Shanghai Cloud-Scale Technology Co., Ltd.

SMART DIRECT DRINKING WATER MANAGEMENT PLATFORM

Complete Integrated System for Piped Direct Drinking Water

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01

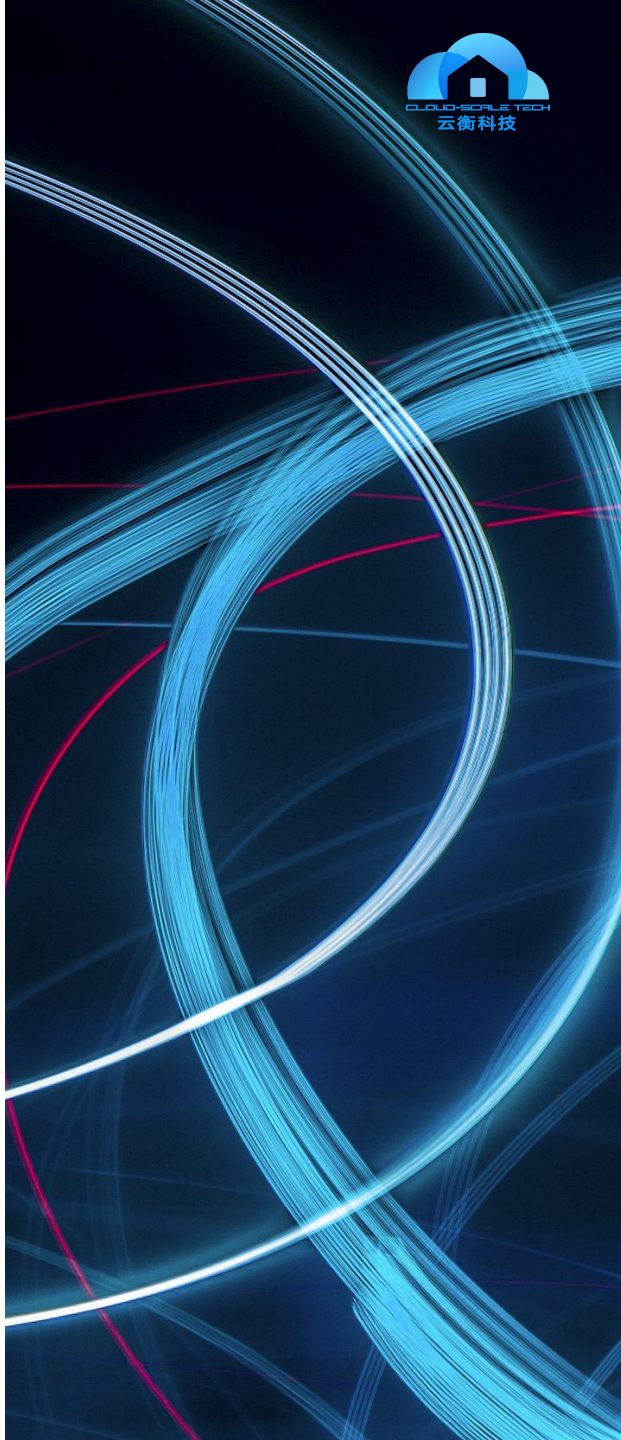
Introduction & Core Strengths

Introduction

Founded in 2016 and headquartered in Shanghai, Shanghai Cloud-Scale Technology Co., Ltd. is a national high-tech enterprise.We serve multiple industrial sectors including public utilities (smart gas & smart water supply) and motor control (smart power systems), delivering all-in-one IoT integrated solutions consisting of intelligent hardware, software, IoT technologies and professional services for global partners.Driven by technological innovation, we keep upgrading our products and supporting services to help clients across industries boost operational efficiency and complete digital & intelligent transformation. We stand as a pioneer and trailblazer in China’s IoT industry.

We have years of in-depth experience in public utility services, with mature R&D and O&M experience for water, gas and heating user systems. Leveraging our long-term expertise in integrated hardware and software development, we independently developed our patented Smart Piped Direct Drinking Water Platform.

The platform covers full-link functions including project operation, customer service, finance management, equipment maintenance, routine inspection and data analysis. It connects water supply units, water meters, surveillance cameras and other terminals to realize real-time data collection, analysis and remote control. As a leading end-to-end solution for piped drinking water, it is the ideal tool to elevate your project operation management.



Core Strengths



Technical Strength

We focus on R&D of industrial IoT, core AIoT algorithms and AI software platforms, and hold multiple invention and utility model patents.



Team

Our team consists of senior specialists from communications and water treatment sectors, and all core R&D members have over 10 years of professional experience.



Service Experience

We have over 10 years of experience developing and operating smart water, smart gas and customer service platforms. We are proficient in industrial smart devices, equipment integration and data collection development.



O&M Support

Our dedicated O&M team resolves faults and emergencies promptly to guarantee stable 24/7 system operation.

02

Overview

Drawing on our practical experience in AIoT, public utilities and piped drinking water sectors, we built a dedicated smart water platform to resolve key industry pain points.

Pain Points

No Unified Standard for Control Systems

Water production and supply equipment on the market adopt diverse PLCs, control boards and communication protocols, leading to poor compatibility and difficult unified management.

Solutions



The built-in SCADA subsystem and configuration tools deliver broad equipment compatibility. It supports data collection and remote control for all types of water meters, and connects to cameras and video platforms from mainstream brands including Hikvision and Dahua.

Pain Points

Low Real-Time Data Performance

Most equipment lacks remote data transmission capability, and conventional systems cannot support professional big data analysis tailored to piped drinking water operations.

Solutions



Equipped with a time-series database and big data processing engine, the platform connects massive devices and processes data through collection, cleaning, storage and analysis. Auto-generated industry reports and charts greatly improve operational efficiency.

Pain Points

Data Isolation

Piped drinking water projects often deploy separate systems from different vendors, resulting in disconnected data, difficult management and poor user experience.

Solutions



This integrated platform covers all modules including project, equipment, video monitoring, user management, billing, O&M and finance. Equipped with a web backend, user Mini Program and O&M Mini Program, it fully eliminates data silos.

Empowering Piped Drinking Water Industry



Centrally manage nationwide piped drinking water projects.
Optimize services via the platform, guide operations with data
and create value through intelligence.

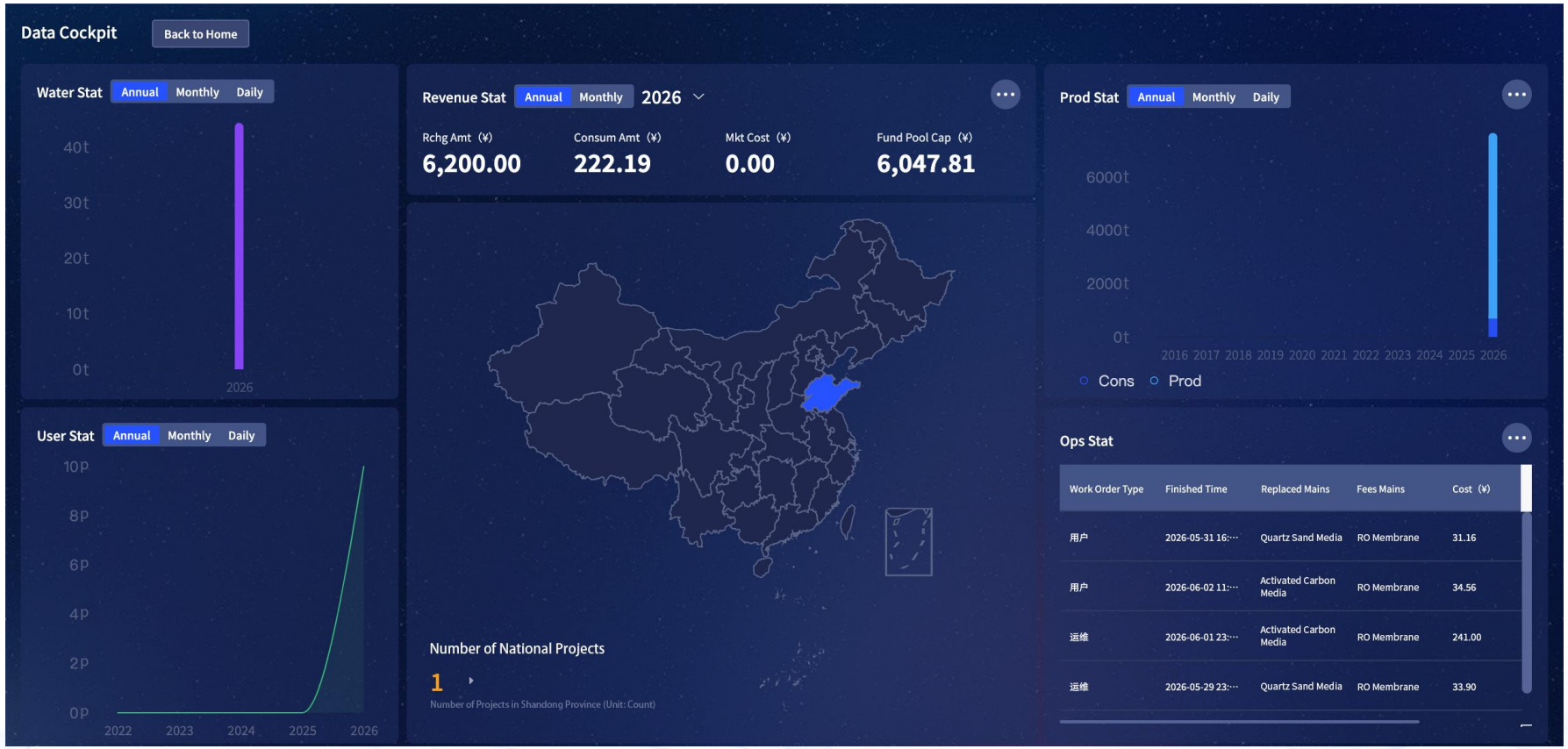
System Architecture



03

System Functions Overview

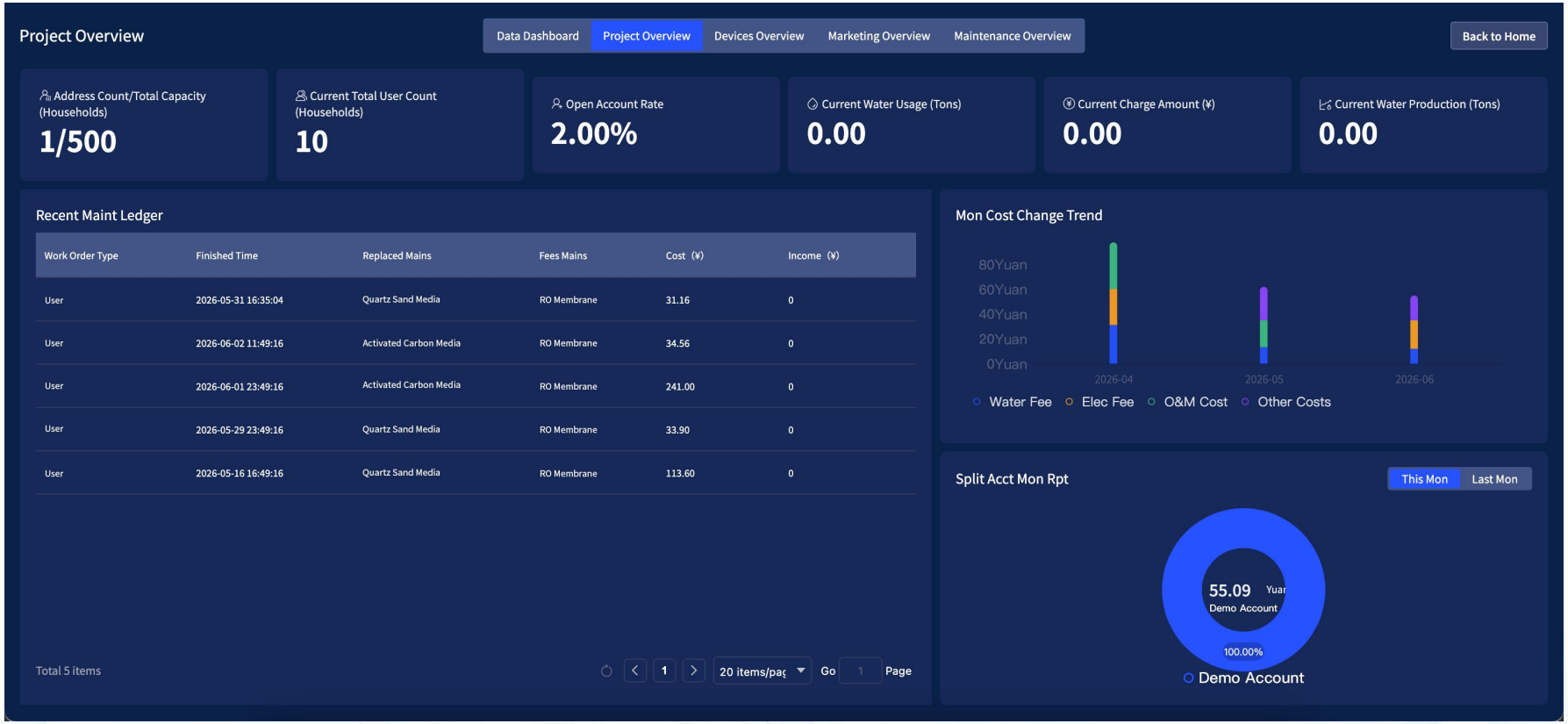
Data Analysis & Monitoring



Data Cockpit

Display real-time statistics of the whole platform and individual projects. It supports map navigation and hierarchical drill-down to quickly view project data by region.

Data Analysis & Monitoring



Project Overview

Show operational metrics including household count, account activation rate, water consumption, revenue, water production and wastewater volume. It also presents financial indicators such as monthly cost trends and revenue sharing statistics.

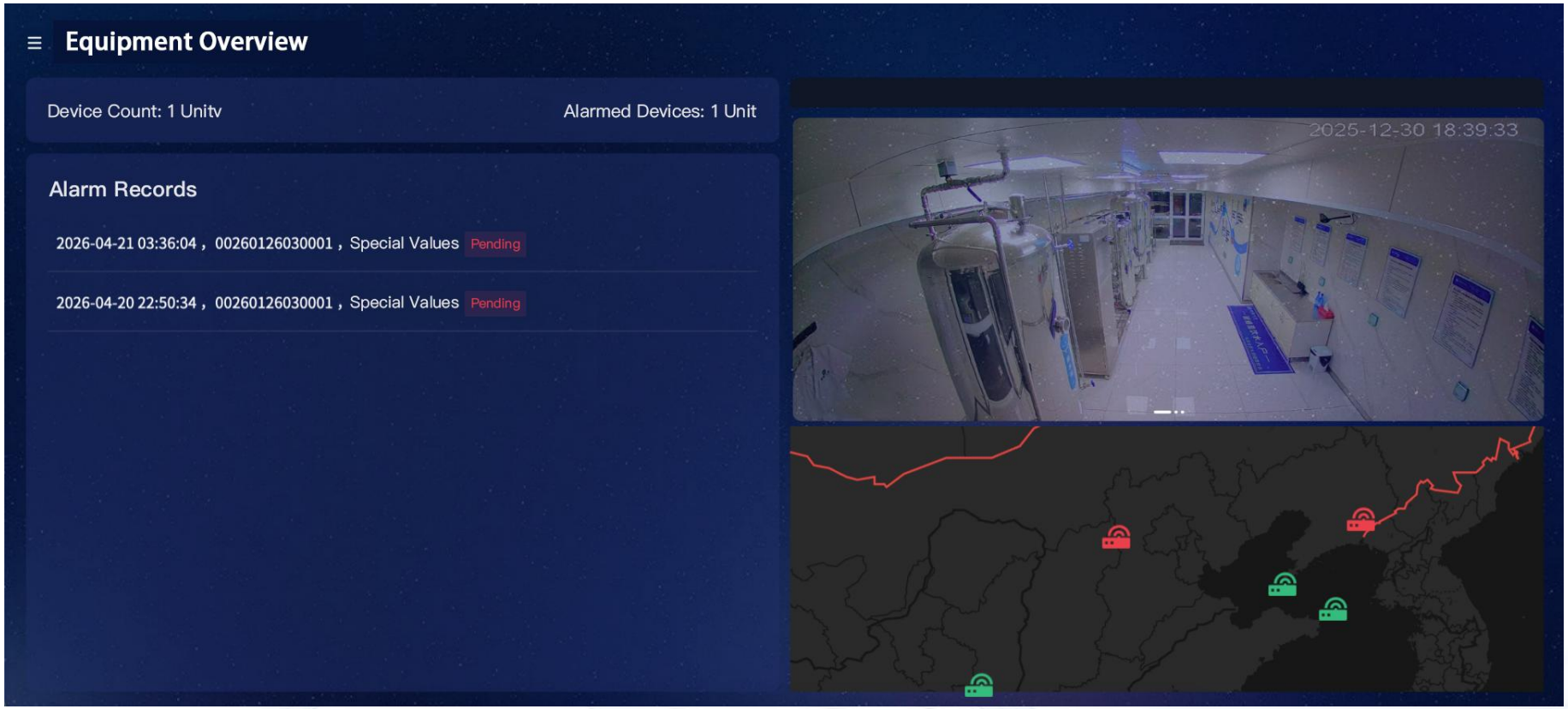
Data Analysis & Monitoring

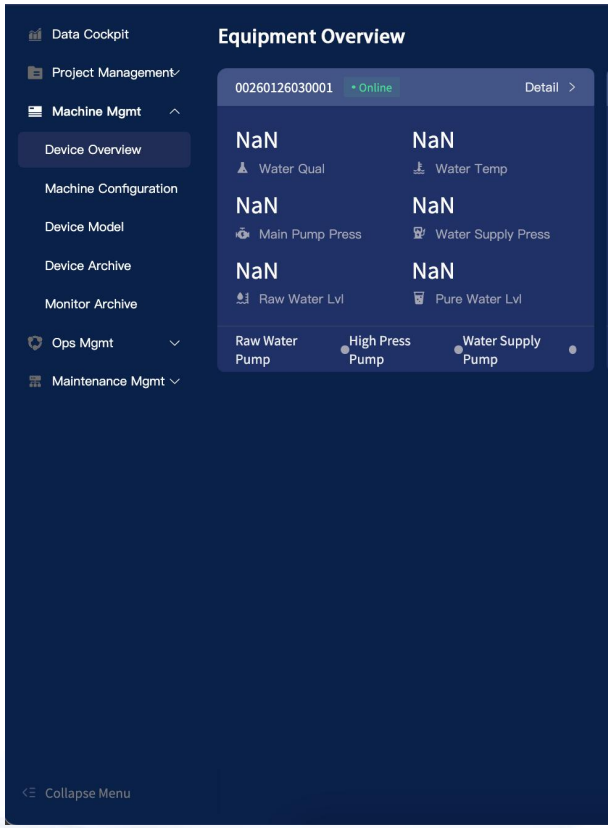


Operation Overview

It displays real-time billing and capital pool data, as well as new account growth trends and operational target completion rates. Multiple water consumption analysis charts are available, including water volume vs user count comparison, monthly average usage fluctuation, annual consumption trends and per-household water usage changes.

Data Analysis & Monitoring

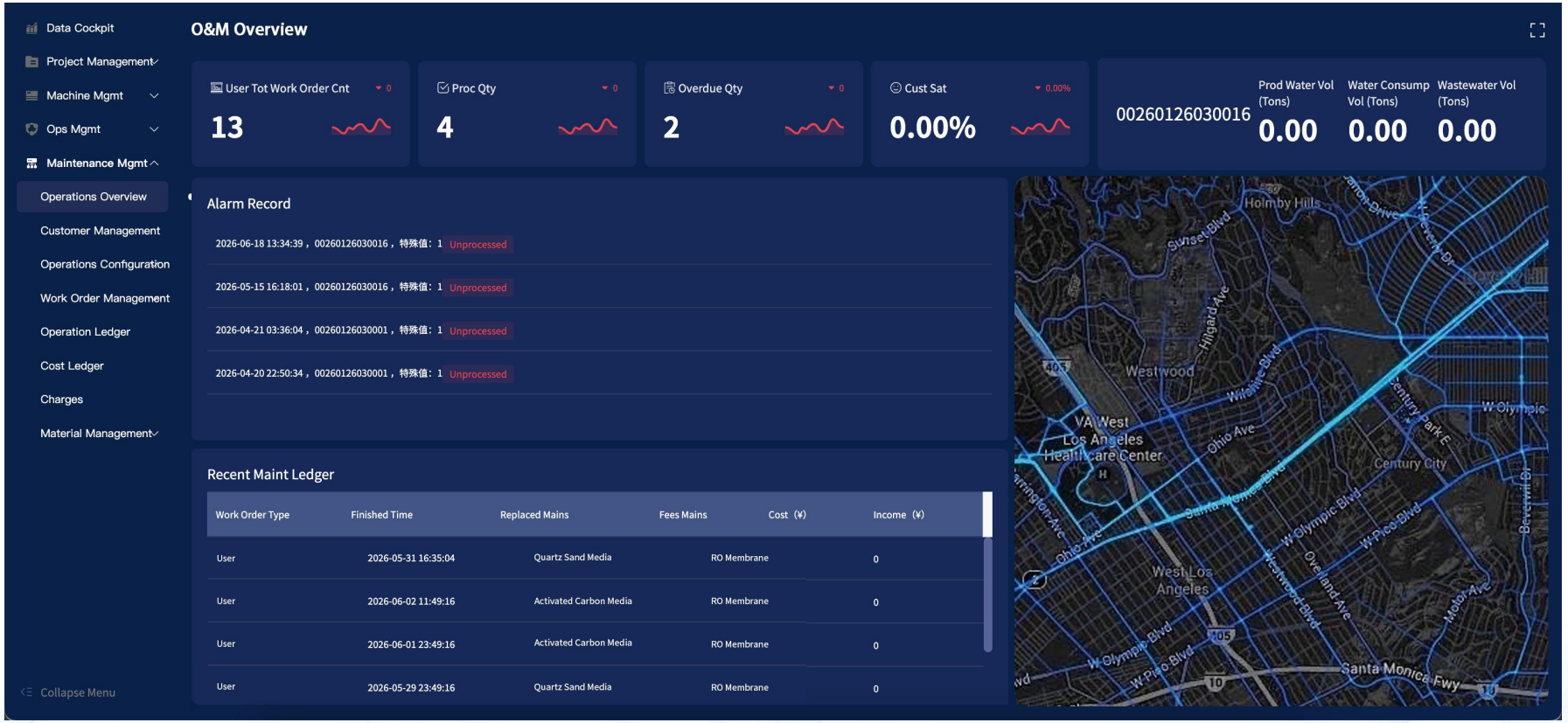




Equipment Overview

It displays key operating parameters of all connected devices, including water quality, flow rate, pressure, temperature and pump operating status. Click any single device to open its configuration monitoring page and view real-time operational details.

Data Analysis & Monitoring

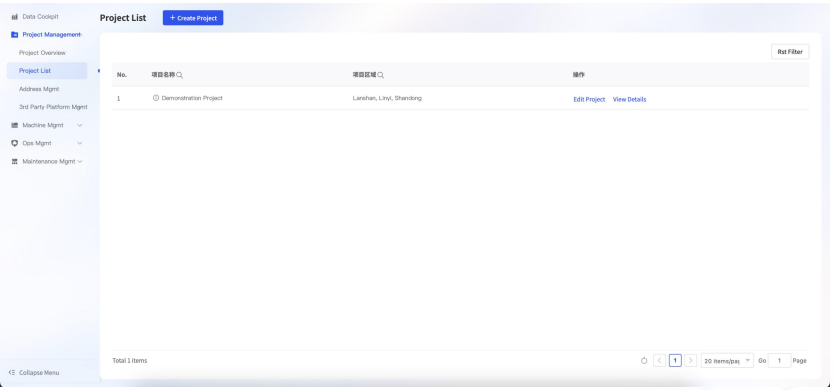


O&M Overview

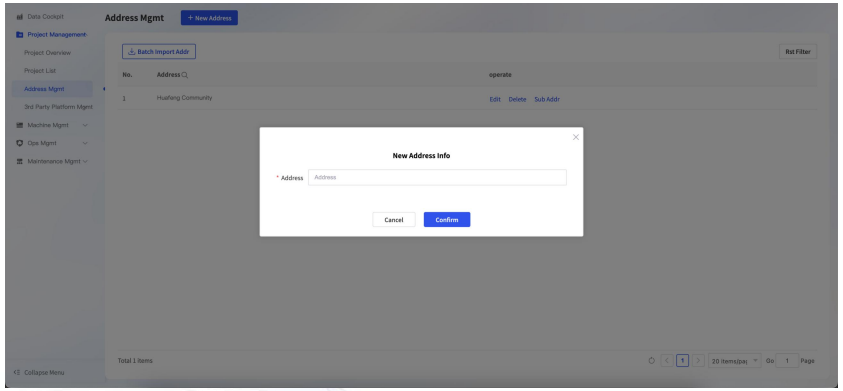
It aggregates equipment alarms, work orders, inventory and cost data. Inspector locations are displayed on maps, with statistics for work order efficiency and customer satisfaction.

Project Management

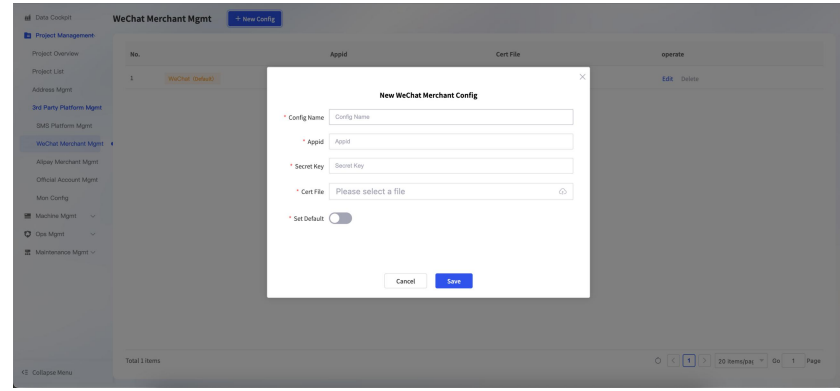
Manage basic information and configurations for all your piped drinking water operation projects.



A project list is provided to manage core data including project name, regional address, project scale, community coverage, investors, beneficiaries and revenue sharing ratios.



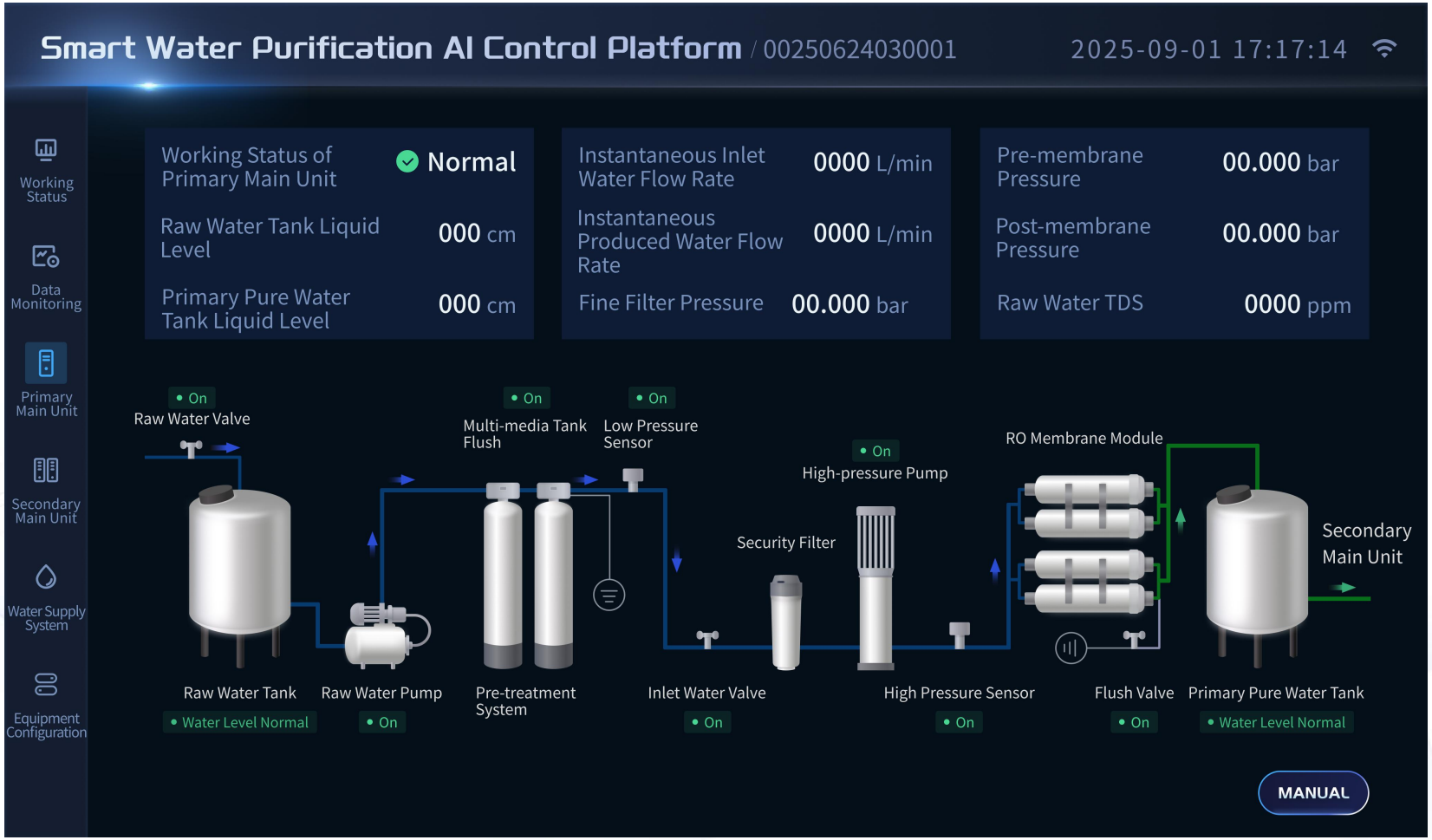
Manage all communities and resident addresses within projects. Add new communities and manage hierarchical address data for buildings and households. Address data can be generated in bulk by building layout or imported via Excel files.



Administer integrated service platforms including SMS gateway, payment merchant accounts (WeChat Pay, Alipay, etc.), official WeChat accounts and video monitoring systems.

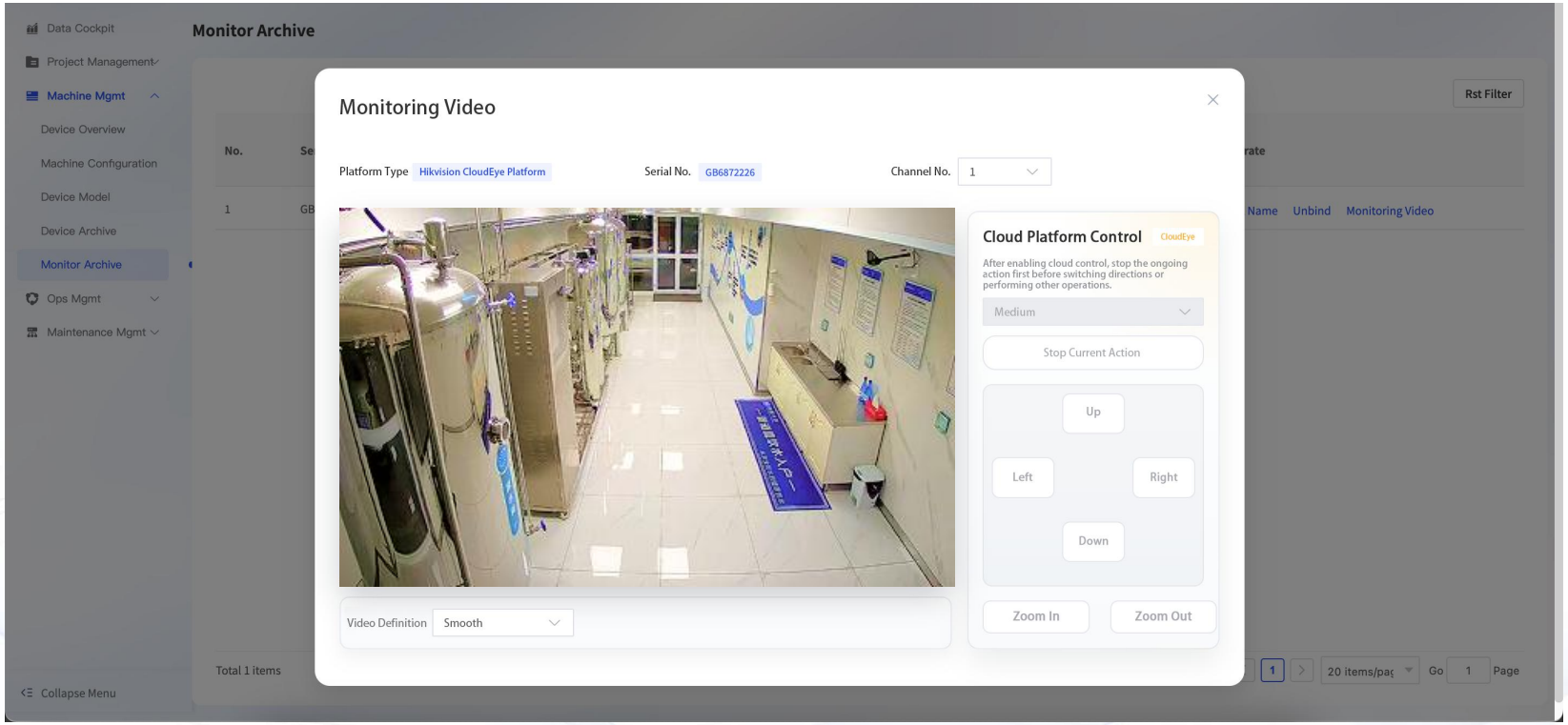
Equipment Management

- Manage multi-modal device models compatible with mainstream water production and supply equipment. It supports diverse communication protocols, data points, configuration points and control points. Flexible configuration enables data collection, remote parameter setup, remote operation and fault alerts for all device types.
- The professional configuration editor supports custom design of monitoring screens and control panels for all devices.

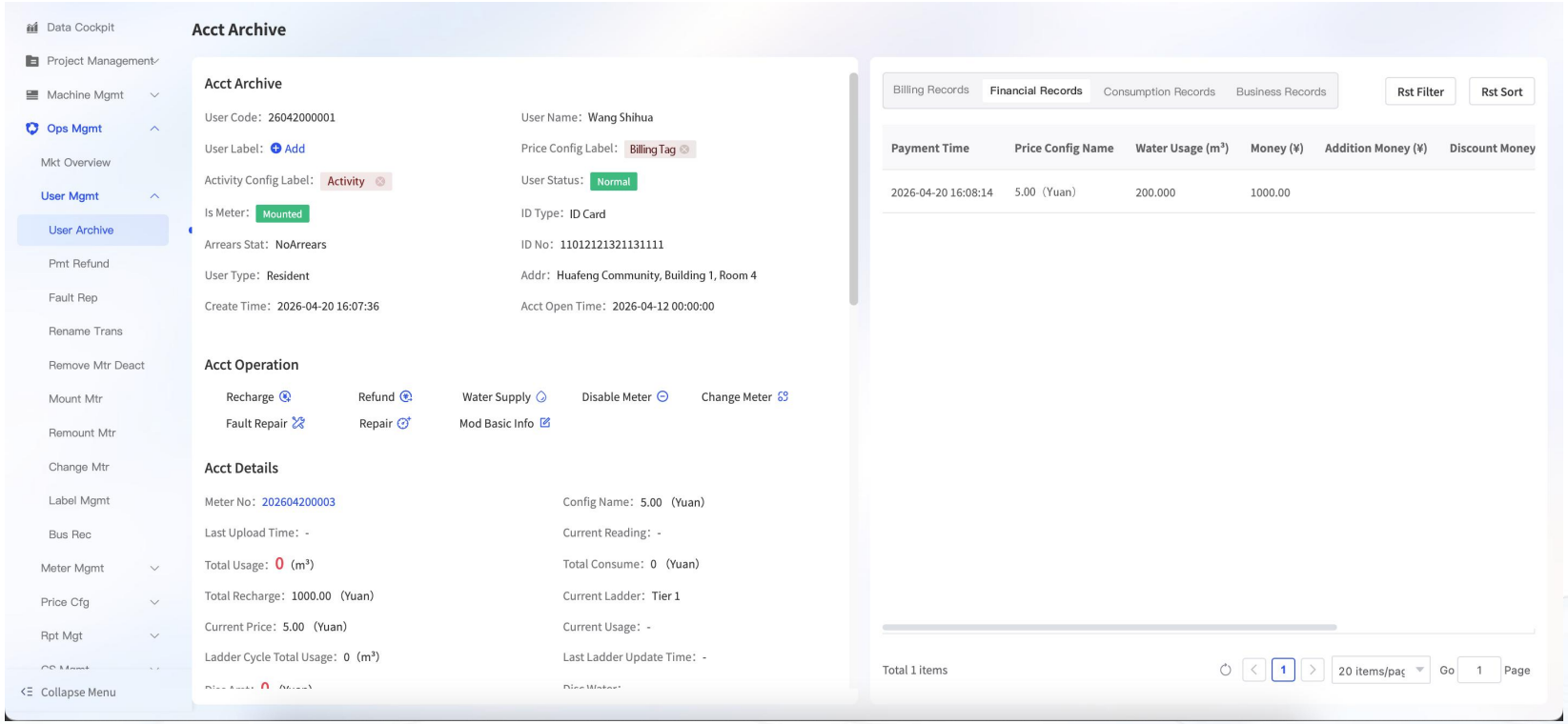


Equipment Management

- Group devices and surveillance cameras by equipment room to create an integrated monitoring dashboard for each room.
- Check the operating status and video wall of all surveillance cameras connected to the system.

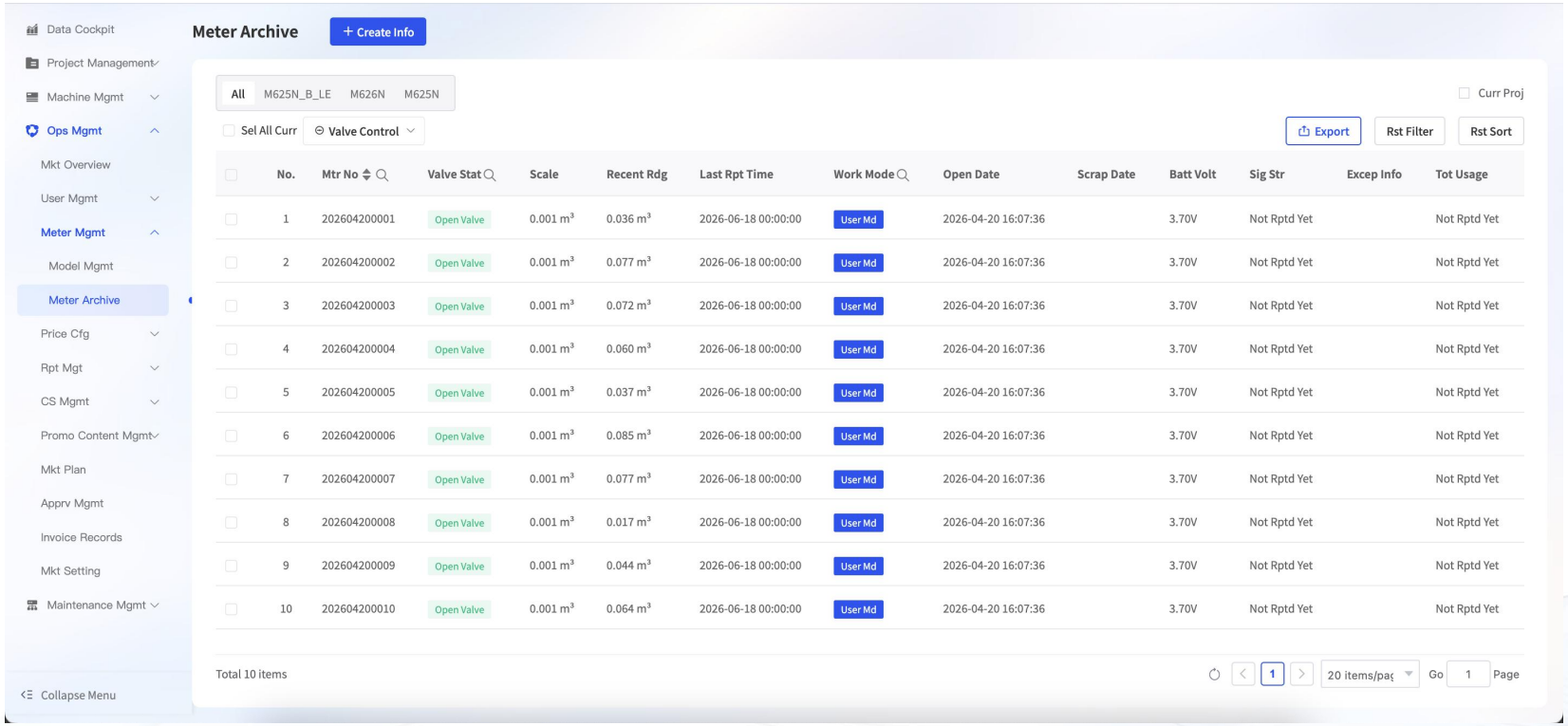


Operation Management



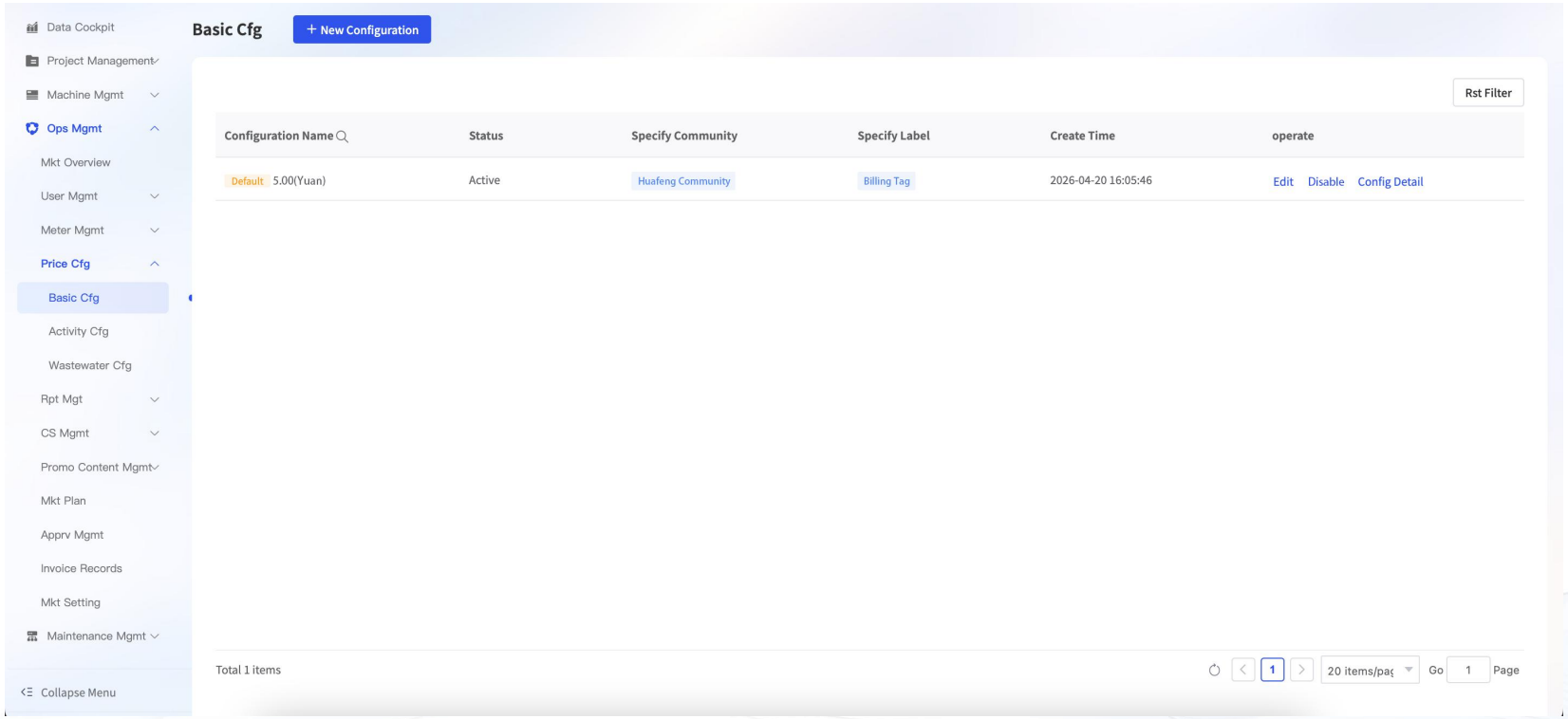
- Manage user profiles, support individual account opening and bulk registration via Excel import. Retrieve full user data and historical records of water consumption, payments and service work orders.
- Process daily user service work orders, including payment & refund, water refill, fault repair, ownership transfer, meter removal & suspension, meter reinstallation and meter replacement.
- Create and assign user tags to build user portraits, segment users and deliver targeted marketing campaigns.

Operation Management



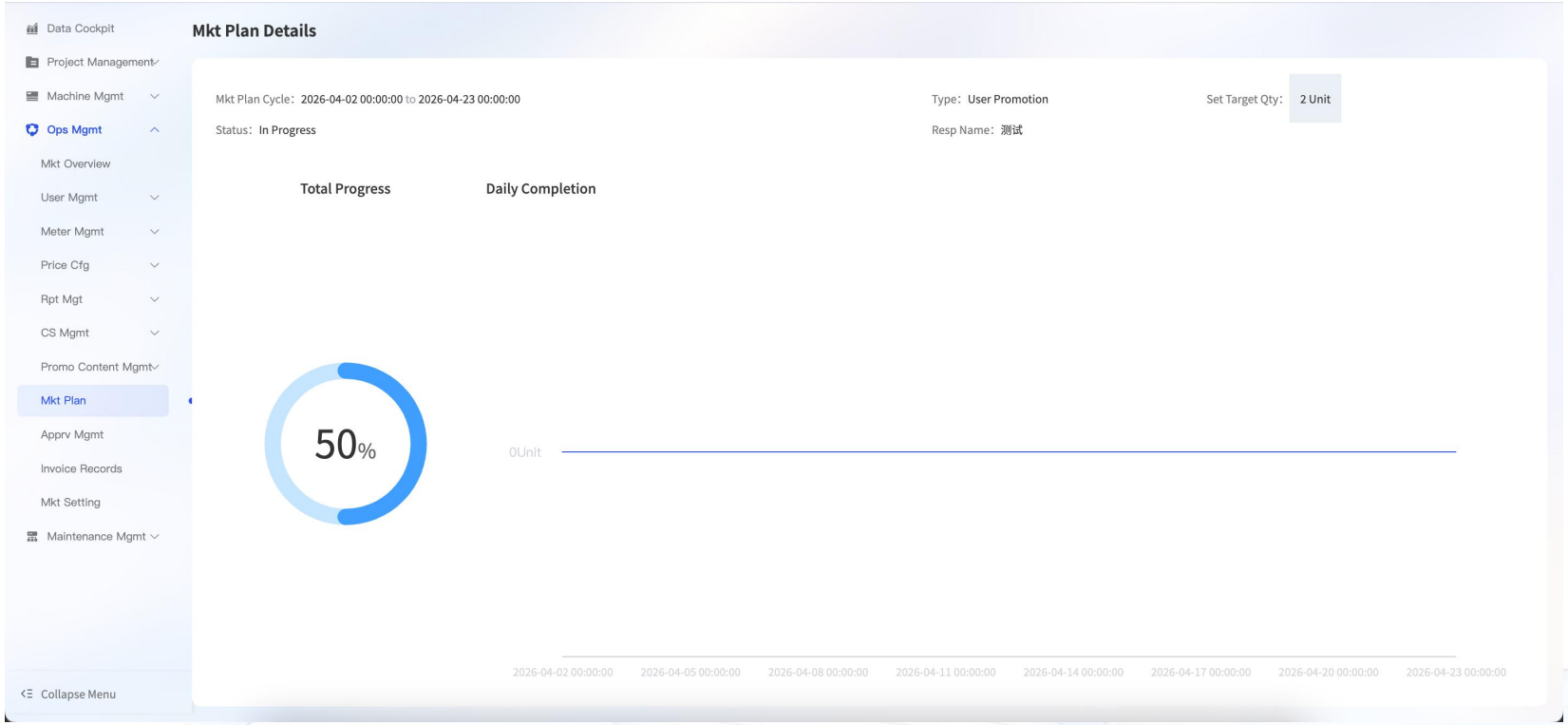
Manage water meter models and archives. It supports access and management of meters from all manufacturers with various models, communication protocols and operating modes. It enables remote recharge and valve control for remote-read water meters, and records all meter upload logs and command histories.

Operation Management



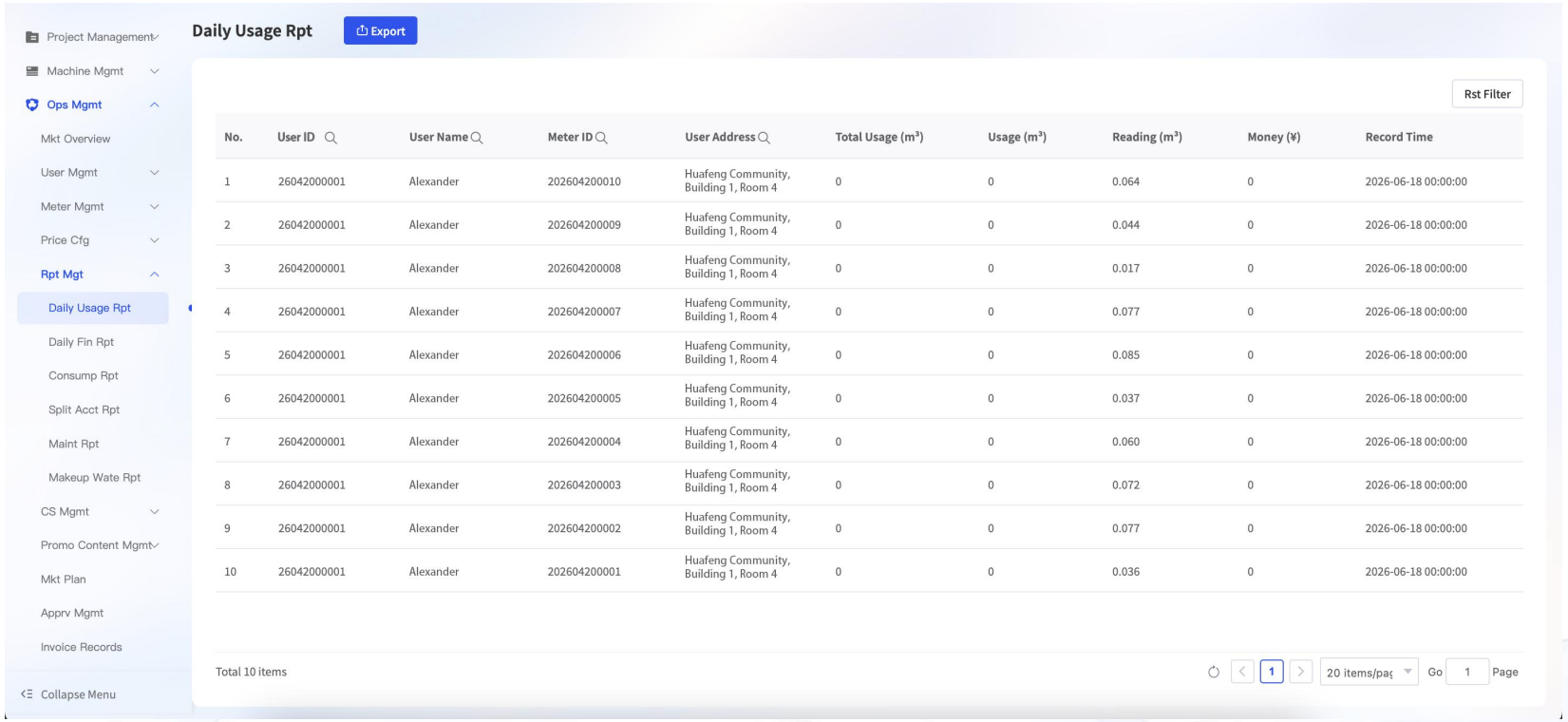
- Manage multiple water price plans and assign them to specific communities or user tags for differentiated pricing. Supported pricing modes include flat rate, progressive & regressive tiered pricing, monthly subscription, prepayment and post-payment. The system also collects additional fees such as equipment rental, property management and waste disposal charges.
- Create multiple promotional campaigns targeted at designated communities or user tags to offer exclusive discounts for segmented users. Available promotions include gift-on-spend, volume discount, monthly free water quota and annual free water quota.
- Configure wastewater tariffs, supporting metered billing or monthly flat fees for wastewater reuse scenarios.

Operation Management



- It delivers flexible content and social operation tools. Publish articles and homepage banner promotions on the WeChat Mini Program, and push Mini Program alerts or official account messages to targeted user groups. Water quality test reports can be uploaded for users to view within the Mini Program.
- Set marketing KPIs including revenue targets and new account quotas. Track target completion to generate performance evaluation metrics for sales staff.

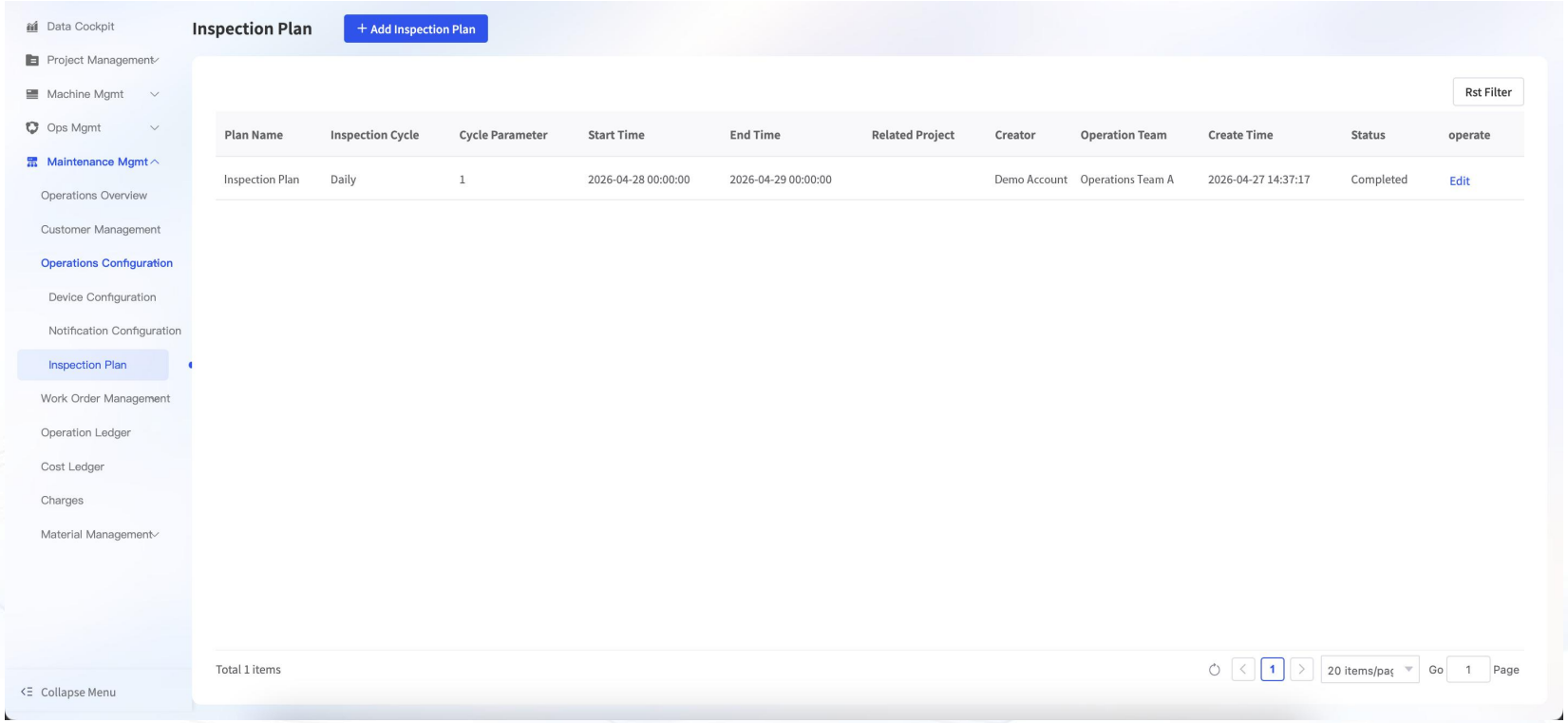
Operation Management



- Generate daily operation reports covering water consumption, finance, transaction, revenue sharing, maintenance and water refill data. All reports support export to Excel.
- Deliver efficient customer service via a real-time agent console. The backend chat panel supports text, image and voice communication with end users.

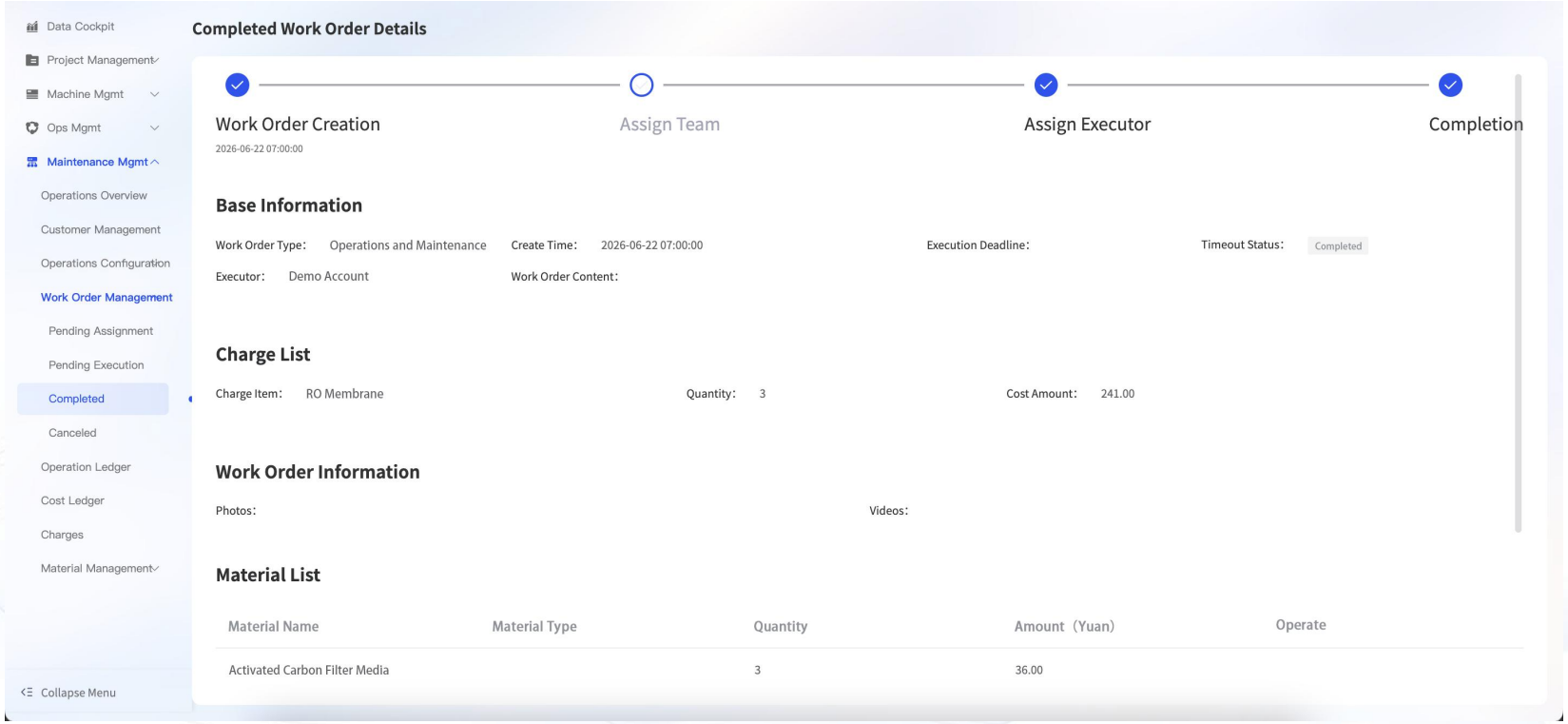
O&M Management

- Set maintenance trigger rules for membrane and filter media replacement based on water output, running hours, water quality, pressure difference and other indicators. The system automatically generates maintenance work orders and sends advance alerts based on remotely collected equipment operating data.
- Customize multi-channel notifications for all work orders. The system sends SMS and voice calls to multiple staff mobile numbers and supports tiered alarm notifications.
- Create inspection schedules covering inspection cycles and staff assignments for all projects and equipment rooms.



O&M Management

- Closed-loop full lifecycle management for work order assignment, execution and completion. Technicians complete tasks via the O&M Mini Program, uploading on-site photos and videos and recording material consumption. Staff geographic location is captured during submission to verify genuine task completion.
- Track material consumption generated by work orders and generate financial ledgers to control overall O&M costs.
- Customize chargeable service items for user work orders, including maintenance, equipment replacement and pipeline extension. Fees entered via the O&M Mini Program auto-generate customer payment bills.
- Hierarchical inventory management for consumables, pipes, equipment and meters. Track stock levels and calculate material costs on a rolling basis.



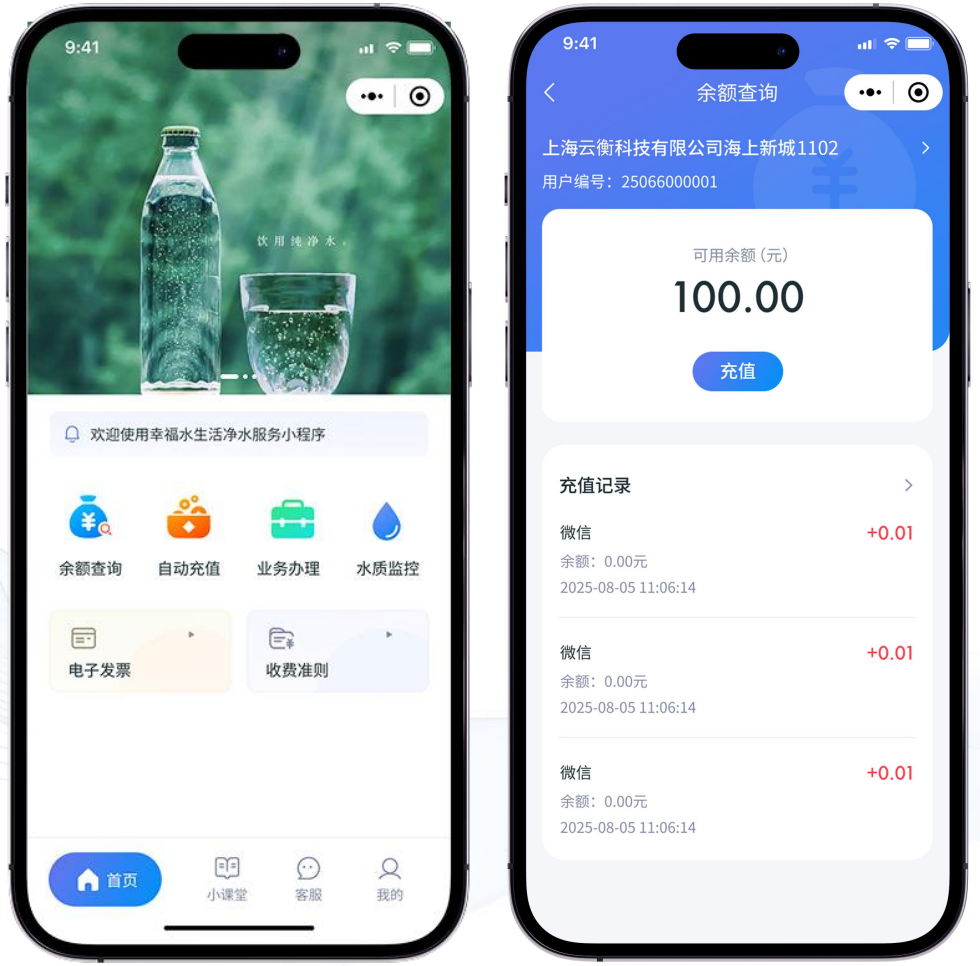
O&M Mini Program

Customize chargeable items for user service orders such as maintenance, equipment replacement and pipeline extension. Technicians input fees via the O&M Mini Program on-site to auto-generate customer payment invoices.



"Happy Water Life" User Mini Program

- Users can check water consumption data and pay water fees and all bills online via the Mini Program.
- Users can view real-time water quality data of the piped drinking water system in their community.



"Happy Water Life" User Mini Program



- Users can self-process daily services including account activation, contract signing, installation application and fault reporting via the Mini Program.
- Users can chat with online customer service agents in real time for inquiries and complaint handling.
- The Mini Program displays diversified marketing materials and delivers efficient differentiated operations through targeted message pushes.

04

Operations Management Model



SaaS Operation

On-premises deployment brings technical challenges and high hardware costs for clients. Our Smart Piped Drinking Water Platform adopts a SaaS model to eliminate capital expenditure on servers, firewalls and network bandwidth. Our professional O&M team provides full technical support, lowering system operation complexity and management workload so you can fully focus on core project operations.

Dedicated On-Premises Deployment

- Business volume evaluation & survey
- Server & network environment planning and consulting
- Custom function evaluation

Pre-Deployment Feasibility Assessment

Dedicated On-Premises Deployment Platform System

Deployment & Implementation

- Dedicated deployment service delivery
- Custom development services
- Independent O&M (Operation & Maintenance) Services

Custom Development Services



Open Integration & Broad Compatibility

We support integration with third-party devices tailored to your business scenarios, including water meters, water production equipment, monitoring devices and more.



On-Demand Customization & Continuous Upgrade

If personalized features are required, we provide custom development to deliver tailor-made functional upgrades for your platform.

24/7 Professional O&M Support

7x24



Phone Support

Rapid response for emergencies and technical inquiries.

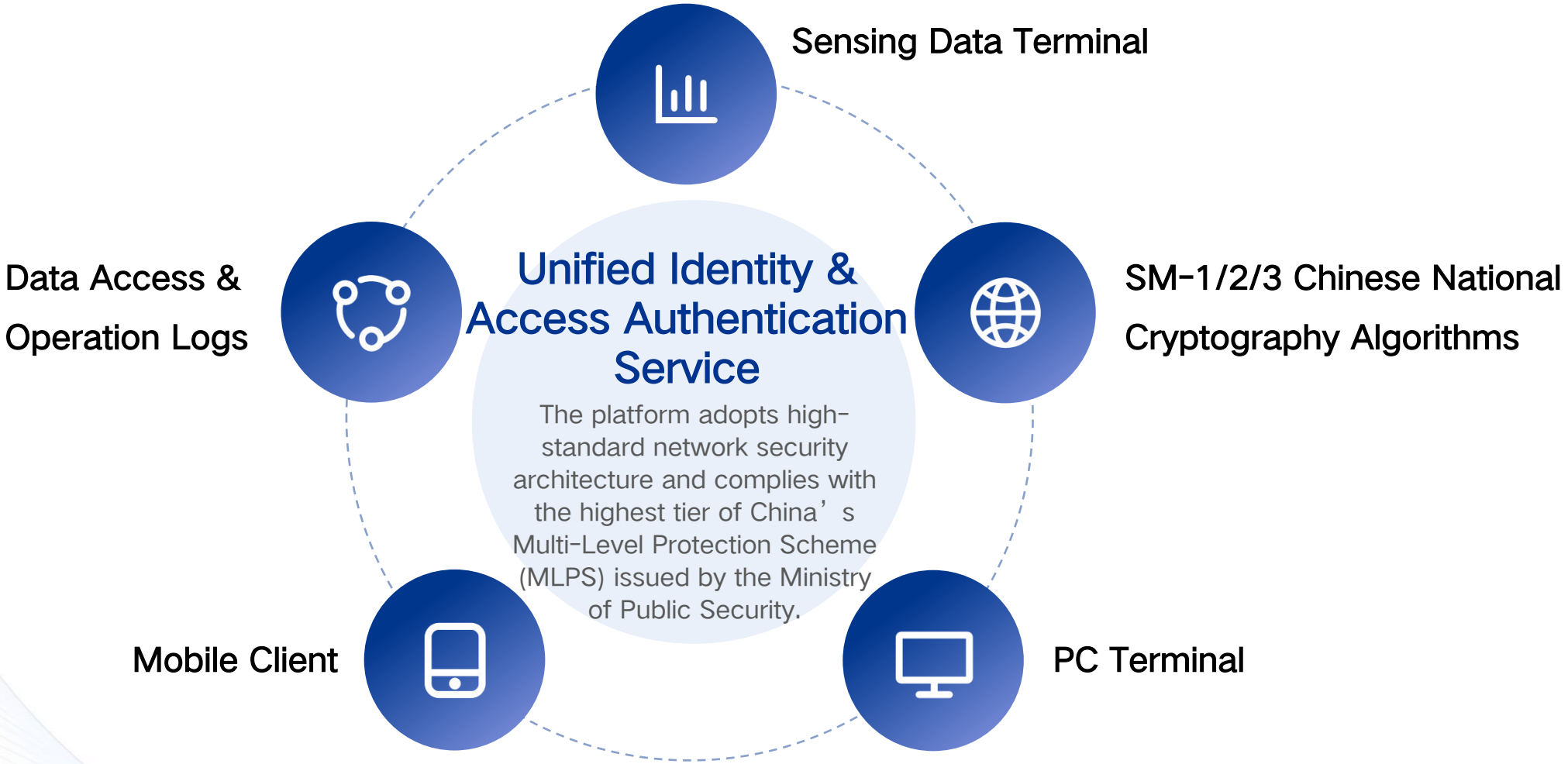


WeChat Support

Text & image communication with real-time replies on workdays and emergency service on holidays.

Uninterrupted Water · Omnichannel Support · Steady Operations

Data Security Protection



Shanghai Cloud-Scale Technology Co., Ltd.

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云衡科技

THANK YOU

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