OEE/A SRP

(OEE- Availability Solution- Ready Package)

Alger Tan
IIoT SRP SAE
Jan 2019
Agenda

- What is WISE-PaaS

- What is OEE/A SRP

- Build up OEE/A Simulation Environment
  - Marketplace Introduction and Hands-on
  - Device Simulator to WebAccess/SCADA Introduction and Hands-on
  - WebAccess/SCADA to WISE-PaaS/SCADA Introduction and Hands-on
  - WISE-PaaS/SCADA to OEE-Configure Introduction and Hands-on
  - OEE-Configure to WISE-PaaS/Dashboard Introduction and Hands-on
What is WISE-PaaS
WISE-PaaS 3.0 AIoT Edge-to-Cloud Architecture

Integrated Application Cloud Solutions
(SaaS Partners & DFSI)

AloT.SRPs

- SR: Situation Room
- OEE: Overall Equipment Effectiveness

PHM: Prognostic Health Management

AOI: AI-based AOI

IVA: Video Analytics

End To End Security: SSL/TLS

Co-Creation

PaaS Cloud Services

WISE-PaaS/EnSaaS

Visualization - Dashboard

- WISE-PaaS/SaaS Composer
- WISE-PaaS/Dashboard

- HTML5 Canvas
- Streaming Data
- 3D Visualization

Asset Performance Management

- Asset Models
- Asset Statistics & Analytics
- Workflow Integration

AI Framework Service

- WISE-PaaS/AFS
  - Online Code IDE
  - Online Flow IDE
  - Model Training & Deploy

Cloud Foundry

- Kubernetes
- Micro-services
- Elastic Scaling
- High Availability

- PostgreSQL
- MongoDB
- InfluxDB
- Ceph

- RabbitMQ
- Kafka

Customer Management

- Multi-tenancy
- Billing & Metering
- Single Sign-on

IoT Hub

Public Cloud

- Azure
- AWS
- 阿里云

Private Cloud

- openstack.

Edge Intelligence

Industrial SCADA

- WebAccess/SCADA
- WebAccess/CNC
- WebAccess/HMI
- WebAccess/NMS

Machine to Intelligence

- WISE-PaaS/EdgeLink

- Protocol Conversion
- Sensor Management
- Device Model

Remote Device Management

- WISE-PaaS/DeviceOn
- WISE-PaaS/EdgeSense

- WISE-PaaS/RMM
- WISE-PaaS/OTA
- WISE-PaaS/Security

Intelligent Video Management

- WISE-PaaS/VideoSense

- WISE-PaaS/VideoCMS
- WISE-PaaS/SignageCMS
- WISE-PaaS/HumanDetectAI

Microservices
- System Management
- Edge Analytics

Enabling an Intelligent Planet
Running Instances and to be deployed
WISE-PaaS User Flow Scenario


Login marketplace account and subscribe EnSaaS Package

Select your Account

Customers who wish to use EnSaaS cloud service in China regions are required to sign up for EnSaaS (China) account where the data center is in Beijing. For EnSaaS services available in global regions, please sign up for EnSaaS account where the data center is in Hong Kong.

Request EnSaaS account, Create Org and select AD location (ex. Org “IIoT-Test” and HK)

2GB memory
50GB Storage
3M Iot Hub Message

2GB memory
50GB Storage
3M Iot Hub Message

Org IIoT-Test
(2GB memory, 50GB Storage, 3M Message)

Beijing

HK

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Advantech
WISE-PaaS User Flow Scenario – SCADA Service


Once you have EnSaaS account, you will be able to subscribe package into space. For example, first time we subscribe EnSaaS entry package as below:

Price of EnSaaS (Infra Resource)
FREE for SCADA Service

Create “default_space” and install selected APPs automatically.
WISE-PaaS User Flow Scenario – SCADA Service

- **Wise-PaaS User Flow Scenario – SCADA Service**
  - EnSaaS will install “Wise-PaaS Dashboard” (512MB) application in default, it’s also free.
  - Each package will include several application which response to various service.
  - For example of Wise-PaaS SCADA package (Free), we have two applications installed in space. 1. Scada-data-worker (256MB) 2. Portal-Scada (512MB)
  - IoT hub message is counted with entire organization (all spaces)
  - DB storage is counted with entire organization (all spaces)

![Diagram of Wise-PaaS User Flow Scenario – SCADA Service](image-url)
WISE-PaaS User Flow Scenario – SI Service

- Wise-PaaS User Flow Scenario – Example for SI Service
  - Immediate service deploy and provide service to different customer.
  - No IT maintenance effort.
  - Compatible with most of Advantech edge product.
  - Free dashboard application to visualize manufacturing process and realize industry 4.0
WISE-PaaS User Flow Scenario – SI Service

- Wise-PaaS User Flow Scenario – Example for SI Service
  - Data isolation by each space.

- Data view isolation user management. In the application of space, user can be managed to access different project.

User of Space3 for example

User A  User B  User C

Database

Data access Isolation from user management
What is WISE-PaaS/OEE-A
Paint Point of Factory Owner

Status of equipment?  Production lead time?  Where is bottle neck?

Wrong number?...

Un-smooth manufacturing  →  Stuck Capacity  →  Lower Output

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What is OEE Availability

OEE (Overall Equipment Effectiveness)

OEE % = Availability (%) x Performance (%) x Quality (%)

Availability

Availability (%) = \[ \frac{\text{Total Machine RUN time (sec)}}{\text{Total Machine Power-on time (sec)}} \]

Ex:

\[
\text{Availability (\%)} = \frac{360 \text{ s}}{360 + 180 + 60 \text{ s}} = 60 \%
\]
Structure

OEE Cloud

WISE-PaaS/EnSaaS

Visualization - Dashboard

Data Infrastructure

Analytics Services - AI

Compute Resource Management

Customer Management

Modbus-TCP

Dashboard

Integrate to a Calculation Tag

<table>
<thead>
<tr>
<th>Value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Stop</td>
</tr>
<tr>
<td>1</td>
<td>Alert</td>
</tr>
<tr>
<td>2</td>
<td>Idle</td>
</tr>
<tr>
<td>4</td>
<td>Run</td>
</tr>
</tbody>
</table>

Get the device running status (many tags)

Value | Explanation
-----|-------------
0     | Stop        |
1     | Alert       |
2     | Idle        |
4     | Run         |

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YCM CNC

Dong Tai CNC(Oi-MF)

Robotic arm
OEE Availability Configuration Steps

1. Marketplace (Cloud)
   - Purchase and Deploy OEE/A SRP by User -

2. WebAccess/SCADA (Edge)
   - Monitoring Machine Operation Status; Deploy by User -

3. WISE-PaaS/SCADA (Cloud)
   - Receiving Machine Operation Status; Deploy by User -

4. OEE Configuration (Cloud)
   - Configure OEE Device System Structure; Deploy by User -

5. WISE-PaaS/Dashboard (Cloud)
   - Display Result; Deploy by Advantech -
1. Marketplace
OEE Availability Configuration Steps

1. Marketplace (Cloud)
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4. OEE Configuration (Cloud)
   - Configure OEE Device System Structure; Deploy by User -

5. WISE-PaaS/Dashboard (Cloud)
   - Display Result; Deploy by Advantech -
Marketplace Pre-request & Purpose

- **Pre-request**
  - User must have two accounts
    - **Marketplace account** – for purchase OEE/A SRP
    - **WISE-PaaS/EnSaaS account** – arrange an organization and a space to deploy OEE/A SRP

- **Purpose**
  - Deploy OEE/A SRP Applications
  - Get all key instances and URLs after OEE/A deployment is completed
## Instance List

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Version</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>portal-scada</td>
<td>1.3.14 or later</td>
<td>WISE-PaaS/SCADA</td>
</tr>
<tr>
<td>2</td>
<td>portal-OEE-Config</td>
<td>2.0.2 or later</td>
<td>Setup product line machine</td>
</tr>
<tr>
<td>3</td>
<td>Dashboard</td>
<td>1.1.19 or later</td>
<td>WISE-PaaS/Dashboard</td>
</tr>
<tr>
<td>4</td>
<td>api-ifactory-srp-postgres</td>
<td>1.1.3 or later</td>
<td>Internal use</td>
</tr>
<tr>
<td>5</td>
<td>api-scada-simplejson</td>
<td>1.0.14 or later</td>
<td>Internal use</td>
</tr>
<tr>
<td>6</td>
<td>OEEUtilizCal-dataworker</td>
<td>1.3.2 or later</td>
<td>Calculate OEE/A hourly, daily and monthly data</td>
</tr>
<tr>
<td>7</td>
<td>OEEUtilizSig-dataworker</td>
<td>2.4.3 or later</td>
<td>Get device running status from database</td>
</tr>
<tr>
<td>8</td>
<td>scada-dataworker</td>
<td>1.3.7 or later</td>
<td>Internal use</td>
</tr>
</tbody>
</table>
URLs

- All key URLs can be found at Management Portal
  - Organization -> Space -> Application -> Routes

Both URLs are ok. The only difference is to show application version number or not
## URLs

- Customer company name and Space name will be included in URL

<table>
<thead>
<tr>
<th>Application</th>
<th>URL Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1       portal-scada (WISE-PaaS/SCADA)</td>
<td><a href="https://portal-scada-**CompanyName-**SpaceName_space.wise-paas.com/#/CloudManager/DeviceManagement">https://portal-scada-**CompanyName-**SpaceName_space.wise-paas.com/#/CloudManager/DeviceManagement</a></td>
</tr>
<tr>
<td>2       portal-OEE-Config (OEE Configuration)</td>
<td><a href="https://portal-oeeconfig-**CompanyName-**SpaceName_space.wise-paas.com/">https://portal-oeeconfig-**CompanyName-**SpaceName_space.wise-paas.com/</a></td>
</tr>
<tr>
<td>3       Dashboard</td>
<td><a href="https://dashboard-1-1-18-**CompanyName-**SpaceName_space.wise-paas.com/?orgId=1">https://dashboard-1-1-18-**CompanyName-**SpaceName_space.wise-paas.com/?orgId=1</a></td>
</tr>
</tbody>
</table>
Easy Steps

1. Deploy OEE/A SRP in Marketplace

   OEE/A - Overall Equipment Effectiveness Solution
   An Industrial Cloud Solution for Real-time Machine Availability Management for Maximizing
   iFactory/OEE

2. Pay by WISE-Point

   iFactory OEE/A Generic Industrial Cloud Service

   16.68
   WISE-Point

3. Space will be deployed

4. Result in Management Portal

   Your service will be deployed to the Space below. You can edit Space name on the Management Portal.
   Space Name: OEE-713162

   Machine

   WISE-4051

   WISE-4051

   [Diagram of management portal]

   [Diagram of space deployment]

   [Diagram of payment process]

   [Diagram of OEE/A solution]

   [Diagram of iFactory/OEE service]

   [Diagram of WISE-Point payment]

   [Diagram of machine integration]

   [Diagram of system overview]
Practice – Marketplace

- Open a browser (e.g. Chrome) and enter Marketplace URL https://wise-paas.advantech.com/en-us/marketplace
- Click “Industrial Cloud Solutions”
Practice – Marketplace

- Select “OEE/A Overall Equipment Effectiveness Solution”
Practice – Marketplace

- Click “Start Trial”
Practice – Marketplace

- Click “Subscribe”
Practice – Enter Marketplace Account

- Login Marketplace
  - Enter Marketplace email address and password, and then click “Sign In”
Practice – Change Role

- Click “Change role to this customer”

![Customer List]

- Click “Confirm”

![Confirm Change Role]

Do you want to change the role to:
Company: WISE-PaaS_Internal (AdvIoT-SAE)
Customer Admin: 1-100RWXR
Point: 0
Type: WISELead

[Cancel] [Confirm]
### Practice – Select Connection Number

- Select Number of Device/Machine connections, then click “Next”
Practice – Authorize Confirm

- Enter WISE-PaaS/EnSaaS Account and then click “Authorize & Confirm”

Subscribe to this Industrial Cloud Solutions

OEE/A - Overall Equipment Effectiveness Solution
Service Provider: Advantech  |  Category: Industrial Cloud Solutions
Last Update: 10/24/2018 12:00:00 AM

Authorize
Login with your WISE-PaaS/EnSaaS account to authorize and confirm the subscription

- Please enter your email
- Please enter your password

Forgot your password?

Confirm your Subscriptions
- OEE/A - Overall Equipment Effectiveness Solution - 100 machine connections

*Pay As You Go consumption fees apply for IoT Hub Messages and DB Storage usage exceeding the subscribed plan in a monthly billing cycle.

Total after discount: 9.28 WISE-Point/Month

PREV  AUTHORIZE & CONFIRM
Practice – Start Deploy

- Marketplace will inform the Space of the OEE/A SRP deployment
- Click “Start Deploy”
**Practice – Deploy**

- **Space Name: OEE-713162**
  - Means OEE/A are being deployed
- **View your service on Management Portal**
  - Means go to WISE-PaaS/EnSaaS Management Portal to check OEE/A
- **Click “Done” to finish subscribed**
Practice – Result in Management Portal

- Space (e.g. OEE-713162) will be created in WISE-PaaS/EnSaaS Management Portal.
- Once complete, 8 instances will be deployed in Space
- Click Space(e.g. OEE-713162) to check all instances

Beginning of deploying
- Instance deploys: 0
- Memory Usage: 0 M

Deployment Completed:
- 8 Instances are deployed successfully
- Memory Usage: 1.7GB
Practice – Result in Management Portal

- Result of successfully deploying OEE-Availability
2. WebAccess/SCADA
OEE Availability Configuration Steps

1. Marketplace (Cloud)
   - Purchase and Deploy OEE/A SRP by User -

2. WebAccess/SCADA (Edge)
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3. WISE-PaaS/SCADA (Cloud)
   - Receiving Machine Operation Status; Deploy by User -

4. OEE Configuration (Cloud)
   - Configure OEE Device System Structure; Deploy by User -

5. WISE-PaaS/Dashboard (Cloud)
   - Display Result; Deploy by Advantech -
Purpose

- WebAccess/SCADA connects to machine(s) and get the operating status (RUN / WAIT / ERROR / STOP)

- Here we use a simulator (LineStateSimula.exe) to simulate a machine operation status
  - Note: Make sure you have started the WebAccess/SCADA kernel of your project before running simulator.
**Easy Steps**

1. Create a project with an analog constant tag in WebAccess/SCADA

   ![Tag Property and Delete Window]

   - **Tag:** LineStateSimula • StatusSimulator • Status
   - **Tag Type:** Constant (analog)
   - **Tag Name:** Status
   - **Description:** Description
   - **Scan Type:** Constant Scan

2. Modify config.ini in simulator

   ![Config.ini Configuration]

   ```
   [config]
   ServerID = 172.16.16.222
   ProjectName = LineStateSimula
   ScadaName = StatusSimulator
   [Tag]
   TagName = Status
   ```

3. Run Simulator

   ![Status Simulator Window]

   - **Script**:
     - **CMD_0**: 0
     - **CMD_1**: 1
     - **CMD_2**: 2
     - **CMD_3**: 4
   - **Interval (ms)**: 3000
   - **Response**:
     - 2018-11-06 15:59:30
     - Send Request PASS
     - 2018-11-06 15:59:33
     - Send Request PASS
     - 2018-11-06 15:59:36
   - **Timer Off**
Practice - WebAccess/SCADA Configuration

- Project Node name: LineStateSimula
- SCADA Node name: StatusSimulator
- Constant Tag name: Status
Practice - WebAccess/SCADA ViewDAQ

- Result of showing tag value in tag “status”

- To send the tag “Status” value to WISE-PaaS/SCADA, user has to setup WISE-PaaS/SCADA and copy SCADA ID, Credential Key and DCCS API Url information back to WebAccess/SCADA.
Practice - Download LineStateSimula.exe

Simulator (LineStateSimula.exe) is available at Advantech Support Portal

Practice - Setup Simulator

- Run Notepad.exe to modify LineStateSimula simulator Config.ini

```ini
[config]
ServerID = 172.16.16.222
ProjectName = LineStateSimula
ScadaName = StatusSimulator

[Tag]
TagName = Status

[Script]
CMD_0 = 0
Duration_0 = 3000
CMD_1 = 1
Duration_1 = 3000
CMD_2 = 2
Duration_2 = 3000
CMD_3 = 4
Duration_3 = 3000

// explanation
// CMD_X: Product Line status // 0 = stop, 1 = alert, 2 = idle, 4 = running
// Duration_X: hold current status for number of ms
// CMD_0 ~ CMD_3 run CMD_0 through CMD_3 repeatly
```

ServerID: Webaccess/SCADA Server IP Address
ProjectName: WebAccess/SCADA Project Node name
ScadaName: WebAccess/SCADA SCADA Node name

WebAccess/SCADA const analog tag

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Practice - Run Simulator

- Run LineStateSimula.exe and click “Timer Off”
3. WISE-PaaS/SCADA
OEE Availability Configuration Steps

1. Marketplace (Cloud)
   - Purchase and Deploy OEE/A SRP by User -

2. WebAccess/SCADA (Edge)
   - Monitoring Machine Operation Status; Deploy by User -

3. WISE-PaaS/SCADA (Cloud)
   - Receiving Machine Operation Status; Deploy by User -

4. OEE Configuration (Cloud)
   - Configure OEE Device System Structure; Deploy by User -

5. WISE-PaaS/Dashboard (Cloud)
   - Display Result; Deploy by Advantech -
Purpose

- WISE-PaaS/SCADA receives machine operation status from WebAccess/SCADA project.

- Edge device could be WebAccess/SCADA, ADAM-3600 or ECU
**Easy Steps**

1. Create a Project and a SCADA in WISE-PaaS/SCADA

2. Get SCADA ID and Credential Keys

3. Setup WebAccess/SCADA WISE-PaaS Connection Settings

---

**WISE-PaaS Connection Settings**

- **Enable**: Yes
- **Scada ID**: 7afbf4af-456-4c54-9022-7ca6c287e1ab
- **Keep-Alive Interval**: 60 seconds
- **Data Publish Interval**: 1 second
- **Credential Key**: 3d792629db0fd7ef45bda6f156c360n
- **DCCS API URL**: https://api-dccs.wise-paas.com/

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ADVANTECH
Practice - WISE-PaaS/SCADA - Create a Project Node

- Click “New Project” to create a Project Node (e.g. test)

- Result of creating a Project Node named “test”
Practice - WISE-PaaS/SCADA - Create a SCADA Node

- Click “New Project” to create a SCADA Node (e.g. 20181105)
- Result of creating a SCADA Node named “20181105”
To create a link between WebAccess/SCADA and WISE-PaaS/SCADA, user has to get following three information and copy them to WebAccess/SCADA.

- SCADA ID
- Credential Key
- DCCS API Url

Click “…” in Detail to get SCADA ID, Credential Key and DCCS API Url

**SCADA ID**

*Information*

Project ID: test

SCADA ID: 7af81af-ff6b-4c54-9022-7ca8c287e1ab

**Credential Key & DCCS API Url**

*Information*

Credential Key: 3d792d629db0fd7ef45bda6f156c360n

DCCS API Url: https://api-dccs.wise-paas.com/
Practice - Back to WebAccess/SCADA Node

- After constructing Project and SCADA in WISE-PaaS/SCADA, the next step is to setup WISE-PaaS Connection in WebAccess/SCADA SCADA Node property

- Click “MQTT Connection Setting” to setup WISE-PaaS connection setting and whitelist
Click “WISE-PaaS Connection Setting” and fill-in followings:

- Click “Yes” in Enable
- SCADA ID – get SCADA ID from WISE-PaaS/SCADA
- Credential Key – get SCADA ID from WISE-PaaS/SCADA
- DCCS API URL – get SCADA ID from WISE-PaaS/SCADA
Practice - Back to WebAccess/SCADA Node

- Going down to “WISE-PssS Whitelist” and select “Status” tag in “ConstPoint” Node Type

- then click “Save”

- Click “Download” in SCADA Node to complete configuration
**Practice - WISE-PaaS/SCADA – Viewing Result**

- Device will be created automatically

**Device List**

<table>
<thead>
<tr>
<th>Name</th>
<th>Filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const Point</td>
<td>Const Point</td>
</tr>
</tbody>
</table>

- Tag will be created automatically and its value will be shown

**Tag List**

<table>
<thead>
<tr>
<th>Tag Name</th>
<th>Tag Type</th>
<th>Description</th>
<th>Value</th>
<th>Update Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Analog</td>
<td>Description</td>
<td>4.00</td>
<td>2018-11-08 16:32:07</td>
</tr>
</tbody>
</table>

**Enabling an Intelligent Planet**
4. OEE Configuration
OEE Availability Configuration Steps

1. Marketplace (Cloud)
   - Purchase and Deploy OEE/A SRP by User -

2. WebAccess/SCADA (Edge)
   - Monitoring Machine Operation Status; Deploy by User -

3. WISE-PaaS/SCADA (Cloud)
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4. OEE Configuration (Cloud)
   - Configure OEE Device System Structure; Deploy by User -

5. WISE-PaaS/Dashboard (Cloud)
   - Display Result; Deploy by Advantech -
Purpose

- Two purposes:
  - Bind WISE-PaaS/SCADA tags
  - Configure and display device structure in WISE-PaaS/Dashboard
## Login OEE Configuration

- Run Chrome and enter the URL to configure device layer
  - default: https://portal-oeeconfig-companyName-spaceName_space.wise-paas.com/
  - e.g. https://portal-oeeconfig-nipponrad-default2_space.wise-paas.com/

- Total 13 items, must fill “Area”, “City”, “Plant”, “Dept”, “Line”, “Shift”, “Machine” and “TagInfo” total 9 items

<table>
<thead>
<tr>
<th>Field</th>
<th>Setting</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>領域_Area</td>
<td>領域設定(Area Setting)</td>
<td></td>
</tr>
<tr>
<td>城市_City</td>
<td>城市設定(City Setting)</td>
<td></td>
</tr>
<tr>
<td>廠區_Plant</td>
<td>廠區設定(Plant Setting)</td>
<td></td>
</tr>
<tr>
<td>部門_Dept</td>
<td>部門設定(Dept Setting)</td>
<td></td>
</tr>
<tr>
<td>線別_Line</td>
<td>線別設定(Line Setting)</td>
<td></td>
</tr>
<tr>
<td>班別_Shift</td>
<td>班別設定(Shift Setting)</td>
<td></td>
</tr>
<tr>
<td>機台_Machine</td>
<td>機台設定(machine Setting)</td>
<td></td>
</tr>
<tr>
<td>標籤類別設定_TagType</td>
<td>標籤類別設定(TagType)</td>
<td>optional</td>
</tr>
<tr>
<td>標籤類別資訊_TagType</td>
<td>標籤類別資訊(TagType)</td>
<td></td>
</tr>
<tr>
<td>標籤資訊_TagInfo</td>
<td>標籤資訊設定(TagInfo Setting)</td>
<td></td>
</tr>
<tr>
<td>固定排休_Plan Downtime</td>
<td>固定排休設定(Plan Downtime Setting)</td>
<td>optional</td>
</tr>
<tr>
<td>非固定排休_Extra Downtime</td>
<td>非固定排休設定(Plan Downtime Setting)</td>
<td></td>
</tr>
<tr>
<td>OEE代碼對照_CodeMapping</td>
<td>OEE代碼對照(CodeMapping)</td>
<td></td>
</tr>
</tbody>
</table>
Practice - Area Setting

- Support 3 languages (must fill in all of them even not using)
  - English, Traditional Chinese and Simplified Chinese
- Area_time_zone is based on UTC + Local Time
  - E.g. Japan is UTC + 9 hours

Click “Add” button after entering “area_name_en”, “area_name_tw”, “area_name_cn” and “area_time_zone”
Practice - City Setting

- For configuring City

- Example:
  - City_name_en: Tokyo
  - City_name_tw: 東京
  - City_name_cn: 东京

- Click “Add” button

![City Data Information Table]

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Practice - Plant Setting (must)

- Select City (e.g. Tokyo) first then enter 3 different languages of Plant names (e.g. Tokyo_plant).
- Click “Add” button
Practice - Dept Setting

- For configuring department
- Select Plant (e.g. Tokyo_plant) then add data
  - **Dept_no**: 1 (could be any number)
  - **Dept_name**: MFG (for all languages)
- Click “Add” button
Practice - Line Setting

- Select Plant_Dept (e.g. Tokyo_plant, 1) then add data
  - Line_name: MFG_Line1
  - Line_offset: 1 (based on your product line)

- Click “Add” button
Practice - Shift Setting

- For setup working shift, for example, 3 shifts a day (00:00 ~ 08:00; 08:00 ~ 16:00; 16:00 ~ 00:00)
- Select Plant_Line (e.g. Tokyo_plant,MFG_Line1) then add data
  - Shift_no: S01 (for setup Shift number)
  - Shift_name: Day_Shift (depends on user)
  - Shift_name_start: 08:30:00+09:00 (must add local time zone)
  - Shift_name_end: 17:29:59+09:00 (must add local time zone)
Practice - Machine Setting

- Select Plant_Line (e.g. Tokyo_plant,MFG_Line1) then add data
  - machine_name: M01 ~ M04 (depends on number of machines)
  - machine_offset: 1 ~ 4  (able to enter numeric and text; this will match to the offset selection in Dashboard panel)

<table>
<thead>
<tr>
<th>廠區_線別</th>
<th>machine_name_en</th>
<th>machine_name_tw</th>
<th>machine_name_cn</th>
<th>machine_offset</th>
<th>modify action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokyo_plant,MFG_Line1</td>
<td>M01</td>
<td>M01</td>
<td>M01</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>M02</td>
<td>M02</td>
<td>M02</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M03</td>
<td>M03</td>
<td>M03</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M04</td>
<td>M04</td>
<td>M04</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Add Data

Action: Query, Add, Modify

Enabling an Intelligent Planet

ADVANTECH
**Practice - Tag Type**

- Display pre-defined tag names with their default ID.

<table>
<thead>
<tr>
<th>type_id</th>
<th>type_name_en</th>
<th>type_name_tw</th>
<th>type_name_cn</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Utilization Rate</td>
<td>營動</td>
<td>營动</td>
</tr>
<tr>
<td>2</td>
<td>Work Order</td>
<td>工單</td>
<td>工单</td>
</tr>
<tr>
<td>3</td>
<td>KW</td>
<td>用電功率</td>
<td>用电功率</td>
</tr>
<tr>
<td>4</td>
<td>KWh</td>
<td>消耗電量</td>
<td>消耗电量</td>
</tr>
<tr>
<td>5</td>
<td>Machine Temp</td>
<td>機台溫度</td>
<td>機台温度</td>
</tr>
<tr>
<td>6</td>
<td>Flow Meter</td>
<td>流量</td>
<td>流量</td>
</tr>
<tr>
<td>7</td>
<td>Machine Oxygen</td>
<td>氧氣</td>
<td>氧气</td>
</tr>
<tr>
<td>8</td>
<td>Pressure</td>
<td>壓力</td>
<td>壓力</td>
</tr>
</tbody>
</table>
Practice - Tag Info (Important)

- **Purpose:**
  - For creating connection between WISE-PaaS/SCADA tag and WISE-PaaS/Dashboard

- **Rule of tag_name:** SCADA ID:Device ID:tagName
  - Note: one machine (e.g. M01) can only bond one tag

- **Where can user find SCADA ID, Device ID and tagName?**
  - These information can be found at WISE-PaaS/SCADA
  - Refer to next three slides for details
Practice - Tag Info (Important)

- **SCADA ID**: Device ID: tagName
Practice - Tag Info (Important)

- SCADA ID: Device ID: tagName
Practice - Tag Info (Important)

- SCADA ID: Device ID: tagName
Practice - Plan Downtime Configuration (optional)

- For configuring **machine downtime time**
- Select Plant_Line (e.g. Tokyo_plant,MFG_Line1) then add data
  - **Type_id**: (serial number created automatically)
  - **Day_id**: (0=Sunday, 1=Monday...)
  - **Day_name**: (based on Day_id will display Sunday / Monday so on automatically)
  - **Start_time**: 08:30:59+09:00 (must add local time zone)
  - **End_time**: 17:29:59+09:00 (must add local time zone)
- Only affect current week (start from Sunday)
**Practice - Extra Downtime Configuration**

- For adding extra or temporary machine downtime
- Select Plant_Line_machine (e.g. Tokyo_plant,MFG_Line1, M01) then add data
  - **Is Downtime**: True/False (enable Extra Downtime or not)
  - **Start_time**: 08:30:59+09:00 (must add local time zone)
  - **End_time**: 17:29:59+09:00 (must add local time zone)

<table>
<thead>
<tr>
<th>Add_Data</th>
<th>True</th>
<th>Start_time</th>
<th>End_time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>08:30:59+09:00</td>
<td>17:29:59+09:00</td>
</tr>
</tbody>
</table>
5. WISE-PaaS/Dashboard
OEE Availability Configuration Steps

1. Marketplace (Cloud)
   - Purchase and Deploy OEE/A SRP by User -

2. WebAccess/SCADA (Edge)
   - Monitoring Machine Operation Status; Deploy by User -

3. WISE-PaaS/SCADA (Cloud)
   - Receiving Machine Operation Status; Deploy by User -

4. OEE Configuration (Cloud)
   - Configure OEE Device System Structure; Deploy by User -

5. WISE-PaaS/Dashboard (Cloud)
   - Display Result; Deploy by Advantech -
Purpose

- Visualize of OEE Availability

- Modify Dashboard
  1. Able to modify default company name and its logo
  2. Able to modify default OEE- Availability Dashboard pages
# WISE-PaaS/Dashboard Page List

- Total 11 key pages

<table>
<thead>
<tr>
<th>Page</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 OEE_AREA_List</td>
<td>Use coordinates to show city location</td>
</tr>
<tr>
<td>2 OEE_Plant_List</td>
<td>Display factory (including pictures)</td>
</tr>
<tr>
<td>3 On Line Utilization Rate</td>
<td>Display machine status</td>
</tr>
<tr>
<td>4 Utilization_Rate_By_Analysis</td>
<td>Display the daily historic of the Line</td>
</tr>
<tr>
<td>5 Utilization_Rate_By_Analysis_Class</td>
<td>Display the daily historic of the Line and Machine</td>
</tr>
<tr>
<td>6 Utilization_Rate_by_Analysis_Machine</td>
<td>Display the historical data of Machine</td>
</tr>
</tbody>
</table>
# WISE-PaaS/Dashboard Page List

- **Total 11 key pages**

<table>
<thead>
<tr>
<th>Page</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilization_Rate_by_Analysis_Machine_Class</td>
<td>Display the historical data of Machine / shift</td>
</tr>
<tr>
<td>Utilization_rate_line_status__day_analysis_machine</td>
<td>Display historical data of machine status distribution</td>
</tr>
<tr>
<td>Utilization_rate_line_status_analysis</td>
<td>Display the month history of the Line</td>
</tr>
<tr>
<td>Utilization_rate_line_status_analysis_machine</td>
<td>Display the daily history of the line/machine</td>
</tr>
<tr>
<td>Utilization_rate_line_status_day_analysis</td>
<td>Display the daily history of the line</td>
</tr>
</tbody>
</table>
1. **OEE AREA List**

- Able to display factory and machine statuses on the map
2. OEE Plant List

- Customized photo display of each area of the factory, convenient management unit to control the immediate situation of the factory
3. On Line Utilization Rate

- can visually real-time utilization rate of the whole line, as well as the information of the rate of each machine, the real-time status, the time accumulation of each state, and the intuitive operation of the equipment operation/abnormal/waiting/shutdown status through the waterfall diagram.
4. Utilization Rate By Analysis

- The display is a summary report, which summarizes the real-time status of all the machines and shows the difference between the trend and the target of the machine's real-time utilization rate.
- The red line is the target utilization rate, and warning mode is used to warn the rate of non-compliance.
- Let equipment personnel and process personnel analyze and improve in time.
5. Utilization Rate By Analysis Class

- Day and night shifts
- According to the way of production line, let the managers know the production indicators of each production line and the production indicators of the morning and evening classes
6. Utilization Rate by Analysis Machine

- The real-time status report of all the machines shows the difference between the trend and the target of the machine's real-time utilization rate. The red line part is the target utilization rate, and the early warning mode is used to warn the rate of non-compliance.
7. Utilization Rate by Analysis Machine Class

- Day and night shifts
- According to the way of each individual machine, let the manager know the production indicators of each production line and the production indicators of the morning and evening classes.
8. Utilization Rate Line Status Day Analysis Machine

- The daily historical trend shows the time of each machine running average/standby/abnormal/stop/retreating, so that the manager can understand the actual production status of the production line.
9. Utilization Rate Line Status Analysis

- The monthly trend of the pie chart shows the time of the production line running average/standby/abnormal/stop/retreating, so that the manager can understand the actual production status of the production line.
10. Utilization Rate Line Status Analysis Machine

- The **monthly** pie chart trend shows the time of each machine running average/standby/abnormal/stop/retreating, so that the manager can understand the actual production status of the production line.
11. Utilization Rate Line Status Day Analysis

- The columnar trend of the day shows the time of the production line running average/standby/abnormal/stop/retreating in real time, so that the manager can understand the actual production status of the production line.
Thank You!