Based on stability and trust
A total IT service provider that delivering optimal solutions

COMPUTER MATE

Total IT Services Company Providing
AI and Smart Factory Solutions

computerMATE

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COMPUTER MATE

computerMATE
Making Another Technology Evolution
㈜컴퓨터메이트

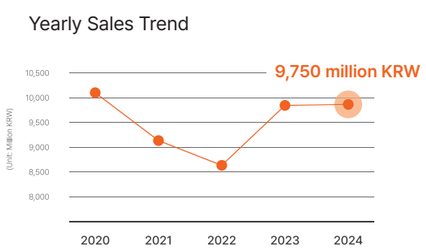
Providing the Ultimate Solution

COMPUTERMATE Co., Ltd. a total IT service provider delivering customized business solutions that enhance productivity, efficiency, and quality through AI solutions and smart factory implementations. Through these technologies, we drive business innovation for our clients and establish a stable digital environment to support long-term growth.

By leveraging AI technology, we deliver data-driven intelligence and automation, creating new value for our clients' businesses. We enhance operational efficiency through AI-driven predictive analytics and real-time data processing, delivering customized AI and MES solutions to boost competitiveness in manufacturing and other industries.

Since our founding in 1992, we have accelerated digital transformation through customized technical support and consulting that meets customer needs.With a dedicated technology research center and ongoing R&D investments, we drive digital innovation to support future growth, positioning ourselves as a trusted partner for our clients.

Company Overview

CEO	Sangin Seo, Sungho Kim	**Founding Date**	Originally Established in 1992 (Incorporated in 2007)
Capital	KRW 100 million	**Credit Rating**	BB+ (NICE Information Service)
Features	· Technology Innovation SME (INNO-BIZ) · Establishment of Corporate R&D Center (2005) · Star Company 100	**Key Facts**	· Relocation of Headquarters to Suseong Alpha City (2019) · Established Gyeonggi Branch (2018)
Patent	· Method for Managing the Production of Rubber Products · Cloud-based Smart Factory Operation System for Automotive Parts Industry using Big Data Analysis · Electronic Devices and Control Methods	**GS Certification**	· Enterprise Resource Planning System v4.0 MATE-ERP v4.0 · Software for Rubber Mixing Process Control · MATE-ERP C#.NET v1.0 · MATE MES.NET v3.0
Patent Application	· Smart Factory Management Device and Control Method · AI-powered Automatic Rubber Cutting Machine · AI-based Rubber Cutting Learning System and Method	**Sales**	Yearly Sales Trend 

Business Area

IT Solution Development and Consulting

- **MATE Series**
  - MES
  - MES for Cloud
  - ERP
  - E-HR
  - SCM
  - Groupware
  - QMS
  - POP
  - WMS
  - Initial- In-process -final product management
  - Compounding management System
  - Biztime (Time card management solution)
- **AI Series**
  - ADUP (Anomaly Detection Universal Platform)
  - AD(Anomaly Detection)
  - OPC(Optimal Process Conditions)
  - QP(Quality Prediction)
  - TMS(Test Management System)
  - CPS(Cyber-Physical System)
- **Data Analysis and Management**
  - BI(Business Intelligence)
  - RPA
  - DA(Data Acquisition)

IT Infrastructure

- **Server Supply and Maintenance**
- **On-site Equipment Supply and Maintenance** (Barcodes, Scanners, Kiosks, etc.)
- **Cloud Services** (AWS, AZURE, NAVER, KT, etc.)
- **Network and Data Collection installation**
- **IoT Installation and Maintenance**

IT Services

- **IT Planning and Diagnostic Consulting**
  - PI(ISP)
  - Quick Assessment
- **Customer Support Services**
  - System maintenance
  - Infrastructure maintenance (H/W, N/W, Various equipment)
- **Training Services**
  - Free training for maintenance customers
  - IT system and technical training (Paid service)

Smart factory and DX (Digital Transformation)

- **Smart Factory Consulting**
- **Smart Factory Expansion Program**
- **Data Voucher Program**
- **AI-powered Data Infrastructure Development Program**
- **Cloud Service Usage Support Program**
- **AI Voucher Program**
- **Metaverse Factory Program**
- **DX(Digital Transformation) Consulting**
- **AI-Manufacturing Convergence Consulting**

Business

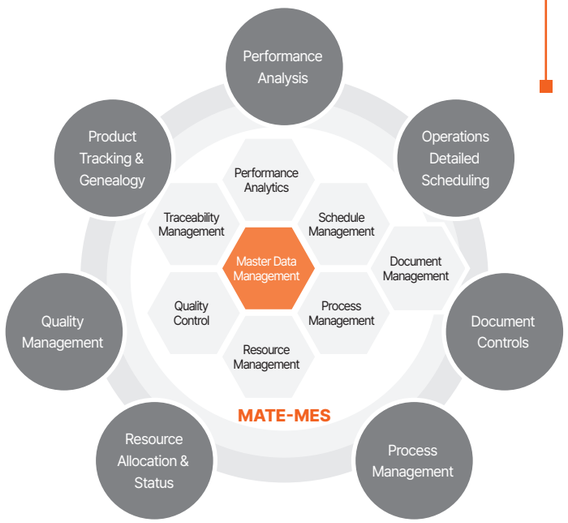
- Automobile Parts Manufacturing
- Electrical & Electronics
- Rubber/Chemical
- Equipment Automation
- General Other Manufacturing
- Distribution & Wholesale
- Public Institutions
- Steel/Wood/Paper

* Automotive parts industry, rubber molding, compounding rubber, painting, plating, sewing, electronics, wiring, injection molding, welding, casting and forging, heat treating, brazing, and all related parts and contract manufacturing.

Reference

경창산업 · 대영전자 · CHASYS · AJACO · 한국피아이엠(주) · YOUNG MOBILITY · SEWON · KWANGJIN · GUYOUNG TECHNOLOGY CO.,LTD. · JINYANG · TAEKYUNG · SIEMENS Healthineers · 동일알루미늄(주) · WOORY · daedong · (주)일지테크 · 주식회사 화신 · JINYANG 진양특수강 · 세명기업 · Pratama · 주식회사 넥센 · SL 주식회사 · DASAN DMC · 금석 긴회이앤지 · 유원고무(주) · JNTG · 대구공공시설관리공단 Daegu Public Facilities Corporation · 한국로봇산업진흥원 · DH AUTOWARE · SAMICK THK · LOTTE ALUMINIUM

MES
Manufacturing Execution System



Product Overview

MATE-MES is a specialized Manufacturing Execution System (MES) solution developed by COMPUTERMATE Co., Ltd., leveraging the company's accumulated expertise. This field support and management system reflects the realities and conditions of the manufacturing industry, enabling systematic management of planning and execution information on the production floor.

MATE-MES optimizes production activities occurring on the shop floor through a series of directives and management processes. This management support system facilitates rapid and seamless responses to dynamic shop floor conditions. Based on the 11 core functions of MES as defined by the American MESA, MATE-MES has been packaged and customized to address the specific needs of small and medium-sized enterprises (SMEs) and manufacturers.

Key Features

· Defines management elements such as equipment, materials, and operators by individual processes.
· Tracks and manages all materials according to predefined specifications.
· Digitalizes detailed execution results and measurement data of products by each process.
· Systematically manages all all factory resources.
· Provides interfaces for integration with other systems.

Necessity of Adoption

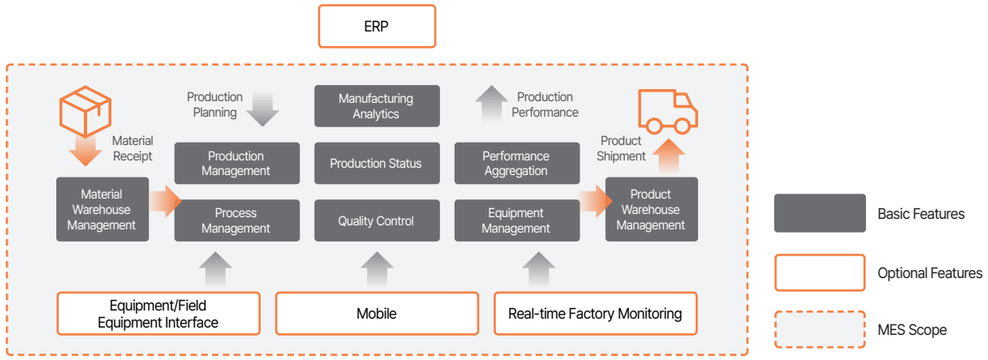
Evaluate your readiness for MES adoption using a self-diagnosis checklist:

- ☑ Inadequate knowledge-based information systems for shop floor management.
- ☑ Lack of integrated functionality for production activities.
- ☑ Insufficient information sharing across factories, departments, processes, and workflows. Difficulty monitoring production progress at various stages.
- ☑ Discrepancies between raw material input and physical inventory.
- ☑ Limited ability to provide or collect critical on-site operational data.
- ☑ Inability to respond flexibly to sudden changes in production conditions.
- ☑ Challenges in gaining transparent visibility and making prompt decisions.
- ☑ Need for a comprehensive system to oversee shop floor operations and support decision-making.
- ☑ Difficulty addressing discrepancies between ERP production requirements and actual results.
- ☑ Managers spending 25–35% of their time verifying and correcting on-site data.

Core Functions

MES is an integrated production management system

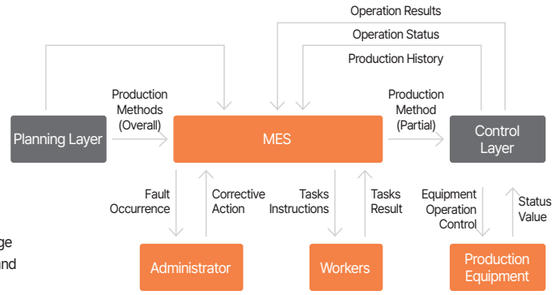
MATE-MES integrates seamlessly with existing systems, such as ERP (Enterprise Resource Planning), to streamline material receipt and issuance using barcodes or other methods. It ensures clear traceability and enables quality control by handling each step—production planning, work orders, process management, and performance recording—at the appropriate management unit. In terms of product receipt and shipment management, the system uses wireless and wired scanners or PDAs to automate tasks, collect and analyze on-site information, and ensure accurate data processing. This facilitates rapid decision-making for both operators and managers.

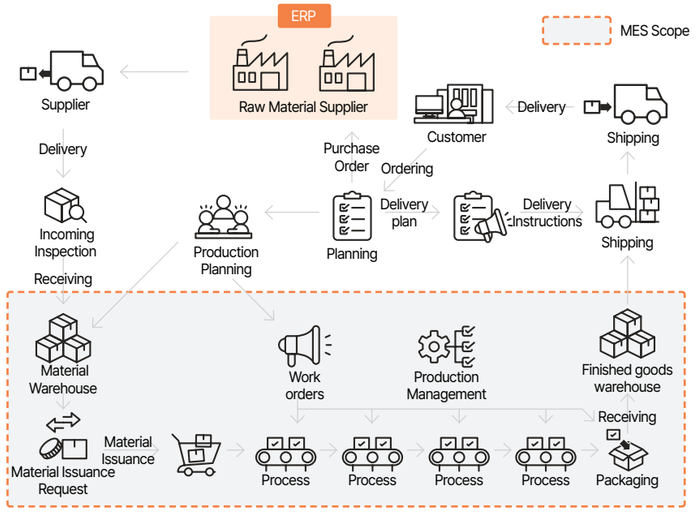


MES enables Quality Control and Informed Decision-Making

MES enables Quality Control and Informed Decision-Making
MES is a system that oversees the entire production cycle, from initiation based on product orders to the quality inspection of finished products. It serves as an integrated information system for the production site, collecting various data in real time—such as production performance, worker activities, equipment status, and product quality information—and performing aggregation, analysis, monitoring, and control of the production process. This enables the establishment of a high-quality, profit-oriented production system.

In other words, MES is designed to improve productivity and meet the increasing customer demands for enhanced product quality. It allows companies to accurately monitor and manage real-time production status on-site, reflecting the characteristics of the company's industry and production site while considering necessary management aspects.





Workflow Diagram

MES can be said to integrate and manage all information that can occur at the production site, such as monitoring and controlling process progress information, facility control and monitoring, quality information tracking and control, performance information aggregation, warehouse operation management, work-in-process management, material input management, personnel management, and facility management.
It is a system that helps workers and managers make quick decisions by automating work by using wired and wireless scanners or PDAs in product import/export management and clarifying data processing by collecting and analyzing field information.

Expected Benefits

MATE-MES can optimally manage the production activities of the 4Ms that exist on the production floor—Man (workers), Method (production methods), Material (materials), and Machine (production equipment)—by collecting real-time data through the information system.

Improvement

· Improved quality through systematic production management.
· Increased factory operational efficiency through standardization of information within the factory.
· Accurate Root Cause Identification and Rapid Response Capability.

Decrease

· Reduction in cycle time and lead time.
· Reduction in documentation tasks between shift teams.
· Decrease in product defect rates.
· Reduction in Work-in-Progress (WIP).

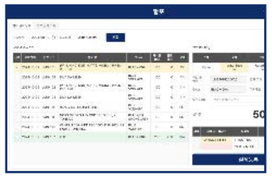
Management

· Real-time data collection and statistical process control through automation.
· Enhanced visibility of information, enabling consistent management by workers, managers, and top management.
· Real-time monitoring of WIP performance for equipment.

Screen Examples


Planning Management

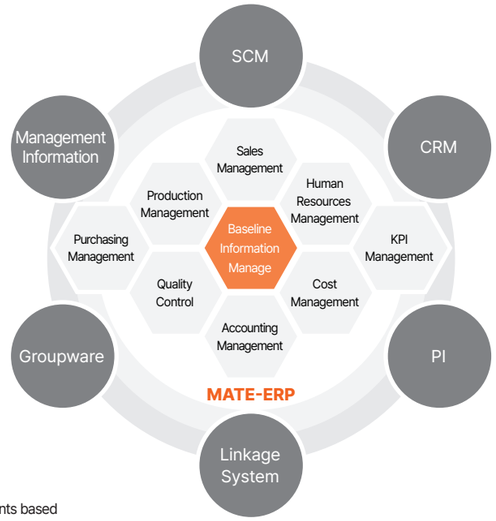

Defect Management


Performance Management


Monitoring

MATE-ERP

Enterprise Resource Planning



Product Overview

An easy and user-friendly integrated information system.MATE-ERP(Enterprise Resource Planning) is an ERP solution that incorporates the project experience and implementation know-how of COMPUTERMATE Co., Ltd., customized to the realities and characteristics of domestic companies. It standardizes and packages the system to enable companies adopting the integrated information system to quickly and flexibly establish advanced business models.

MATE-ERP, developed with COMPUTERMATE's technological expertise, is a specialized corporate ERP solution that integrates all business processes and provides real-time insights into operational performance, and facilitates quick and transparent business operations through information sharing.

Key Features

- An ERP package that prioritizes user convenience and minimizes input by pre-reflecting requirements based on implementation experience and implementing core functions with a sense of field reality.
- Covers all business processes across the enterprise, including accounting, human resources, purchasing, sales, materials, and quality.
- Combines the integration, modularity, and stability of ERP with the convenience and maintainability advantages of legacy systems.
- Implements the accessibility of the web, a user-friendly interface, and the usability of a client/server (C/S) system in a single solution.
- Supports additional integrated management by linking with existing systems and groupware according to the information environment of the target company.
- Pre-reflects the requirements of domestic companies considering the reality of redundant business processes and a lack of manpower.

Competitiveness

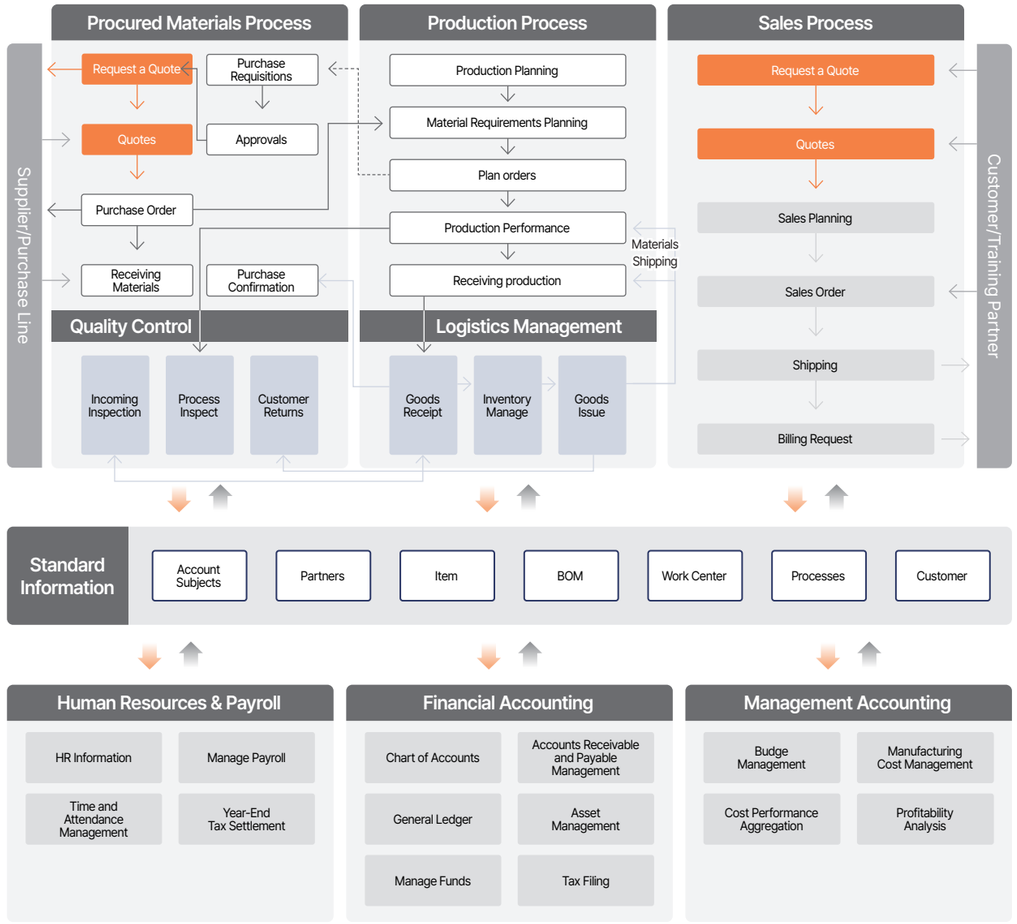
Project understanding	ERP implementation capabilities	Building a PI-based ERP system	Minimize IT-TCO	Reliable operational support	Customer satisfaction
Strong understanding of best practices in ERP systems.	Over 30 years working on related projects.	Build systems to drive revenue growth.	Designing efficient IT infrastructure to minimize total IT investment costs.	Projects with early stabilization in mind and ongoing IT collaboration.	Align project objectives with client vision.

Core Functions

Purchasing Materials	Implementation of a process to improve inventory accuracy through the management of inbound and outbound materials from in-house and outsourced companies, ensuring alignment between physical and electronic inventory through daily/monthly data processing to prevent stockouts and excess inventory.
Production Management	Establishment of optimized production plans linked to sales, production, and purchasing, ensuring the consistency of production information through systematic management of production performance.
Sales Management	Improvement of inventory accuracy through the management of inbound and outbound materials for in-house and consignment stock transactions, implementing daily/monthly closing processes through daily/monthly verification data processing.
Quality Management	Implementation of process inspection management functions linked to production and cost processes.
Financial Accounting	Elimination of duplicate work and enhancement of data reliability through the integration of information from the logistics and accounting departments.
Cost Management	Provision of accurate product-specific costs by applying standard labor rates to labor and expenses and achieving reasonable allocation of indirect costs.
Human Resources Management	Supports systematic and efficient management of HR information, enables fast and accurate payroll processing, and facilitates electronic filing for year-end tax settlements and income taxes.

Workflow Diagram

Option



Expected Benefits

Enhancement of Work Efficiency and Connectivity

- Increase in the efficiency of individual tasks.
- Strengthening data connectivity between tasks.

Integration-based Information System

- Foundation of an internal information portal.
- Activation of internal communication.

Strengthening Management Information and Sharing

- Establishing a future-ready customer-facing web service infrastructure.
- Provision of structured management information for timely decision-making.

Screen Examples

Human Resources Detail

Voucher Inquiry Details

Sales Order Registration Management

Inventory Inquiry

MATE-SCM

Supply Chain Management System

Product Overview

MATE-SCM (Supply Chain Management) is a system that supports simplified and standardized ordering tasks to manage procurement processes accurately and in real-time over the internet. It facilitates real-time information sharing among trading partners using IT including component suppliers, manufacturers, and customers, enabling agile responses to market demands and consumer needs. The system is designed to support accurate and efficient management of orders, receipts, and payments. It databases all information related to orders, such as receipts, outstanding payments, overpayments, suppliers, and materials, to ensure smooth production and delivery.

Key Features

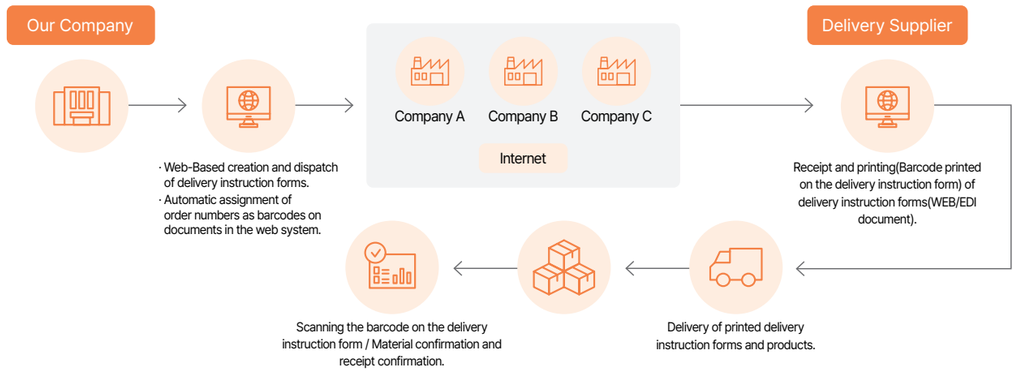
Web-Based System and Security System	· Developed an information system based on the internet, enabling real-time processing of tasks without time and space constraints. · Implements a robust security system to protect business operations and information.
Scalability-Oriented Design	· Designed to fit the workflow of users, accommodating changes in business environments, advancements in information technology, and the accumulation of data.
Selection of Verified Products	· Selected genuine software that facilitates smooth system development and maintenance for delivery.

Core Functions

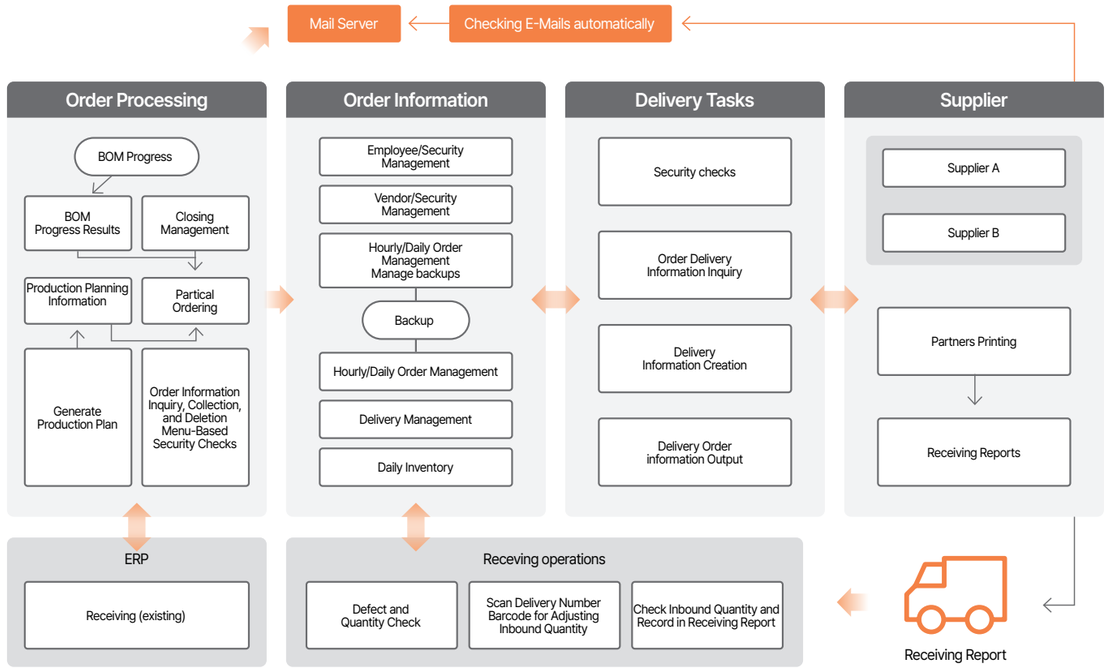
Basic Information Management	System Management, Common Code Management, User Code Management, User Permission Management, Client Information Management, Standard Information Management, IP Management, Backup Management, Registration/Modification/Deletion of Items.	Quality Management	Receipt Confirmation, Receipt Modification, Return Confirmation, Reorder Processing, Scheduled Receipt Inquiry, Outstanding Receipt Inquiry, Receipt Status Compared to Orders.
Production Status Management	Inquiry of Production Status(Linked with MRP).	Delivery Plan Management	Delivery Operations, Printing of Delivery Instruction Sheets, Delivery Registration, Modification of Delivery Quantities.
Order Management	Order Registration/Modification/Deletion, Automatic Orders, Manual Orders, Periodic Orders.	Delivery Status Management	Receipt Management Compared to Orders, Delivery Status Inquiry by Item/Period.
Bulletin Board	Public Bulletin Board, Secure Bulletin Board, Conditional Search/ Modification/Deletion.	Statistical Management	Management/Inquiries/Output by Date/Period/Item.

Workflow Diagram

· When an automatic order is placed and uploaded to the web, the delivery supplier prints the corresponding shipping order form.
· At the same time as printing, the order number is automatically generated as a barcode, which immediately serves as the box instruction.
· When goods are received at our company, the barcode on the delivery instruction form can be scanned without the need for a separate verification of the transaction statement, allowing for automatic processing of which company supplied which products.



System Flow Diagram



Expected Benefits

Standardization of operations, Utilization of information technology, and Cost reduction

· Consistent and flexible business processing.
· Quick and accurate handling of tasks.
· Ability to process tasks anytime, anywhere.
· Cost reduction through standardization and digitalization of ordering processes.

Support for production and delivery

· Accurate order and receiving management.
· Convenient and rapid task handling.

Profit Growth
Revenue Growth
Inventory Reduction

Accurate performance management and Utilization of business information

· Saving labor and time through standardization.
· History management based on accurate data.
· Business information utilization for ordering, delivery, and task history management.

Trust between suppliers

· Facilitated organic collaboration between companies.
· Minimize errors and losses.

Screen Examples


Shipping Invoice Printing


Delivery Registration


Parts Identification Label Printing

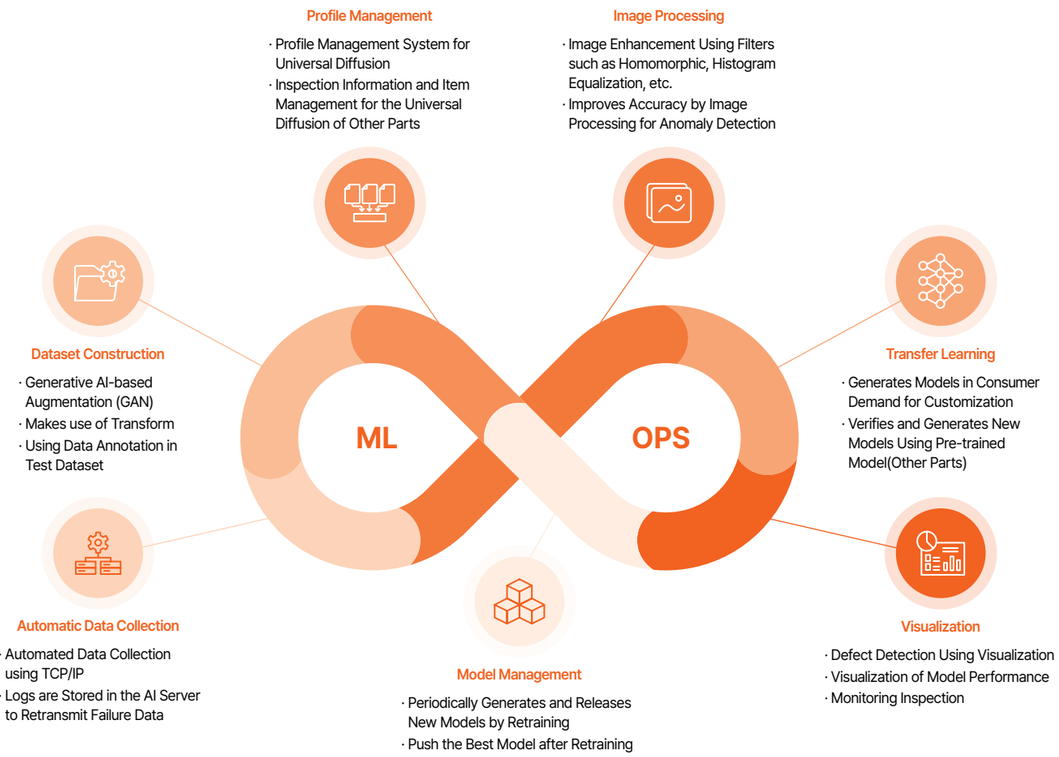

Test Report Registration

MATE-AI for ADUP

Anomaly Detection Universal Platform

Product Overview

MATE-AI for ADUP (Anomaly Detection Universal Platform) resolves atypical defect detection and false defect issues in rule-based vision inspection and can be adapted for other industries and product types through generative AI techniques and a universal platform, providing AI reliability and efficiency.



Profile Management

- Profile Management System for Universal Diffusion
- Inspection Information and Item Management for the Universal Diffusion of Other Parts

Image Processing

- Image Enhancement Using Filters such as Homomorphic, Histogram Equalization, etc.
- Improves Accuracy by Image Processing for Anomaly Detection

Dataset Construction

- Generative AI-based Augmentation (GAN)
- Makes use of Transform
- Using Data Annotation in Test Dataset

Transfer Learning

- Generates Models in Consumer Demand for Customization
- Verifies and Generates New Models Using Pre-trained Model(Other Parts)

Automatic Data Collection

- Automated Data Collection using TCP/IP
- Logs are Stored in the AI Server to Retransmit Failure Data

Model Management

- Periodically Generates and Releases New Models by Retraining
- Push the Best Model after Retraining

Visualization

- Defect Detection Using Visualization
- Visualization of Model Performance
- Monitoring Inspection

Core Functions

Generative AI-based Dataset Construction	Profile Management System for Universal Diffusion	Efficiency Enhancement by Transfer Learning	Model Management (MLOps) and Visualization

Screen Examples

MATE-AI for TMS

Test Management System

Product Overview

MATE-AI for TMS (Test Management System) enables AI-driven scheduling for holistic monitoring of testing processes. As a test management system, it delivers real-time monitoring of equipment utilization and operational performance based on AI-driven test planning. It also provides reliable test services through deep learning-based automatic performance aggregation and analysis.

1. Test Request	2. Test Registration	3. Test Execution	4. Test Completion
· Master Data · Test Type · Test Conditions · Special Notes	· Review of Test Information · Review of Test Schedule · Confirmation of Test Registration	· Test Environment Setup · Situation Monitoring · Collection of Test Data · Derivation of Test Results	· Issuance of Test Refort · Notification to the Client

Key Features

- The introduction of the Test Management System enables the systematization of test data.
- Quantification and visualization of test data through systematization allows for quick decision-making.
- Real-time sharing of test progress information improves communication between departments.
- Real-time monitoring of test equipment operation helps prevent potential issues and allows immediate response, reducing loss time due to test interruptions or stoppages, and ensuring sufficient test time.
- An immediate response system is established for handling equipment malfunctions, abnormal test results, and emergency situations through real-time monitoring.

Core Functions

AI-based Optimal Test Scheduling	Deep Learning-based Automated Data Acquisition for Test Results
Quantification and Visualization of Test Data	Response to Test Equipment Abnormalities and Emergency Situations

Request Management	Request Registration, Request Management
Test Management	Test Monitoring, Test Instruction Management
Standard Management	Test Standard Management, Test Planning Management
Performance Management	Test Performance Inquiry, Test Performance Management
Equipment Management	Equipment Monitoring, Anomaly Detection Analysis
Standard Management	Test Jig Management, Test Equipment Management, Component Management, Inspection Standard Management
Preventive Maintenance Management	Routine Inspection Inquiry, Maintenance Management, Calibration Management
Sample Management	Sample Management

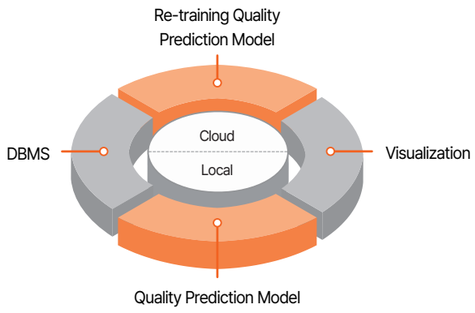
Screen Examples

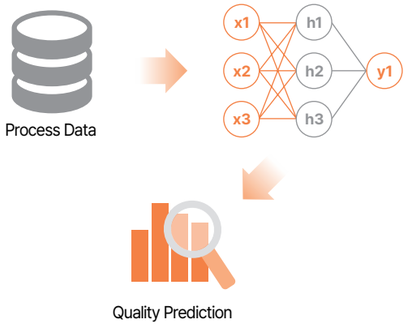
MATE-AI for QP

Quality Prediction AI Solution

Product Overview

MATE-AI for QP (Quality Prediction) offers AI-driven quality prediction services leveraging process data. As a quality prediction AI solution, the AI model trained on process data delivers real-time quality predictions for active processes. It also features AI model training management capabilities to continuously improve the quality prediction AI solution.

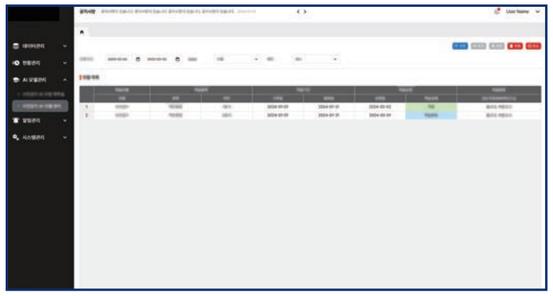


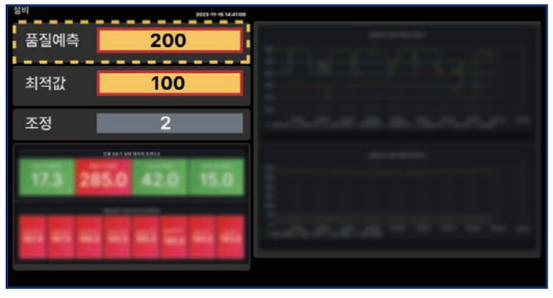


Key Features

Process Data Collection and Monitoring	View AI prediction history	Real-Time Quality Prediction for Process Data	Insight Generation through EDA(Exploratory Data Analysis)

Screen Examples





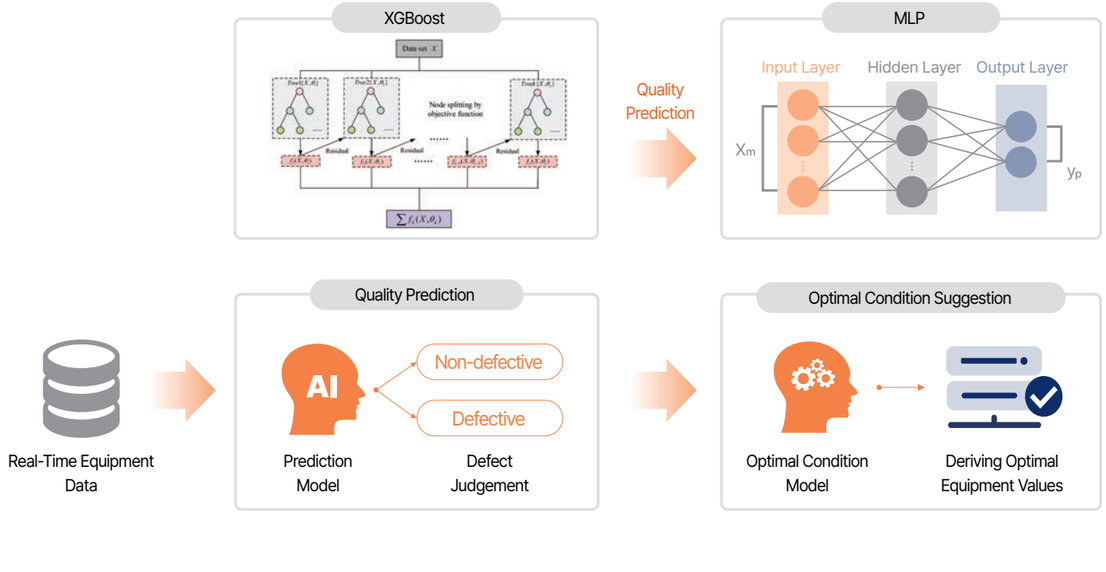
· Real-Time Predictive Monitoring
· Providing Intelligent Decision-making

MATE-AI for OPC

AI Solution for Optimal Process Conditions

Product Overview

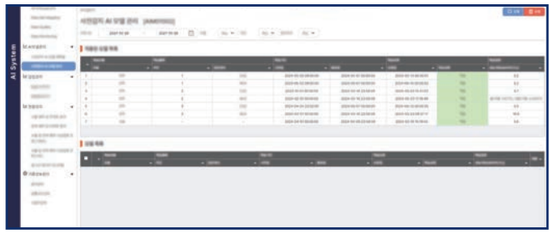
MATE-AI for OPC (Optimal Process Conditions) is an AI solution that provides optimal condition values for equipment. As an AI solution that delivers optimal process conditions, its AI model offers real-time process condition values for quality prediction based on equipment data. This solution supports the foundation for a Digital Twin.



Key Features

Real-time Monitoring of Process Data	Defect Determination in Key Processes	Suggestion of Optimal Condition Values for the Process	Reduction of Defect Rate through Prevention of Human Error

Screen Examples



MATE-AI for AD

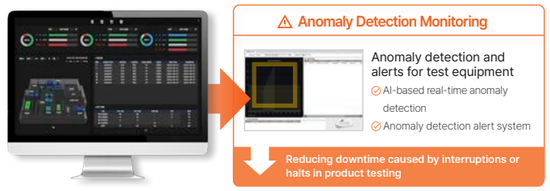
AI Solution for Equipment Anomaly Detection

Product Overview

MATE-AI for AD(Anomaly Detection) detects real-time anomalies using AI and notifies operators. As an AI solution equipment anomaly detection, it detects and notifies in advance about equipment stoppages, failures, repairs, and replacements to prevent production delays. The system provides comprehensive management of equipment with a predictive alert system.

Key Features

- Collection of Key Equipment Parameters Data
- Model Retraining and Performance Evaluation
- AI-Based Equipment Anomaly Detection and Alerts
- Sensor Data-Based Equipment Failure Prediction



Screen Examples

MATE-CPS

Cyber-Physical System

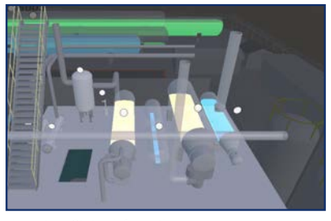
Product Overview

MATE-CPS(Cyber-Physical System) constructs a 3D-modeled virtual environment replicating real-world production sites. Based on real-time process data collected from the production site, it synchronizes the virtual site, visualizes and monitors the operational status, and sends alerts in the event of abnormalities, making it easier to manage manufacturing processes.

Key Features

- 3D Factory Layout Similar to the Actual Production Site
- Easy Recognition of Actual Factory Components
- Easy To Grasp the Overall Status through Real-time Data
- User-customizable Layout Adjustments for Equipment Position Changes

Screen Examples



- Inventory Status Information
- Environmental Status Information (IoT Data)

- Equipment Status Information (PLC Data)
- Inventory Status Information (Inbound and Outbound Data)
- Production Status Information (Performance, Defects, Downtime Data)
- Environmental Status Information (OpenAPI Data)

MATE-RPA

Robotics Process Automation Solutions

Product Overview

RPA stands for Robotics Process Automation, and it is one of the emerging innovative software technologies driven by the Fourth Industrial Revolution and advancements in artificial intelligence. It is a solution that automatically performs structured and repetitive tasks that are typically handled by humans on PCs.

Key Features

User Convenience	Globally recognized User-Friendly UI enables automation even for non-technical users.
Reduced Development Time	Completes a process by simply dragging and dropping over 300 actions.
Easy Maintenance Management	Provides automation capable of handling any scenario through four levels of exception handling.
Parallel Process Execution	Maximizes value by running multiple processes on a single software robot.

Core Functions

UI Flows Connector	Add RPA functionality through Power Automate authoring tool.
Recording Mouse and Keyboard Inputs	Recording steps for UI automation in desktop and web apps.
New WinAutomation Desktop Authoring Tool	Implements RPA through desktop authoring experience of WinAutomation.

Application Examples

Automatic Distribution of Salary Contract and Notification Email to Unsigned Recipients

Applied Services

Create salary contract form and organize list of recipients for distribution.	Generate Word files based on recipient list. - Create user-specific files by entering the data from the list into the Word template and send emails.	Collect user signatures and generate Word files with inserted signatures.	Regularly update the person in charge on the status of signature collection. Send reminder emails to those who have not signed.
Excel(Recipient List)/Word(Template)	Power Automate	Power Apps/Power Automate	Power Automate

Collection and Transmission of System Usage Logs to the Smart Factory Business Management System

→ Collects system usage log informations from over 50 smart factory-implemented companies and uploads them to the Smart Factory Business Management System.

Automatic Registration of Corporate Card Vouchers

Before Implementation : Each user manually enters voucher registration information into the ERP every time, processes approvals, and prints vouchers to deliver to the Management Support Department for ledger management.

After Implementation : RPA automatically collects corporate card voucher information and inputs it into the ERP.

Expected Benefits

Improvement of Work Quality

- Elimination of human error enhances the accuracy of tasks.
- Effectively improves the quality of work.

Increased Focus on High-Value Tasks

- Simple and repetitive tasks are performed by bots.
- Enables employees to focus on high-value tasks, maximizing efficiency.

Reduction of Manpower and Operating Costs

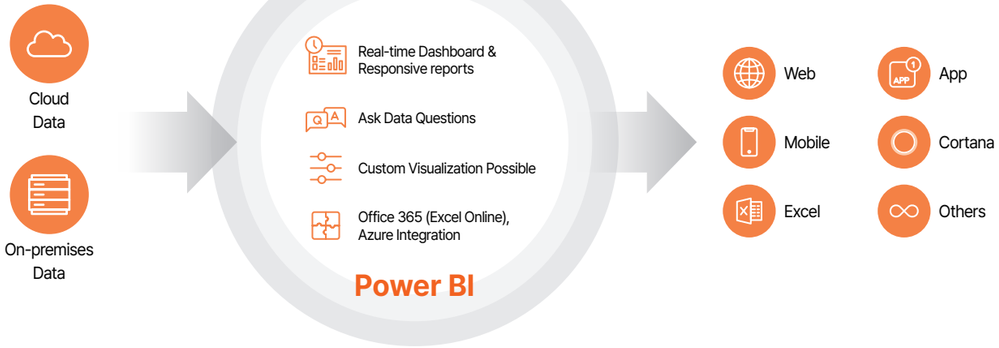
- With the introduction of RPA, all existing simple and repetitive tasks are handled by bots.
- Delivers significant savings in labor and costs.

MATE-BI
Business Intelligence

Product Overview

MATE-BI (Business Intelligence) is a technology designed to collect and analyze data generated internally and externally to enhance corporate competitiveness in rapidly evolving markets. MATE-BI Empowers business users to directly analyze the business environment using Microsoft Excel, a familiar analytical tool, and provides dashboard analysis reports for executives to understand the overall status and flow of operations.

Hybrid Real-time Responsive Reports

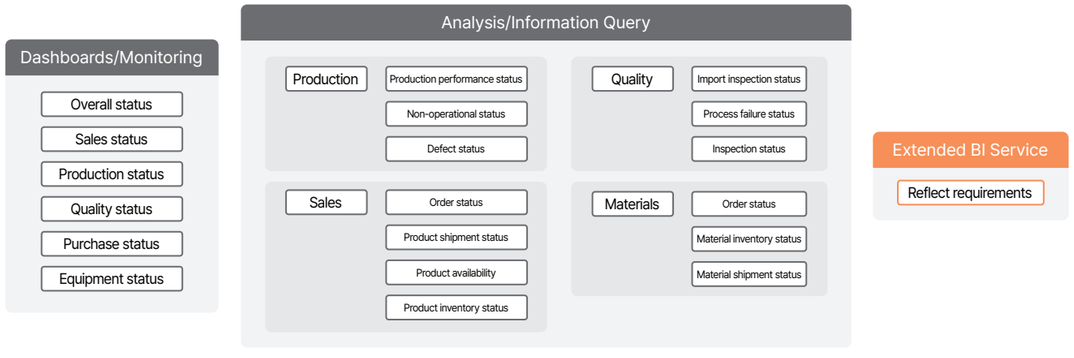


Key Features

- Provides a function for critical decision-making information into a single view.
- Provides monitoring of critical business metrics.
- Controls screen access based on user permissions.
- Supports data visualization in various ways.
- Enables easy and quick access to multiple data sources.
- Delivers analytical capabilities through integration with ERP and MES solutions.
- Operates on the Microsoft Power BI engine.

Core Functions

User-Friendly Design	Intuitive interfaces enable effortless usage for all users.
Quick Insight	Automatic analysis feature provides immediate business insights.
Cortana Integration (AI Voice Service)	Provides fast and easy data access via AI-driven voice commands.
Real-Time Dashboard	Facilitates agile decision-making through real-time data monitoring.
Scalability	Supports seamless scalability as integrating with various data sources.
Statistical Analysis	Enables in-depth analysis of data using advanced statistical techniques.
Visualization	Presents complex data intuitively through various charts and graphs.



Work Process

Data Collection	Data Processing	Report Creation	Report Modification	Report Sharing
Leveraging diverse types of data sources	Data Modeling and Operations	User-defined design and format for report generation	Changing Report Format and Data	Posting and Sharing Reports
· Excel and Text Files · Database Data · Unstructured Data using Hadoop	· Defining Data Relationships · Creating Fields	· Charts and Images · Analysis Conditions · Types of Report Lists	· Charts and Images · Analysis Conditions · Types of Report Lists	· Management of Read, Report, and Data Modification Permissions

Expected Benefits

Optimization of Productivity and Inventory Management

Reduces costs by leveraging real-time data analysis and dashboards to optimize productivity and inventory status.

Enhanced Data-Driven Insights

Provides in-depth business insights through various data visualizations and statistical analyses.

Enhanced Security

Strengthening security through role-based access control, management of department-specific data access levels and types, and management of external data sharing.

Integrated Information for Field Practitioners and Management

Provides customized reports necessary for both field personnel and executives by integrating operational and managerial data.

Data Integrity Assurance

Resolving human error issues through automated reporting, reducing the time required for data validation and verification.

Enhanced Security

Strengthening security through role-based access control, management of department-specific data access levels and types, and management of external data sharing.

Screen Examples

Monthly Sales Performance

Daily Sales Figures

Sales Plan Accuracy

Defective Disposal Costs

Overall Production Efficiency

Process Defect Status

E-HR

Human Resource Management System

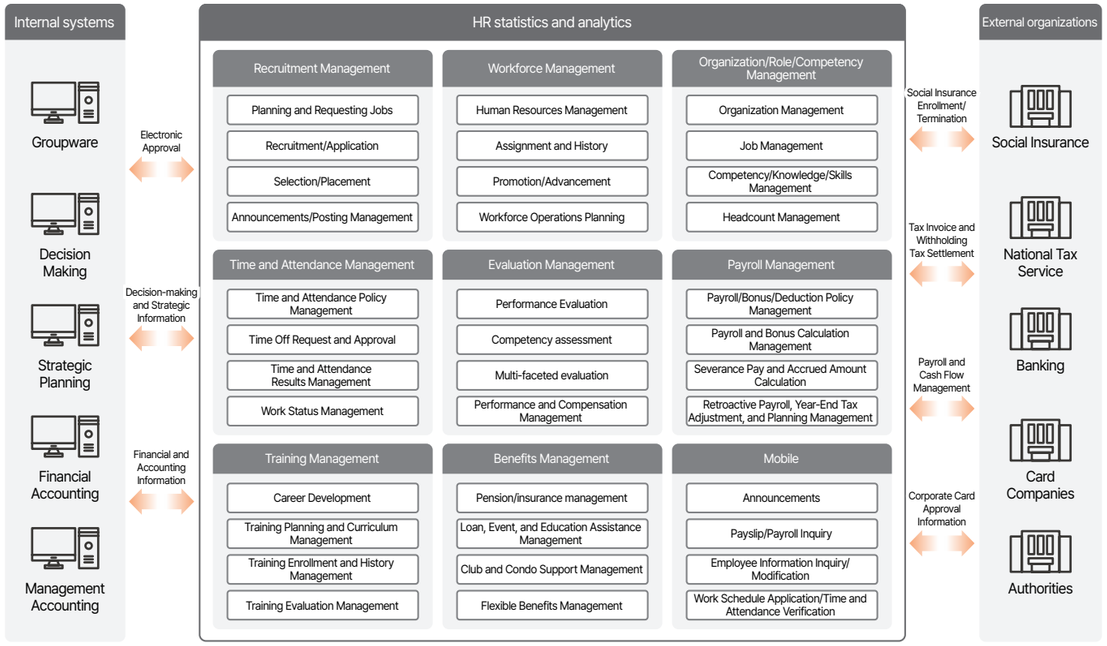
Product Overview

The E-HR system consists of recruitment management, organization/jobs, personnel management, time and attendance management, year-end settlement, welfare benefits, evaluation management, training management, and system management modules, and supports integrated operations through organic linkage with existing systems. Supports integrated management operations of headquarters and affiliates.

Key Features

Built for Manufacturing	Designed to reflect the multi-layered organizational structure and complex shifts of manufacturing environments. Manage different shift types in real-time, including 24-hour shifts, day and night shifts, and analyze workforce data linked to productivity.
Flexible Time and Attendance	Automated timesheets and time and attendance calculations for different work types, plus easy vacation and annual leave management.
Real-Time Data Analytics	We provide dashboards that integrate production line and HR data from manufacturing to provide real-time analytics. This allows you to monitor productivity and HR data simultaneously.
Mobile-Ready	Managers can view employee data and process approvals anytime, anywhere via mobile, and employees can easily view their timesheets and payroll information on the go.

Workflow Diagram



Expected Benefits

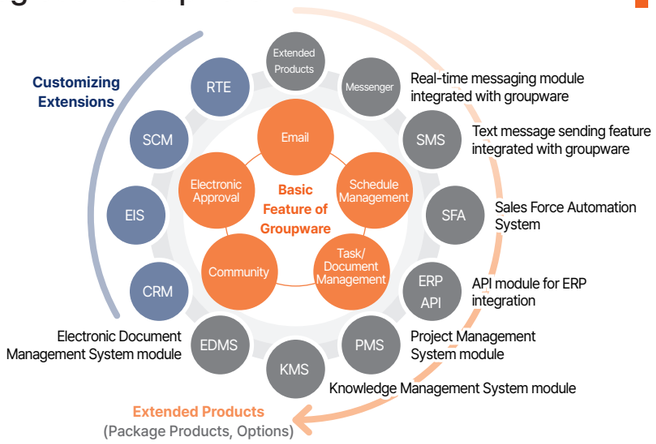
Increase Productivity	· Integrate real-time HR and production data to maximize staffing efficiency. · Provide insights that link work patterns to productivity for optimal workforce management.
Cost Savings	· Reduction of labor costs through automated HR and payroll processing. · Minimization of errors that lead to cost increases. · Automation of time and attendance management for easier overtime handling.
Transparent HR	All HR processes are centrally managed, with clear rules and real-time data analytics to ensure fair and transparent HR management.
Rapid Decision Support	Fast and accurate decision-making by management based on real-time personnel information and production line data.

MATE-Groupware

.NET-based Knowledge Integration Groupware

Product Overview

MATE-Groupware develops a knowledge-based system to efficiently manage and share dispersed information within the company, enhancing work efficiency. MATE-Groupware is a .NET-based knowledge integration groupware solution that offers a variety of systematized features to strengthen managerial decision-making and collaboration activities.



Key Features

Executives can Readily Assess the State of Operations	Easy identification of the work status of in-house employees and sharing of internal materials, enabling quick comprehension of intellectual property and work report statuses.
Systematically Structured Database	Efficient structuring and management of dispersed company data and knowledge, including project management, HR history cards, production parts management, drawing management, and sales policy management.
Quick Processing and Delivery of Tasks	Various features such as electronic approval systems, messengers, and SMS services allow for easy and rapid decision-making.
Increased Focused Task Processing and Efficiency	Integration of various solutions and modules, including electronic approval & ERP (integration), payroll statements (integration), web cameras (expansion), design PDM (expansion), SFA (expansion), CRM (expansion), KMS (expansion), and EDMS (expansion).
Minimized Time and Space Constraints	100% web-based system enables work processing from anywhere on the internet, with mobile UI support for mobile phones and PDAs, minimizing time and space limitations for task execution.
Enhanced Collaboration and Communication	Facilitates effective sharing of materials across different fields and fosters a community with employees through various media, improving teamwork and activating collaborative activities within the company.

Core Functions

Electronic Approval	· Easily creates approval forms tailored to the company's needs, offering various templates. · Provides real-time status of approval documents (G/W, Messenger, SMS).
Email	· Allows users to assign individual storage limits and personalize email signatures · Supports group email functions for internal and external communication, with settings based on organizational charts or address books.
Schedule Management and Work Reporting	· Facilitates the sharing of work schedules with customizable sharing settings by individual, department, or organization. · Enables daily, weekly, and monthly work reports, managed by designated department representatives.
Document Management, Knowledge Management and Community	· Offers personal and shared web hard drives. · Regulation Management : Management of documents such as company policies, manuals, and ISO standards.
ERP and MES Integration	· Supports SSO (Single Sign-On) between ERP, MES and groupware systems. · Automatically generates reporting documents from ERP and MES for approval submission.
Messenger and Mobile Support	· Provides web-based, PC and mobile messenger services. · Notifies users of incoming electronic approval documents and incoming emails.

Expected Benefits

· Facilitates quick decision-making and accurate task communication.
· Enhances work efficiency by reducing processing time and operational costs.
· Integrate internal and external information to enhance collaboration.
· Facilitate communication between team members with features like mail, calendar, organization, message boards, and more.
· Streamlines approval by systematizing workflows with e-approval.

MATE-Compounding Management System

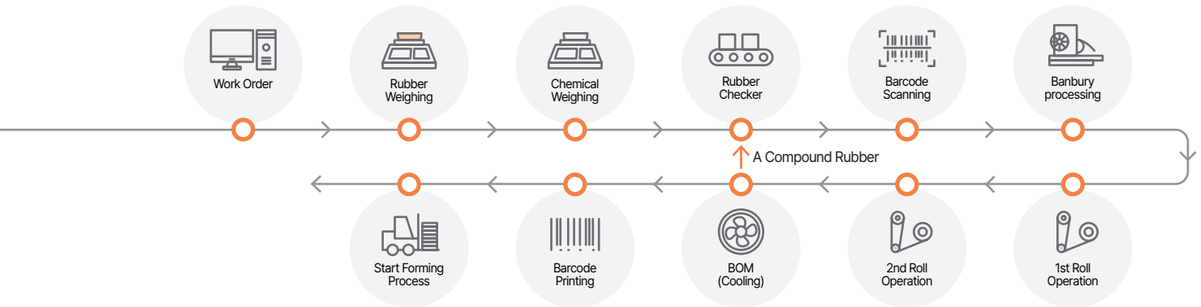
Product Overview

Automation of Process Control and Efficient Management of the compounding Process. The MATE-Compounding management system enables the automation of the chemical weighing process, one of the most important steps in the rubber manufacturing process. It allows for efficient process management, including compounding management and work management.

Core Functions

Weighing Automation	Automatically identifies materials to be weighed according to the compounding formula and work orders. The data measured by electronic scales is automatically reflected in the system. · Small Quantity Chemical Weighing Device · Raw Rubber Weighing Device · Carbon/Oil Weighing Device	Work Management	You can check work order registration, work order status, weighing work report, weighing detailed status, weighing inventory status, weighing unfinished list, material usage status (by period, monthly, yearly) in real time.
Compounding History Management	Allows registration, inquiry, and printing of compounding formulas, and facilitates batch changes of materials. Automatically calculates compounding costs and tests the compounding weight.	Compounding Process Management	Sets work conditions and monitors operations during the mixing of weighed raw materials using equipment such as the kneader mixer and roller.
Curing Process Management	Monitors the entry and exit weights of the compounded rubber in the curing room, manages the first-in, first-out (FIFO) system, and monitors the temperature and humidity within the curing room.	Compounded Rubber Physical Properties Management	Manages physical property testing standards and results for each compound and uses these data to support various statistical reports.

Work Process



Expected Benefits

Improvement of Work Processes	Increase operational efficiency by transitioning from manual processes to automation.
Improvement of Work Environment	Organize the workplace environment efficiently to provide a better setting for workers.
Reduction of Work Errors	Prevent weighing errors caused by manual mistakes through the Fool-Proof System*
Real-Time Monitoring	Monitor work orders and on-site activities details in real time.
Accurate Data Management	Manage data related to materials, clients, compounding data, work orders, and work records accurately for business analysis.
Competitive Advantage	Reduce defect rates, boost productivity, and enhance external competitiveness.

* Fool-Proof System: A system designed or maintained to ensure quality and safety by maintaining the reliability of an item, even if inappropriate actions or human errors occur. It enables lot traceability of defective products, from parts to finished goods.

MATE-QMS
Quality Management System

Product Overview

MATE-QMS (Quality Management Systems) monitors quality processes to proactively respond to potential quality issues, ensuring that, in the event of a quality problem, it can promptly and accurately provide the required quality information to customers. MATE-QMS efficiently manages quality issues by monitoring, managing, and documenting quality processes across the organization. It tracks product history and ensures consistent quality results by managing quality standards, achievement levels and goal management functions.

Key Features

· Continuous monitoring of quality information.
· Automation of quality LOT tracking.
· Various analysis functions to identify the root causes of quality issues.
· Generation of various quality-related reports, including defect causes.

Core Functions

Master Data Management	Drawing Management	Development Management	Spc Process Control
Measuring Instrument Management	Defect Management	Inspection Management	Corrective Actions And Reports
4M Change Management/ISIR	Periodic Inspection Management of Parts	Reliability Test Management	Supplier Quality

Expected Benefits

Ensuring customer reliability through the realization of a Quality Management System.

Ensuring quality consistency and stabilizing basic quality.

Reduction in defect occurrence rates and enhancement of product competitiveness.

Ability to respond quickly and accurately to customer requirements.

MATE-WMS
Warehouse Management System

Product Overview

MATE-WMS (Warehouse Management System) is a web-based, specialized WMS system designed to support and optimize warehouse or distribution center operations. It allows for the planning, classification, support, supervision, and control of facility operations regarding the movement and storage of products within and outside the warehouse.

Key Features

· Provides Interfaces of ERP and MES.
· Enables Lot Management Using Barcodes and RFID.
· Supports for Mobile Functions.
· FIFO (First In, First Out) Operation for Easy Production and Shipping Management.

Expected Benefits

Operational Efficiency Improvement
Enhanced accuracy of inbound and outbound operations through barcode scanning.

Real-Time Inventory Tracking
Intuitive monitoring of real-time inventory status and logistics conditions.

Productivity Enhancement
FIFO management optimizes production and shipping, maximizing worker efficiency.

Improved Customer Satisfaction
Improved picking control during stock discrepancies or defective inventory ensures accurate shipments, leading to increased customer satisfaction.

MATE-MES for Cloud

Cloud-Based Manufacturing Execution System

Product Overview

MATE-MES for Cloud (Cloud-based Manufacturing Execution System) implements MES operation and functionality in a cloud environment, standardized and optimized based on over 25 years of experience and the know-how gained from delivering MES for over 500 companies.
By utilizing a public cloud, MES can be accessed anytime and anywhere with an internet connection. It operates on a pay-as-you-go model, allowing small businesses with lower usage demands to use the service at a reasonable cost. Additionally, optional features are available as needed, saving time and money and enhancing economic efficiency.

Key Features

Smart	Provides a convenient and intuitive user interface, making it easy for users to operate.
Speed	Enables fast task processing through efficient process management, and can be easily implemented with simple settings.
Security	Strengthens information protection and stability with strict security technology to safeguard users' assets.
Integration	Allows for flexible and efficient business operations and management through an integrated UI and data.
Cost Reduction	Allows users to use only the specifications, features, and duration they need, drastically reducing initial deployment costs.
Flexibility	Allows for flexible operation by expanding computing resources as needed and scaling down when they are not required, enabling adaptable usage.

Expected Benefits

Economic Efficiency
Reduction in H/W and infrastructure costs, as well as shortened implementation time for MES deployment.

Convenience
Access to MES from various OS platforms and devices (PC, mobile, etc.) without time or location constraints.

Expertise
Enhanced security and disaster recovery capabilities through professional management of H/W and systems.

Efficiency
Improved data reliability and processing speed, facilitating easier information sharing and boosting work efficiency.

Initial/In-process/Final Product Management System

Product Overview

Real-time self-inspection monitoring and efficient management of data for Initial/In-process/Final product.
The MATE-Initial/In-process/Final Product Management System is a self-inspection management system that ensures data reliability and maintains a quality system through defect analysis. It facilitates sampling, measurement, review, verification, storage, and analysis of inspection data for initial, in-process, and final stages of production processes. Initial/In-process/Final product management is a part of the self-inspection process during product manufacturing. Workers regularly check the product status at predetermined intervals (Initial/In-process/Final) in the production process. Self-inspection involves the worker conducting inspections of the products produced within their own manufacturing process. The worker inspects the product based on predefined inspection items, using designated tools, at set times, and records the measured values.

Core Functions

Entering Measurement Values

Improved Method of Entering Measurement Values

Save System

※ Measurement values registered on devices are transmitted and stored in the system.

Management of Measurement Data History

Real-time Monitoring

Frequent verification of inspection status

Expected Benefits

· Enhancement of basic quality control through improvement of Initial/In-process/Final product management methods.
· Prevention of large-scale defects through interlocks (alarm/stop) in case of inspection omission or abnormal measurement values.
· Ensuring traceability of quality history through the database (DB) of measurement values.
· Prevention of inspection omissions and rapid response to process defects through real-time monitoring.
· Possibility of utilizing statistical process control (SPC) through database-driven insights.

MATE-DA

Data Acquisition

Product Overview

MATE-DA (Data Acquisition) is a solution for the real-time collection of manufacturing data from sensors, PLCs, and other sources. It processes and stores data such as sensor information, equipment details, production results, and alarm histories through OPC UA communication, leveraging the OPC Server's key feature of Tag information.

Key Features

Collection of Diverse Data Types	· Collect analog data such as temperature, pressure, flow, and digital input/output data from various sources such as sensors, PLCs, and DCS to monitor the entire process in real time. · Optimize process control and maintenance.
Real-Time Data Synchronization and Storage	· Synchronize time between all automation systems in the factory to collect and store data consistently. · Maximize operational efficiency by increasing interoperability between facilities and improving data accuracy.
Real-Time Monitoring of Equipment and Energy Usage	· Reduce operating costs and support optimal operation of facilities by monitoring equipment operating status, energy usage, utility consumption, etc. in real time. · Improve energy efficiency and realize sustainable factory operations.
Data-Driven Process Improvement	· Analyze collected data to detect problems in the process early and provide solutions. · Analyze data to drive process-wide improvements, including increased productivity, improved quality, and cost savings.

Expected Benefits

Improvement of Production Efficiency	Enhances productivity by quickly detecting and responding to anomalies in the production process through real-time data collection.
Quality Improvement	Strengthens quality management by utilizing collected data to reduce defect rates and facilitate process improvements.

MATE-BizTime

Product Overview

With the implementation of the 52-hour workweek policy and the growing adoption of flexible work arrangements such as remote work and flexible schedules, the need for effective workforce time management solutions is increasing among companies MATE-BizTime offers an optimized solution for managing work hours, integrating attendance and task management into a single system for enhanced efficiency in workforce management and improved productivity.
Supporting the 52-hour workweek, remote work, and flexible schedules, MATE-BizTime reduces the workload for HR personnel while improving employees' work-life balance. This, in turn, boosts employee morale and fosters a positive corporate culture. Additionally, MATE-BizTime enhances decision-making and collaboration through its task management tools and comprehensive dashboards.

Key Features

· Facilitates efficient HR management through systematic attendance tracking, including clock-in/out time management, actual working hours collection, and 52-hour workweek alerts.
· Enables seamless project-based task management and reporting, with real-time work reporting and sharing via various dashboards for easy tracking of work progress.
· Supports optional features such as mobile clock-in/out, location-based business trip management, and integration with messenger, SMS, ERP, PMS, and SSO solutions.
· Offers flexible deployment options, including on-premise package installation or cloud-based services.

Expected Benefits

· Easy Monitoring of Work Status for Managers.
· Support for Remote and Flexible Work Arrangements.
· Attracting and Retaining Top Talent.
· Increased Focus on Work and Enhanced Efficiency.
· Activation of Collaborative Activities and Communication.
· Compliance with Legal Working Hours.

Screen Examples

Main Dashboard | Work Statistics | Task Management | Actual Working Hours Management | Supports Mobile Devices