Wastewater Treatment Operation and Maintenance Management
Enhancing Intelligent Management of Water Treatment

IWS-41A

Solution Suite

Energy & Environment

Introduction Video

POWERED BY
WISE-PaaS

ADVANTECH
Enabling an Intelligent Planet
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.

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 Advantech’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

**Water Treatment L-App Service**
- Device Management
  - Device governance
  - Data security
  - Easy configuration
  - Remote access
- Business Integration
  - Twin objects
  - O&M business
  - Patrol inspection
  - Analytics & reports
  - IAPP service plugin
- AI Driven Services
  - Forecasting demands
  - Preventive maintenance
  - Predictive maintenance
  - Advanced process control

**Central Cloud** (Azure, AWS, Ali)

**iWater O&M Command Center**
- Aeration control module
- Sludge return control module
- Internal recycling control module
- Biological activity monitoring
- Step-feed control module
- Water quality prediction module
- Dosing decision module
- Automatic control module
- Non-linear regression module
- Back washing optimal control module

**WISE-PaaS/IoTSuite DeviceOn/BI**

**WISE-STACK Edge100**

#### Intelligent Water Treatment Management

- Patrol Inspection
- Wastewater Dashboard Wizard
- Wastewater Management Report
- Vibration Detecting System

#### Edge Devices & Gateways

**Water Unit / Process**
- ECU-1251
- Adam-3600
- UNO-2484
- WISE-6610
- WISE-2410
- EKI-1200

**Vibration & Protocol Conversion**

**Water Equipment Modules**
- ECU-1251
- Adam-3600

**Water Quality Sensor**
- Adam-6066
- WISE-4671
- ECU-1051

#### Industrial Apps

**WISE-PaaS/IoTSuite**

**DeviceOn/BI**

**WISE-STACK Edge100**

**Central Cloud** (Azure, AWS, Ali)

**iWater O&M Command Center**

- Biological Treatment A20
- Biological Treatment A0
- Biological Activity Monitoring
- Sludge Return Control Module
- Step-feed Control Module

**Coagulate Sedimentation**

**Water Dosing**

**Membrane Bio-reactor**

**Water Quality Prediction Module**

**Non-linear Regression Module**

**Backwashing Optimal Control Module**

- Water Quality Prediction Module
- Non-linear Regression Module
- Backwashing Optimal Control Module

**EnSaas Edge Agent & Connector**

**K8s/K3s Cloud Native Technology**

**Blobstore**

**WISE-PaaS**

**Data Platform**

**E&E Industrial Apps**

**Hierarchical User Role & Group Management**
- Event Configuration & Rules
- Notification & User Group Management
- Customized Form Data Forwarding

**Equipment Twin Object Management**
- Customized Format
- Data Forwarding

**Dashboard & Command Center Wizard**
- Patrol Inspection
- Analytics & Reports
- Automatic Control Module
- Predictive Maintenance
- Advanced Process Control

**Device Governance**
- Data Security
- Easy Configuration
- Remote Access

**Data Security**

**Easy Configuration**

**Remote Access**

**Business Integration**

**AI Driven Services**

**Industrial Apps**

**EnSaas Edge Agent & Connector**

**K8s/K3s Cloud Native Technology**

**Blobstore**

**WISE-PaaS**

**Data Platform**

**E&E Industrial Apps**

**Hierarchical User Role & Group Management**
- Event Configuration & Rules
- Notification & User Group Management
- Customized Form Data Forwarding

**Equipment Twin Object Management**
- Customized Format
- Data Forwarding

**Dashboard & Command Center Wizard**
- Patrol Inspection
- Analytics & Reports
- Automatic Control Module
- Predictive Maintenance
- Advanced Process Control

**Device Governance**
- Data Security
- Easy Configuration
- Remote Access

**Business Integration**

**AI Driven Services**

**Industrial Apps**

**EnSaas Edge Agent & Connector**

**K8s/K3s Cloud Native Technology**

**Blobstore**

**WISE-PaaS**

**Data Platform**

**E&E Industrial Apps**

**Hierarchical User Role & Group Management**
- Event Configuration & Rules
- Notification & User Group Management
- Customized Form Data Forwarding

**Equipment Twin Object Management**
- Customized Format
- Data Forwarding

**Dashboard & Command Center Wizard**
- Patrol Inspection
- Analytics & Reports
- Automatic Control Module
- Predictive Maintenance
- Advanced Process Control

**Device Governance**
- Data Security
- Easy Configuration
- Remote Access
Solution Marketing Strategy

**Factory Wastewater Treatment**

**Ready to Go Solution Suite**
A variety of ready-to-use wastewater treatment solutions to make everything easier and faster.

**Industrial Park Wastewater Treatment**

**Extended Applications**
DFSI water treatment process to extend development and improved value-added services in the water treatment industry.

**Domestic Sewage Treatment**

**Cloud-enabled Management Platform**
Combining 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

A variety of ready-to-use wastewater treatment solutions to make everything easier and faster.

Extended Applications
DFSI water treatment process to extend development and improved value-added services in the water treatment industry.

Cloud-enabled Management Platform
Combining operations and maintenance management to provide agent services to help new business models and move towards digital transformation.
### Ordering Information

<table>
<thead>
<tr>
<th>Intelligent Water Treatment Management Solution Suite</th>
<th>HW/SW Portfolio</th>
<th>HW/SW Image</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>iWater-41A</strong></td>
<td><strong>IWS-41A-AP01</strong></td>
<td><strong>WEBAccess/SCADA</strong></td>
</tr>
<tr>
<td>Operation and maintenance management</td>
<td>Hardware: MIC-770 Compact Fanless System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optional hardware: ADAM-3600, ECU-1051</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebAccess 75 Pts (bindable license)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A2O Process package software</td>
<td></td>
</tr>
<tr>
<td><strong>iWater-42A</strong></td>
<td><strong>IWS-42A-AP01</strong></td>
<td><strong>WEBAccess/SCADA</strong></td>
</tr>
<tr>
<td>Biological Treatment A2O</td>
<td>Hardware: MIC-770 Compact Fanless System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optional hardware: ADAM-3600, ECU-1051</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebAccess 75 Pts (bindable license)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A2O Process package software</td>
<td></td>
</tr>
<tr>
<td><strong>iWater-42B</strong></td>
<td><strong>IWS-42B-AP01</strong></td>
<td><strong>WEBAccess/SCADA</strong></td>
</tr>
<tr>
<td>Biological Treatment AO</td>
<td>Hardware: MIC-770 Compact Fanless System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optional hardware: ADAM-3600, ECU-1051</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebAccess 75 Pts (bindable license)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AO Process package software</td>
<td></td>
</tr>
<tr>
<td><strong>iWater-43A</strong></td>
<td><strong>IWS-43A-AP01</strong></td>
<td><strong>WEBAccess/SCADA</strong></td>
</tr>
<tr>
<td>Coagulation Sedimentation</td>
<td>Hardware: MIC-770 Compact Fanless System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optional hardware: ADAM-3600, ECU-1051</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebAccess 75 Pts (bindable license)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coagulation Process package software</td>
<td></td>
</tr>
<tr>
<td><strong>iWater-44A</strong></td>
<td><strong>IWS-44A-AP01</strong></td>
<td><strong>WEBAccess/SCADA</strong></td>
</tr>
<tr>
<td>Membrane Bio-reactor</td>
<td>Hardware: MIC-770Q Compact Fanless System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optional hardware: ADAM-3600, ECU-1251</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WebAccess 75 Pts (bindable license)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MBR Process package software</td>
<td></td>
</tr>
<tr>
<td><strong>Edge Cloud</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WISE-PaaS Edge-Cloud Solution Suite</strong></td>
<td><strong>WISE-STACK Edge100</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hardware: SKY7221/ 10 cores/ 64GB Memory/ 16TB HDD/ 1TB SSD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Software: WISE-PaaS/IoTSuite E100</td>
<td></td>
</tr>
</tbody>
</table>

---

**Advantech Co., Ltd.**
Official website: www.advantech.com
WISE-Marketplace website: wise-paas.advantech.com

- US/Canda: info@advantech.com
- Europe: customercare@advantech.eu
- China: sales@advantech.com.cn
- Taiwan: sales@advantech.com.tw
- Japan: ajp_sales@advantech.com
- Korea: ASK@advantech.co.kr
- Singapore: sg@advantech.com
- Malaysia: sales@advantech.com.my
- Thailand: sales.th@advantech.com
- Vietnam: sales.AVN@advantech.com
- Indonesia: aid.ccs@advantech.com
- India: info.in@advantech.com
- Brazil: vendas@advantech.com.br
- Australasia: info@advantech.net.au