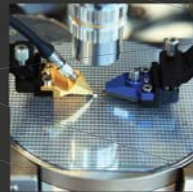**H** HAESOL

Upgrade your factory to the next level
with the Haesol Smart Factory solution optimized for your plant environment

Smart Factory
Solutions

fastMES / fastPOP / fastWMS / fastSPC / fastHMI

HAESOL

Haesol Smart Factory Solution is
### Provides the most optimized way to improve the plant's production environment.

(Integrated production management, logistics management,
statistical process control, facility monitoring / control integration)

fastMES

fastPOP

fastWMS

HAESOL

fastSPC

fastHMI

fastDBA

Business Partner

M3 MOBILE
Your Best Mobile Business Partner

Tech Scan
(주)테크스캔코리아

symbol
The Enterprise Mobility Company

ZEBRA
TECHNOLOGIES

Hansol Information Systems is a real-time integrated production management system (MES / POP), which actively contributes to productivity improvement and quality improvement throughout the manufacturing industry. We provide a factory-optimized Smart Factory Solution through the construction of Logistics Management System (WMS), Statistical Process Control (SPC), Facility Monitoring and Control (HMI).
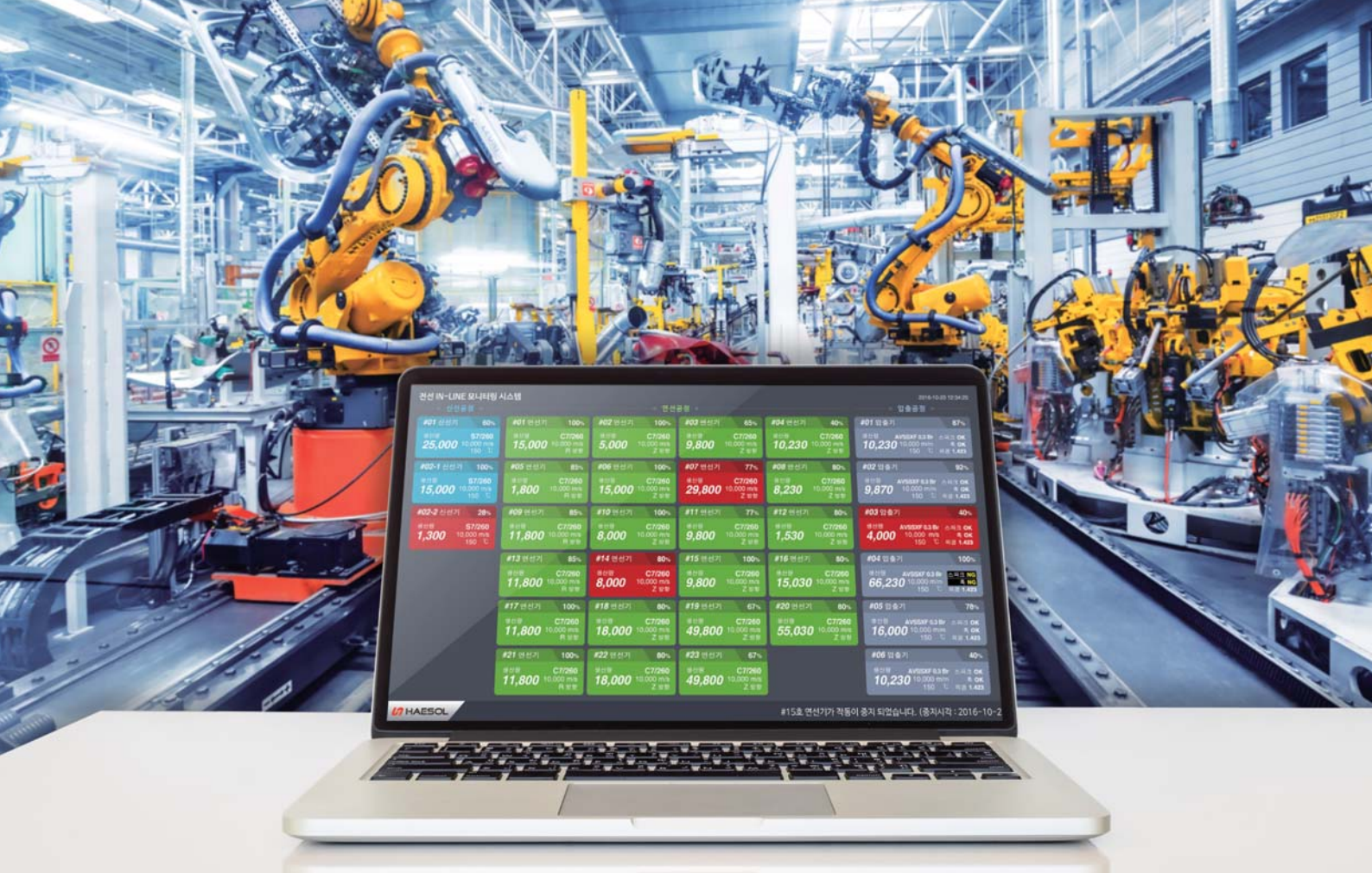
Become a Partner with the Haesol Information Systems!

01 Accurate repair, inventory, real-time information and real-life

02 The time and effort spent on administration and analysis is greatly reduced

03 All flows of material and product moving are tracked without omission.

04 You can see your current utilization rate and yield at any time and at any time.

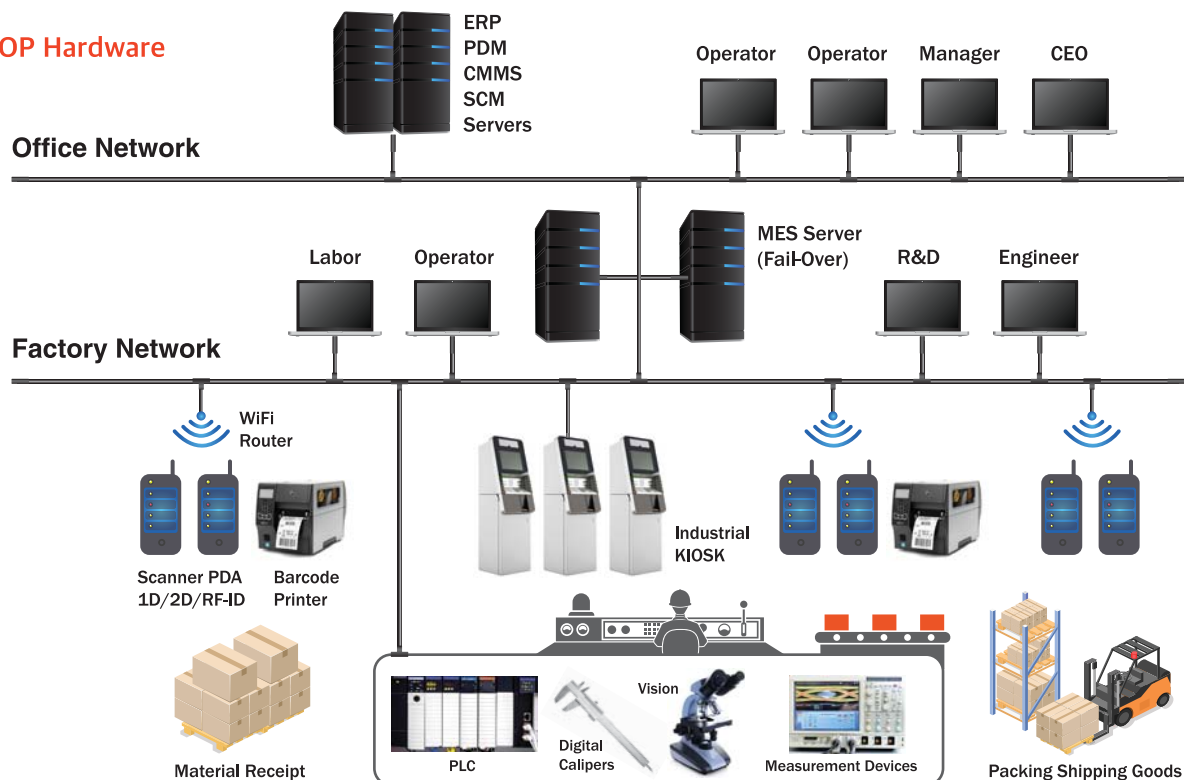**05** Process and work are naturally standardized.

fastMES/POP

fastMES / POP is a manufacturing execution system that controls the site as a system so that production can proceed according to plan and assists quick decision making by collecting and analyzing valuable on-site.
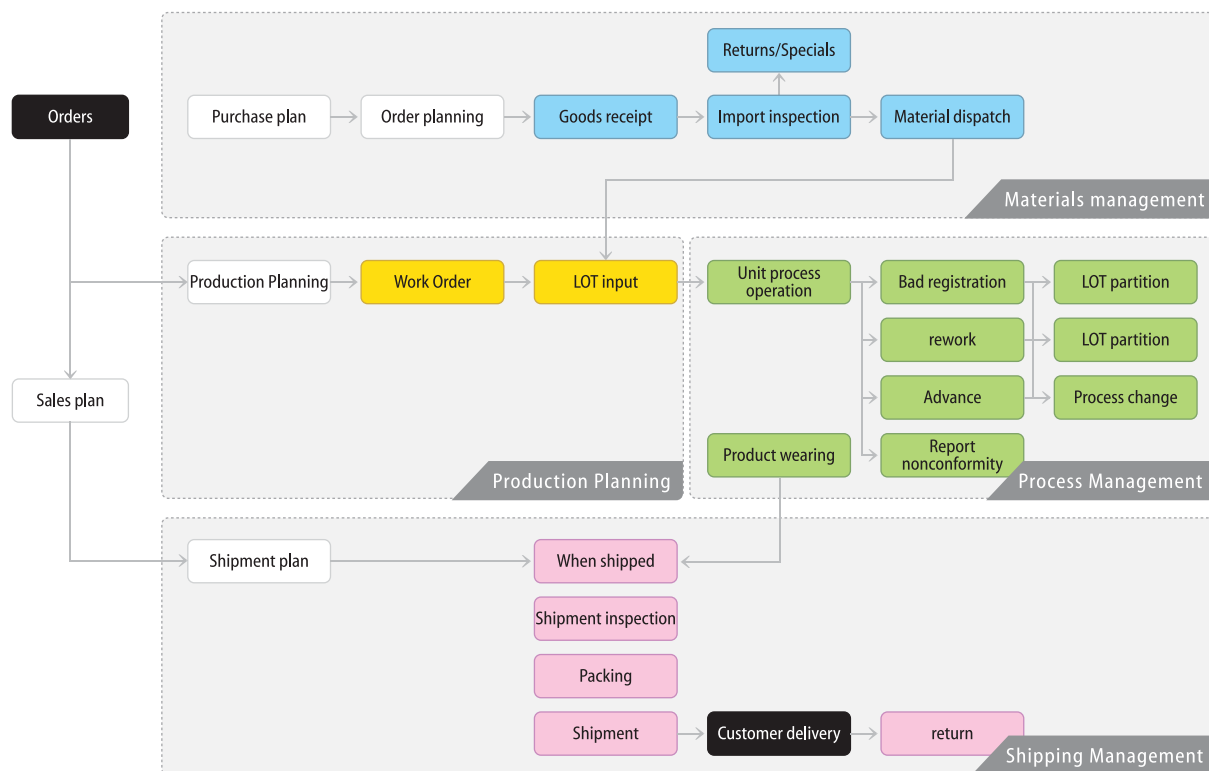
Benefit	Process control and logistics control based on planning and routing / Real-time process information collection and analysis (production capacity, labor time, facility time, defects, process conditions, etc.) / Cost competitiveness through direct effect on productivity improvement, quality improvement, Improving

MES/POP Hardware

ERP PDM CMMS SCM Servers

Operator Operator Manager CEO

Office Network

Labor Operator MES Server (Fail-Over) R&D Engineer

Factory Network

WiFi Router

Scanner PDA 1D/2D/RF-ID Barcode Printer

Industrial KIOSK

Material Receipt

PLC Digital Calipers Vision Measurement Devices

Packing Shipping Goods

MES/POP Process

Orders

Returns/Specials

Purchase plan → Order planning → Goods receipt → Import inspection → Material dispatch

Materials management

Production Planning → Work Order → LOT input

Sales plan

Unit process operation → Bad registration → LOT partition

rework → LOT partition

Advance → Process change

Product wearing → Report nonconformity

Production Planning

Process Management

Shipment plan → When shipped

Shipment inspection

Packing

Shipment → Customer delivery → return

Shipping Management

MES/POP Software

fastMES/POP has a stable structure, and other external modules are standardized together with individual service module in MES Core. Even if the production environment or manufacturing method is increased or changed, it is possible to respond quickly by setting environment and modifying MES

Base management

- Process code management
- Material/product code management
- Equipment Code Management
- Bad code management
- BOM management
- Parameter/Recipe Management
- Spec Management
- Source/Customer Management
- User/Operator Management
- System permissions management
- Code Master Management

Materials management

- Material receipt
- Import inspection
- Returns / Specials
- Material dispatch

Production Planning

- Daily Production Planning
- LOT knitting
- Route lookup
- Material Inventory Status
- Planned Performance

Production Performance

- Status of work
- Total Production Status
- Input versus instructions/performance
- Production efficiency
- Production monitoring
- LOT Tracking

공정 관리

- Displaying work order
- Process Start / Complete
- Bad registration
- Process change
- Re-worker check
- LOT Tracking
- LOT split / merge
- HOLD / HOLD Release
- Report inappropriate / Inquiries
- Facility monitoring

설비 관리

- Preventive maintenance management
- Mold & tool management
- Troubleshooting
- Availability Rate
- Non-moving status
- Facility efficiency

품질 관리

- Defect status
- Parameter analysis
- Yield status

추적 관리

- LOT tracking (static deployment)
- LOT tracking (reverse deployment)
- Bad Tracking Management
- Manufacturing history tracking

출하 관리

- Goods Receipt
- Shipment instruction
- Shipment inspection
- Packing
- Shipment
- return

MES Main Screen

Monitoring product receipt status

Monitoring product receipt status

Monitoring Monthly Production Status

Availability Chart

Sales plan for this month shipment status

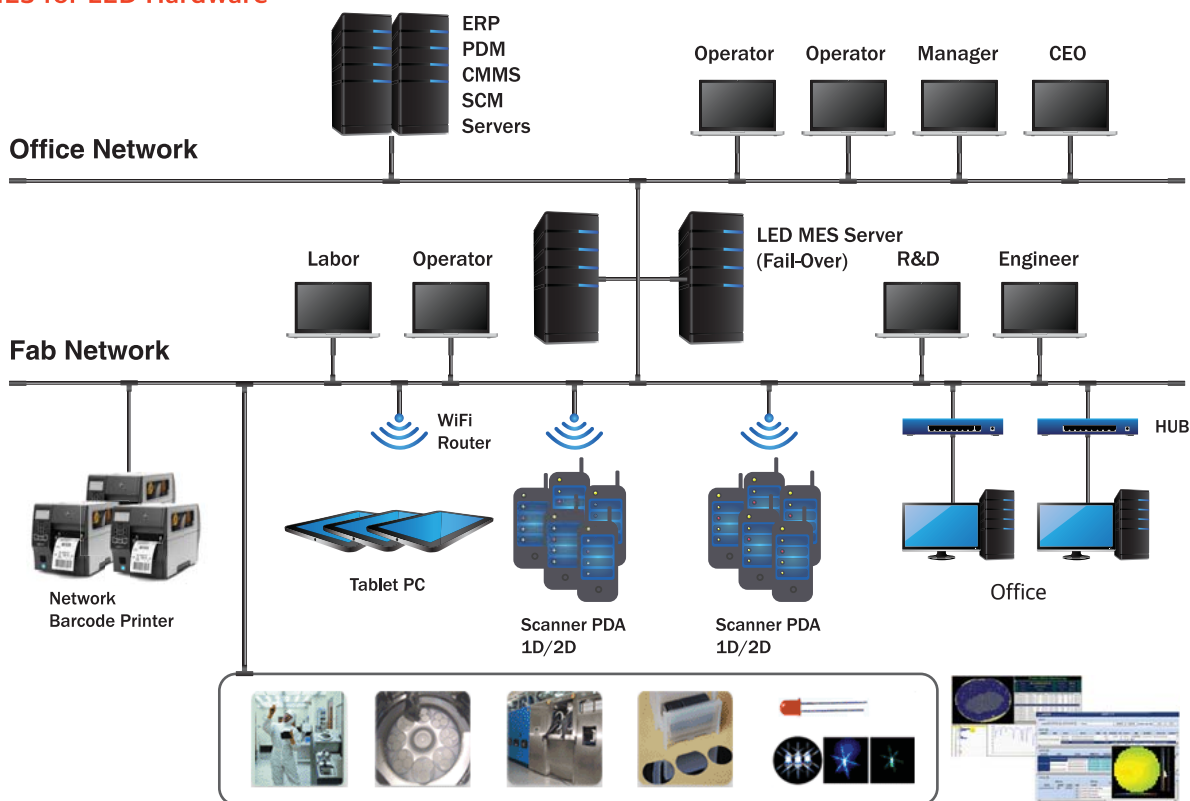

Weekly production status monitoring

fastMES for LED

fastMES for LED solution is a specialized semiconductor solution tailored to the semiconductor industry that manufactures LED chips. It is a specialized semiconductor solution for PSS, EPI, CHIP processes, covering everything from goods receipt to shipment.
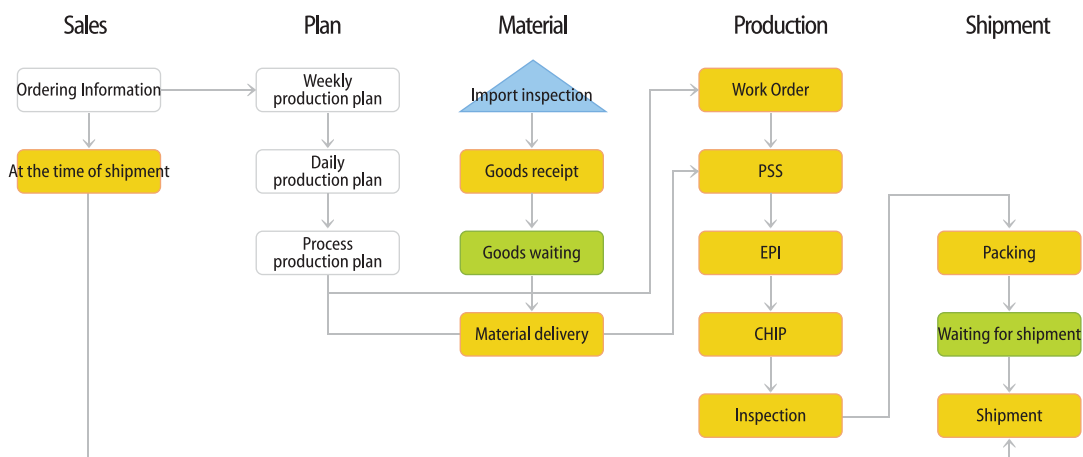
Benefit	Real-time process information collection analysis / Precise cause tracking on abnormal yield / Automatic generation of tag and report by customer / Real-time quality tracking by customer / Automatic quality determination of measurement data / Cost standardization

MES for LED Hardware

Office Network

ERP
PDM
CMMS
SCM
Servers

Operator   Operator   Manager   CEO

Fab Network

Labor   Operator   LED MES Server (Fail-Over)   R&D   Engineer

WiFi Router

Network Barcode Printer

Tablet PC

Scanner PDA 1D/2D   Scanner PDA 1D/2D

HUB

Office

MES for LED Process

| Sales	Plan	Material	Production	Shipment
Ordering Information	Weekly production plan	Import inspection	Work Order	
At the time of shipment	Daily production plan	Goods receipt	PSS	
	Process production plan	Goods waiting	EPI	Packing
		Material delivery	CHIP	Waiting for shipment
			Inspection	Shipment

PSS~EPI, CHIP Process

Main process data from sapphire wafer wearing to pattern, MOCVD EPI growth, chip processing probe and sorting are managed to the lowest unit chip level, and forward / reverse tracking from chip level to wafer and carrier lot is possible
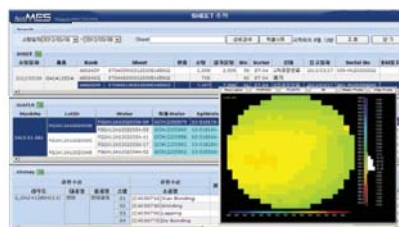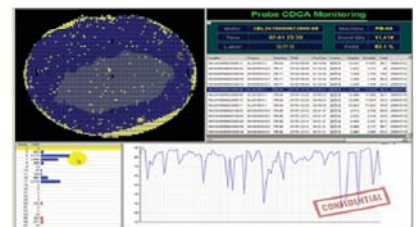
PSS~EPI
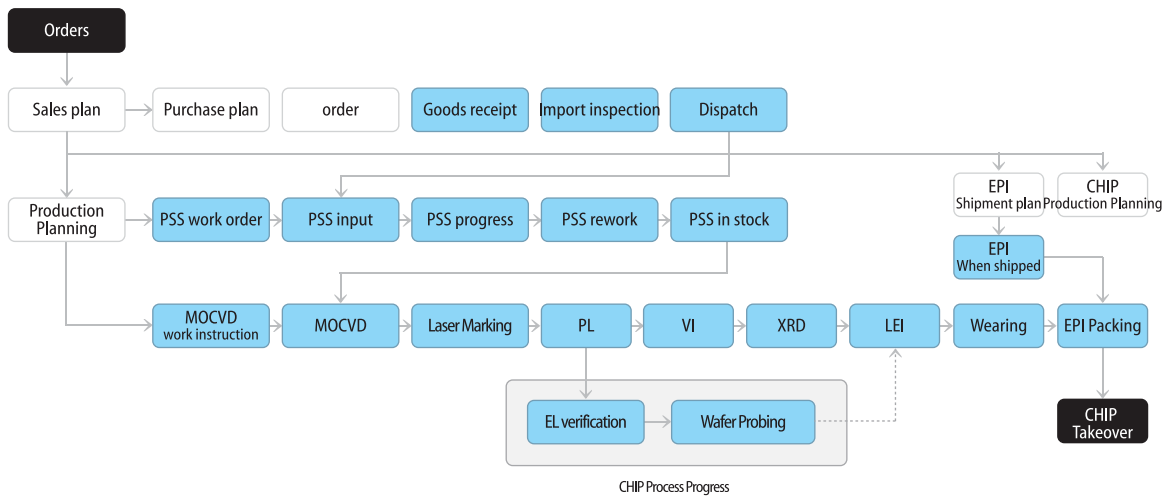
CHIP
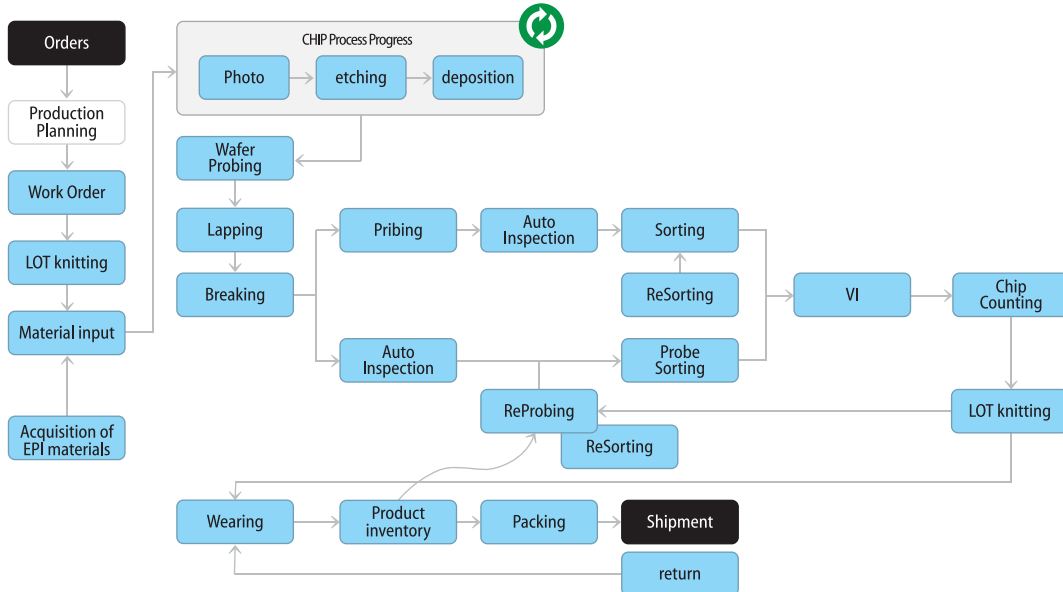
MES for LED Main Screen

LED MES MAIN

Chip Unit Tracking from Sheet to Wafer

Real-Time Quality Analysis

Analysis of measurement performance

CHIP yield analysis

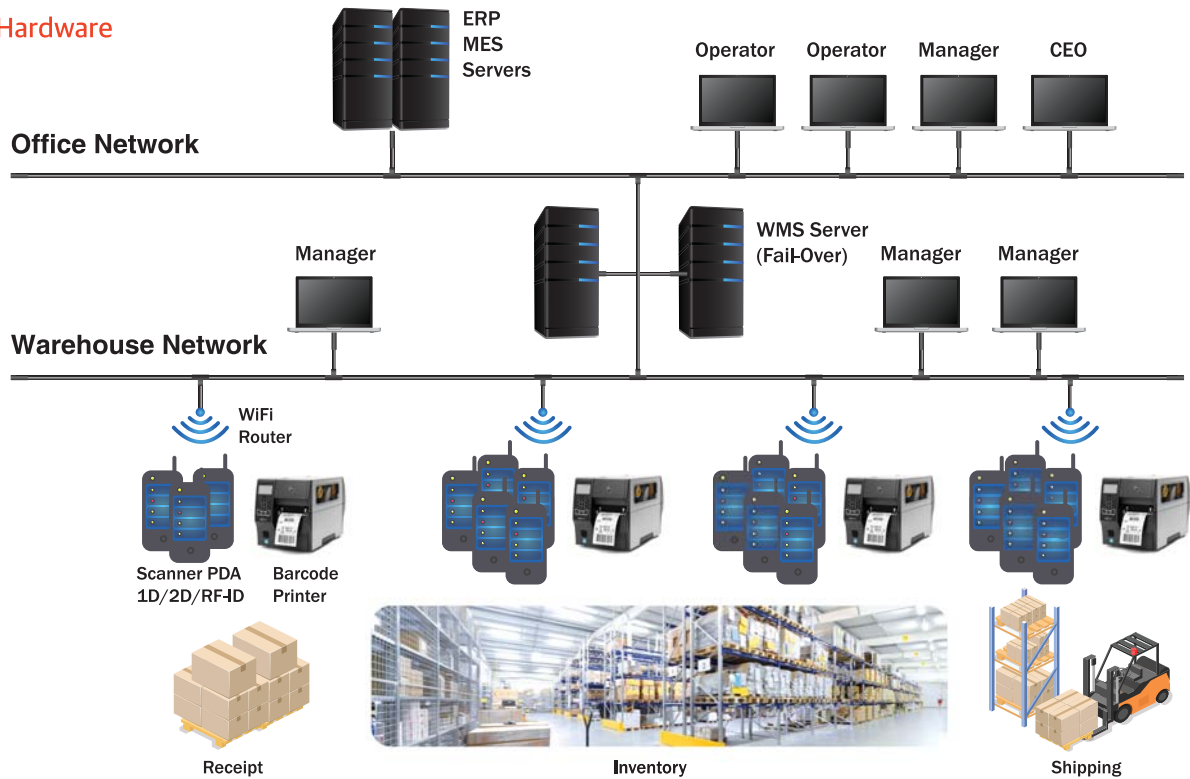
Real-time equipment operation status

fastWMS

fastWMS is a warehouse and inventory management system based on complex logistics environment and business characteristics. It manages the ordering, goods receipt, order management, picking, warehouse, inventory management, Logistics solution.
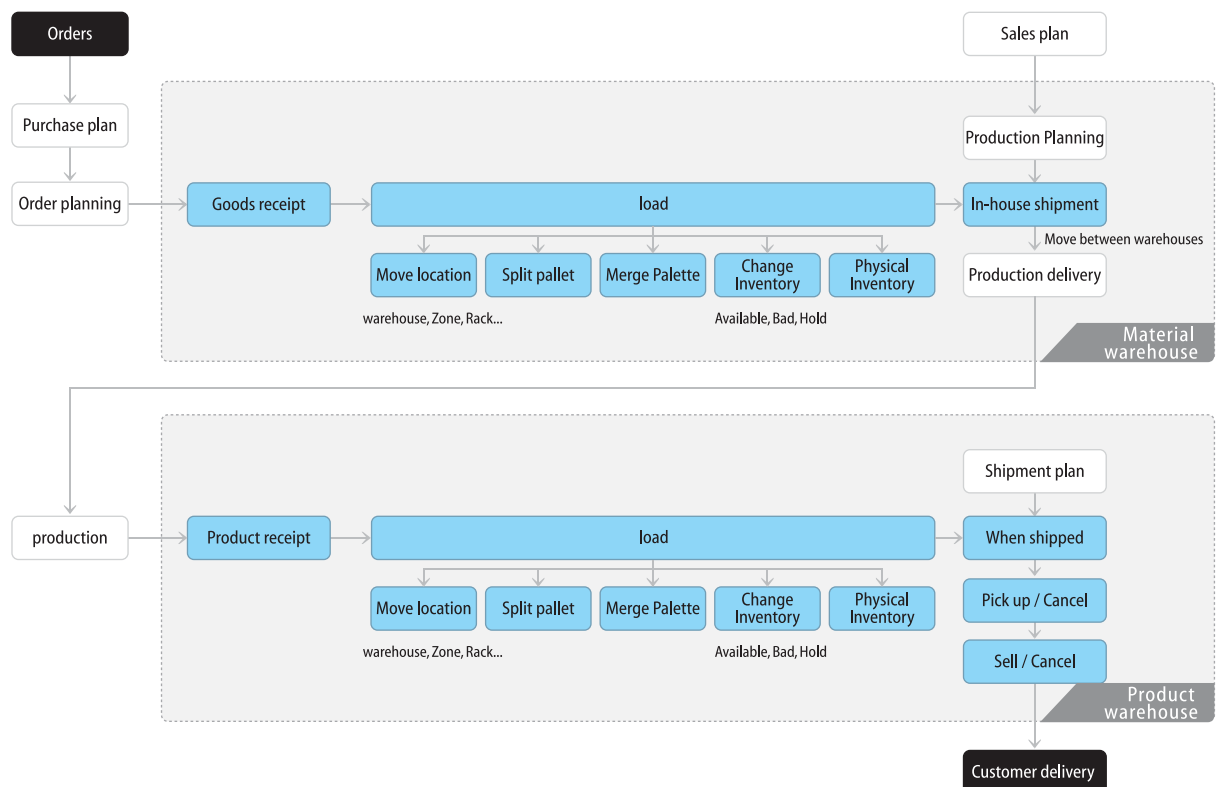
Benefit	Inventory accuracy and real-time inventory check management / Load space efficiency and first-in / first-out ability / Effective manpower management by shortening work time from goods receipt to delivery

WMS Hardware

ERP MES Servers

Operator Operator Manager CEO

Office Network

Manager

WMS Server (Fail-Over) Manager Manager

Warehouse Network

WiFi Router

Scanner PDA 1D/2D/RF-ID Barcode Printer

Receipt Inventory Shipping

WMS Process

Orders

Sales plan

Purchase plan

Order planning → Goods receipt → load → In-house shipment

Production Planning

Move location Split pallet Merge Palette Change Inventory Physical Inventory

warehouse, Zone, Rack... Available, Bad, Hold

Move between warehouses

Production delivery

Material warehouse

production → Product receipt → load → When shipped

Shipment plan

Move location Split pallet Merge Palette Change Inventory Physical Inventory

warehouse, Zone, Rack... Available, Bad, Hold

Pick up / Cancel

Sell / Cancel

Product warehouse

Customer delivery

WMS Software

It is a WMS professional solution based on experience of building various warehouse logistics management system in Korea.
Using proven solutions that are already in use in the field, you can apply them quickly and maximize warehouse operation efficiency.

Base management

- Item code management
- Packing unit management
- Warehouse Code Management
- Factory code management
- User / Operator Management
- System permissions management
- Code Master Management

Goods Receipt

- Purchasing Goods Receipt
- Moving between warehouses
- Stock Status
- Return Status
- Management of the unit cost of goods receipt

Load Management

- Load Location Management
- Pallet configuration
- Dismantling pallet
- Label Issued
- load
- ZONE Management

Inventory management

- Inventory Status
- Inventory Status by Load Position
- Split pallet
- Merge pallet
- Change inventory status
- Label Issued
- Move load location
- Physical Inventory

Shipment management

- In-house shipment
- Factory Management
- Picking
- Picking Status
- Cancel picking
- Selling goods
- Cancel goods issue
- Issuance of waybill / statement
- Goods history

WMS Main Screen

Warehouse monitoring

Picking status

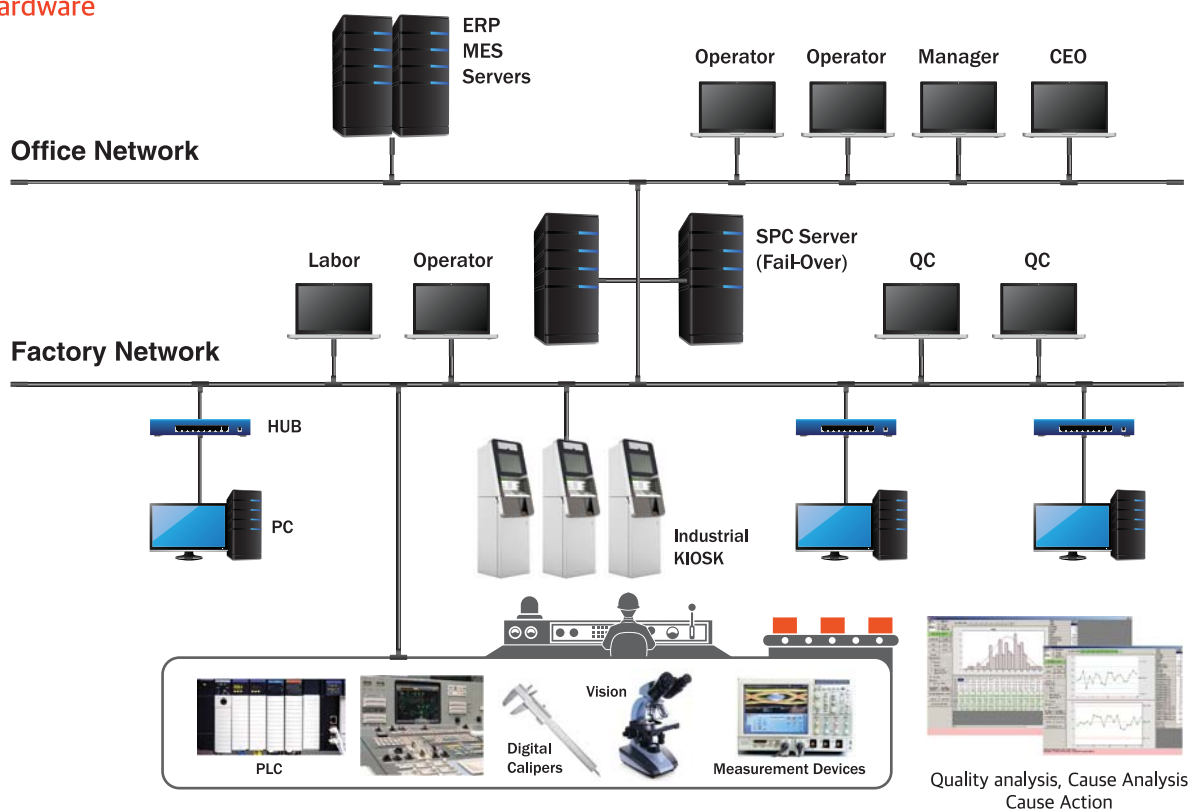Daily shipment status

PDA Picking Sample Screen

fastSPC

fastSPC is a statistical process management system that collects various inspection information from production process in real time, analyzes quality with 6 Sigma quality control analysis technique, and provides analysis result in real time to maintain stable process condition.
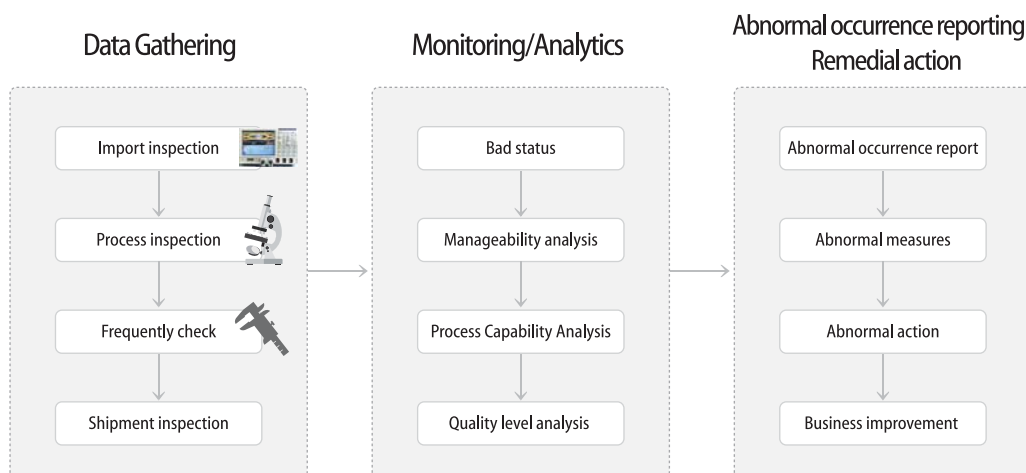
Benefit	Real-time quality analysis management (Histogram, Normal Distribution, XBar-R, XBar-S, NP, P, I-MR) Standardization of inspection standard / Maximization of field data utilization / Real time process feedback / Establishment of incidence reporting system

SPC Hardware

Quality analysis, Cause Analysis
Cause Action

SPC Process

Data Gathering

- Import inspection
- Process inspection
- Frequently check
- Shipment inspection

Monitoring/Analytics

- Bad status
- Manageability analysis
- Process Capability Analysis
- Quality level analysis

Abnormal occurrence reporting / Remedial action

- Abnormal occurrence report
- Abnormal measures
- Abnormal action
- Business improvement

SPC Software

By collecting all the data related to the quality (process, equipment, work, etc.) generated at the production site and analyzing various graphs of the indicators with statistical quality control technique, real-time analysis, measures and measures can be made on the process status

Base management

- process code management
- Item Code Management
- Inspection Standard Management
- Measurement drawing management
- User / Operator Management
- Instrument Management
- Inspector certification management

Data collection

- Import inspection
- Process inspection
- Frequently check
- Interweave water inspection
- Circuit inspection
- Shipment inspection

Monitoring

- Monitoring by line
- Monitoring by management item
- Integrated dispersion monitoring
- Abnormal occurrence monitoring
- Special management item monitoring

Abnormal

- Abnormal occurrence report
- Abnormal measures
- Abnormal action
- Abnormal history

Quality Analysis

- Weekly / Monthly yield analysis
- View bad status
- Inferior factor inquiry
- Analysis of bad factor TOP10
- Poor trend analysis
- Np control chart
- I-MR management chart
- Xbar-R control chart
- Xbar-S control chart
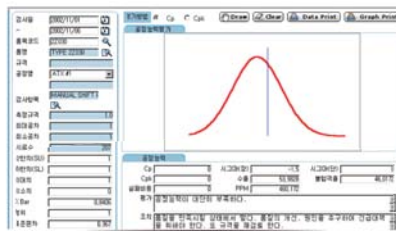- Histogram
- Cp, Cpk

Comprehensive Analysis

- Capability Analysis
- Quality Level Analysis
- Process capability trend
- Sigma trend
- NG analysis
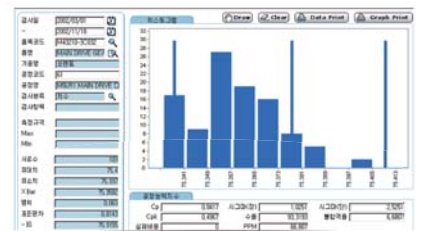- Comprehensive Worst analysis
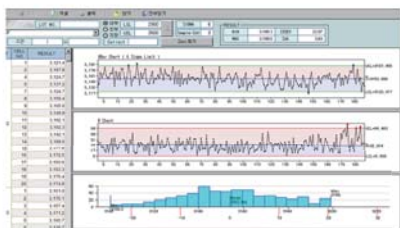
SPC Main Screen
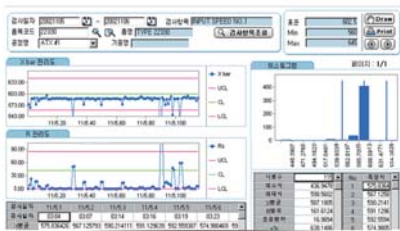
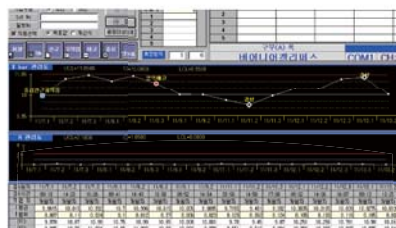Total quality analysis

Process capability evaluation

Histogram & quot

Manageability analysis

Process anomaly prediction and measurement

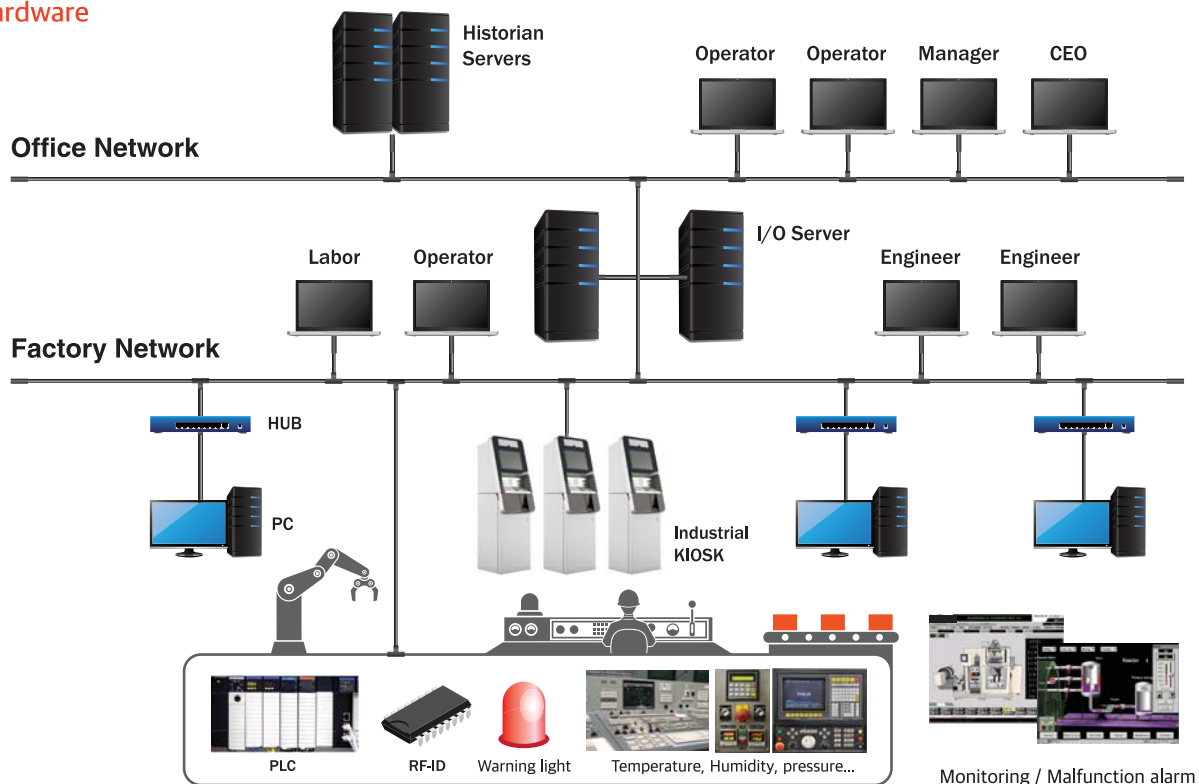Monitoring by Process Capability

fastHMI

fastHMI combines the functions of HMI and POP (Point of Production) to provide an intuitive and easy-to-understand interface between operators and facilities, and collects, formats, and combines data from various facilities to enable full and detailed equipment monitoring.

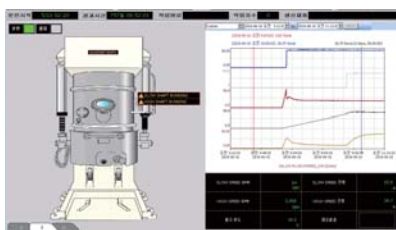| Benefit	Reduces development and maintenance time by using InTouch, a specialized HMI tool. Provides independent animation for each facility. Displays real-time trend of analog data change.

HMI Hardware

Historian Servers

Operator   Operator   Manager   CEO

Office Network

Labor   Operator   I/O Server   Engineer   Engineer

Factory Network

HUB

PC

Industrial KIOSK

PLC   RF-ID   Warning light   Temperature, Humidity, pressure...

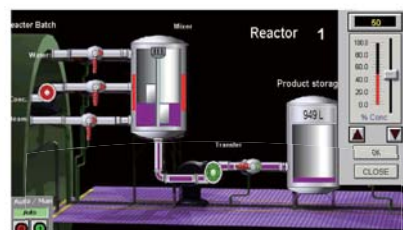Monitoring / Malfunction alarm

HMI Main Screen
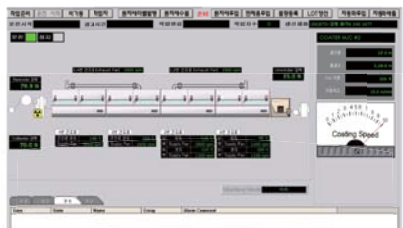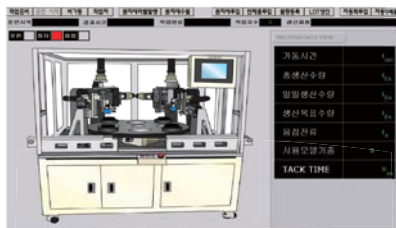
Process monitoring   Process monitoring   Process monitoring
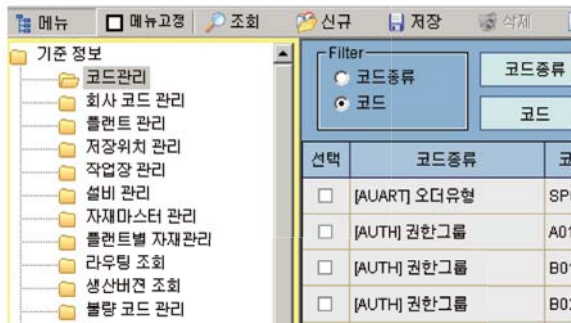
Process monitoring   Process monitoring   Process monitoring
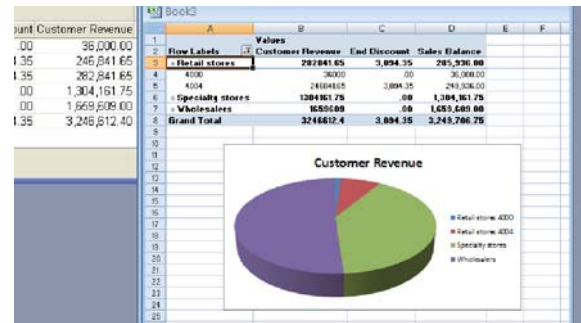
Haesol Smart Factory Solution is
# easy and simple for anyone to access.

Intuitive UI
Easy-to-access folder-type menu structure allows you to grasp the overall menu structure at a glance. We also have an interface that minimizes loading for fast and easy use


Easy to use
Most screens support Excel download. You can receive data in the form of an Excel report on the retrieved data and easily edit the Excel file
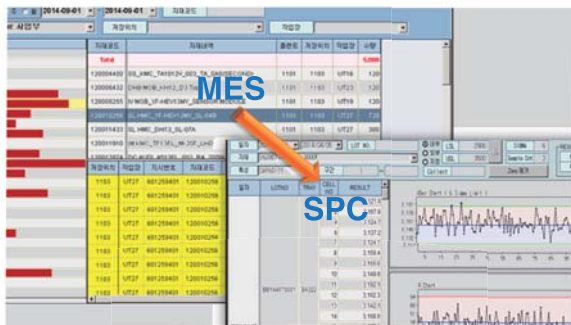
Flexible linkage with other systems
A flexible connection environment of other systems and related data is provided. XML-based data exchange interfaces are supported, allowing for convenient screen switching and rapid and accurate decision-making.
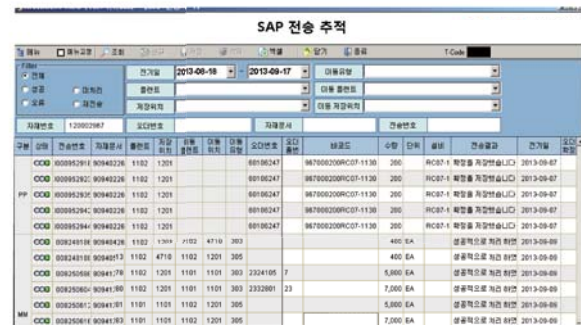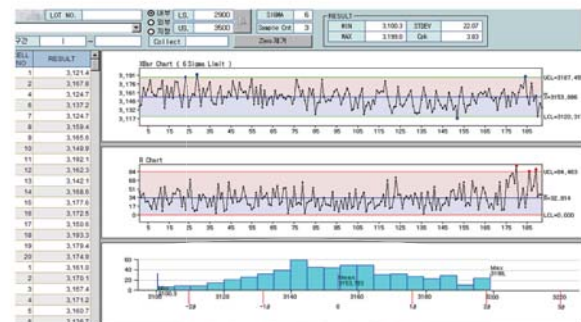

Increase work efficiency
You can organize your work and information in one window, manage errors in the system as messages, and track transmission of SAP I / F items

## Real-time visualization and control
You can visualize and control critical plant processes in real time, so you can more accurately determine your current situation and take the necessary action

Efficient Quality Control
By analyzing the cause of defective product and process status in real time and performing statistical analysis visualized, we support efficient quality control activities

Korean smart factory model optimized for SMEs
Haesol Information Systems comes with

fastMES   fastWMS   fastSPC   fastHMI
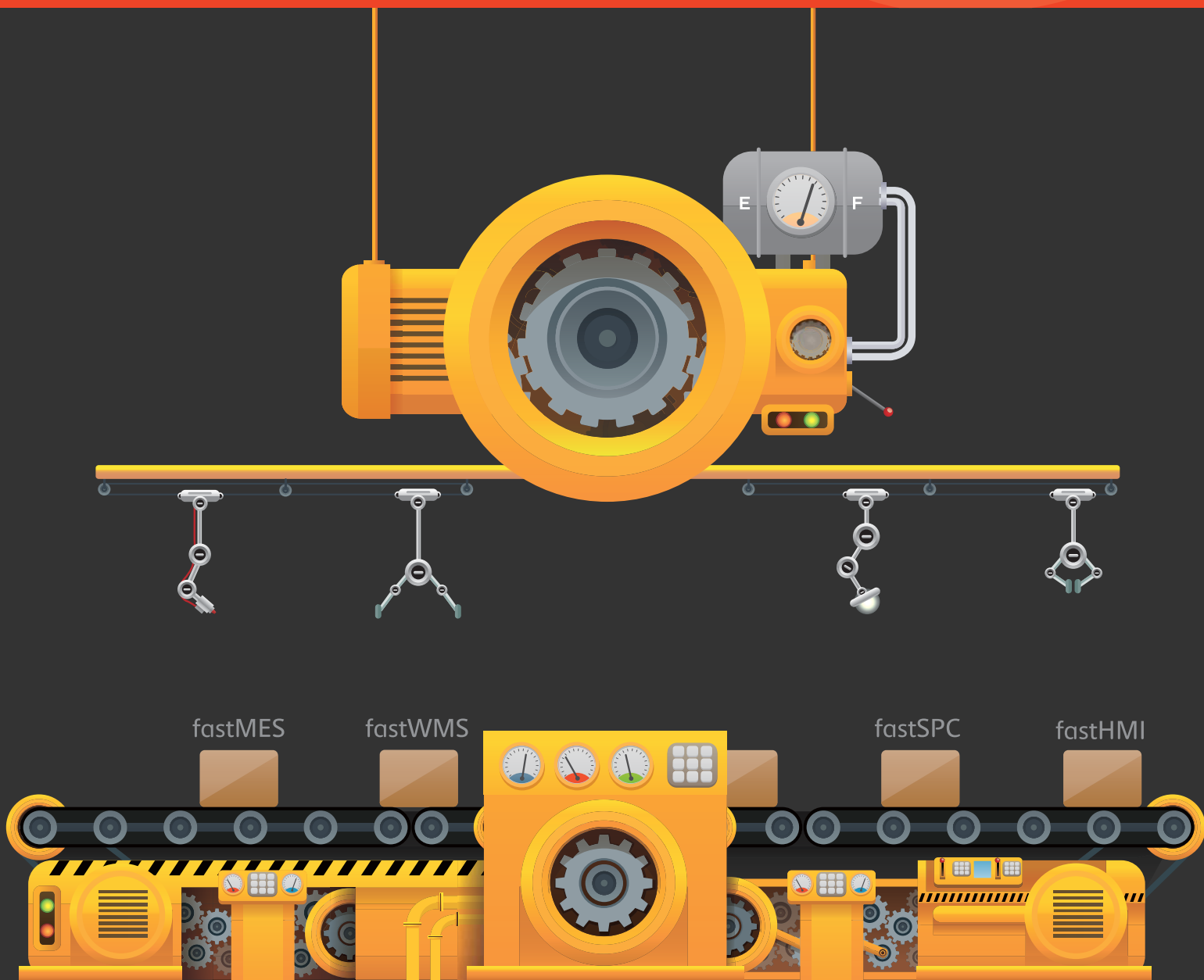
HAESOL

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