nexbe+

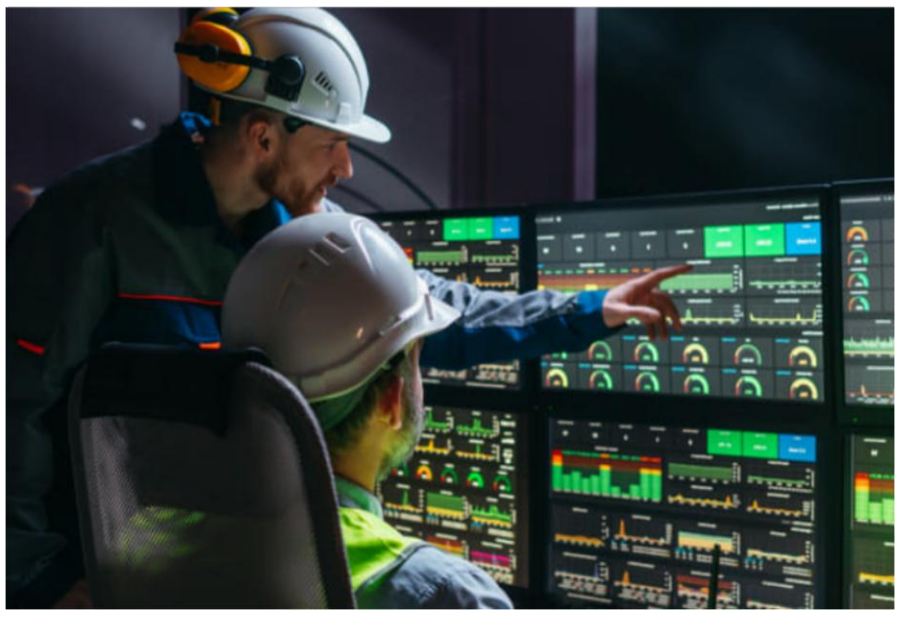
Integrated Automation and Control Solution

Our smart factory platform offers a range of packaged solutions for optimized factory automation, ensuring a smooth and reliable experience from installation to operation.
By harnessing data from individual equipment and inter-equipment processes, our integrated solution streamlines production management, equipment maintenance, and real-time monitoring. With instant processing capabilities, it helps customers make better use of their resources and achieve maximum operational efficiency.

FMB

Fab Monitoring Board

Field-oriented Optimized service



What does it do?

FMB supports real-time monitoring of operational data from anywhere, anytime, via a web browser. It collects various forms of raw data sent from equipment through the MES and continuously monitors changes in process and equipment status over a defined period.

Administrators need accurate and quick insights into changes in user service patterns. The monitoring system plays a crucial role in verifying assumptions and intuitions about potential issues.

The monitoring system rapidly visualizes current status information, helping administrators interpret accumulated data within meaningful ranges and establish appropriate standards. It plays a vital role in enabling quick fault detection, reducing downtime, supporting informed decision-making, and driving automation. By leveraging data, the system offers real-time equipment monitoring, optimal maintenance scheduling, real-time quality tracking, query and alarm functions, trend charts, and proper process management guidelines.

Data visualization 'strategy' not 'tool'

Through data visualization,

enhance work efficiency and achieve process management innovation

Web-based Environment
Convenient workflows

- Provides convenient access anytime, anywhere via a URL without requiring installation.
- Enables enterprise-wide data sharing and simplifies business processes, streamlining and automating workflows for improved system efficiency.
- Offers a dedicated module for mobile-friendly content access.

Data Visualization
Maximized efficiency

- Tracks WIP (Work-in-Progress) for all products in production, ensuring efficiency, accuracy, and traceability.
- Supports real-time data collection and visualization with SVG graphics representing factory layouts; Provides alarm and chart functionalities to maximize operator efficiency.

Fault Management
Increased productivity

- Monitors and queries the current status and predicted conditions of processes and equipment, and visualizes root causes and suggests corrective actions when abnormalities or potential issues are detected.
- Optimized data supports quick responses to faults, enhancing operator productivity.

Enjoy!

Good UX Validation History Management Spec Management

01

Data-driven Visualization & Monitoring Query

Real-Time Monitor

- SVG-based graphical representation of equipment operation/progress (Down, Run, etc.)
- SVG-based graphical representation of equipment operation status (Online, Offline, etc.)

Real-Time Issue Tracker

- Tracks and Counts downtime caused by work errors (Downtime)
- Counts in-progress products in production (WIP Count)
- Displays alarms generated from EQP, FDC, and SPC data

Shop Info

- Work in Progress (WIP) information
- Stocker capacity
- Look up specific equipment (Machine List)
- Look up products currently on hold (Hold)
- Look up products without work interruptions (Q-Time)

Trend Charts

- Production volume and yield management data
- Fault management data
- Preventive/Preservation information for equipment status

02 02Next-generation Technology

SVG graphics

- SVG is a powerful web technology offering numerous accessibility benefits.
  Its structured design allows for creating content images and graphs with accessibility in mind. SVG is fully supported by all modern desktop and mobile browsers.

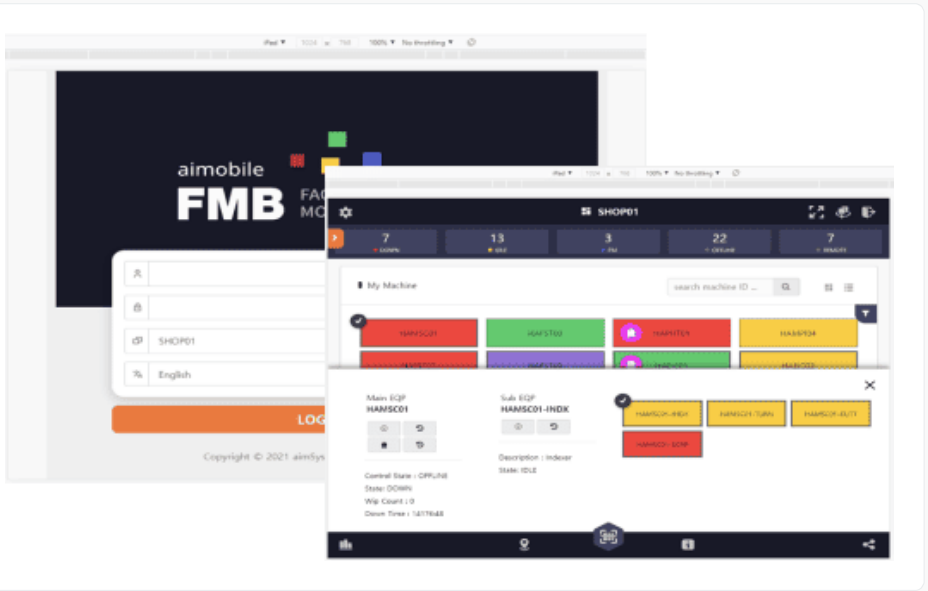
Configuration management/deployment

- It supports version changes by reviewing and confirming changes to source files, documents, and components through fundamental principles, strategies, and technologies used to ensure convenient development and maintain the environment.

03 Convenient User Interface

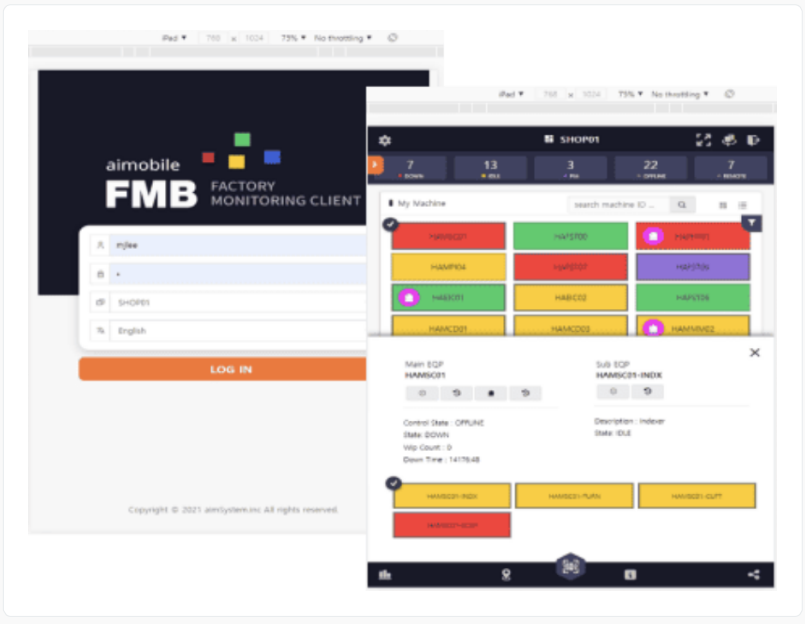
Ease-of-use tools

Mobile version available



Ease-of-use tools

- Zoom in/out
- Layout navigation
- Status board
- Machine Searcher
- Refresh
- Synced Server/DB data



Mobile version available

- Accessible on various devices and operating systems
- Screen-responsive UX/UI structure
- Equipment status features tailored to user preferences
- Push notifications that instantly deliver alarms
- A Ranking Summary Board that summarizes the statuses of available equipment

Product Configuration

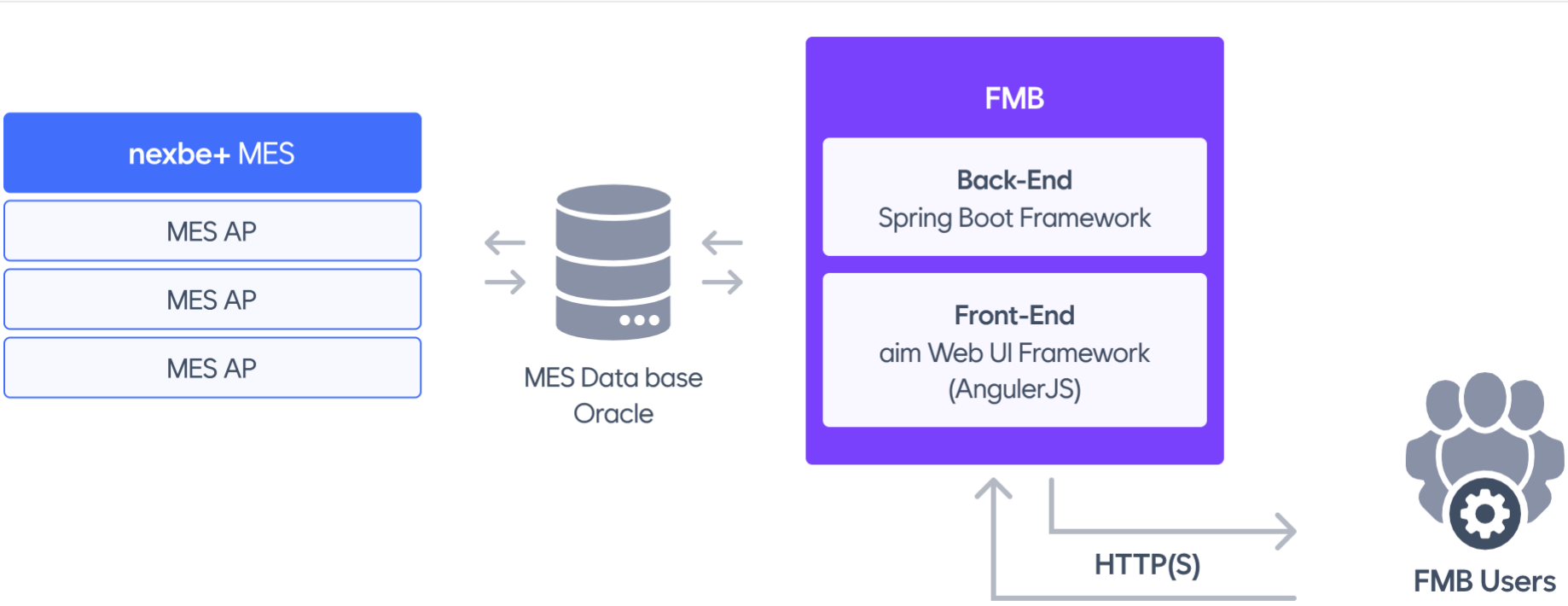
Development Environment

aim Web UI Framework

Back-end	Front-end	IDE Env.	Comply with
Spring Boot Framework	AngularJS (JavaScript UI Framework)	Spring Tool Suite, Maven	HTML5 standard + CSS3

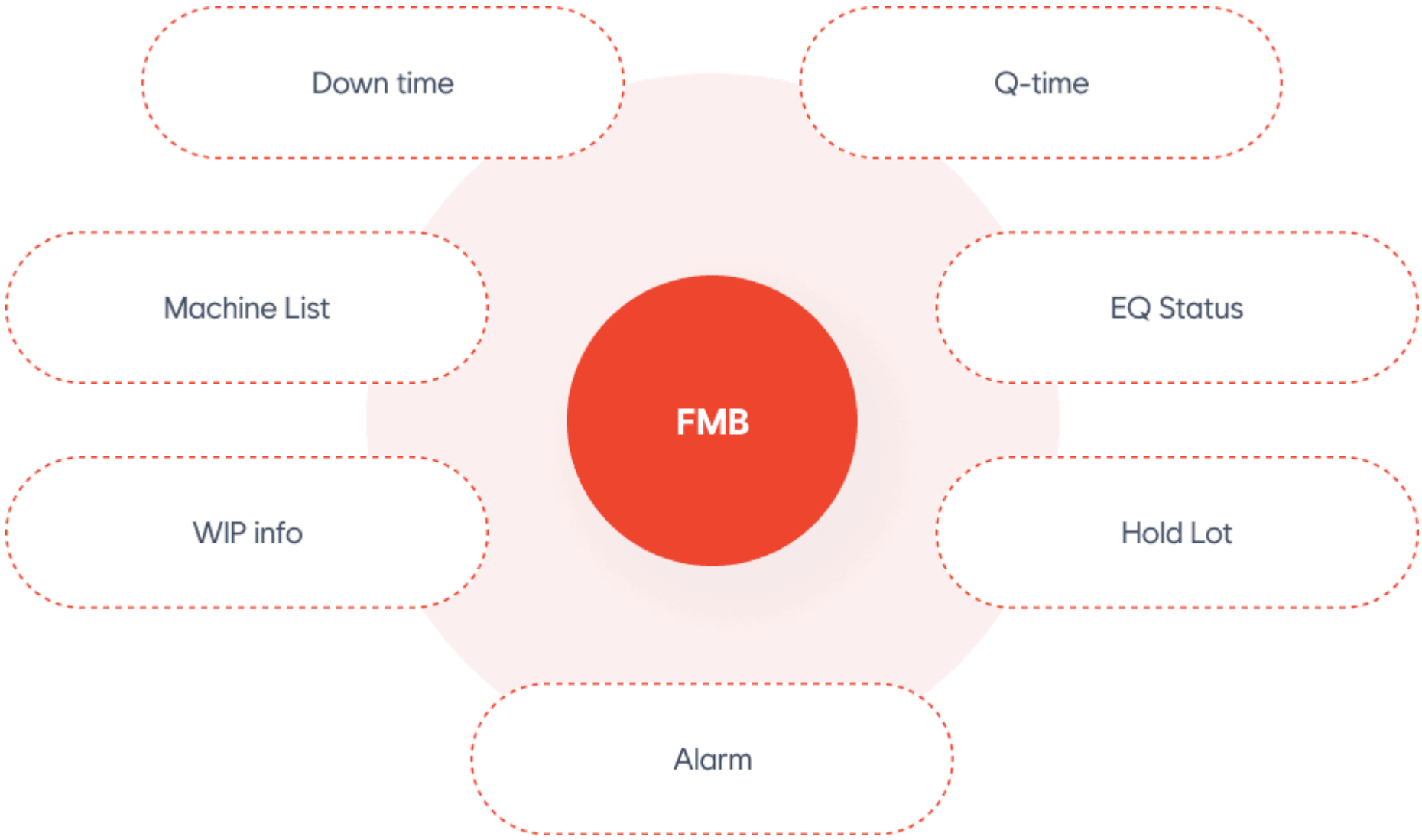
Application Framework

- Front-end / Back-end / DB Server
- Front-end communicates using HTTP(s) and JSON (JavaScript Object Notation) format
- Transactions and query execution are managed through JDBC



Configuration Diagram

Field-oriented Optimized service



Real-Time Monitor

EQ Status

- Displays information about the condition and progress status of equipment.

EQ Control Status

- Displays information about the condition and progress status of equipment.

Real-Time Issue Tracker

Alarm (SPC/EQP/FDC)

- Provides alarm notifications for down issues reported by each system.

Down-time

- Calculates and displays the total downtime of equipment.

WIP Count

- Shows the number of WIPs currently in progress on the equipment.

Shop Info

EQP Fab in State

- Provides detailed information about equipment, ports, and stockers, including equipment ID, type, and status.

WIP Info

- Displays details of WIPs currently in progress.

Stocker Capacity

- Indicates the efficiency of stocker storage.

Machine List

- Enables searches for specific equipment.

Hold Lot

- Lists lots currently on hold and not being processed.

Q-time Lot

- Displays lots that have exceeded their processing time limits.

01 Real-Time Monitor

Machine Control Status

- Displays the operational status of equipment.
  - e.g., Online, Offline, Remote

Machine State

- Displays operational and progress statuses for main, unit, port, and stocker equipment.
  - e.g., Down, PM, IDLE, PM, RUN, etc.

Item	Funtion List	Comment
Machine State Change	Machine State Change	Initialize Display Data(Match with SVG) Update Machine State Change state color
	Machine Control State Change	
	Stocker State Change	
	Port Access Mode Change	
	Port State Change	

02 Real-Time Issue Tracker

Alarm

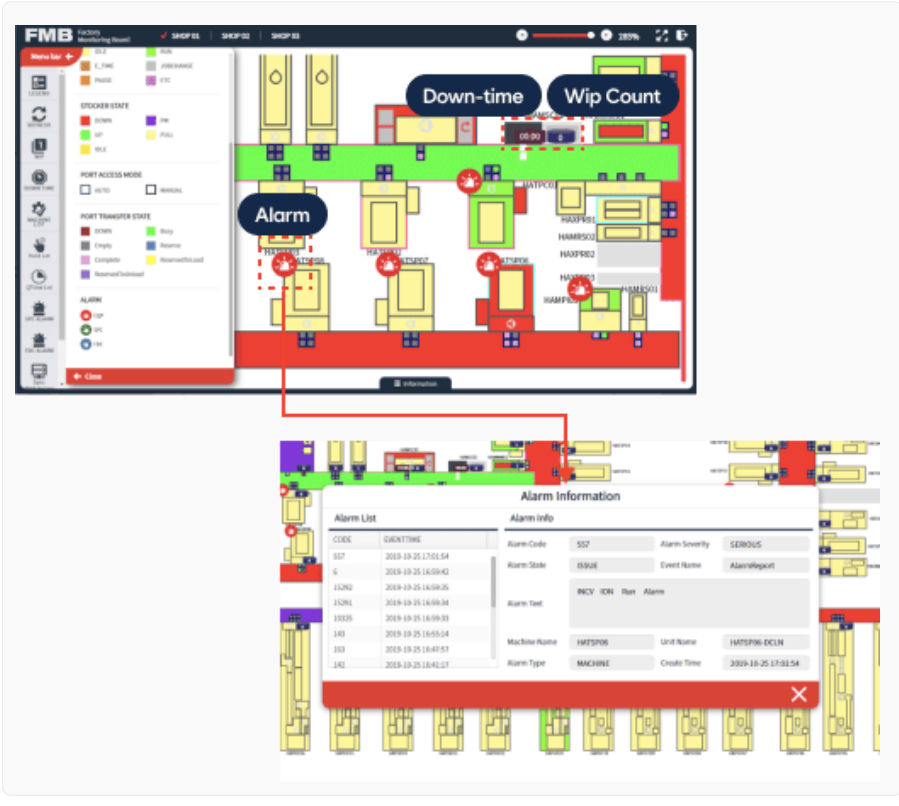
- Alarms from EQP, FDC, and SPC are triggered as significant events.
  - Alarms are categorized by color and displayed based on the main EQP.
  - When an alarm first occurs, the alert symbol flashes to notify users of the event..

Down-time

- Initially not displayed on the screen but can be accessed by clicking the corresponding button in the left section of the menu on the side.
  - Displayed in the equipment layout area corresponding to the main equipment location.
  - Downtime is calculated based on the track-in time and displayed on the main equipment.

WIP Count

- Initially not displayed on the screen but can be accessed by clicking the corresponding button in the left section of the menu on the side.
  - Displayed in the equipment layout area corresponding to the main equipment location.
  - WIP is calculated based on the track-in time and displayed on the main equipment.

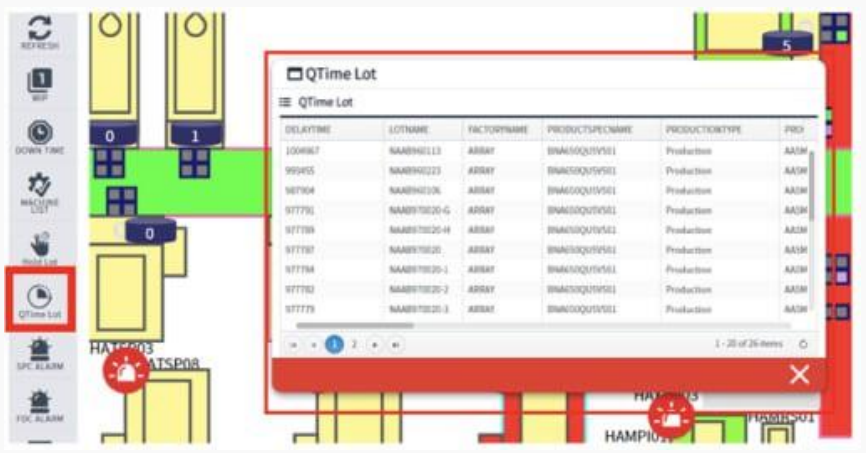


03 Shop Info

Machine List

WIP Info

EQP Fab in State



EQP Fab in State

Provides detailed information about equipment, ports, and stockers, including equipment ID, type, and status.

WIP Info

- Displays information about the shop in a table format, providing details such as WIP and alarm data.

Machine List

- Displays the machine list for the specific fab, allowing users to filter and display only the desired machines; provides functionality to locate or retrieve information about specific machines.

Hold Lot

- Displays a list of lots currently on hold (work stopped) within the fab.

Q-time Lot

- Provides a list of lots that have exceeded the end-time of their scheduled work orders.

Coverage

aimFMB optimizes data to provide real-time equipment monitoring, optimal maintenance scheduling, real-time quality tracking, and features like queries, alarms, and trend charts, ensuring effective process management and operational guidelines.