

ADVANTECH

Enabling an Intelligent Planet



eManual 解決方案

Advantech Industrial IoT / AI / iFactory Smart Manufacturing Solution



大綱

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大綱

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服務架構

軟體架構

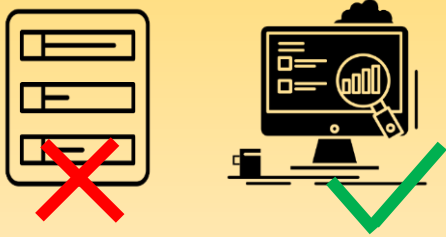


概述

在工廠內，為快速大量生產及確保品質穩定，所有操作流程都有一套SOP標準作業流程。SOP應用在生產作業標準化，品質檢驗標準化，以及機器維護保養標準化。操作員遵循SOP作業，使工廠達到快速生產、品質穩定。

傳統上，公司透過紙質作業進行SOP作業，然而傳統紙本易外洩機密資料、難以管理保存，又因一次性使用，造成浪費，無形中增加公司成本。

研華 iFactory eManual I.App, 提供數位生產SOP，由中央下發數位化操作SOP，保護產品資訊安全，同時達到工廠無紙化、快速換線，並縮短操作人員的學習曲線，進而降低管銷及人力成本，並兼顧企業社會責任。



資料來源儲存管控

使用 eManual，客戶無需列印大量紙張說明，從而節省來源和資金，並可以做好版本管控，確保資料一致性



減少維護和管理時間

通過數位操作指導，SOP的管理和維護變得靈活便捷。並可以加速單位之數位化



提高生產效率

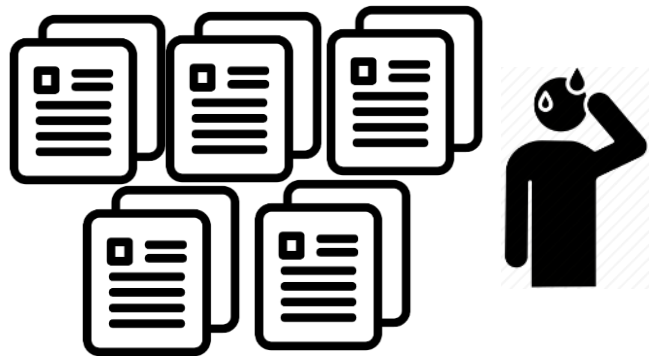
操作員可以減少使用工作說明書之查找和閱讀工作指令的時間，從而縮短生產時間並提高生產效率。



挑戰與解決方案

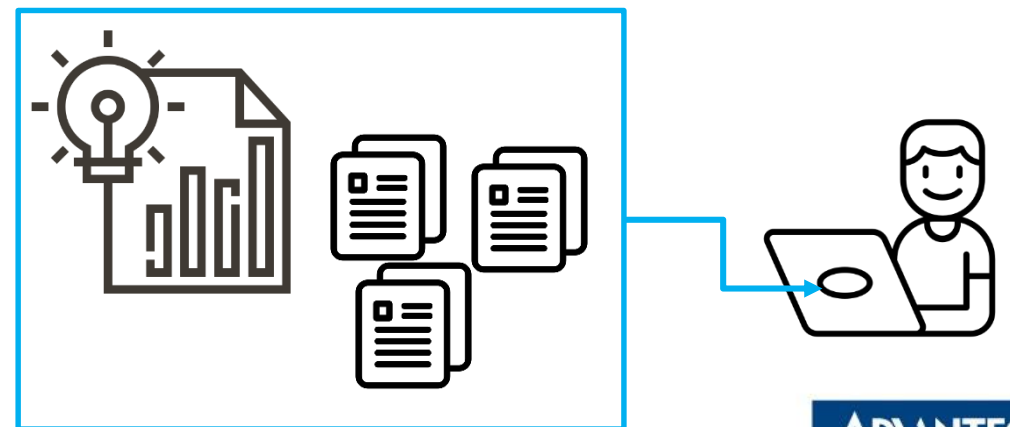
挑戰

1. 紙本SOP不易保存和維護，且一次性使用造成浪費
2. 紙本SOP易流出，有資料外洩風險。
3. 產線換線時，傳統SOP需費較多時間和人力，難以快速布建。
4. 操作員在生產產品時使用紙本SOP不方便閱讀，在少量多樣的產線易產生錯誤。



解決方案

1. eManual 提供數位SOP，讓資料有效保存在系統中，便於查找追溯，同時實現無紙化，為環保盡一份力。
2. eManual有效控管SOP使用權限，避免外流。
3. 換線時，eManual可快速切換欲生產產品的SOP，降低換線成本及時間。
4. eManual讓操作員可以輕鬆搜索正確的SOP，節省查找及閱讀SOP的時間，從而縮短生產時間提高生產效率及降低使用錯誤SOP的風險。



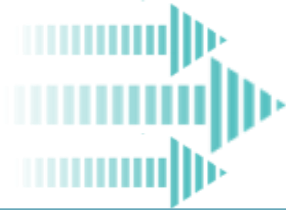
使用情境

01

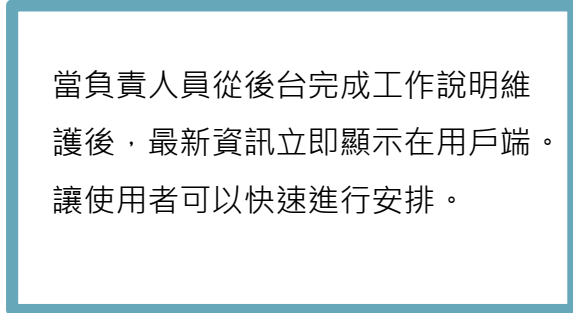
IE 或是 IT 人員 通過操作
eManual i.APP後台進行
設置，輕鬆維護大量SOP。



02

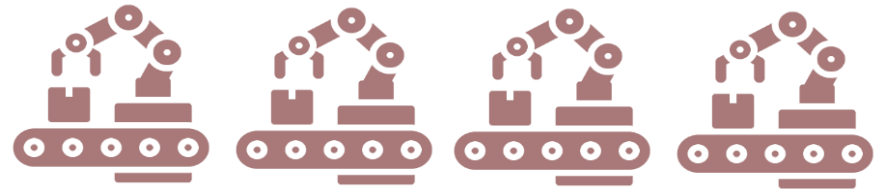
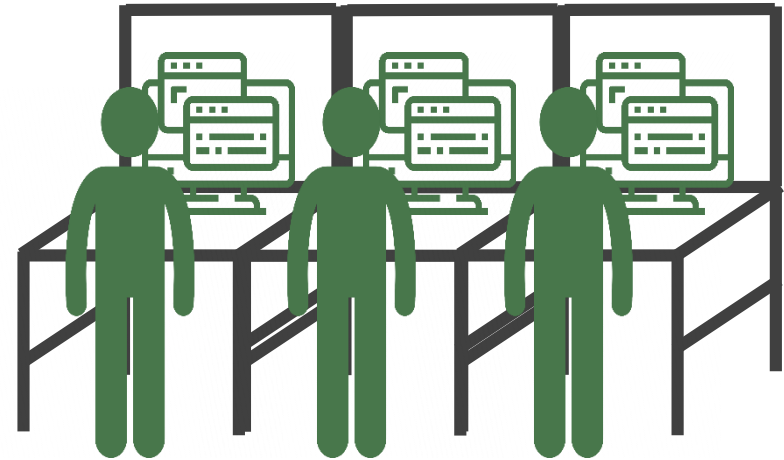


當負責人員從後台完成工作說明維
護後，最新資訊立即顯示在用戶端。
讓使用者可以快速進行安排。



03

eManual i.app 為使用者
(操作員) 提供清楚且易
操作的數位SOP



eManual的主要功能

01

簡易操作設定

簡單的設置任務步驟和類別，內置工作指令編輯器和拖放功能，無需程式設計。

03

收集週期時間以做出數據驅動決策

採集數據，以確認每一步效率，如每個步驟的速度和過程週期時間，以進行生產流程之改進。

05

基於 Web 的應用程式

不必安裝額外的軟體，可以在任何設備上工作，如平板電腦，手機，筆記型電腦...等。



條碼和 QR 代碼輸入操作

用戶可以掃描條碼或 QR 代碼，以便快速進入任何程式或指令。

提供整合介面

連結其他 I.APP 或上位系統（如 MES、ERP、iFactory/ShopFloor和Maintenance）提供 API，以輸入流程數據並收集週期時間。

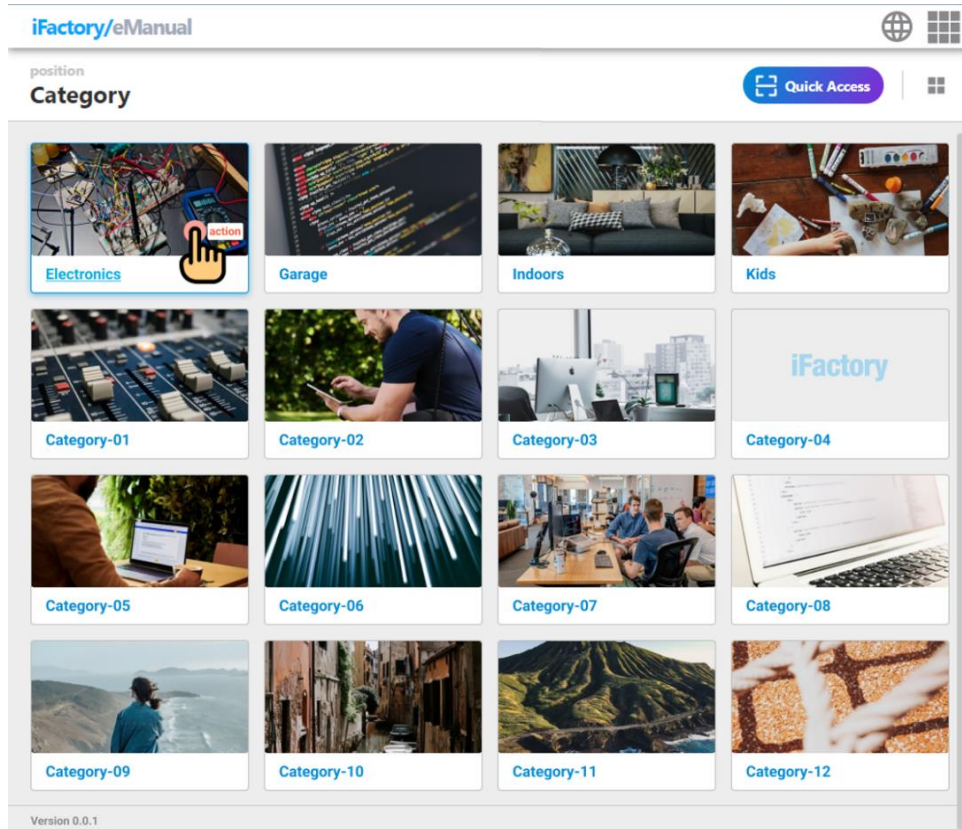
02

04

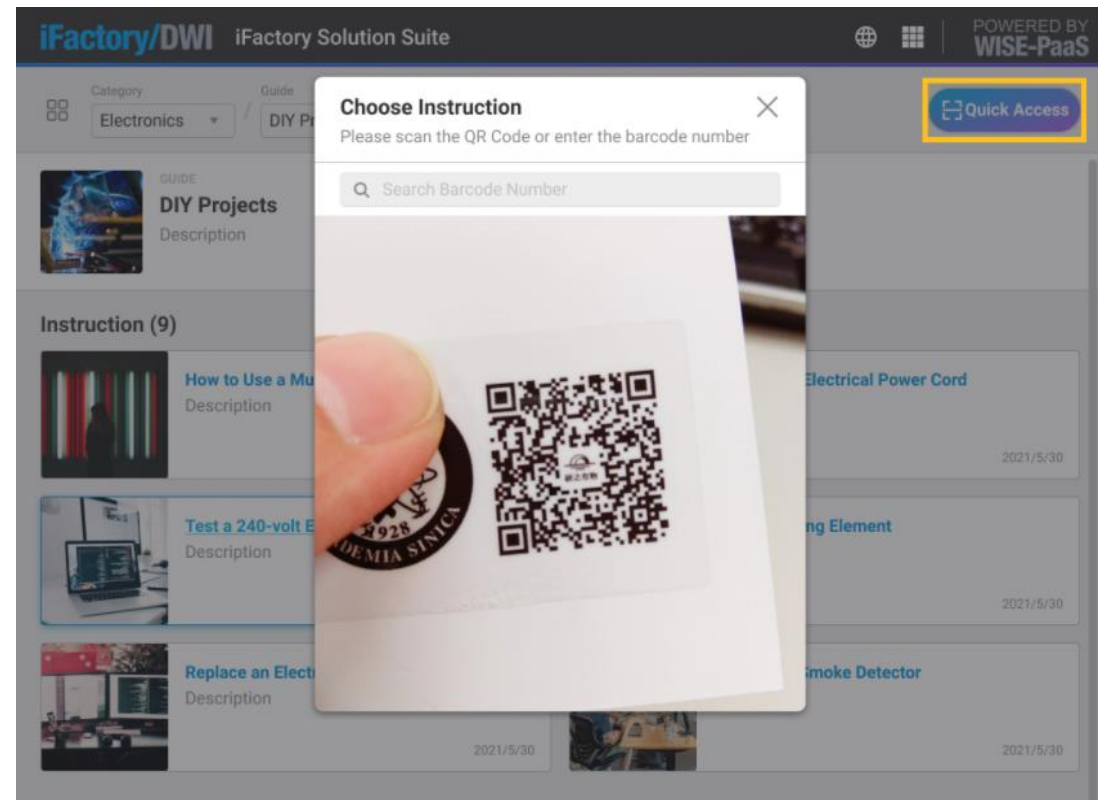


訪問及使用數位操作說明

- 基於 Web 的軟體應用程式，使用者透過任何可上網的設備、平板電腦、筆記型電腦、iPad，皆可隨時隨地通過瀏覽器创建工作說明或查看報告。
- 使用內置搜索功能或掃描條碼和 QR code，可快速存取所有說明中的資訊。



數位操作說明類別



快速訪問指令

數位SOP操作說明

- 工作說明和步驟可實時顯示，同時可獲取每個任務開始和停止的時間。
- 週期時間指標顯示每站的目標時間及實際時間，透過eManual所蒐集到的數據可與 iFactory/ MOM及 iFactory/ KPI結合，為管理層提供做出數據驅動的運營決策所需的工具。

快速指令開關

步驟切換和時間

每個進程任務開始和停止，顯示目標時間

圖像和書面說明

操作指導細節



eManual 操作影片指導

- 涵蓋如何完成各式流程的影片，將複雜的概念轉化為簡潔的視覺引導。
- 也可將生產現場或車間錄製的影片匯入您的eManual操作服務，降低任何在SOP中有可能產生的混淆與誤解。

The screenshot displays the iFactory/eManual interface. At the top, there are dropdown menus for 'Category' (Atest01), 'Guide' (Guide01), and 'Instruction' (ins). Below these is a table with columns 'No', 'Step Description', 'Status', and 'Time'. The third step, 'Step3', is highlighted and has a 'Start' button. To the right of the table is a video player showing a person working on a machine. Below the video player is a 'Start' button. To the right of the video player is a 'Actual Time' display showing '0,27' and a 'Target Time' display showing '0 M 50 s'. A yellow arrow points from the text on the right to the video player.

No	Step Description	Status	Time
1	A01	-	
2	A02	-	
3	Step3	Pause	Start

Actual Time: 0,27

Target Time: 0 M 50 s

Start

影片工具包括: 全螢幕顯示, Minelayer, 音量調整, 速度調整...等

Video Instruction



數位指引編輯工具

- 使用eManual內置的工作指令編輯工具，在簡單易用的系統中使用圖像、文字說明、影片或PDF檔，輕鬆創建SOP。可支援檔案上限為 5GB。
- 也可透過設定指令管理類別、上傳照片和影片、添加標記和編寫說明來快速設定任務序列，不需額外撰寫程式。

檔案類型	支援的格式
圖片檔	JPG, JPEG, GIF (建議畫素: 1920px 寬, 1024px 高)
影片檔	MP4

File Format

步驟持續時間配置

Text Instruction Editor

標記要點

上傳影片與PDF檔案

上傳包含於PDF中的頁面

Create Work Instruction

ADANTECH



結構化教學管理- 後台

- 建立SOP集中由後台管理。整合指導與指南，安排類別，以滿足各種使用者對知識管理的需求。
- 結合條碼和 QR code，可幫助用戶掃描快速進入任何指令。

將指令移動或複製到其他類別

Instruction Name	Step	Date Modified	Date Created	Action
Instruction - 003	14	2021/01/06 00:00:00	2021/01/06 00:00:00	[Edit] [Copy] [Duplicate] [Delete]
Instruction - 005	11	2021/01/06 00:00:00	2021/01/06 00:00:00	[Edit] [Copy] [Duplicate] [Delete]
Instruction - 006	8	2021/01/06 00:00:00	2021/01/06 00:00:00	[Edit] [Copy] [Duplicate] [Delete]
Instruction - 008	9	2021/01/06 00:00:00	2021/01/06 00:00:00	[Edit] [Copy] [Duplicate] [Delete]
Instruction - 002	20	2021/01/06 00:00:00	2021/01/06 00:00:00	[Edit] [Copy] [Duplicate] [Delete]
Instruction - 009	6	2021/01/06 00:00:00	2021/01/06 00:00:00	[Edit] [Copy] [Duplicate] [Delete]

Select Instruction(s)

Please select the instruction to copy

Instruction(s)

- KEIM
- FunderMax
 - Tarkett Sports
 - Ceramiche Refin**
 - Aparici
 - Gustafs
 - Skyfold
 - Focus
 - EQUITONE
 - Neolith
 - Kvadrat Soft Cells
 - Invisible
 - Island Exterior Fabricators

Selected Instructions (6)

- Select All
- panoramahl - FunderMax/Tarkett Sports/
- ULMA Architectural Solutions - FunderMax/Tarkett Sports/
- SilentLab - FunderMax/Tarkett Sports/**
- Libart - FunderMax/Tarkett Sports/
- Sancal - FunderMax/Tarkett Sports/
- Cupa Pizarras - FunderMax/Tarkett Sports/

CANCEL SUBMIT

操作使用結構

匯出說明條碼和 QR 代碼

Export QR-Code or Barcode File(s)

Please select the format of the downloaded image file.

QR-Code Format

Barcode Format

Download QR-Code

Download Barcode

指南清單

ADVANTECH



一鍵匯入MOM產品設定- 後台

內建MOM數據導入功能，無需編成一鍵匯入產品資料，可節省在eManual中重新建立所有商品資料的時間。

The image displays a multi-panel screenshot of the WISE-DataConnect interface. On the left, the 'eManual' section shows a 'Category List (2)' table with a yellow starburst highlighting the 'Add From iFactory/MOM' button. Below it, a 'Guide List (3)' table is visible, and further down, an 'Instruction List (4)' table. On the right, the 'MOM - 資料設定' section shows a 'Products (6)' table with columns for Product ID, Product Name, Type, Unit, Cycle Time, Route, Current Version, Date Modified, and Date Created. Below this, a 'Product List (3)' table and a 'Product Process' table are shown. Blue dashed arrows with labels indicate the data flow: '分類' (Classification) from the eManual Category List to the MOM Products table; '產品群組' (Product Group) from the eManual Guide List to the MOM Products table; '產品' (Product) from the eManual Instruction List to the MOM Product List table; and '流程' (Process) from the eManual Instruction List to the MOM Product Process table.

Index	Category Name	Guides	Date Modified	Date Created	Actions
1	PC	1	2022/04/13 13:55:26	2022/04/13 13:55:26	
1	PC	1	2022/04/13 14:01:44	2022/04/13 14:01:44	

Index	Guide Name	Instruction	Date Modified	Date Created	Actions
1	Module001	4	2021/10/20 11:01:51	2021/10/20 11:23:20	
2	PC002				
3	PD0805				

Index	Instruction Name	Step	Date Modified	Date Created	Actions
1	SMT002	0	2021/10/20 11:11:08	2021/10/20 11:11:08	
2	SMT001	0	2021/10/20 11:14:29	2021/10/20 11:14:29	
3	SMT003	0	2021/10/20 11:14:50	2021/10/20 11:14:50	
4	SMT002	0	2021/10/20 11:15:02	2021/10/20 11:15:02	

Product ID	Product Name	Type	Unit	Cycle Time	Route	Current Version	Date Modified	Date Created	Actions
P-001	PCB-001	A Type	PCS	00:00:30	Route-001	1.37.12	2021/01/06 00:00:00	2021/01/06 00:00:00	
P-002	PCB-002	A Type	PCS	00:00:30	Route-001	1.37.12	2021/01/06 00:00:00	2021/01/06 00:00:00	
P-003	PCB-003	A Type	PCS	00:00:30	Route-001	1.37.12	2021/01/06 00:00:00	2021/01/06 00:00:00	
P-004	PCB-004	B Type	PCS	00:00:30	Route-001	1.37.12	2021/01/06 00:00:00	2021/01/06 00:00:00	
P-005	PCB-005	B Type	PCS	00:00:30	Route-001	1.37.12	2021/01/06 00:00:00	2021/01/06 00:00:00	
P-006	PCB-006	C Type	PCS	00:00:30	Route-001	1.37.12	2021/01/06 00:00:00	2021/01/06 00:00:00	

Index	Product ID	Product Name	Process	Unit	Date Modified	Date Created	Actions
1	Module001	Module001	4	u	2021/07/20 10:51:45	2021/07/20 10:51:46	
2	PC002						
3	P						

Index	Process ID	Process Name	Description	Machine / Station	Date Modified	Actions
1	ID002	SMT002	SMT	Station_07	2021/07/20 10:56:33	
2	ID001	SMT001	SMT	Station_05	2021/07/20 10:56:33	
3	ID003	SMT003	SMT	Station_08	2021/07/20 10:57:32	
4	ID002	SMT002	SMT	Station_07	2021/07/20 11:06:57	

eManual

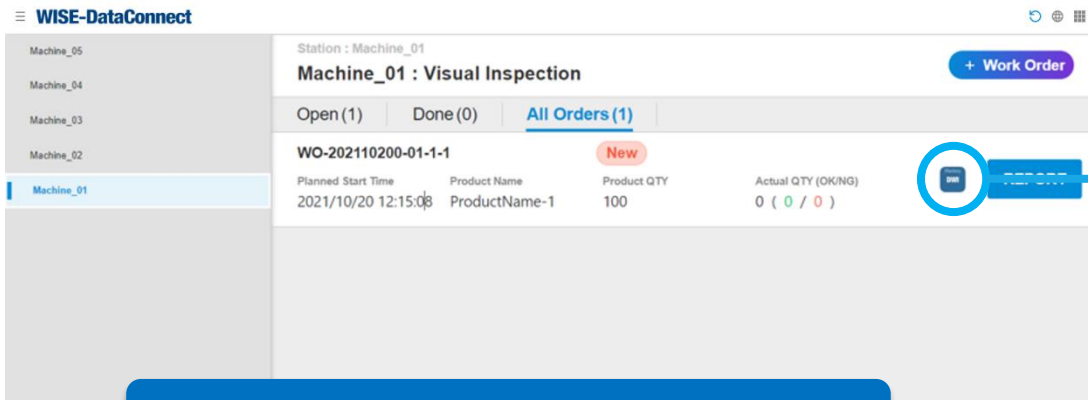
MOM - 資料設定

TECH



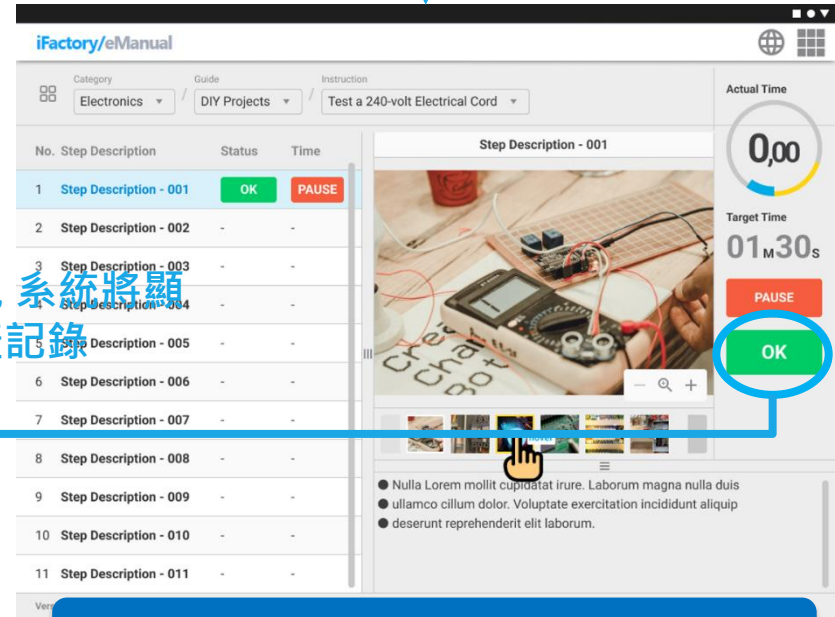
整合資料與流程的可追溯性介面

透過SOP收集流程操作員的必要參數，經由API將所收集到的訊息輕鬆的匯出至其他I.Apps或者是您的外部系統。



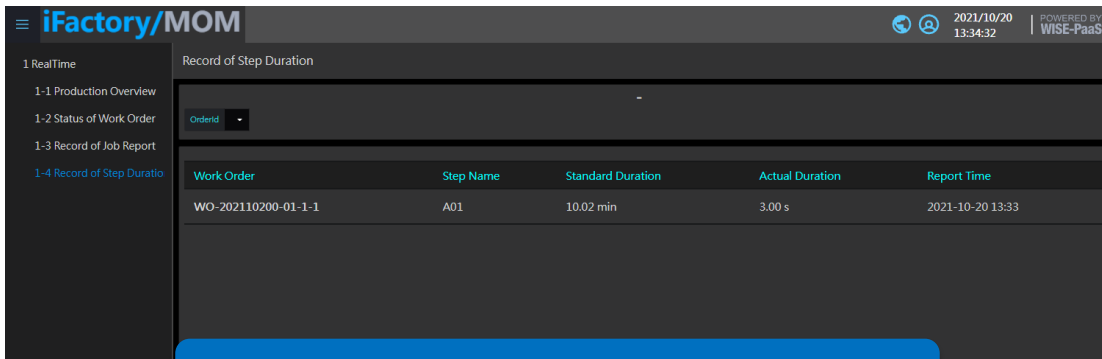
MOM – Job Report

於MOM中進入eManual



eManual – Work Order Instruction

當完成生產步驟後，系統將顯示相對的生產記錄



MOM – Step Record Dashboard



eManual 服務架構



iFactory Desk- 後台操作指導

簡單的指令創建和及時更新，讓操作員隨時可用最新的操作指導

生產現場操作指導

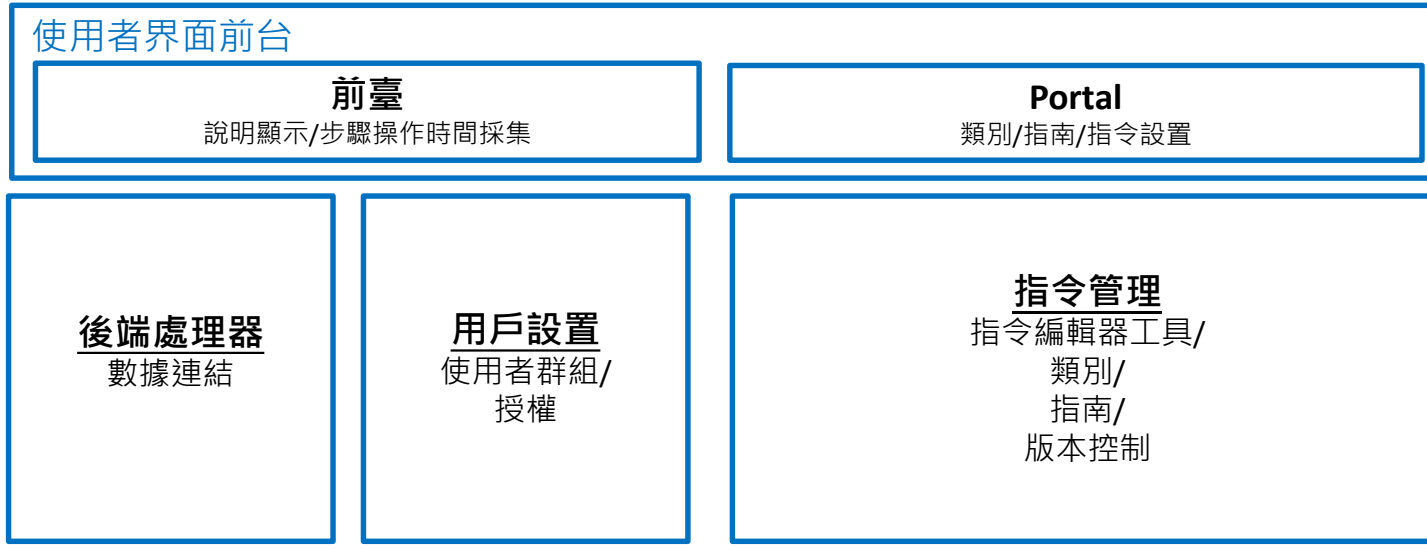
清晰簡潔操作指令適合任何技能水平的現場操作員

手持設備操作指導

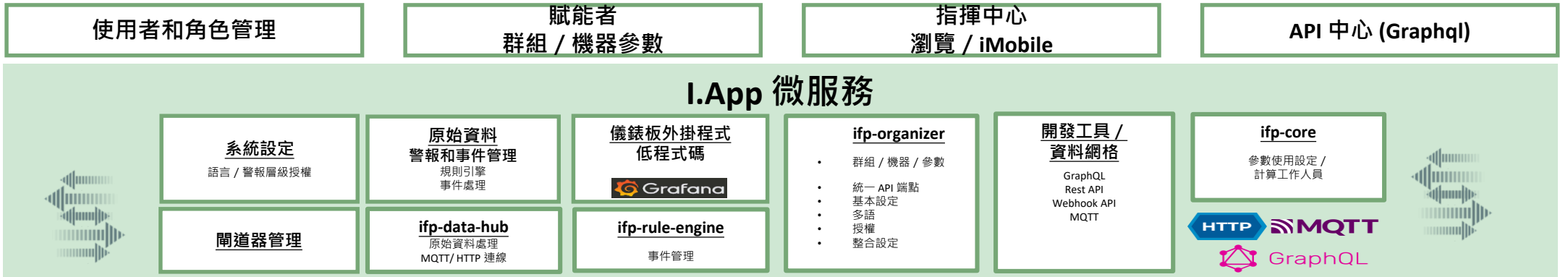
維修及保養人員的手持設備指導，在任何地方都可執行標準程序

iFactory eManual 架構圖

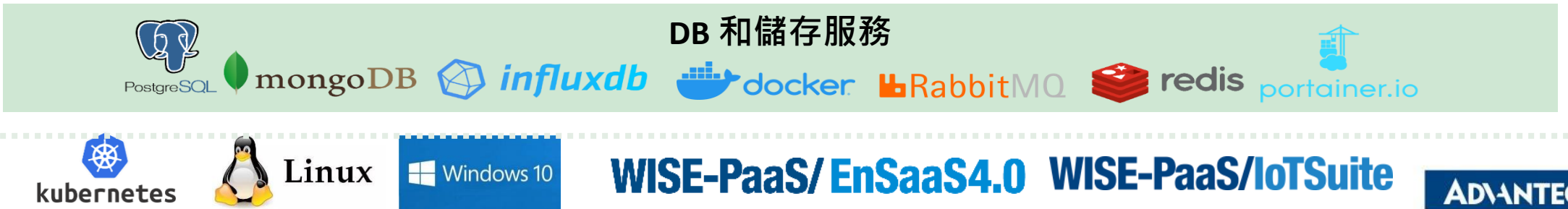
i.APP
eManual



RTM
iFactory/
Desk



平台 / 環境



IoTaaS, List of Apps for Subscription

■ No Code
■ Low Code
■ SI Enabled

2022.05.20 update

Solution Ready Package

iFactory		iWater & iEnvironment		iHospital	
 WISE-iFactory/Andon Monitor OEE Management	 WISE-iFactory/EHS Digital tool for work orders	 WISE-iWater/Quality Monitoring The distributed management solution for water distribution treatment processes in the water treatment plants	 WISE-iWater/Facility Management Monitor all the facility availability, identify and control abnormalities to optimize water treatment facility management	 WISE-iDS/SignageCMS Media management, program editing, program upload system	 WISE-iDS/SignageCMS Media management, program editing, program upload system
 WISE-iFactory/OEE Improve your OEE performance	 WISE-iFactory/Manual Digital tool for work orders			 WISE-iQM/Inspection Cloud storage, video analysis technology and mobile internet technology to optimize equipment management	 WISE-iQM/Inspection Cloud storage, video analysis technology and mobile internet technology to optimize equipment management
 WISE-iFactory/Maintenance Improve your asset performance				 WISE-iVA/Counting Help you measure visitor traffic to improve people flow management	 WISE-iVA/Counting Help you measure visitor traffic to improve people flow management
iEMS		iMachine		AIFS	
 iEMS/IVAC Media management, program editing, program upload system	 iMachine/Pump System Monitor all the facility availability, identify and control abnormalities to optimize water treatment facility management	 AIFS/InspectionAI Forge Monitor all the facility availability, identify and control abnormalities to optimize water treatment facility management	 WISE-iDS/SignageCMS Media management, program editing, program upload system	 WISE-iVA/Counting Help you measure visitor traffic to improve people flow management	
 iEMS/CarbonR Media management, program editing, program upload system	 iMachine/Chiller System Monitor all the facility availability, identify and control abnormalities to optimize water treatment facility management	 AIFS/PHM Inspection Multiple predictive maintenance solution for bearing monitoring	 WISE-iQM/Inspection Cloud storage, video analysis technology and mobile internet technology to optimize equipment management		
 iEMS/ECOWatch Digital tool for work orders	 iMachine/MachineUnits Monitor all the facility availability, identify and control abnormalities to optimize water treatment facility management				

WISE Platform

 WISE-Dashboard Report visualization tool	 WISE-InsightAPM Digital tool for work orders	 WISE-IoTSuite Management Platform
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Edge Service

 WISE-DataConnect Help you reduce network traffic to improve people flow management	 WebAccess SCADA Help you measure visitor traffic to improve people flow management	 WebAccess DMP Help you reduce network traffic to improve people flow management	
 Cybersecurity SRP Help you measure visitor traffic to improve people flow management	 DeviceOn Help you measure visitor traffic to improve people flow management	 Edge AI Help you measure visitor traffic to improve people flow management	 Triangle Help you measure visitor traffic to improve people flow management

WISE Platform & Edge Service

WISE Platform



No Code

WISE-Dashboard

Report visualization tool



No Code

WISE-InsightAPM

Digital twin low code platform



No Code

WISE-IoTSuite

Device IoT Platform

Edge Service



No Code

WISE-DataConnect

Help you measure footfall traffic to improve people flow management.



No Code

WebAccess SCADA

Help you measure footfall traffic to improve people flow management.



No Code

WebAccess DMP

Help you measure footfall traffic to improve people flow management.



No Code

Cybersecurity SRP

Help you measure footfall traffic to improve people flow management.



Low Code

DeviceOn

Help you measure footfall traffic to improve people flow management.



Low Code

Edge AI

Help you measure footfall traffic to improve people flow management.



Low Code

Triangle

Help you measure footfall traffic to improve people flow management.

Domain Solution

Solution Ready Package

iFactory



WISE-iFactory/Andon

Abnormal Event Management



WISE-iFactory/EHS

Digital twin low code platform



WISE-iFactory/OEE

Digital twin low code platform



WISE-iFactory/eManual

Digital twin low code platform



WISE-iFactory/Maintenance

Digital twin low code platform

iWater & iEnvironment



WISE-iWater/Quality Monitoring

The centralized management platform for various distributed treatment processes in the water treatment plants



WISE-iWater/Facility Management

Analysis of the facility availability, reliability and power consumption to optimize water treatment facility management

iHospital



WISE-iDS/SignageCMS

Media management, program editor, program dispatch system.



WISE-iDS/SignageCMS

Media management, program editor, program dispatch system.



WISE-iQM/Inspection

Cloud storage, video analysis technology and mobile internet technology to provide enterprise management.



WISE-iQM/Inspection

Cloud storage, video analysis technology and mobile internet technology to provide enterprise management.



WISE-iVA/Counting

Help you measure footfall traffic to improve people flow management.



WISE-iVA/Counting

Help you measure footfall traffic to improve people flow management.

iEMS



iEMS/HVAC

Media management, program editor, program dispatch system.



iEMS/CarbonR

Media management, program editor, program dispatch system.



iEMS/ECOWatch

Digital twin low code platform

iMachine



iMachine/Pump System

Analysis of the facility availability, reliability and power consumption to optimize water treatment facility management.



iMachine/Chiller System

Analysis of the facility availability, reliability and power consumption to optimize water treatment facility management.



iMachine/MachineUnite

Analysis of the facility availability, reliability and power consumption to optimize water treatment facility management.

AIFS



AIFS/InspectionAI.Forge

Analysis of the facility availability, reliability and power consumption to optimize water treatment facility management.



AIFS/PHM.Inspection

Intelligence Predictive Maintenance Solution for Rotating Machinery

iCity, iRetail & Public Services



WISE-iDS/SignageCMS

Media management, program editor, program dispatch system.



WISE-iVA/Counting

Help you measure footfall traffic to improve people flow management.



WISE-iQM/Inspection

Cloud storage, video analysis technology and mobile internet technology to provide enterprise management.

Co-Creating the Future of the IoT World

