

Smart Water Supply

MDM Platform For Smart Water Supply

Remote Meter Reading System

▲ Customer-oriented system

This system goes beyond simple data collection and monitoring and provides water supply management solutions through various analyses.



▲ Main Features

01

'23 operation in Seoul City and 30 local governments
Advanced remote meter reading project in Seoul

02

Mobile-based system
On-site support app for field workers / Efficient management through mobile

03

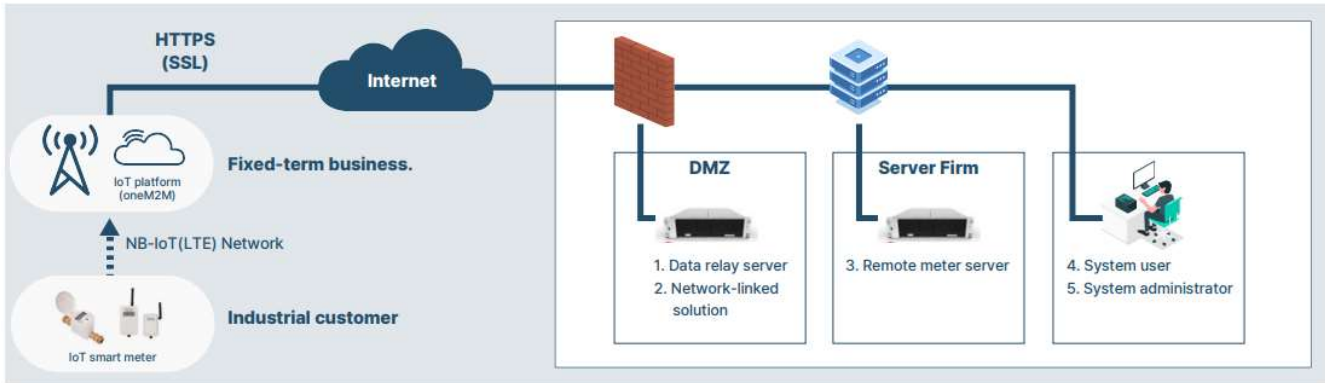
Compatibility with various water meters

Remote Meter Reading System

Introduction

Summary

1. A system that can remotely meter and monitor water usage.



The composition

1. Data relay server: Data received from IoT platforms in the DMZ area is first received and delivered to separate internal networks.
2. Network-linked solution: Network-linked solution for accessing remote meter servers of network-separated internal networks in the DMZ.
3. Remote meter server: It consists of a data reception program and a remote meter web program.
4. System user: A user who uses the service of the remote meter system.
5. System manager: Manager who maintains/manages the remote meter reading system.

Menu description

<p>Dashboard</p> <ul style="list-style-type: none"> - Provide information on the condition of the meter. - Provide innmate time, daily meter reading rate. - Provide the meter reading rate and usage trend. - Provide map and customer location information. - Provide up-to-date status and meter reading information for each consumer.
<p>Metering condition</p> <ul style="list-style-type: none"> - On the same day, meter reading is provided. - The previous day's meter reading was provided. - Average meter reading count for the previous 7 days. - Average meter reading count for the previous 30 days. - Daily (mobile average) usage is provided. - Same-day usage provided - The previous day's usage will be provided. - Average usage for the last 7 days. - Average usage for the previous 30 days.
<p>Metrology count.</p> <ul style="list-style-type: none"> - Provide the total daily usage of the total number of customers. - The number of people subject to meter reading is provided. - Provide the highest usage for the day out of all customers. - Provide the lowest usage for that day among all customers. - Provide total meter water for all daily audiences. - Provide an average meter reading rate for all daily audiences.
<p>Metrology history</p> <ul style="list-style-type: none"> - Provide daily meter reading value information for each consumer.
<p>History management</p> <ul style="list-style-type: none"> - Provide a history of registering/renewing a terminal.
<p>Setting</p> <ul style="list-style-type: none"> - Provide a history of registering/renewing a terminal.

Log in

Screen definition and output method

1. Smart Watermeter Management system login screen.



Describe how to use and how to function

1. ID : The user ID that was issued or newly created.
2. Password : User password issued or newly created.
3. Login : When you log in,

Menu description



Screen definition and output method

1. A dashboard where you can see information about the entire audience at a glance.
2. If you succeed in logging in, print it out.

Describe how to use and how to function

1. Region selection
 - You can select business offices, districts, and dong in groups.
2. Search filter : Search conditions can be set with various search filters.
 - State : Meter condition.
 - Business type : For home, business, etc.
 - Block : Types of small blocks.

- Water purification plant : Types of water purification plants.
- Year of installation : The year of telemetry.
- Company : Device manufacturing company.
- Communication : Communication methods such as LoRa and NbloT.
- Caliber

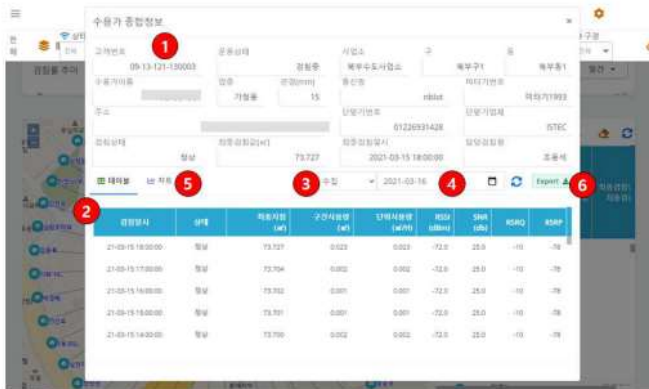
3. Current status : Show the current meter reading status.
 - Normal : Normal meter reading.
 - Communication failure : Device is broken.
 - Measuring instrument failure : The meter is broken or the terminal is disconnected.
 - Leakage : If a leak is suspected in the water pipe,
 - Exceeding Q4 : Water flows beyond Q4
 - Battery : Meter Low Battery Alert
 - Reflux : Water flows backwards

4. State aggregation : Count 3 elements
5. Time reading rate : Aggregation of customer time meter reading rate
 - When 24 normal data for each customer is received, 100% meter reading rate is calculated by the calculation method
 - Yesterday, the average of the previous 7 days, and the average of the previous 30 days

6. Daily meter reading rate: Aggregation of daily meter reading rates
 - Calculated by the calculation method of 100% meter reading rate when 1 normal data per customer is received
 - Yesterday, the average of the previous 7 days, and the average of the previous 30 days

7. Meter reading rate : Provides daily meter reading rate
8. Usage trend : Total usage per day

Comprehensive customer information



Screen definition and output method

1. Provides comprehensive information on water usage for individual consumers.
2. Output when clicking the dashboard consumer twice or searching for a specific consumer.

Describe how to use and how to function

1. Comprehensive customer information.
2. Meter reading data information.
 - Meter reading date : Hourly meter reading date and time.
 - Condition : Indication of communication failure, water leakage, backflow, etc.
 - Final guidelines : The meter reading value received at the time of the meter reading.
 - Section usage : Time guide value difference (usage).
 - Unit usage : Calculate the time guideline value difference per hour.
 - Unit usage : Calculate the time guideline value difference per hour.
 - RSSI/RSRQ/RSRP/SNR : Measured and transmitted value by equipment with received signal strength.

3. Meter reading data search conditions
 - : Select data output method as collection, daily data.
 - Collection : Outputs 1 month's worth of data per hour.
 - Daily : Daily data output for 1 month.

4. Search by date : Set the date based on the meter reading data search.
5. Chart : Output data as a chart
6. Download data

Meter reading



Describe how to use and how to function

1. Meter reading : Meter reading status by customer according to search conditions
 - General customer information
 - Daily (moving average) number of meter readings (24 meter readings from 1:00 to 24:00)
 - * Same-day : Number of readings per day
 - * Previous day : Number of meter readings in the previous day
 - * Previous 7 days : Average number of readings in the previous 7 days.
 - * Last 30 days : Average number of readings in the previous 30 days.
 - Daily (moving average) usage.
 - * Daily : Daily usage
 - * 전일 : 전일 사용량
 - * Previous 7 days : Average usage over the past 7 days.
 - * Last 30 days : Average usage over the last 30 days.

Screen definition and output method

1. Provides comprehensive information on hourly water usage for individual consumers
2. When you click the meter reading status in the top menu.

2. Search by specific audience.
3. Download data.

Meter reading aggregation



Describe how to use and how to function

1. Comprehensive information according to meter reading aggregation conditions (describing both graphs and tables)
 - Total usage : Total consumption of total consumers by day.
 - Number of faucets : Number of customers subject to meter reading (normal only)
 - Total usage
 - * Average : Average usage of all customers (total usage/number of customers)
 - * Highest : Shows the highest usage for that day among all customers.
 - * Lowest : Shows the lowest usage for that day among all customers.
 - Meter reading : Total number of meter readings for all customers per day.
 - Meter reading rate : Average meter reading rate for all customers per day.

Screen definition and output method

1. Comprehensive information on all customers.
2. Output when you click Meter Reading Aggregation in the top menu

2. Convert data output to chart/table
3. Period
 - 1 month/1 year data output setting.
 - Set search criteria date.
4. Search by date : Meter Reading Data Search Criteria

☐ Metrology history

Screen definition and output method

1. Display daily usage by customer.
2. Output when you click meter data in the top menu.

Describe how to use and how to function

1. Daily meter reading value information by consumer.
2. Search date setting.
3. Download data.

☐ Taking care of my history

Screen definition and output method

1. Consumer, terminal registration history.
2. Output when you click Manage History in the top menu.

Describe how to use and how to function

1. Consumer, terminal registration history output.
2. Filter with consumer information or terminal information.
3. Download data.

☐ Setting

Screen definition and output method

1. Register/update customer, terminal, and meter information.
2. Output when clicking Settings in the top menu.

Describe how to use and how to function

1. Consumer, terminal, and meter information output.
2. Search by meter reading status, customer information, terminal information, etc.
3. Register customer, terminal, and meter information.
4. Download data.