iMES
MANUFACTURING EXECUTION SYSTEM

AIMFLEX

Manufacturing Execution System

Achieve Manufacturing Excellence

iMES

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i-MES is an industry 4.0 shop-floor online Manufacturing Execution System for smart factory. It brings the shop-floor to your fingertips - connects, controls and monitors products, machines and PLC in the factory anytime anywhere.

Why i-MES?

Connect, monitor and control manufacturing systems and data flows on the factory floor.

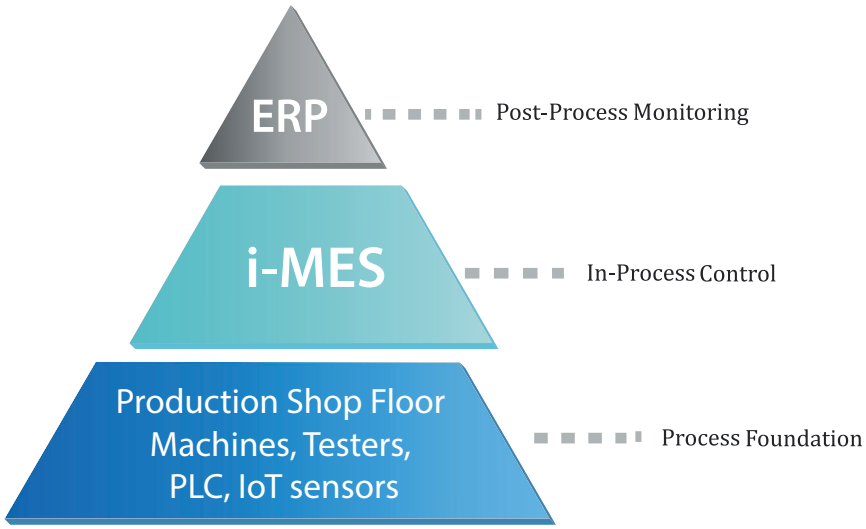
Effective execution of the manufacturing operations and improve production output.

Track and gather accurate, real-time data about the complete production lifecycle, beginning with order release until the product delivery stage.

- Web-based system allows access anytime, anywhere
- All clients connect to server for data protection and traceability
- Ensure good products delivered to customer by establishing flawless QC systems
- Rework procedure are controlled and recorded
- Online production dashboard
- Report generation by demand and automatically
- Data are logged and kept in server for better integrity and accuracy

i-MES HELPS YOU BRIDGE THE GAPS

i-MES system bridges the gap between the planning, controlling and execution. It uses on-line information to manage the current application of manufacturing resources: people, equipment and inventory.

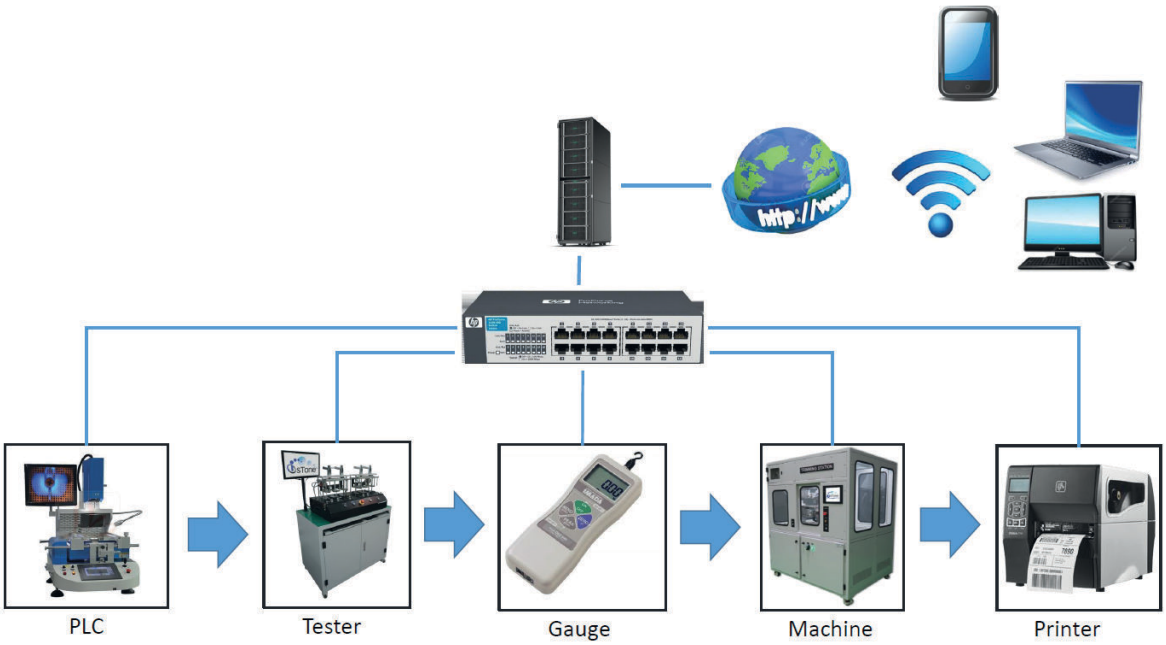


i-MES Functions

Work Preparation	• Machines and tools setting • Customer orders management • Production & operators management • SOP / Work instructions digitalization	Reduce Manual Work Production Interlock
Manufacturing Execution	• Machine live data logging and reporting • Machine performance logging and monitoring • Tooling data logging and tracking • Production live data logging and tracking	IoT Ready Improve Traceability
Quality Management	• Machine quality and parameters control • Quality control and management analysis • Download management • Production output control	Reduce Waste Reduce Cost Improve Quality
Intelligent Operations	• Automated production control and reporting • Manufacturing visualization • Dashboard system • Automated alarm and fault triggering system	Improve Productivity Improve Reporting Reduce Downtime

i-MES Setup

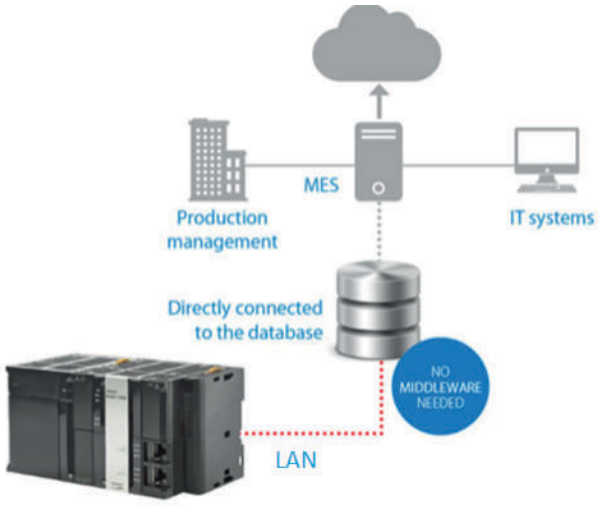
i-MES integrates and interacts with the systems from shop floor straight to the corporate level. It provides real-time visibility of the operations. Top of the line equipment are utilized to ensure quality data are processed and recorded accurately and efficiently.



- Interfacing between i-MES and other hardware/equipment/machine through standard TCIP interface.

- Standard SDK, dll and Labview interface will be provided to other machine vendors to interface with i-MES.

- Communicate with other network for data upload and download.



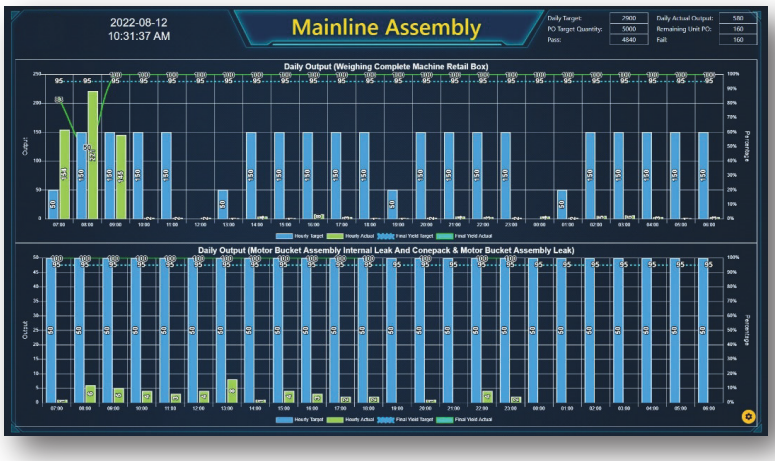
i-MES Modules

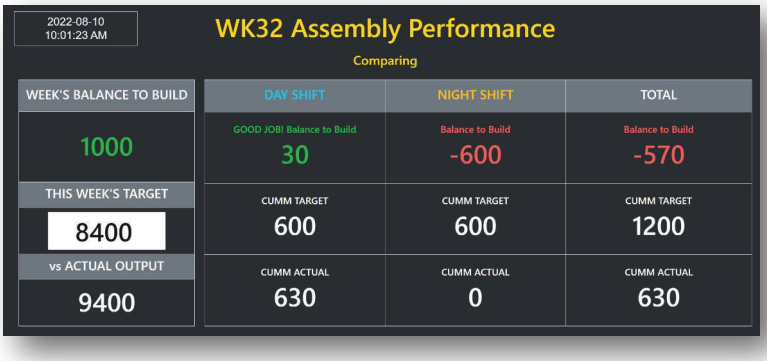
Customizable KPI Reporting Dashboard

A manufacturing dashboard is a real-time visual representation of a manufacturing process. It displays, typically in graphical or chart form, the key KPI or metrics that indicate performance. It enables manufacturers to track and optimize the operation productivity and is a valuable analytics tool to manage all related manufacturing costs efficiently. By having tailored-made dashboards that showing instant information and email or text notifications of pending problems, our cloud-based solution empowers your entire manufacturing and operation team to make decisions with real-time data that's never stale.

i-MES Dashboard and KPI Module includes:

- Web-based reporting tool to provide real time monitoring on:
  - Machine status.
  - Overall Equipment Effectiveness (OEE).
  - Statistical Process Control (SPC).
  - Production output and yield performance.
- Customized charts and tables to gain insight on key production metrices.
- Mobile applications.
- Exportable to multiple formats (pdf, excel).



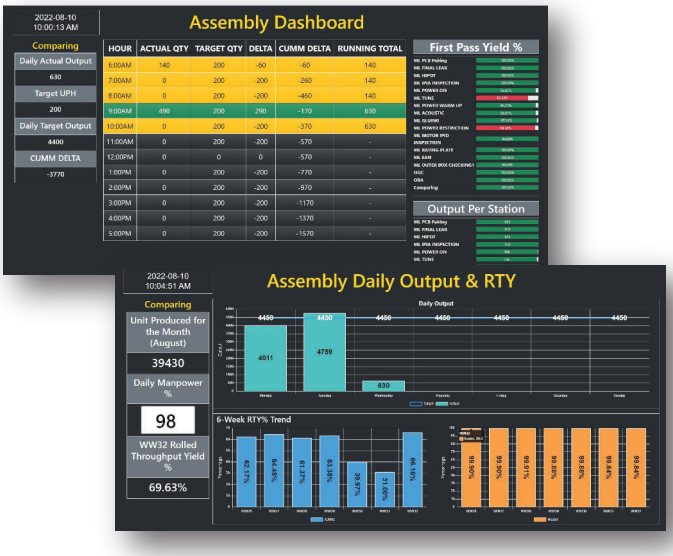


Yield Management System (YMS)

Production yield is a metric that results from dividing the number of good parts produced by the total number of parts started in production. Manufacturers continue to drive toward cheaper, faster, and more reliable products. The prime factor in determining the cost of a product is its manufacturing yield. Yield improvement is vigorously pursued via measurements against the targets, establishing action plans and tightening the targets in a cyclical mode. For all of those reasons, our Real-time YMS helps manufacturers to uncover “hidden factory” that decreases the quality or efficiency of operations.

i-MES YMS Module includes:

- Rolling yield and output chart.
- Automatic triggering:
  - Alarm and SMS/email notifications to stakeholders when yield and output are underperformed.
  - Reset enabled after action has been taken.
  - Event log.



Statistical Process Control (SPC)

A control chart is a specialized time series plot designed to help identify abnormal patterns of variability in a process. However, many manufacturers find this information comes in too late for earlier intervention to prevent costly scrap. Our Real-Time SPC Module, on the other hand, instantly triggers manufacturers to quickly contain and fix defects through a suite of statistical charts and visualizations. In addition, it also enables manufacturers to set up email or text message alerts to stakeholders when entered data is out-of-control or out-of-spec.

i-MES SPC Module includes:

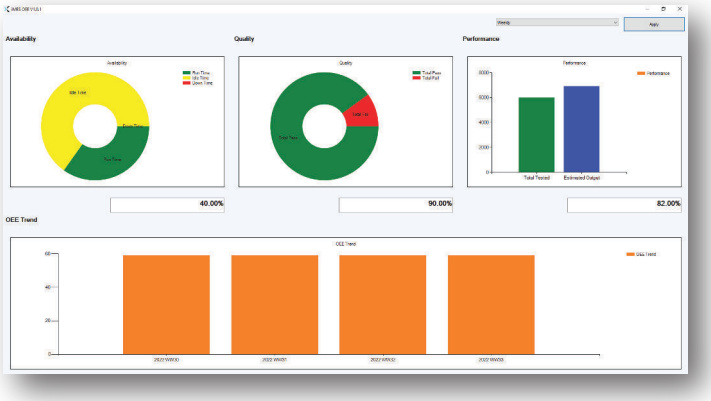
- Real-time display and monitoring for SPC.
- Rolling SPC chart based on data collected from machines.
- Automatic triggering:
  - Alarm and SMS/email notifications when out-of-control or out-of-spec occurs.
  - Display outliers.
  - Event log.
  - Reset enabled.

Overall Equipment Effectiveness (OEE)

Overall Equipment Effectiveness (OEE) is a measure of the overall efficiency of equipment. The three key OEE factors include availability, performance, and quality. Common causes for efficiency losses are machine break down, delays during equipment operation, and an excessive reject rate. Our OEE module tracks and measures Overall Equipment Effectiveness, and provides users an instant insight into machine performance by identifying hidden capacities for optimization.

i-MES OEE Module includes:

- Real-time display to ease monitoring for improvement.
- Rolling OEE chart.
- Automatic triggering and notifications (SMS/email) when OEE is underperformed.
- Event log.
- Reset enabled.

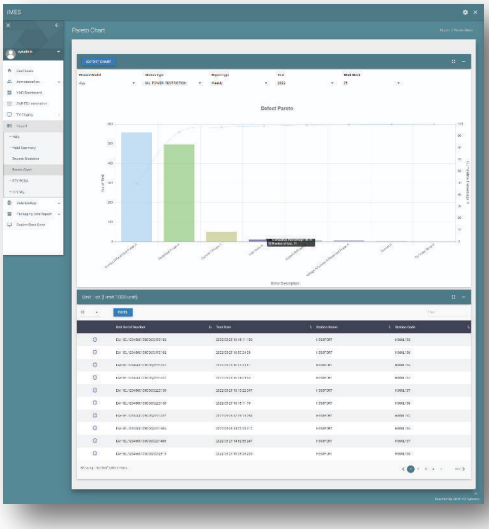


Quality Analysis

Digitization has become the key to ensuring quality control. It is being used for early detection procedures, identifying product defects and root causes, refining operations and preventing future disruptions. With centralized data repository and built-in Pareto Chart, our Quality Analysis Module is designed not only to aid manufacturers make quality disposition decision but also prioritize actions in order to observe the greatest overall improvement.

i-MES Quality Analysis Module includes:

- Pareto chart for top 5 failures.
- Accurate reporting and retrieving of defective data.
- Scheduling of QC reports to internal and external stakeholders.

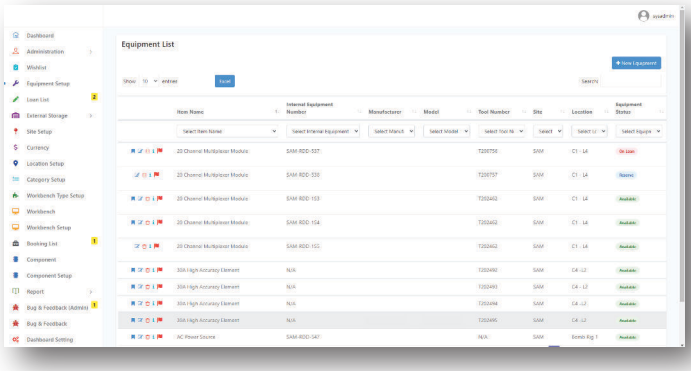


Maintenance and Servicing

Our Maintenance and Servicing Module helps manufacturers to establish a proper equipment maintenance workflow which is essential in achieving highest efficiency and full regulatory compliance.

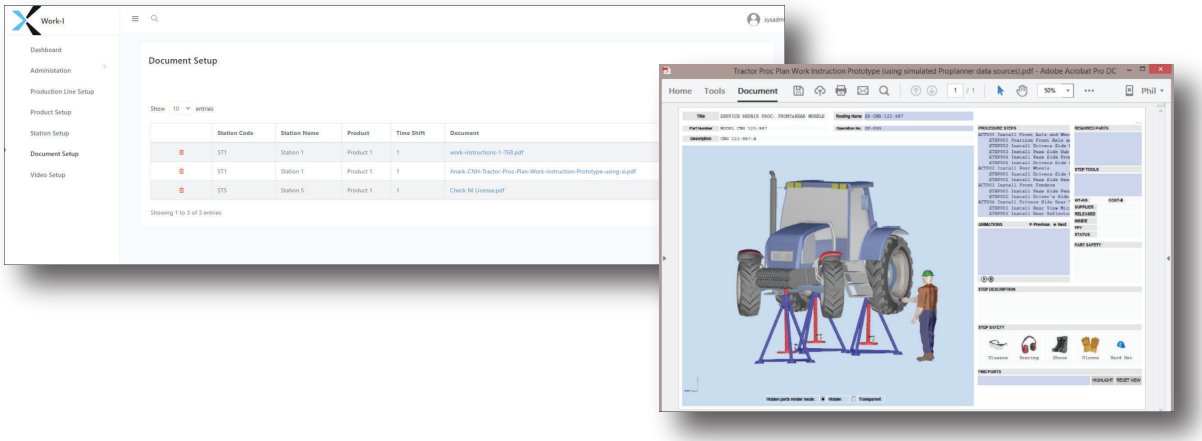
i-MES Maintenance and Servicing Module allows users to:

- Set maintenance, calibration and service plan for machines and toolings.
- Receive auto reminder for maintenance based on fixed date, recurring date or usage cycle.
- Get seamless update on maintenance report.
- Ensure well-maintained machines are used for production.
- Notify supplier for quotation when servicing and calibration are due.



Electronic Work Instructions (eWI)

e-WI saves considerable time connecting, modifying and printing documents. It ensures latest instructions are being used effectively. With RFID reader and tag verification, only certified operators are able to perform critical tasks.



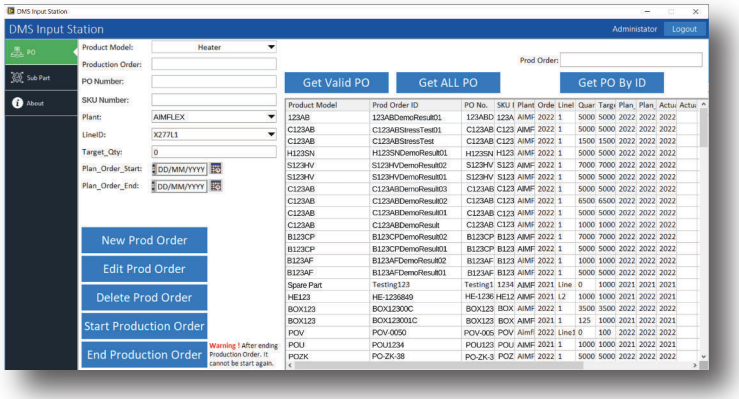
Data Interfacing and Entry GUI

Production Order Input

Preventing redundant work and typo error, our system allows manufacturers to read and pull information from a barcode. With pre-populated Production information retrieved from ERP or customizable template, our data input interface provides a list of the predefined selections to choose from rather than have our users enter the information again. In applications which seamless transfer of product information and measurements are required, we develop user-friendly methods to communicate and integrate with machine tools, application programming interfaces (APIs), sensors, operators and many other sources.

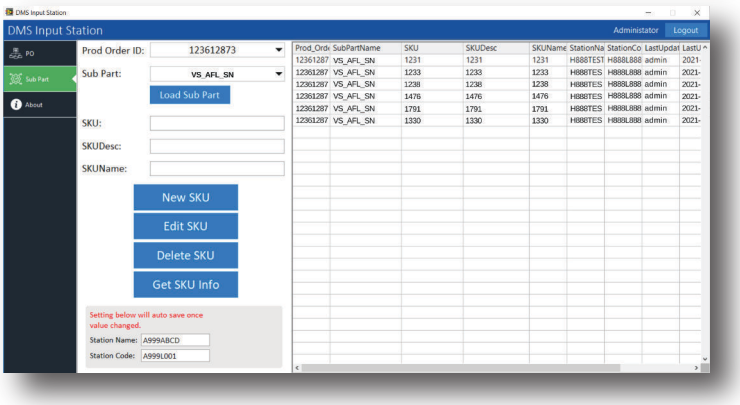
Information includes:

- Production order
- BOM input
- Production line, machine and tooling
- Operators and engineering personnel
- Production date and shifts
- Work order
- Shipping information
- Production target output



Barcode Creation and Printing

- Manual or auto barcode creation
- Manual or auto label printing
- Historical records
- Reprint function



i-MES Features List

Security and Control
- Administrator rights
- Engineering control
- Operator access

Engineering Setup
- Work flow and step sequencing
- Production specs and limits
- Data logging
- Machine setup and parameters
- Revision control

Manage Product Control
- Model and variant
- Work order
- Bill of Materials (BOM)
- Material and calculation

Manage Machines and Tooling
- Machine model, location, calibration and data
- Tooling asset number, cycle and data
- Servicing and calibration schedule
- Supplier list

Human Resource Management
- Machinist and operator training record and qualification
- Machinist and operator database

Production Control
- Production calendar, shift and hours
- Production formula for Overall Equipment Effectiveness (OEE)
- Production settings

Notification Settings
- Email notifications
- Notification format
- Notification schedule
- Notification list

Production and QC Tracking
- Complete production process tracking
- Historical records

Data Collection
- Automated data collection
- Manual data collection
- Data collection settings

Overall Equipment Effectiveness (OEE) Setting
- Visualization format
- Formula

Statistical Process Control (SPC) Settings
- Formula
- Data list

Quality Control
- Limits and control
- Alarm settings

Barcode and Serialization
- Barcode format
- Running Serial Number

Reporting
- Format
- Time settings
- Recipient list

Scan and Printer
- Barcode scanning
- Label printing

Cloud Upload
- Data list
- Upload schedule
- Destination settings

Why Aimflex?

The Company

- Public listed in ACE market of Bursa Malaysia with annual turnover of > USD15 million
- 15 years of operations since 2007
- Operating in Malaysia (Johor, Kuala Lumpur, Penang) and Singapore
- Certified in ISO9001 and ISO14000

The Factory

- HQ in Johor, Malaysia
- 68,000 sf production floor space
- R&D, engineering and production under one roof
- Empty land area of 70,000 sf for future expansion

The Team

- Total of 270 staff and 88% are engineering workforce
- In-house Mechanical, E&E, Automation, Software Engineering & Support Engineers
- PMP qualified and dedicated Project Managers

The Expertise

- Certified in NI Labview, CVI, TestStand and Labview FPGA
- Expertise in data acquisition and Instrument control, real-time embedded, RF and electronics test and design
- Specialised in various brand PLC control and monitoring system

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AIMFLEX

As commited one-stop test and automation company, we provide:

- Functional Testers
- Process Machines and Automation
- Manufacturing Execution System
- Precision and Metal Parts Fabrication

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