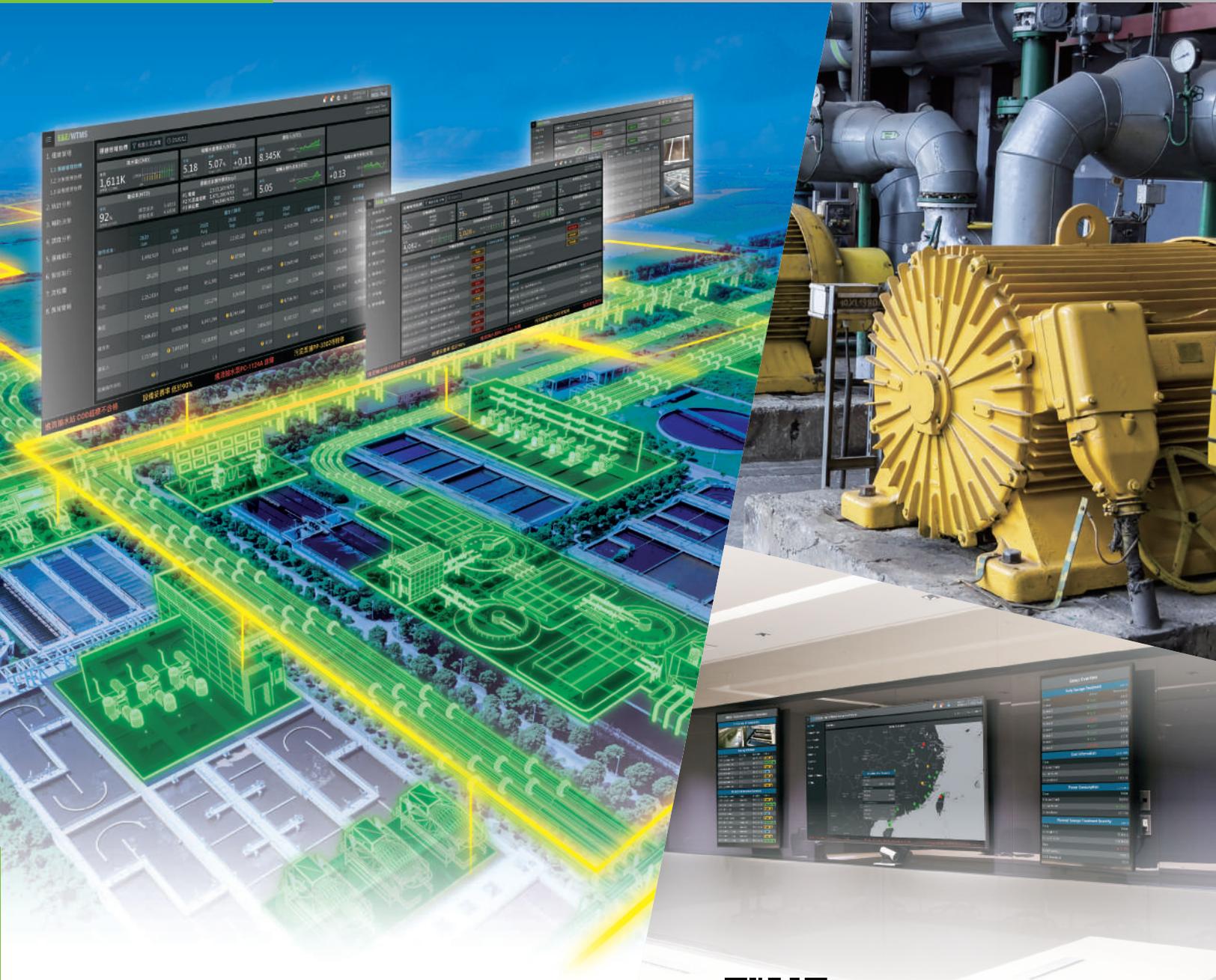# Energy & Environment

Wastewater Treatment Operation and Maintenance Management

Enhancing Intelligent Management of Water Treatment

Solution Suite

IWS-41A

ADVANTECH

Enabling an Intelligent Planet

Introduction Video

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ADVANTECH

WISE-PaaS

Introduction

According to wastewater data, combined with the water process control, precise dosing and aeration can be achieved to improve the quality of effluent water, reducing the material and energy consumption of the wastewater treatment system overall. The facilitates end-to-end one-stop service for water management, data analysis, and automatic alarm processing to enable better strategic management and decision-making. With recommended system configurations for typical application scenarios in water management, guide analysis and visual processing can be implemented for water management modeling and system integration.

Full control of group overview with key performance index	**Equipment energy saving increases efficiency**	**Water agent saving reduces treatment and labor costs**
Meets water quality prediction and early warning mechanisms.	Conforms to discharge water standards and biological aeration to save energy consumption.	Reduces operating costs and improve water purification efficiency.

Focused Industries

Domestic Sewage Plant

The AI prediction and control of biological treatment are able to optimize the operation mode of the blower, return sludge pump, and control of precise aeration. The dissolved oxygen amount and water quality of the aerobic tank are stably controlled to reduce energy consumption and improve equipment efficiency.

Industrial Park Wastewater Treatment

Wastewater treatment companies realize the value of operation and maintenance management services created by digital transformation, thereby reducing energy consumption, improving operational efficiency, and reduced operation and maintenance costs.

Factory Wastewater Treatment Plant

Through chemical treatment of coagulation sedimentation, accurate dosing is achieved to reduce pharmaceutical costs, sludge treatment costs, and operating manpower. Combined with data analysis and edge intelligence technologies, operation interference factors are minimized to improve water regeneration efficiency.
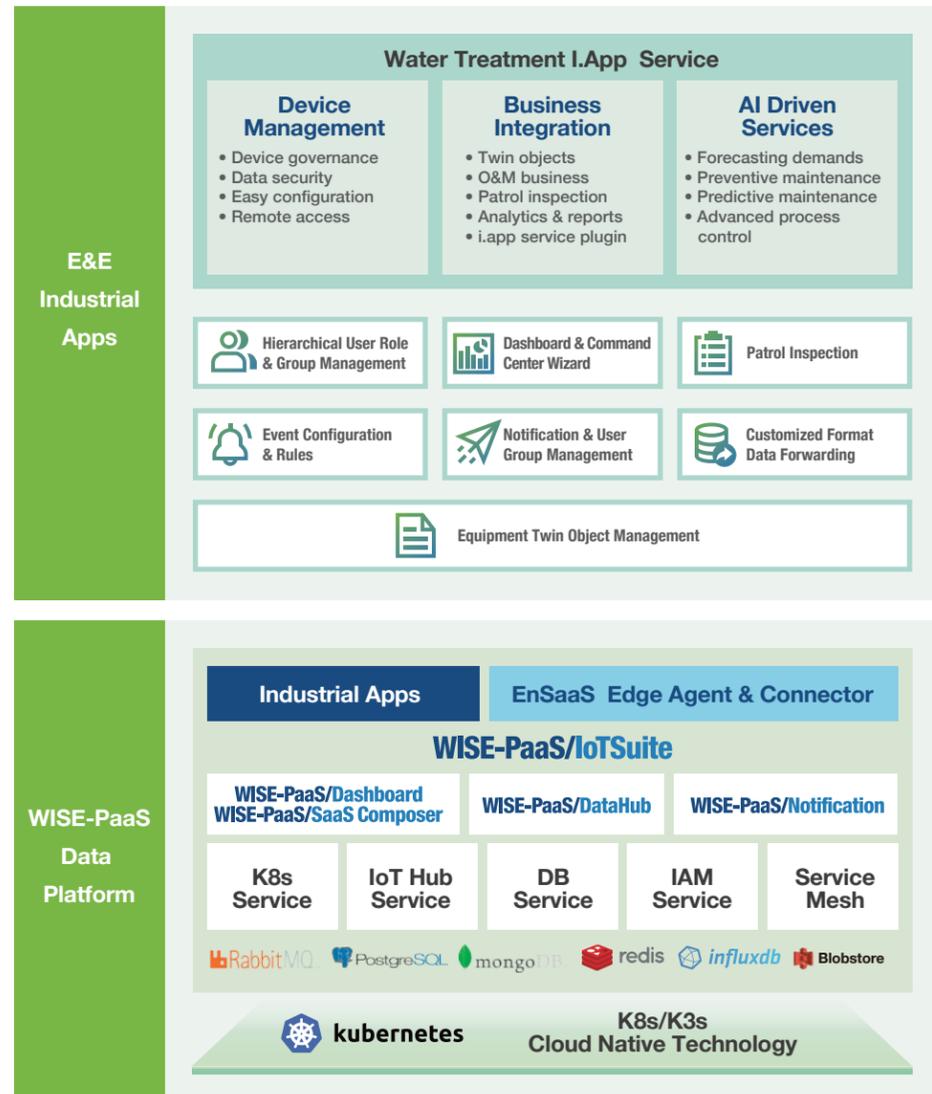

Smart Water Grid and Pump Station Monitoring

Water pumping stations are the most important node in a water network, through Adavntech's solution, the operating status of the pump station can be monitored and managed in real-time with easier scheduled maintenance and notifications.
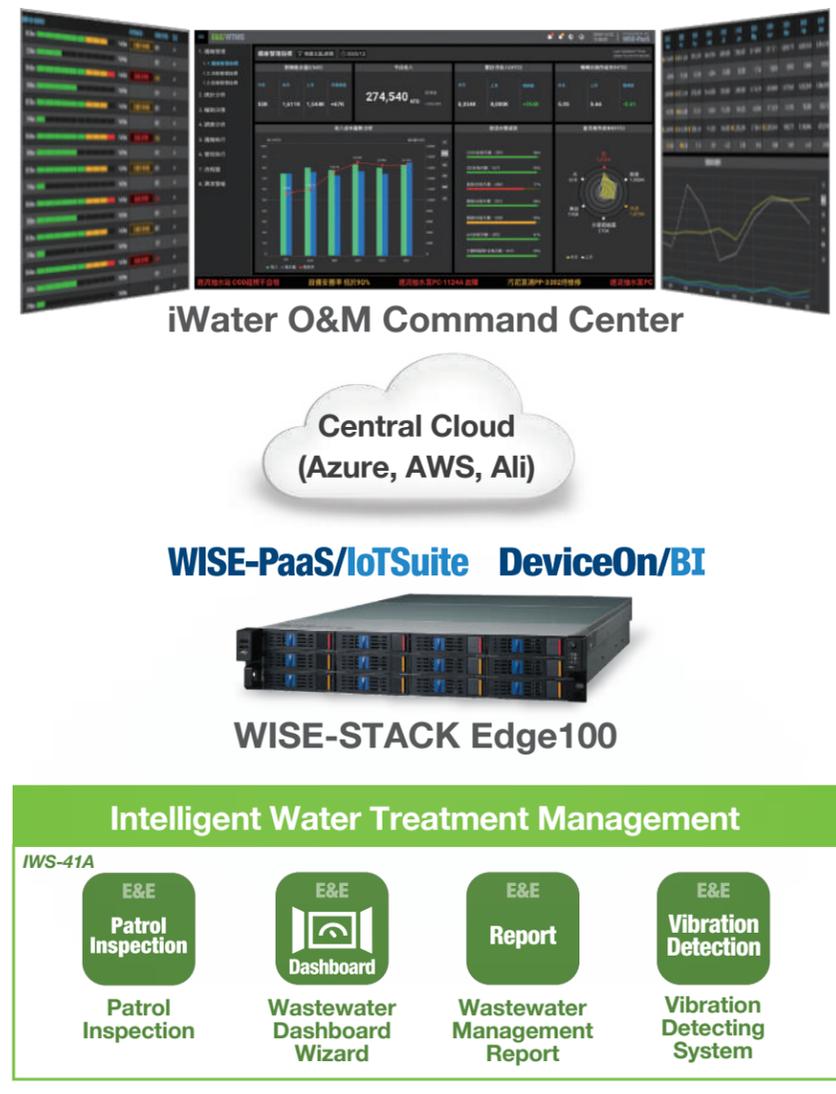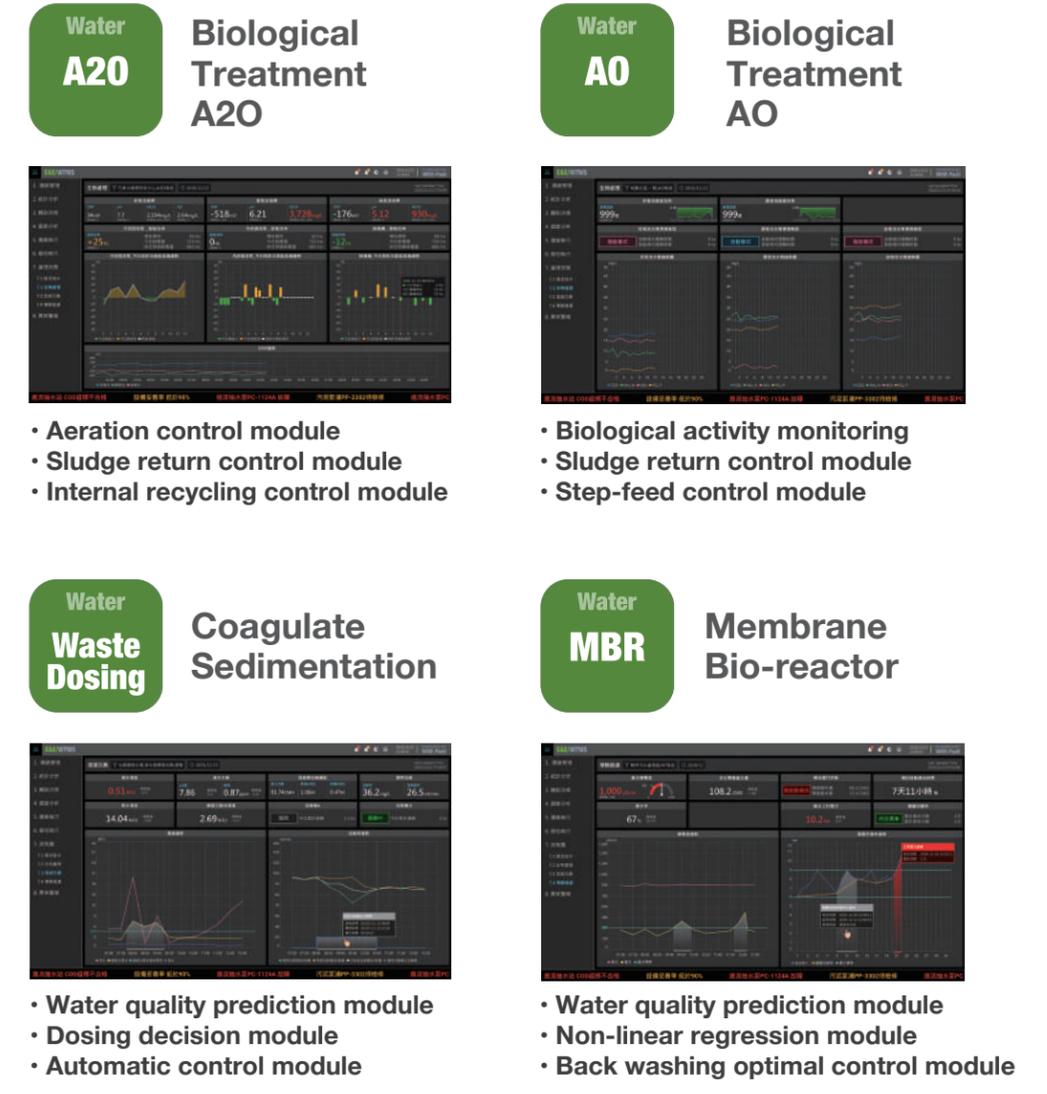
Solution Architecture Overview

Software Diagram

E&E Industrial Apps

Water Treatment I.App Service

Device Management	Business Integration	AI Driven Services
• Device governance	• Twin objects	• Forecasting demands
• Data security	• O&M business	• Preventive maintenance
• Easy configuration	• Patrol inspection	• Predictive maintenance
• Remote access	• Analytics & reports	• Advanced process control
	• i.app service plugin	

- Hierarchical User Role & Group Management
- Dashboard & Command Center Wizard
- Patrol Inspection
- Event Configuration & Rules
- Notification & User Group Management
- Customized Format Data Forwarding
- Equipment Twin Object Management

WISE-PaaS Data Platform

Industrial Apps	EnSaaS Edge Agent & Connector

WISE-PaaS/IoTSuite

WISE-PaaS/Dashboard WISE-PaaS/SaaS Composer	WISE-PaaS/DataHub	WISE-PaaS/Notification

K8s Service	IoT Hub Service	DB Service	IAM Service	Service Mesh

RabbitMQ PostgreSQL mongoDB redis influxdb Blobstore

kubernetes — K8s/K3s Cloud Native Technology

Command Center & Edge Cloud

iWater O&M Command Center

Central Cloud (Azure, AWS, Ali)

WISE-PaaS/IoTSuite DeviceOn/BI

WISE-STACK Edge100

Intelligent Water Treatment Management

IWS-41A

E&E Patrol Inspection	E&E Dashboard	E&E Report	E&E Vibration Detection
Patrol Inspection	Wastewater Dashboard Wizard	Wastewater Management Report	Vibration Detecting System

Industrial Apps

Water A2O — Biological Treatment A2O
- Aeration control module
- Sludge return control module
- Internal recycling control module

Water AO — Biological Treatment AO
- Biological activity monitoring
- Sludge return control module
- Step-feed control module

Water Waste Dosing — Coagulate Sedimentation
- Water quality prediction module
- Dosing decision module
- Automatic control module

Water MBR — Membrane Bio-reactor
- Water quality prediction module
- Non-linear regression module
- Back washing optimal control module

Edge Devices & Gateways

Water Unit / Process
WebAccess/SCADA

ECU-1251 ADAM-3600 UNO-2484

Vibration & Protocol Conversion

WISE-6610 WISE-2410 EKI-1200

Water Equipment Modules
WISE-EdgeLink

ECU-1251 ADAM-3600

Water Quality Sensor
WISE-EdgeLink

ADAM-6066 WISE-4671 ECU-1051

Solution Marketing Strategy

Factory Wastewater Treatment	Industrial Park Wastewater Treatment	Domestic Sewage Treatment
Ready to Go Solution Suite	**Extended Applications**	**Cloud-enabled Management Platform**
A variety of ready-to-use wastewater treatment solutions to make everything easier and faster.	DFSI water treatment process to extend development and improved value-added services in the water treatment industry.	Combing operations and maintenance management to provide agent services to help new business models and move towards digital transformation.

Application Stories

Water Resource Wastewater Treatment

- Cost-effective integrated solution for seamless implementation
- Remote supervision of on-site data acquisition with zero data loss
- Automatic monitoring and control enhances project development and after sales maintenance

Solution

Water O&M Command Center (iWater-41A) / Patrol Inspection / DeviceOn/BI

Industrial Park Wastewater Treatment

- Real-time monitoring from remote locations
- Track the operational status of equipment
- Reduce treatment costs, improve system stability, and enhance functionality

Solution

Biological Treatment A2O (iWater-42A) / ADAM-3600 / WebAccess/SCADA

Industrial Factory Wastewater Treatment

- Reliable raw data collection for ad-hoc data analysis
- Real-time monitoring of crucial equipment operational status
- Refined and expedited water treatment reduces energy usage requirements

Solution

Coagulation Sedimentation (iWater-43A) / ADAM-3600 / WebAccess/SCADA

Ordering Information

		Intelligent Water Treatment Management
Intelligent Water Treatment Management Solution Suite *iWater-41A*	**IWS-41A-AP01** Operation and maintenance management	IWS-41A — Patrol Inspection / Wastewater Dashboard Wizard / Wastewater Management Report / Vibration Detecting System

Solution	HW/SW Portfolio	HW/SW Image
Biological Treatment A2O *iWater-42A*	**IWS-42A-AP01** Hardware: MIC-770 Compact Fanless System Optional hardware :ADAM-3600, ECU-1051 WebAccess 75 Pts (bindable license) A2O Process package software	WebAccess/SCADA WISE-EdgeLink
Biological Treatment AO *iWater-42B*	**IWS-42B-AP01** Hardware: MIC-770 Compact Fanless System Optional hardware : ADAM-3600 , ECU-1051 WebAccess 75 Pts (bindable license) AO Process package software	WebAccess/SCADA WISE-EdgeLink
Coagulation Sedimentation *iWater-43A*	**IWS-43A-AP01** Hardware: MIC-770 Compact Fanless System Optional hardware : ADAM-3600 , ECU-1051 WebAccess 75 Pts (bindable license) Coagulation Process package software	WebAccess/SCADA WISE-EdgeLink
Membrane Bio-reactor *iWater-44A*	**IWS-44A-AP01** Hardware: MIC-770Q Compact Fanless System Optional hardware:ADAM-3600 , ECU-1251 WebAccess 75 Pts (bindable license) MBR Process package software	WebAccess/SCADA WISE-EdgeLink

Edge Cloud

WISE-PaaS Edge-Cloud Solution Suite	**WISE-STACK Edge100** Hardware: SKY7221/ 10 cores/ 64GB Memory/ 16TB HDD/ 1TB SSD Software: WISE-PaaS/IoTSuite E100	WISE-PaaS/IoTSuite

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