

**ADVANTECH**

*Enabling an Intelligent Planet*



# Maintenance I.App Introduction



Advantech Industrial IoT / ASG/  
Machine C2S(Machine Connect to Service) Solution

# Outline

## 1. Product Introduction

Overview

Application Story

User Benefits

## 2. Product Key Features

User Scenario

Features & Function Introduction

## 3. Software Architecture

# Why you need a preventive *Maintenance* system?

A preventive maintenance system is an important management system to reduce **unplanned downtime** and **equipment failures**. Regular maintenance actions and preventive maintenance notifications can improve the operating efficiency of the factory and reduce maintenance costs. Besides regular maintenance service, we also provide daily check function and annual maintenance planning. Tracking your assets, assemblies, and parts associated with your machines through iFacotry Maintenance solution.



# Challenge of Factory Management



Unplanned Downtime



Inefficient operation and management



Hard tacking of the available human resources



High maintenance Costs



Short Asset Lifecycle



High Energy Consumption

# Key Benefit for Maintenance System

When it comes to effective equipment, machinery, and facility upkeep in 2021, companies simply can't afford to ignore the important benefits of preventive maintenance.



## Early Detection of Malfunction Symptoms

Regular maintenance work is possible to reduce unplanned downtime and repair time



## Create a cohesive workforce

Use digital technology to enhance human cohesion and efficiency. Mobile app allows employees to give immediate feedback and receive updates



## Get going with a preventive maintenance schedule

Improve efficiency and reduce uncertainty and emergencies through Calendar's maintenance



## Ensure accountability

Through the preventive maintenance system, the use of manpower and performance at a glance

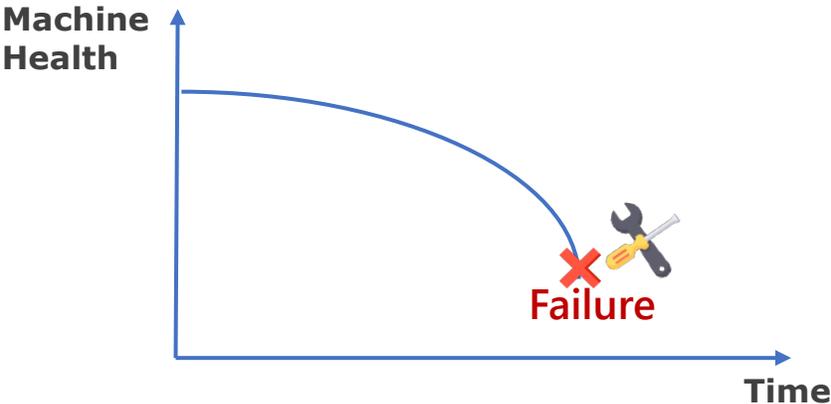


## Take last-minute changes in stride

Instant change can also be a confident step forward, as digital systems are imported to make all information transparent.

# Reactive vs Preventive Maintenance

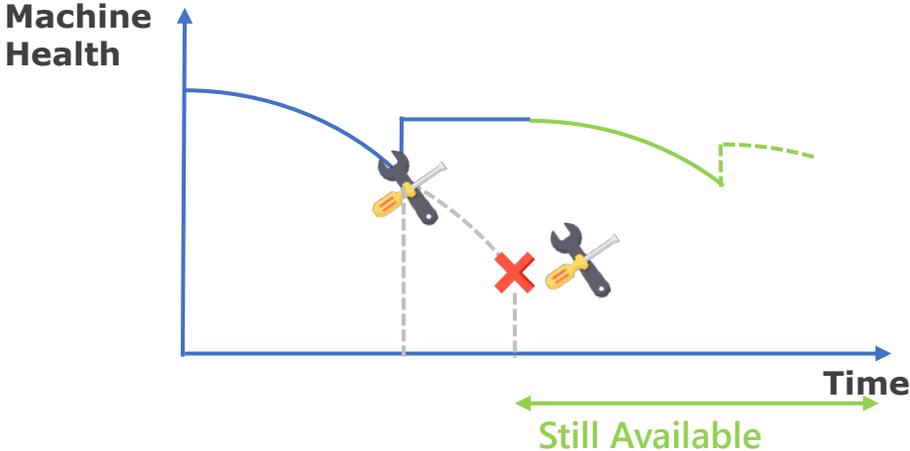
## Reactive Maintenance



- After equipment failure has occurred
- Requires less planning and less manpower
- Often results in unplanned downtime
- Poses safety risk

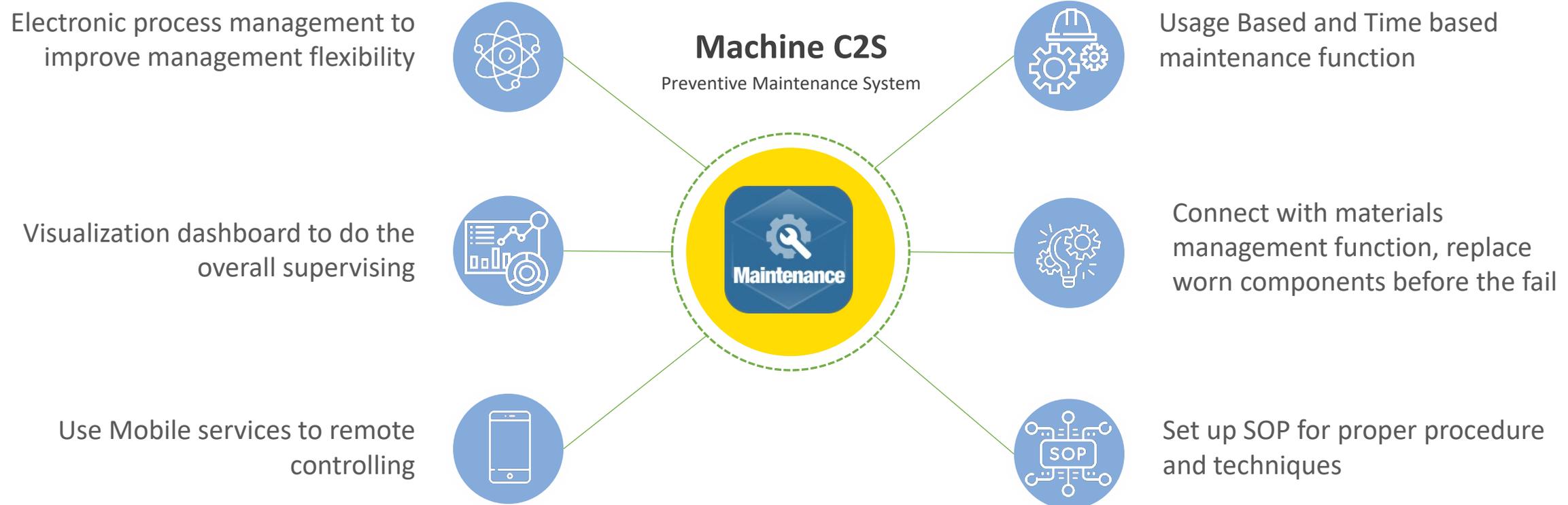


## Preventive Maintenance



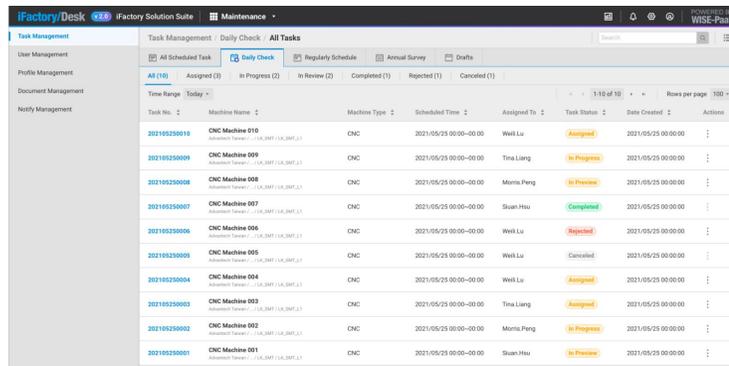
- Before equipment failure has occurred
- Requires planning, often with a Maintenance system
- Prolongs asset lifespans
- Reduced risk of injury

# Key Features of Maintenance System

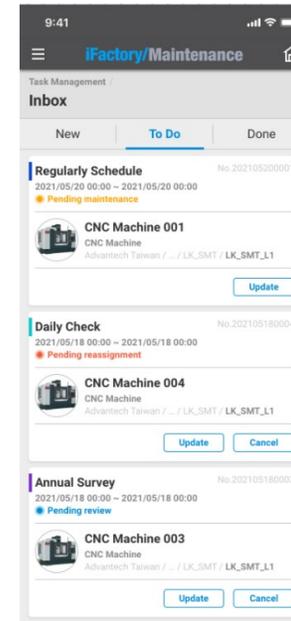


# Two Main Platforms

According to the use of the factory situations, three types of maintenance inspection functions are designed, including daily spot checks, regular maintenance and annual maintenance. Base on the needs of the corresponding maintenance projects, managers or operators could set the maintenance tasks through a simple start-up and a clear UI design. It can be imported into the case site immediately and improve the efficiency of plant operations

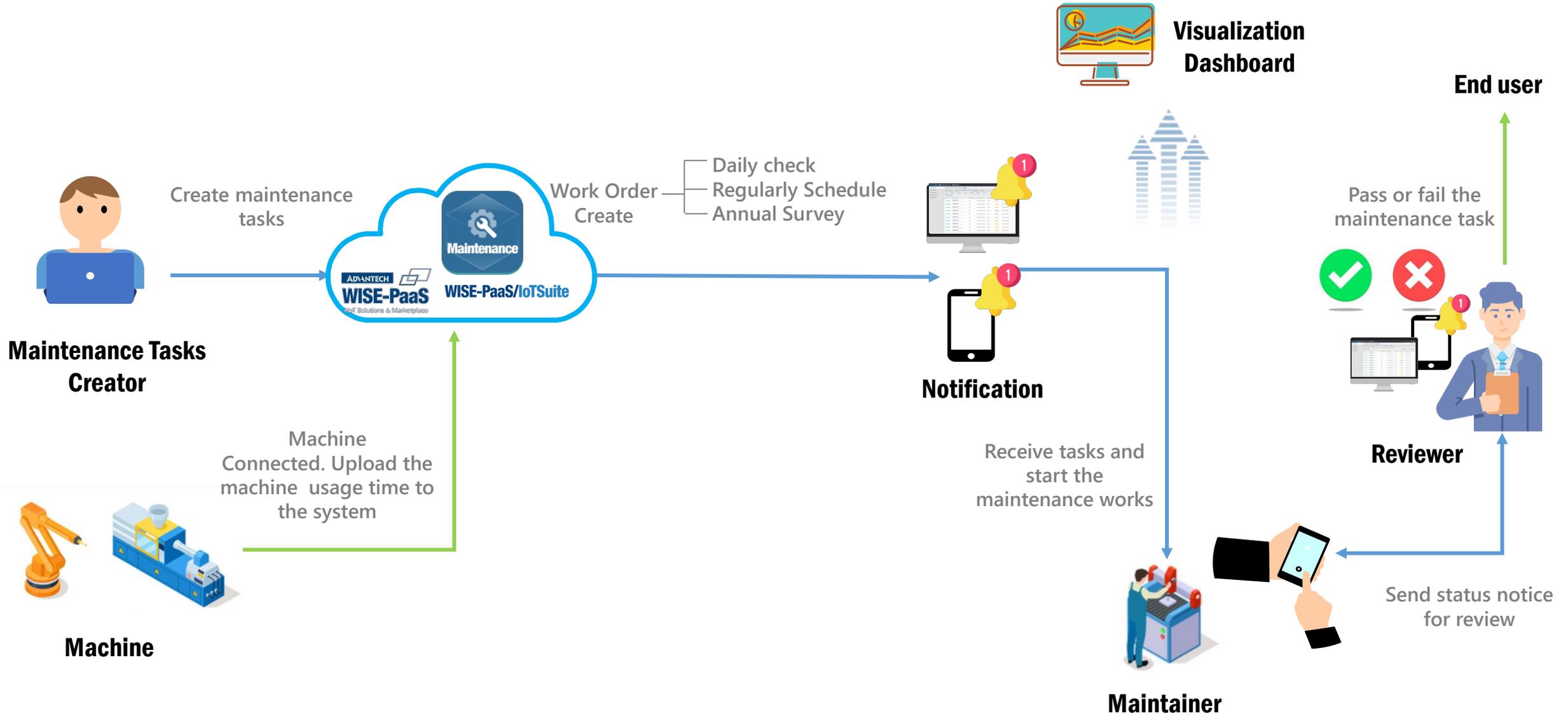


Web-Based Backstage



iMobile Service

# User Scenario



# 3 Types of maintenance functions

According to the use of the factory situations, three types of maintenance inspection functions are designed, including daily spot checks, regular maintenance and annual maintenance.

Task No.	Machine Name	Machine Type	Scheduled Time	Assigned To	Task Status	Date Created	Actions
20210520010	CNC Machine 010	CNC	2021/05/25 00:00-00:00	Wu Lu	Assigned	2021/05/25 00:00:00	
20210520009	CNC Machine 009	CNC	2021/05/25 00:00-00:00	Tina Liang	In Progress	2021/05/25 00:00:00	
20210520008	CNC Machine 008	CNC	2021/05/25 00:00-00:00	Morris Peng	In Preview	2021/05/25 00:00:00	
20210520007	CNC Machine 007	CNC	2021/05/25 00:00-00:00	Shan-Hsu	Completed	2021/05/25 00:00:00	
20210520006	CNC Machine 006	CNC	2021/05/25 00:00-00:00	Wu Lu	Rejected	2021/05/25 00:00:00	
20210520005	CNC Machine 005	CNC	2021/05/25 00:00-00:00	Wu Lu	Cancelled	2021/05/25 00:00:00	
20210520004	CNC Machine 004	CNC	2021/05/25 00:00-00:00	Wu Lu	Assigned	2021/05/25 00:00:00	
20210520003	CNC Machine 003	CNC	2021/05/25 00:00-00:00	Tina Liang	Assigned	2021/05/25 00:00:00	
20210520002	CNC Machine 002	CNC	2021/05/25 00:00-00:00	Morris Peng	In Progress	2021/05/25 00:00:00	
20210520001	CNC Machine 001	CNC	2021/05/25 00:00-00:00	Shan-Hsu	In Preview	2021/05/25 00:00:00	

Daily Check

Task No.	Machine Name	Machine Type	Scheduled Time	Assigned To	Task Status	Date Created	Actions
20210520010	CNC Machine 010	CNC	2021/05/25 00:00-00:00	Wu Lu	Assigned	2021/05/25 00:00:00	
20210520009	CNC Machine 009	CNC	2021/05/25 00:00-00:00	Wu Lu	In Progress	2021/05/25 00:00:00	
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20210520007	CNC Machine 007	CNC	2021/05/25 00:00-00:00	Wu Lu	Completed	2021/05/25 00:00:00	
20210520006	CNC Machine 006	CNC	2021/05/25 00:00-00:00	Wu Lu	Rejected	2021/05/25 00:00:00	
20210520005	CNC Machine 005	CNC	2021/05/25 00:00-00:00	Wu Lu	Cancelled	2021/05/25 00:00:00	
20210520004	CNC Machine 004	CNC	2021/05/25 00:00-00:00	Wu Lu	Assigned	2021/05/25 00:00:00	
20210520003	CNC Machine 003	CNC	2021/05/25 00:00-00:00	Wu Lu	Assigned	2021/05/25 00:00:00	
20210520002	CNC Machine 002	CNC	2021/05/25 00:00-00:00	Wu Lu	In Progress	2021/05/25 00:00:00	
20210520001	CNC Machine 001	CNC	2021/05/25 00:00-00:00	Wu Lu	In Preview	2021/05/25 00:00:00	

Regularly Schedule

Annual Survey

Group / Machine

- Admetech-Taiwan
  - Linkou
    - LK\_Broad
      - LK\_SMT
        - LK\_SMT\_L1: Assigned No.20210520010 (4.9h)
        - LK\_SMT\_L2: In Progress No.20210520007
        - LK\_SMT\_L3: In Progress No.20210520009 (5.9h)
        - CNC Machine 4: In Progress No.20210520006
        - CNC Machine 5: Rejected No.20210520005
        - CNC Machine 6: Rejected No.20210520004

Annual Survey

# Main Four Characters

Full rights role functionality to make maintenance management more responsive to user needs



**Creator**

Have the right to create, cancel work orders, and reassign the maintainer



**Maintainer**

The engineer responsible for maintenance who have the permission to update the maintenance status or reject the work item



**Reviewer**

Responsible for reviewing the completed work orders and can choose to pass or fail the work order



**Notify Party**

Who can view the progress and task log of the work order, but do not have permission to manage it

# Daily Check

In the daily operation of the factory, in order to ensure the machine performance normally, there may be some items need to be check daily. Through the daily check function of maintenance system, can enable factory managers to set daily inspection work orders, in order to maintain check lists and record inspection history

Task No.	Machine Name	Machine Type	Scheduled Time
202105250010	CNC Machine 010 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250009	CNC Machine 009 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250008	CNC Machine 008 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250007	CNC Machine 007 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250006	CNC Machine 006 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250005	CNC Machine 005 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250004	CNC Machine 004 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250003	CNC Machine 003 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250002	CNC Machine 002 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0
202105250001	CNC Machine 001 Advantech Taiwan / ... / LK_SMT / LK_SMT_L1	CNC	2021/05/25 00:0

### Step 1 : Select Machine

You can select one or more machines for daily check

### Step 2 : Set schedule

Set the time you that you want to perform this. Time setting can be broken down to hours

### Step 3 : Set check items and choose the maintainer(s)

You can select a maintainer for each check item

### Step 4 : Select reviewer(s) and notify party(s)

The system automatically jumps out of the maintainer's audit supervisor and the person who need to be noticed.

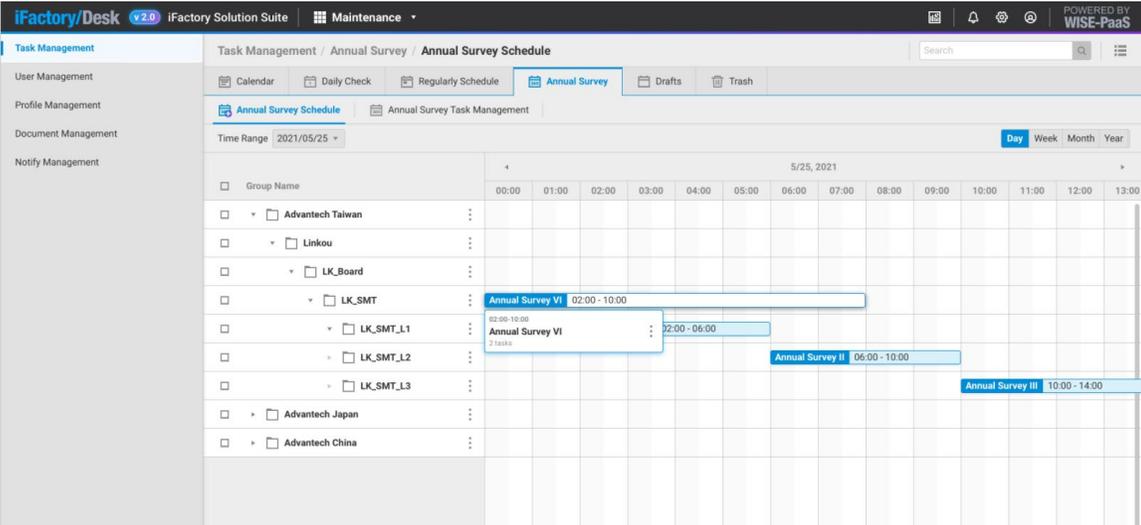
# Regularly Schedule Maintenance

Regular maintenance of the factory is divided into two types, one is time-based, the other is based usage-based. **Time-based** can be based on a fixed maintenance cycle to produce work orders, **usage-based** can be based on different cumulative use units to do maintenance.

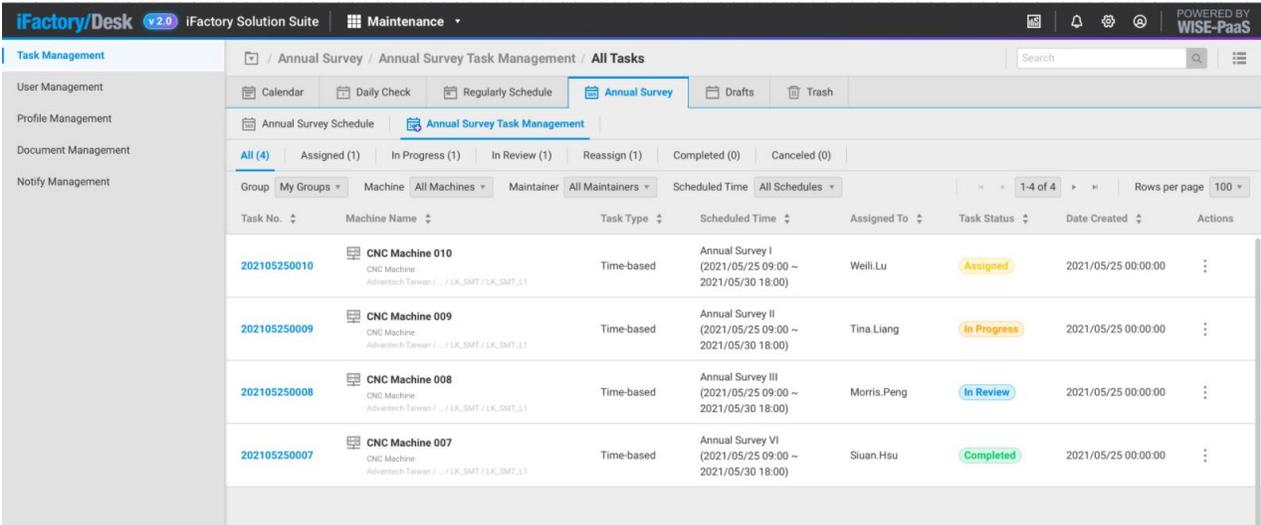
Task No.	Machine Name	Machine Type	Scheduled Time	Assigned To	Task Status	Date Created	Actions
202105250010	CNC Machine 010 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	Assigned	2021/05/25 00:00:00	⋮
202105250009	CNC Machine 009 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	In Progress	2021/05/25 00:00:00	⋮
202105250008	CNC Machine 008 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	In Preview	2021/05/25 00:00:00	⋮
202105250007	CNC Machine 007 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	Completed	2021/05/25 00:00:00	⋮
202105250006	CNC Machine 006 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	Rejected	2021/05/25 00:00:00	⋮
202105250005	CNC Machine 005 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	Canceled	2021/05/25 00:00:00	⋮
202105250004	CNC Machine 004 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	Assigned	2021/05/25 00:00:00	⋮
202105250003	CNC Machine 003 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	Assigned	2021/05/25 00:00:00	⋮
202105250002	CNC Machine 002 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	In Progress	2021/05/25 00:00:00	⋮
202105250001	CNC Machine 001 <small>Advantech Taiwan / ... / LK_SMT / LK_SMT_L1</small>	CNC	2021/05/25 00:00~00:00	Weili.Lu	In Preview	2021/05/25 00:00:00	⋮

# Annual Survey

Annual survey is an important maintenance event in the operation of the factory. Our Maintenance system also provides multi-zone/group maintenance time setting. After setting the time period, you can further maintain the group and which equipment under the time period needs annual maintenance.



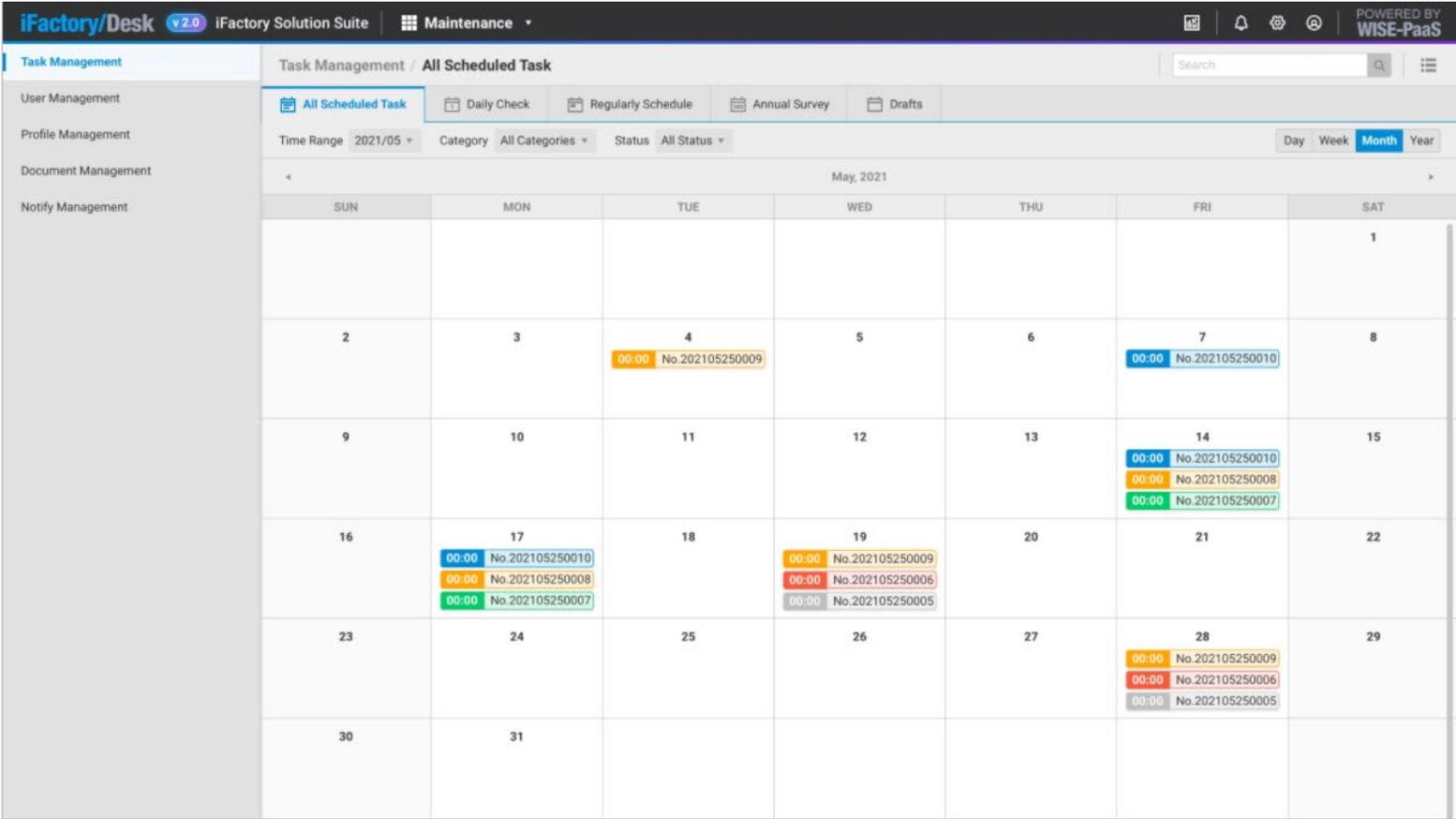
Annual Survey Scheduling



Annual Survey- Task Mgmt.

# Calendar

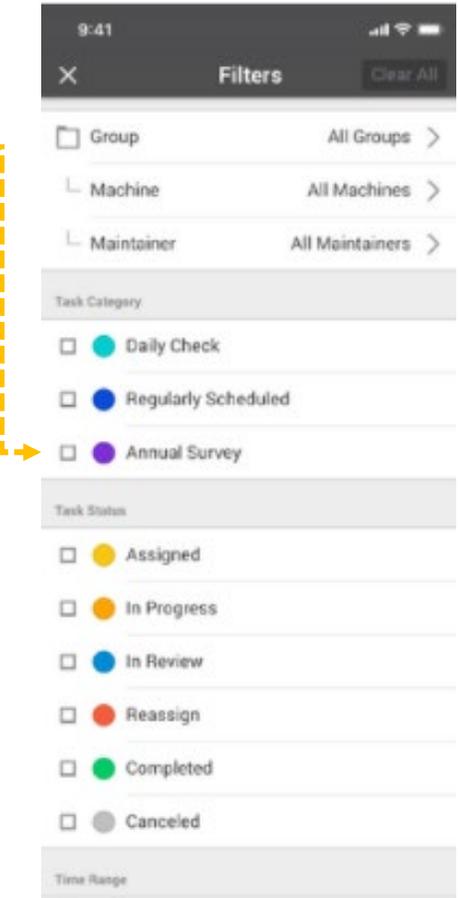
After establishing the maintenance worklist, managers can go into the maintenance calendar screen for a holistic work view and can select different time intervals such as day, week, month, and year to view the worklist.



# Task Management - Inbox

Once the user enters the app, can click the menu of “Task Management” to go to the work order management page, default to the “Inbox” page, which shows the work orders needed to be done and have done.

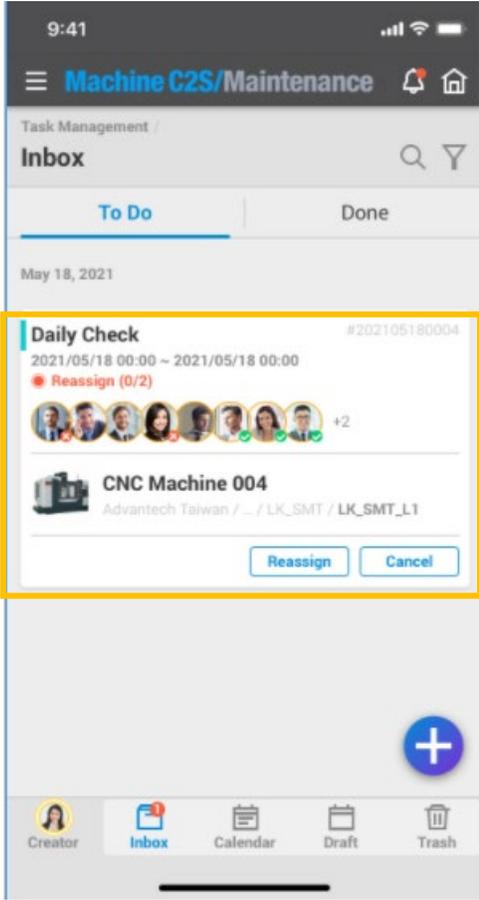
When a user has more than one permission, he/she can switch in the lower right corner to see individual work lists for different roles to work on



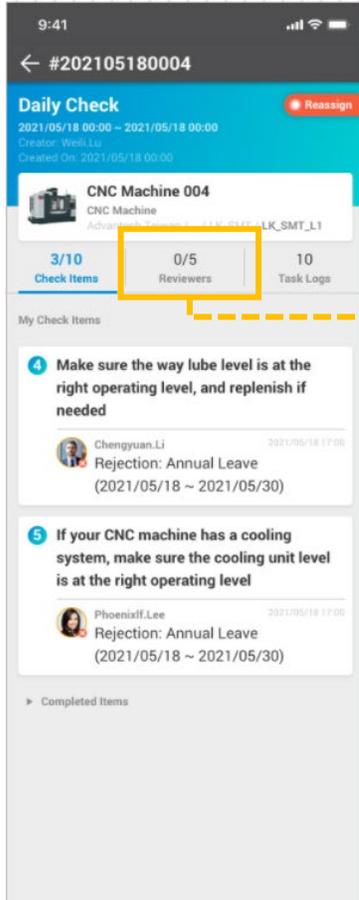
# Task Management - Inbox

Click on any work order card to further view the work list and pending review status.

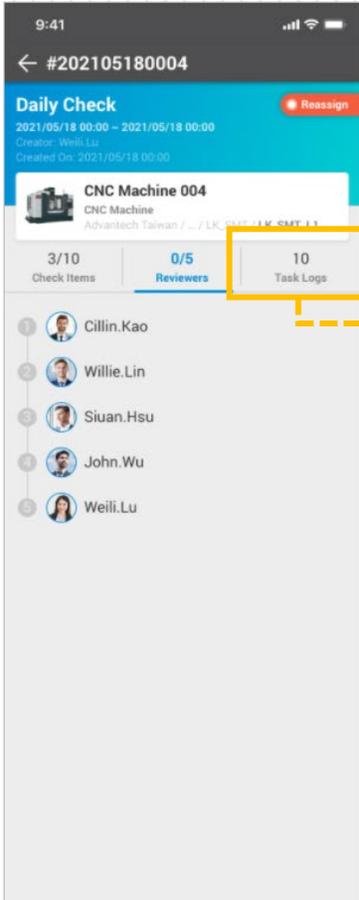
And user can perform the next action on the work order. For example, reassignment, canceling work orders, and so on.



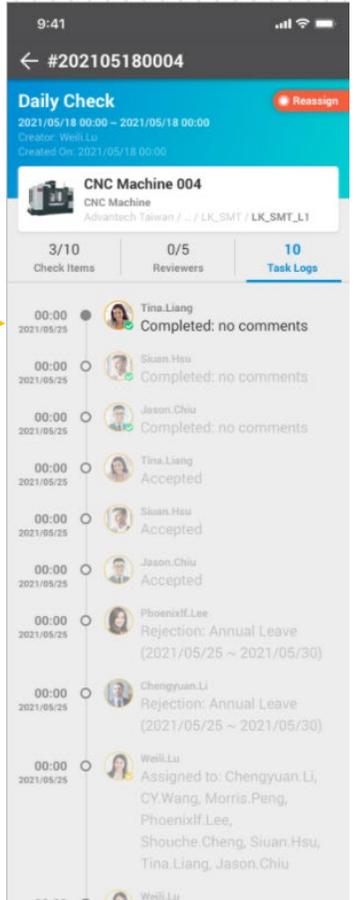
To Do



Check Items



Reviewer

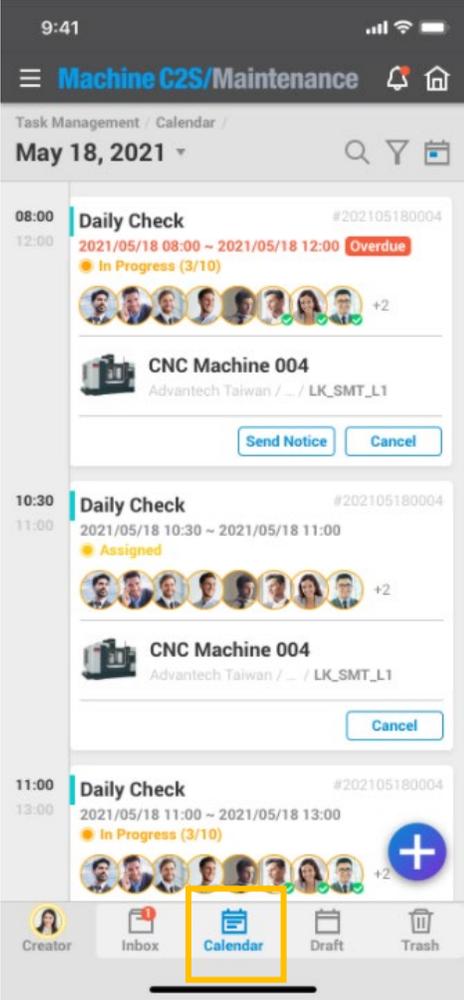
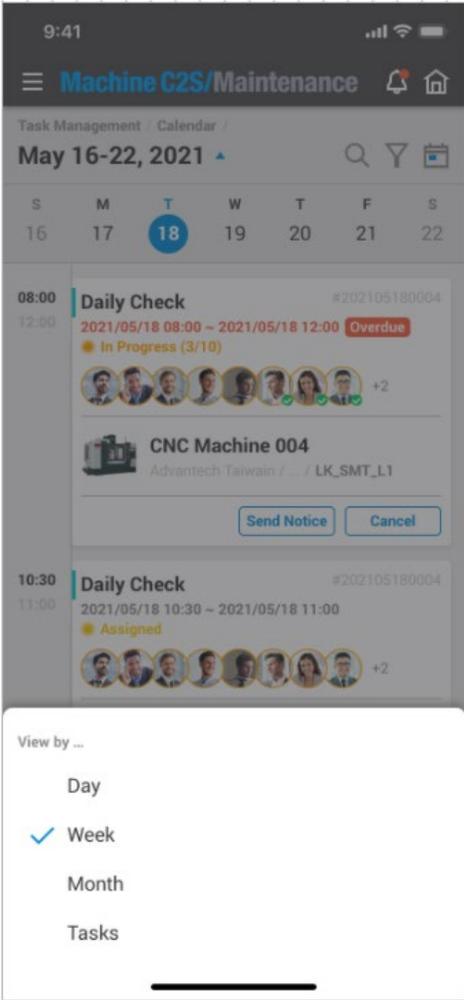


Task Logs

# Task Management - Calendar

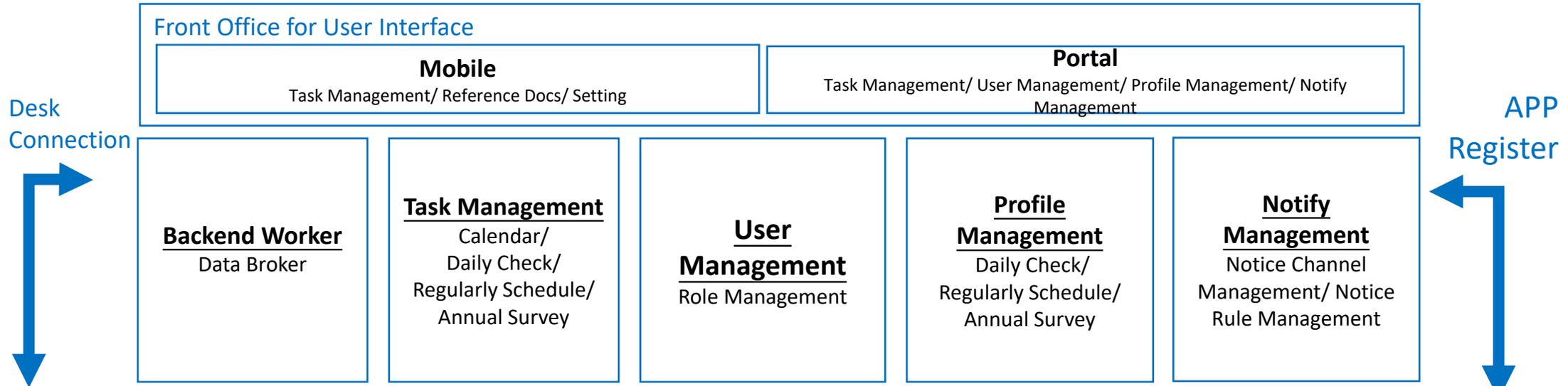
The mobile version also provides a maintenance calendar that allows all relevant personnel to view the maintenance calendar at any time and anywhere.

In addition to selecting different time dimensions to view the maintenance calendar, users can also choose to view specific maintenance engineers to see how their work is progressing.

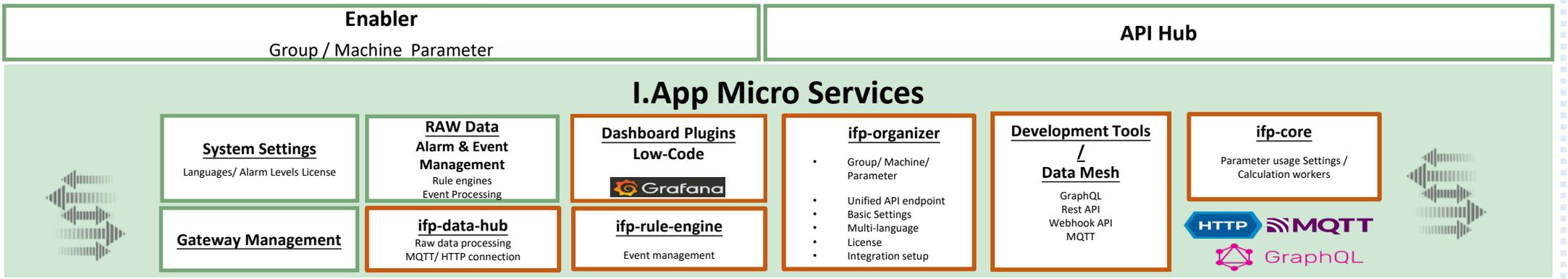


# Maintenance Architecture

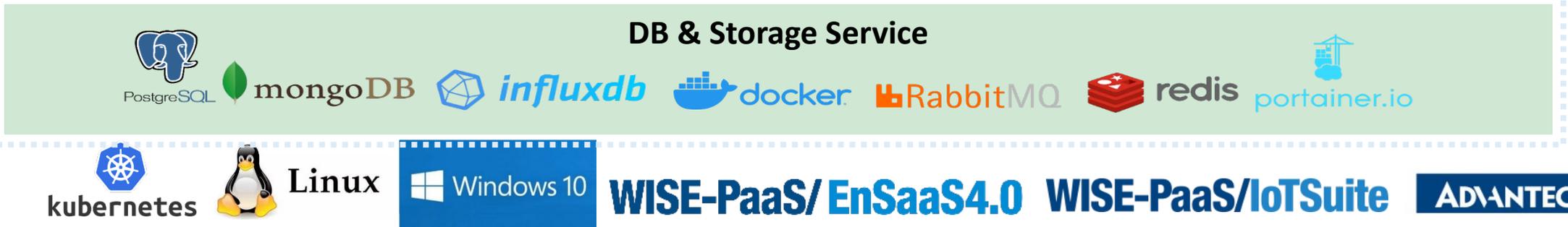
i.APP  
Maintenance



DAS  
Desk



Platform / Environment



# Co-Creating the Future of the IoT World

