

iFactory

Assembly Line iWorkstation Solution

Real-time Data Acquisition and Visualization
for Assembly Operation Optimization

SRP-IFS300



Solution
Ready
Package



ADVANTECH

Enabling an Intelligent Planet



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WISE-PaaS

System Introduction

It's tough to make a buck in manufacturing today while products are increasingly complex and require more assembly steps. Advantech offers assembly line monitoring solutions with a simple IoT architecture to improve the assembly operation. In addition to collecting data from the assembly process, the solutions also enable data analysis and visualization, as well as integrate with WISE-PaaS platform for industrial APP applications. The factory managers can be in full control of all the details happening on the line for real-time management to optimize assembly operations.

WISE-PaaS/Dashboard

Line	MO	Part Number	QTY	Target	Actual	Setup	FO
A-L1	KAF5711SA	9495BE903E-005	800	2300	0	0.1	
A-L2	KAF5768SA	9495BE903E	250	801	200	10.9	
A-L3	KAF5711SA	9495BE903E-M0000A1	1000	1800	100	25.4	
A-L4	KAF5734SA	9495BE903E	250	553	155	55.4	
A-L5	KAF5711SA	9495BE934E-M0000B11	250	200	0	10.9	
A-L6	KAF5745SA	9495BE903E	820	810	64	0.0	
A-L7	KAF5711SA	9495BE906E-010	880	800	24	5	
A-L8	KAF5767SA	9495BE903E-039	400	1250	124	143.5	
A-L9	KAF5711SA	9495BE903E	155	100	25	1.2	
A-L10	KAF5736SA	9495BE903E-M0000A5	350	30	0	2.4	
A-L11	KAF5789SA	9495BE903E	300	200	45	0.0	
A-L12	KAF5711SA	9495BE903E-M0003B1	500	45	34	0.0	
A-L13	KAF5714SA	9495BE903E-039	800	0	35	10.9	
A-L14	KAF5721SA	9495BE903E-M0000A4	300	0	50	8.5	
A-L15	KAF5771SA	9495BE903E-009	800	0	0	1.2	
A-L16	KAF5712SA	9495BE903E	500	0	0	8.4	
A-L17	KAF5771SA	9495BE903E-010	800	0	0	1.2	
A-L18	KAF5712SA	9495BE904E	500	0	0	8.4	

Work Order Status

- WIP Information
- Accumulated Production Quantity
- Production Yield Rate
- Error/Warning Messages

Time	Work Order	Part Number	Process	Line	Issue	Actual Value(%)	Target Value(%)	Remark
2018-04-28 08:32:20	KEEEB680SA	94ADH51001-M0000A1	Assembly	A-L3	Defect Issue	95.4	95.5	
2018-04-28 08:32:20	KEEEB680TSC	94ADH51001-M0000A3	Assembly	A-L2	Defect Issue	95.2	95.5	
2018-04-28 08:32:20	KEEEB682SA	94ADH51001-M0000B1	Assembly	A-L1	Productivity Issue	55.3	75.0	
2018-04-28 08:32:20	KEEEB689SB	94ADH51001-M0000A8	Assembly	A-L6	Productivity Issue	50.4	75.0	
2018-04-28 08:32:20	KEEEB686SA	94ADH51001-M0000E1	Assembly	A-L2	Efficiency Issue	87.4	95.0	
2018-04-28 08:32:20	KEEEB62SSD	94ADH51001-M0000C1	Assembly	A-L7	Defect Issue	92.1	95.5	
2018-04-28 08:32:20	KEEEB686SA	94ADH51001-M0000A3	Assembly	A-L8	Defect Issue	95.2	95.5	
2018-04-28 08:32:20	KEEEB650SE	94ADH51001-M0000B1	Assembly	A-L3	Efficiency Issue	91.2	95.0	
2018-04-28 08:32:20	KEEEB680SA	94ADH51001-M0000E1	Assembly	A-L5	Efficiency Issue	75.4	95.0	
2018-04-28 08:32:20	KEEEB640SG	94ADH51001-M0000E5	Assembly	A-L3	Productivity Issue	65.4	75.0	
2018-04-28 08:32:20	KEEEB686SA	94ADH51001-M0000E1	Assembly	A-L2	Efficiency Issue	87.4	95.0	
2018-04-28 08:32:20	KEEEB62SSD	94ADH51001-M0000C1	Assembly	A-L7	Defect Issue	92.1	95.5	
2018-04-28 08:32:20	KEEEB686SA	94ADH51001-M0000A3	Assembly	A-L8	Defect Issue	95.2	95.5	
2018-04-28 08:32:20	KEEEB650SE	94ADH51001-M0000B1	Assembly	A-L3	Efficiency Issue	91.2	95.0	
2018-04-28 08:32:20	KEEEB680SA	94ADH51001-M0000E1	Assembly	A-L5	Efficiency Issue	75.4	95.0	
2018-04-28 08:32:20	KEEEB640SG	94ADH51001-M0000E5	Assembly	A-L3	Productivity Issue	65.4	75.0	

Content	Jan	Feb	Mar
Production QTY(PO)	23,340	23,364	23,340
Defect QTY(MCNV)	23.5	23.5	28.5
Yield Rate(%)	99.3	99.3	99.3
Working Hours(H)	428	418	458
Abnormal Times(H)	22	22	22
Productive Hours(H)	406	406	406
Standard Hours(H)	428	258	348
Efficiency(%)	92.5	93.9	96.3
Productivity(%)	93.3	93.3	93.3

Performance Management

- Abnormality Index
- Abnormality Analysis
- KPI Status
- Incident Records of Work Orders

Trend Report

- Monthly Work Order Completion Rate
- Monthly Production Yield Rate
- Monthly Production Efficiency
- Monthly Management Indicators

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Failure	Yield(%)	Top Issue
0	100.0	
0	95.4	D27_1(2) RT2_1(2) RT2_1(2)
36	80.0	AC19_1(1) AL88_1(1) C121_1(1)
0	89.0	C630_1(6) D7A_1(2) C543_1(1)
0	93.4	
0	100.0	
30	100.0	
18	100.0	
6	100.0	
0	100.0	
7	100.0	
0	100.0	
20	100.0	
0	100.0	
0	100.0	
0	100.0	
0	100.0	
0	100.0	

Assembly-L2 abnormal yield



Assembly Dashboard

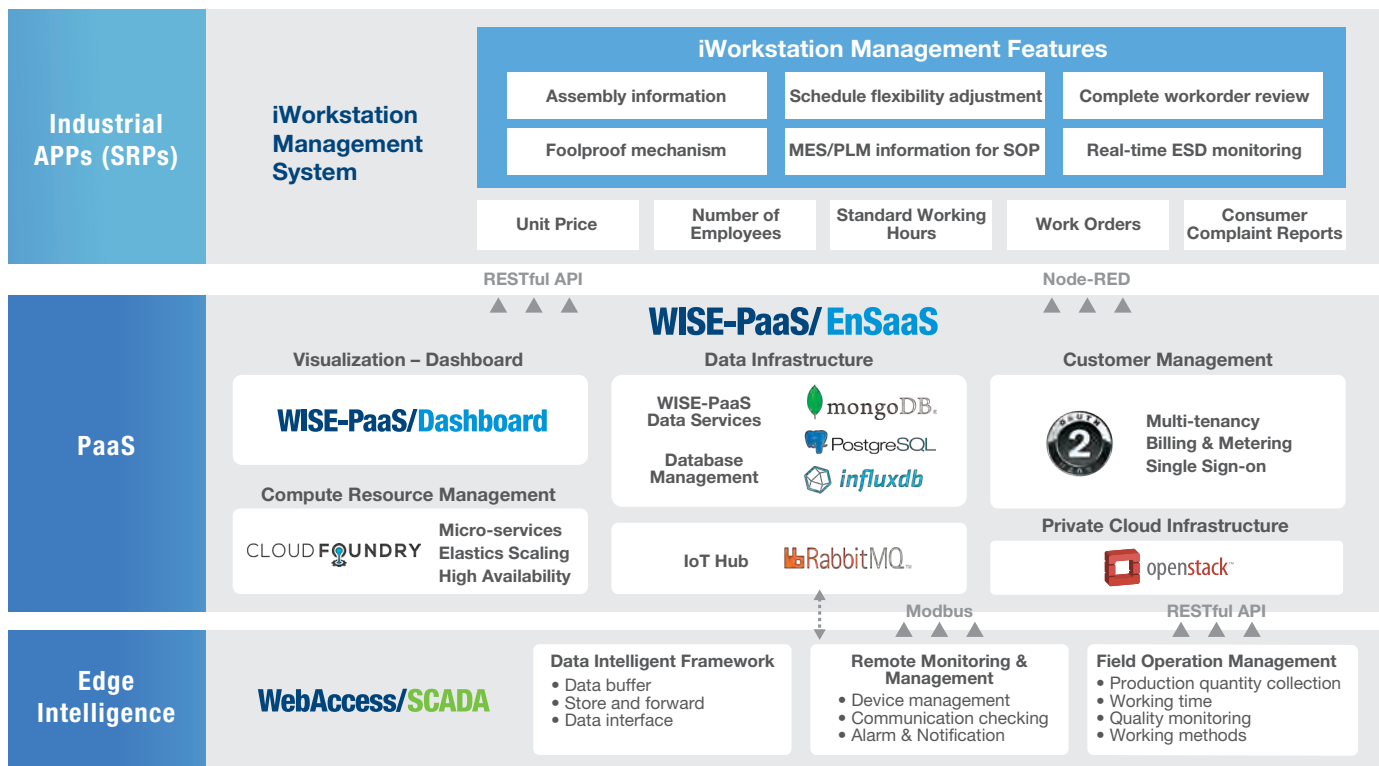
- Assembly Line Information
- Work Order Completion Rate
- Production Yield Rate
- Production Efficiency



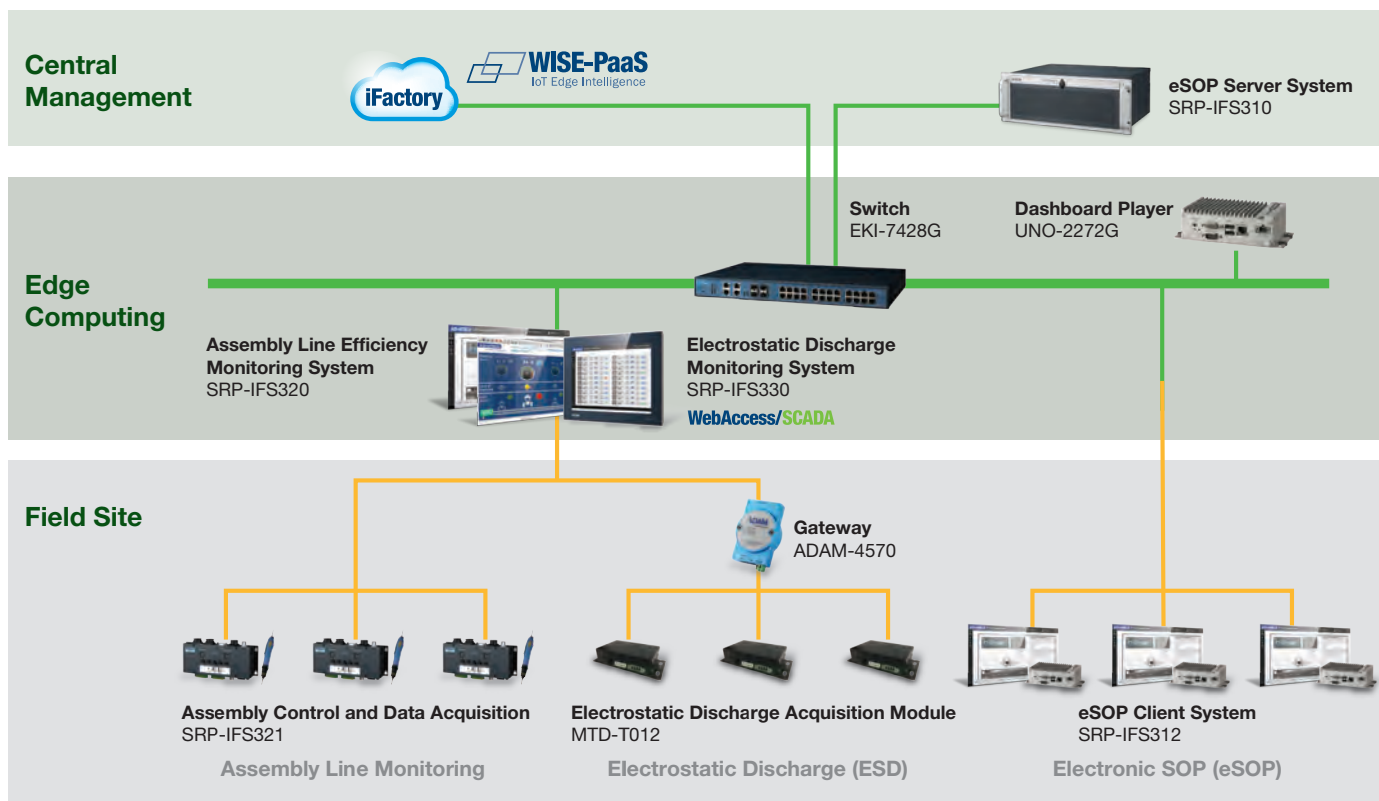
ESD Status

- ESD Personnel Anti-static Detection
- Abnormal Alarm
- ESD Report Management

Software Diagram



System Diagram



Feature Highlights

Assembly Workstation Management

The solution allows workstation data to be collected, analyzed and visualized as all kinds of assembly line information and key performance indicators for managers to optimize assembly operations.

Automated eSOP Management

SOPs are easily mismanaged under manual paper-based processes. The automated eSOP system solves the shortcomings of prior approach by scanning barcode to have the lasted SOP e-documents.

ESD Real-time Monitoring

The ESD monitoring system alerts immediately if there is any disconnect from the operator to ground, thereby shortening the corrective action loop and controlling the ESD environment

Industrial Applications

Computer Industry

- Computer manufacturers are constantly looking for new ways to improve workplace efficiency.
- Enabled data visualization management of the assembly line information for optimizing operation efficiency.



Communication Products

- Mobile phone and communication manufacturing expects productivity improvement and quality control of manual assembly lines.
- Ensured product quality and improved on-time deliveries of products and services.



Consumer Electronics & Appliances

- Very often consumer electronics and household appliance manufacturers need abundant labor force for their assembly lines.
- Reduced labour costs by eliminating wasted time and improving process flow.



Automotive Assembly

- The automotive industry requires highly flexible and changeable assembly systems to increase productivity.
- Improved automotive assembly reliability and quality with long-term stable operation.



Ordering Information

Solution Package		
WISE-PaaS Situation Room SRP-SR-100-BTO	LCD Wall: 86" x 1 + 55" x 2 Server and Display: DS-980 x 1 Control Panel: UTC-520 x 1 WISE-PaaS/SignageCMS x 1	
WISE-PaaS VIP Membership 98DPWAP2K	WISE Point: 2,000 Points	
SRP-IFS310 Electronic SOP Server System	IPC-610 x 1 Windows Server 2016 R2 eSOP Server System	
SRP-IFS312 Electronic SOP Client System	UNO-2272G x 1 Windows Embedded 7 Pro eSOP Client Service APP	
SRP-IFS320 Assembly Line Efficiency Monitoring System	TPC-1551T x 1 Windows Embedded 7 Pro ALM Service APP	
SRP-IFS321 Assembly Control and Data Acquisition	ADAM-3880-AE x 1 Screwdriver x 1	
SRP-IFS330 Electrostatic Discharge Monitoring System	TPC-1551T x 1 Windows Embedded 7 Pro WebAccess/SCADA 300 tags ADAM-4570 x1	
	MTD-T012 x 1 Electrostatic Discharge Acquisition Module	

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