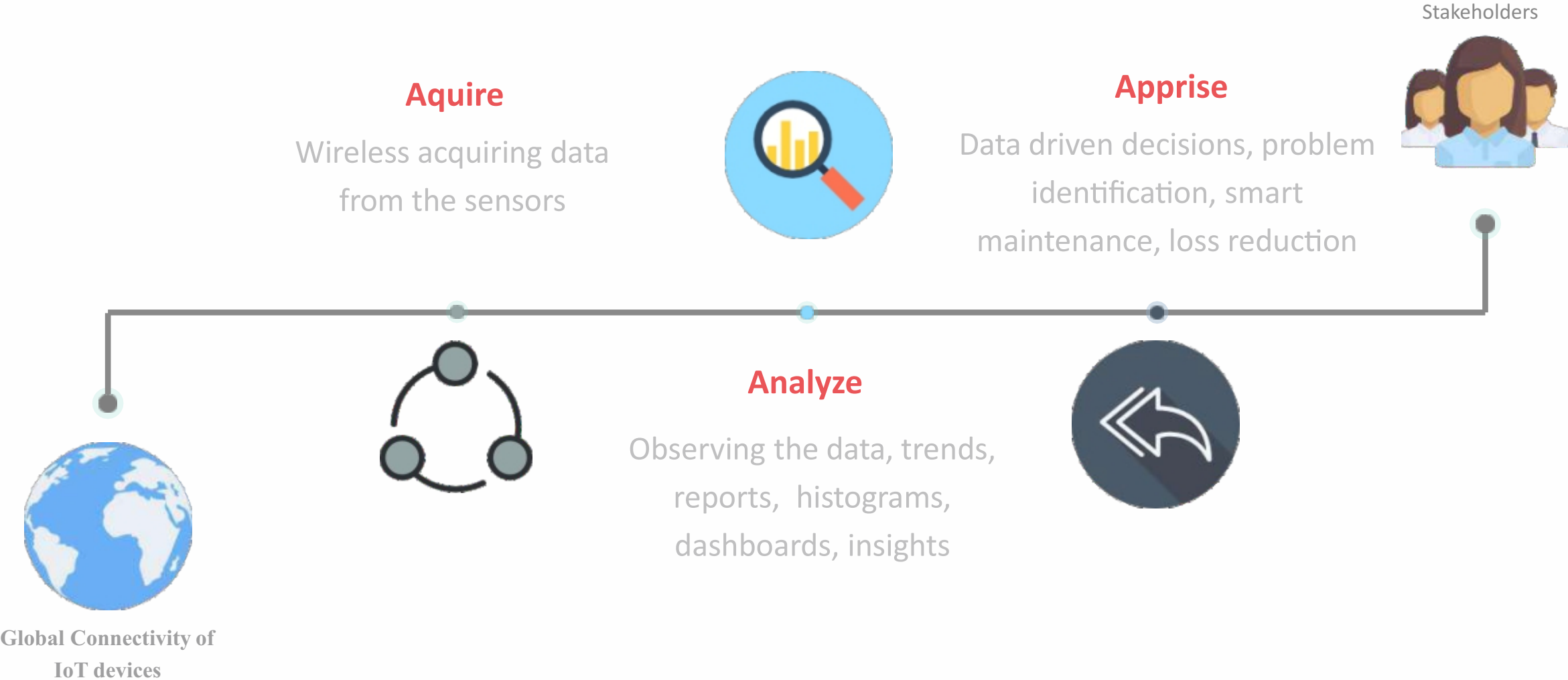
NIPPEN ELECTRICAL INSTRUMENTS CO.

## Energy Automation to Optimise EASSY IoT Platform Solution

Helping enterprise reduce energy cost & carbon emissions

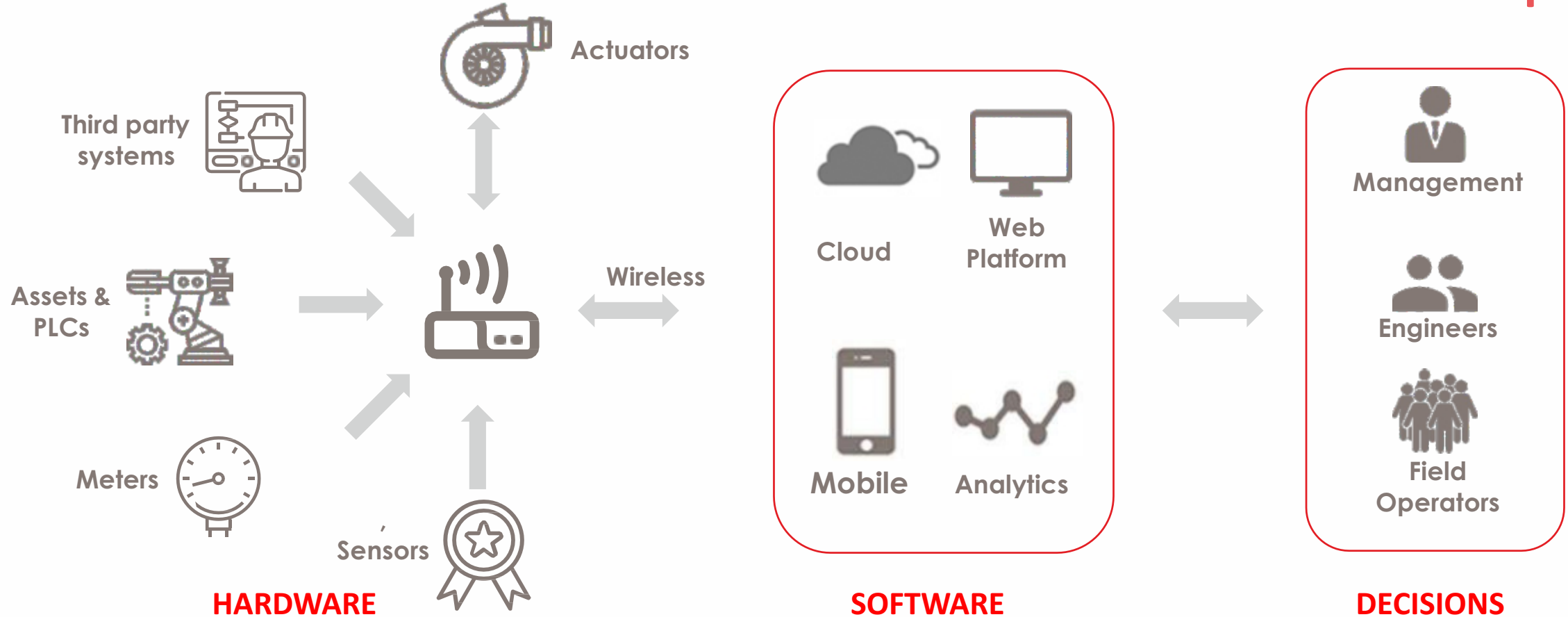


# 3A Concept | Connected Sensor Network



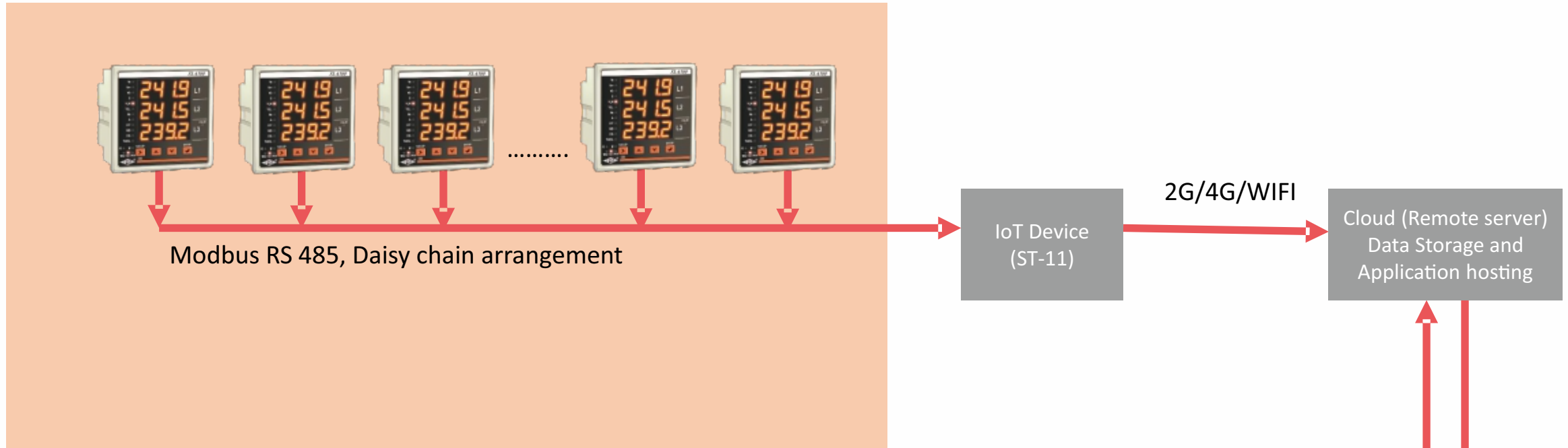
# Solution Architecture

**Aquire**



# Solution Implementation

**Aquire**



## Installation Places

- HT Panels
- LT Panels
- PCC, MCC, MLDB
- Distribution board
- Incoming/Outgoing feeders

## Supply Tracking

- Main Incomers, DGs, UPS

## Demand Tracking

- Machines
- HVaCs/AHUs
- Entire infrastructure
- Lighting
- Motors/Pumps
- Etc.....

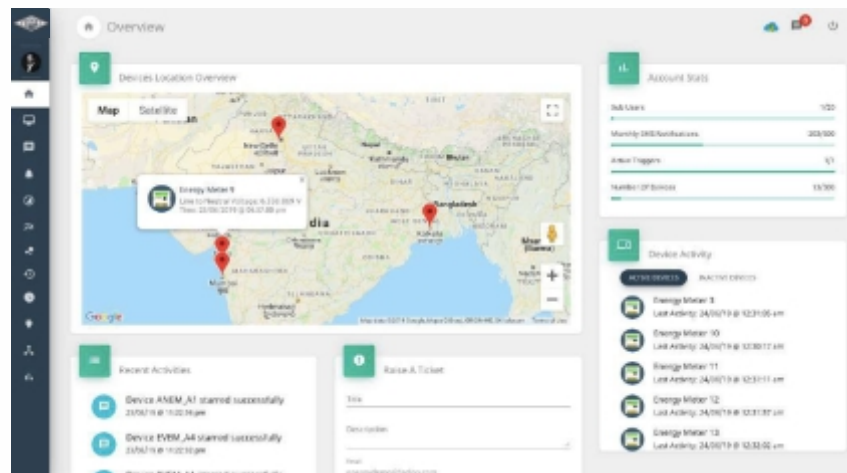
- Saving potential
- Enhanced decision-making using data
- Better insight in future energy consumption
- Improved monitoring of disparate systems
- MIS Reports
- Optimized asset utilization

# IO Sense | Connected Device Management & Overview

## Analyze

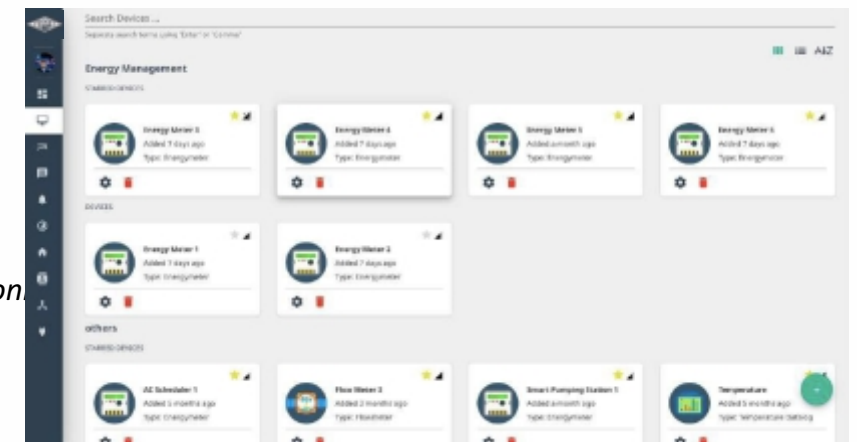
### Device Management

- View & add the required connected devices using IDs. The device can be energy meter, flow sensor, temperature etc..
- View network connectivity of individual meters
- Provide naming and tagging(sections) based on process, geography, types
- Provide configurations (units, alias, co-ordinates, etc)



System overview

Con



### Overview

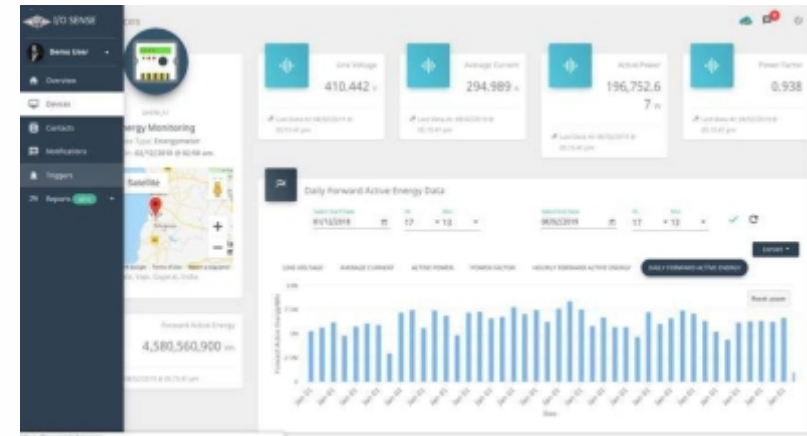
- Monitor the set of active and inactive devices based on network connectivity
- Meter Location view on google maps
- Raise tickets for customer support
- View system consumption & activities

# IO Sense | Individual Device Data Monitoring and Analysis

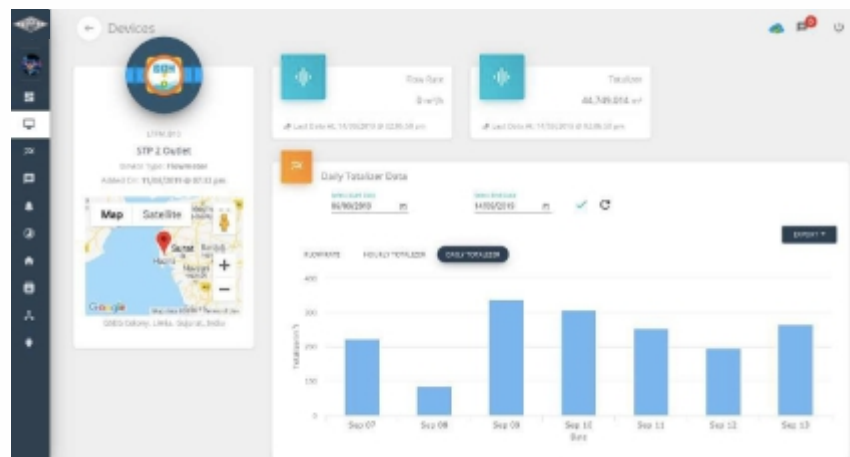
Analyze

## Individual Meter Analysis Template

- Monitor the all data collected from individual devices in near real-time
- Download the data in excel
- View the time series trends of power and electrical parameters
- Histograms to understand the spread of the data



Multifunction Energy Meter



Electromagnetic Flow Meter



8-Channel temperature Datalogger

# IO Sense | Drag & Drop Widgets to create dashboards

Analyze

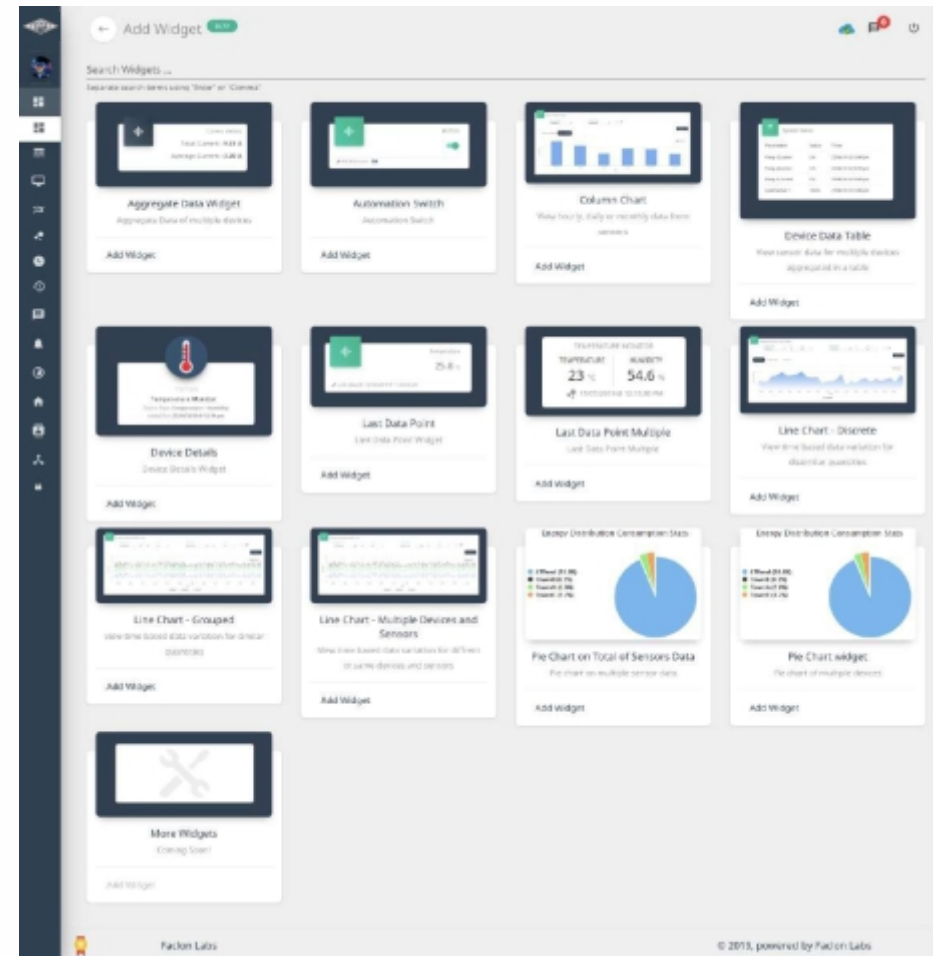
## User Customizable Dash boarding

- Compare the data & trends of multiple devices by adding widgets to your dashboard layout
- Create real-time tables with visual alerting system for effective system understanding and fault isolation
- Create as many dashboards

Energy Table : Substation 1

Devices	Line to Neutral Voltage	Line to Line Average Voltage	Average Current	Average Power Factor	Total Active Power	Total Reactive Power	Total Apparent Power
Energy Meter 3	239.51 V	414.84 V	1,055.70 A	0.99	745.78 kW	65.18 kVAR	751.23 kVA
Energy Meter 4	245.12 V	424.80 V	217.61 A	0.88	142.52 kW	76.26 kVAR	161.71 kVA
Energy Meter 5	237.86 V	412.19 V	121.77 A	0.87	77.34 kW	45.20 kVAR	88.70 kVA
ETEM_A1	245.97 V	426.04 V	0.02 A	1.00	0.00 kW	0.00 kVAR	0.03 kVA

Dynamic Tables with visual alerts



Widgets to create dashboards

# IO Sense | Custom Dashboards, Automation & SMS Alerts

Analyze<sup>24</sup>

## Custom Dashboards

Sankey Diagram to understand energy distribution and T&D losses

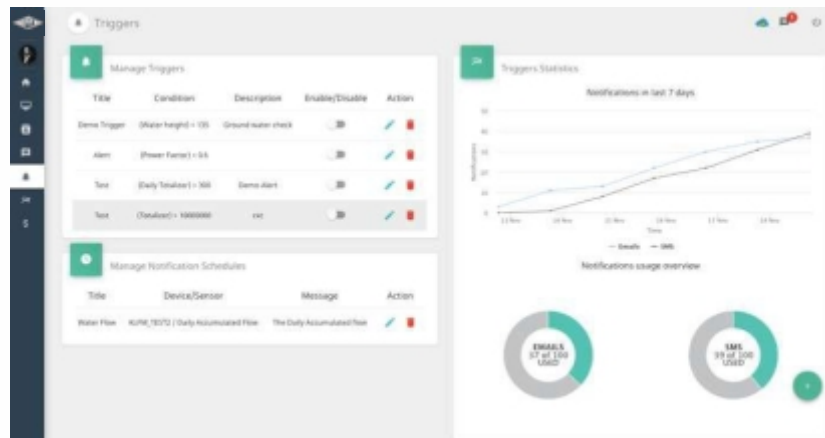


## Automation

Time based & condition based controls, Changing operating conditions

The Automation Scheduling interface displays a list of automation schedules. The table below shows the details of these schedules.

Device	Sensor	Time	Repeat	Description	State	Actions
On Off	WEM_A2	TRG-entrk AC	10:05 - 12:05	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A2	TRG-entrk AC	14:05 - 16:30	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A2	TRG-entrk AC	18:05 - 18:30	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A2	TRG-entrk AC	10:10 - 14:00	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A1	Ground floor AC near entrance	09:05 - 21:10	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A1	Ground floor AC near staircase	09:05 - 21:15	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A2	TRG-entrk AC	18:05 - 20:34	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A2	TRG-entrk AC	12:10 - 14:10	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A2	TRG-entrk AC	16:05 - 18:05	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>
On Off	WEM_A2	TRG-entrk AC	10:05 - 12:05	Everyday	AC Scheduling	<span>🟢</span> <span>🔴</span>



Alert & Notification console

## Alerts & Notifications for Proactive approach

- Alerts: Create Condition based or custom alerts to send SMS/Email to concerned personnel
- Notification: Set up time based SMS/Email notification to regularly update the concerned personnel



# IO Sense Capabilities

## Apprise

### ENERGY MANAGEMENT

- Usage ●
- Cost ●
- Efficiency ●
- Power Quality Analysis ●
- Automatic Metering & Billing ●

### WATER MANAGEMENT

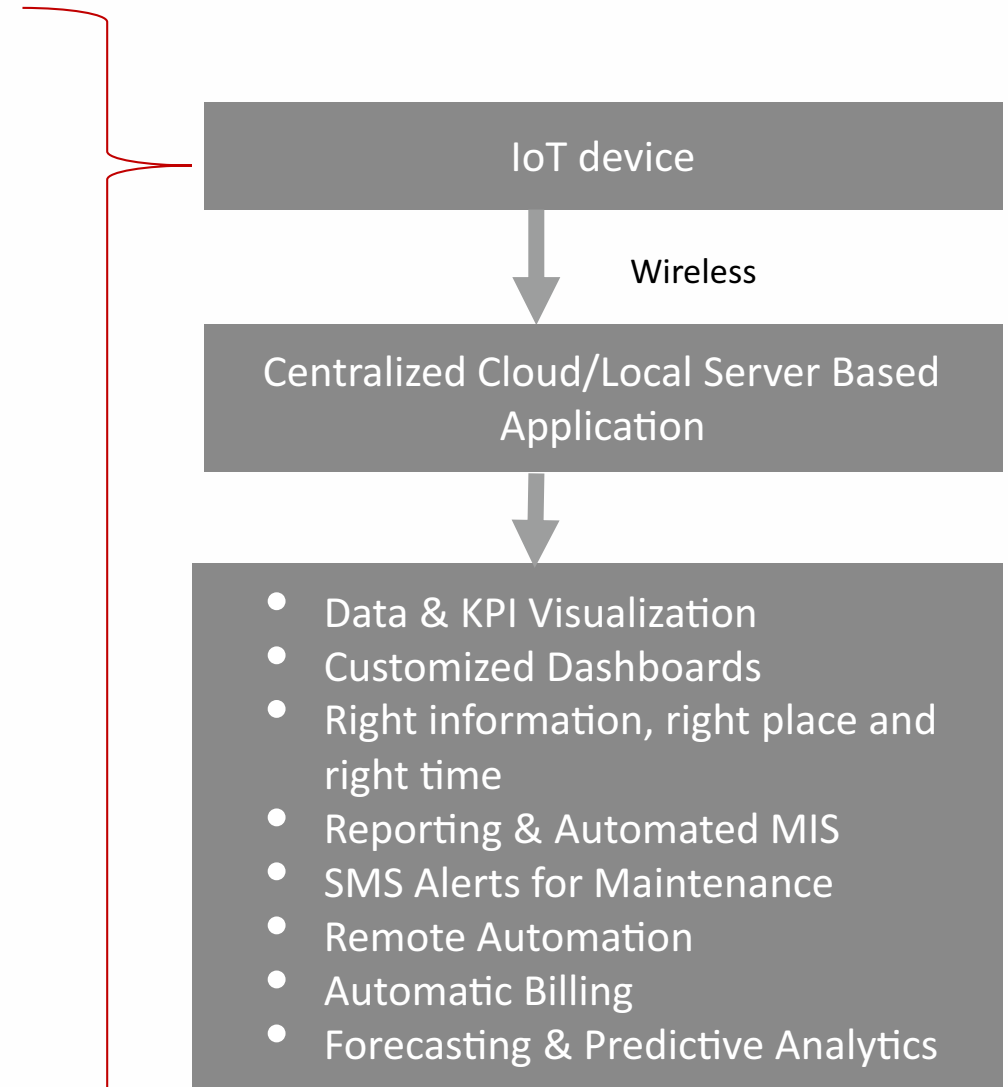
- Flow ●
- Level ●
- Pressure ●
- Quality Monitoring & Analysis ●
- Pump & Valve Control and Automation Automatic Metering ●

### INDUSTRIAL IoT

- Machine & Process Data Monitoring Analytics ●
- Monitoring of assets like Diesel Generator, Compressors , Machines etc. ●

### GREEN BUILDING

- CO2 ●
- Temperature ●
- Humidity ●
- Dust ●



The background features a grayscale industrial scene with tall distillation columns and a complex network of pipes. Overlaid on the left side are several glowing white chemical structures, including benzene rings and other organic molecules. A prominent red rectangular box is centered horizontally across the middle of the image.

Thank You

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