

SM HACCP

Cloud based smart factory platform with HACCP certification related operation & management automation solution for Food Manufacturer

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**Every manufacturing process gets smarter?
Food specialized DX platform!**



About **SMHACCP**

SM haccp, inc. is actively engaged in the installation and distribution of solutions that enables the implementation of automated systems for HACCP certification operation and management, using cloud-based smart factory platform.

Our smart factory and smart HACCP platforms are designed to enhance productivity and economizing cost, through customized supply and maintenance.

Additionally, by utilizing AI-based machine vision inspection systems, we provide real-time monitoring through data integration, such as automatic aggregation of production performance and automatic inspection of expiration date mis-labeling.

With a commitment to continuous learning, we prioritize delivering the highest quality and ultra-fast services as our management philosophy. We strive to offer advanced technology at minimal cost to create value for our customers.

We ask for your continued support and interest in SM-HACCP as we aim to provide high-quality services and become a partner in your success, moving towards a bright future together.

Thank you.

SMHACCP History

Market-validated for four years as a DX company specializing in HACCP standards management and food manufacturing

Sales Approximately 1.3 billion KRW

- Smart factory implementation for Kong3al Co., Ltd., Baekdudaegan Agricultural Cooperative Corporation, and ten other companies
- Machine vision system installation for Kojoobu B&F Co., Ltd. and K-Pride Co., Ltd.
- AI quality prediction solution implementation for Kojoobu B&F Co., Ltd.

- Smart factory implementation for K-Pride Co., Ltd. and three other companies
- Development and copyright registration of smart factory & smart HACCP software
- SM-HACCP established in June**

Sales Approximately 1.6 billion KRW

- Selection of R&D projects for technology development (development of machine vision and IoT control shipment systems)
- Smart factory implementation for DoDram Food Systems Co., Ltd. and Felicita Roastery Co., Ltd.
- Smart HACCP system implementation for Samyang Corporation Incheon Plant, Sempio Foods Co., Ltd. Incheon Plant, and four other companies
- Manufacturing data product processing business for Kojoobu B&F Co., Ltd.
- Cloud service distribution and expansion business for Wellbeing Garden Co., Ltd. and four other companies
- Patent for deep learning-based AI machine vision inspection device

Sales Approximately 1 billion KRW

- Smart factory implementation for Felicita Roastery Co., Ltd., Kojoobu B&F Co., Ltd., and seven other companies
- Registered as a supplier of AI-based manufacturing data analysis solutions
- Selected for the Startup Promotion Agency's early-stage startup package R&D project
- Established a corporate research institute and obtained venture certification
- Signed a cloud service partner agreement with KT
- Established a Daegu(ROK) branch office

Business Overview

Smart Factory

(ERP, MES, SCM, FEMS etc.)

- Sales, purchasing, inventory, production, quality, and equipment management
- Automation of all processes through system interfaces
- Automatic integration of production information through automation
- Automatic integration function for shipping label attachment
- Power usage management
- Convenient UI/UX and POP



Smart HACCP

- Specialized System for Monitoring Critical Control Points (CCP) in Food Industry Plants
- Real-time monitoring of critical CCP processes based on IoT and digitization of various record documents
- Immediate response to production history and contribution to quality analysis, CCP processes, and decision-making for production planning



Machine Vision & AI Solution

- Machine Vision System: A solution applicable to multi-product, small-batch production that addresses issues with labeling and expiration dates previously handled manually, through real-time inspection and automatic performance aggregation.
- AI Quality Analysis Solution: Data analysis and visualization, with results compared for drying time prediction to achieve target moisture levels.



Material Supply

- System for Automatic Input of Label Design and Tag Information Integrated with MES
- UI for direct user editing
- Automatic management of auxiliary material consumption and inventory, automatic ordering, and automatic purchasing/receiving processing
- Affordable solution enabled through revenue from auxiliary material sales



Partner and Certificate



ISIDA Korea Co., Ltd.
Machine vision system collaboration



Edge Cross
IoT Sensor collaboration



Future sense Co., Ltd.
Food saifty block-chain



Reference



Meat processing

- Enhancement of Non-Quantitative Product Production Capabilities through System Improvements:
- Implementation of an IoT-based HACCP operation/management (critical control points) automation system for real-time data collection, registration, and management
- Real-time collection, recording, and management of metal detection and weight measurement information to improve quality and production yield
- Establishment of a standardized system for auxiliary material management

Say Sauce & Fermented product

- Smart HACCP System Implementation Project at Sempio Foods' Icheon Plant:
- Development of a solution for obtaining smart HACCP certification
- Real-time monitoring, log recording and storage for limit deviations, warning notifications for limit breaches, real-time automatic collection and storage of CCP data, and contingency plans for system outages, all in compliance with certification requirements

Snacks

- Smart HACCP System Implementation Project at Samyang's Icheon Plant 2:
- Involvement in both software and hardware aspects for the successful establishment of a smart HACCP system
- Development of a POP system for real-time control and monitoring of processes such as freezing and refrigeration, leading to efficient production management
- Establishment of a foundation for the collection of production process data

Hansalim Cooperative

- Enterprise-wide standardization of customer-specific level management and products
- Improvement of business processes and enhancement of inventory management accuracy through real-time order information sharing
- Increased work efficiency through the digitization of manual management
- Replacement of outdated production equipment with automated systems to boost productivity
- Establishment of a foundation for statistics and analysis based on sales, production, and unit price information

SOLUTIONS

SMART FACTORY SOLUTIONS



MES/ERP Implementation Capabilities

Implementation that considers flexibility, integration, and scalability to meet the client's requirements.



Smart Factory Implementation Solutions

Decision support through IoT-based real-time data collection and analysis.



User friendly Solutions

Easy and accurate information gathering using barcodes and PLC, etc.



Production site suited Integrated management solution

Systematic management of manufacturing history and prompt response to issues.

SM MES Introduction effect

Realtime data collection

Increased yield product & decreased Defective rate

Reduced workload based on efficient management

Increased productivity & economization

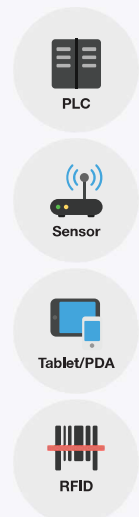
Standard information	Production Management	Purchasing management	Facility management
Implementation that considers flexibility, integration, and scalability to meet the client's requirements.	Work order registration, production planning/actuals/-defect status	Purchase receipt registration/status, material warehouse dispatch/inventory status	Equipment status (fault inspection), equipment manufacturing history
Quality Control	Monitoring	Smart HACCP	System management
Inspection management, equipment history, production performance monitoring, finished product inspection log, CCP verification results	Production performance monitoring, CCP (Critical Control Point) monitoring	CCP Management & Recording (temperature /humidity/metal detect etc.)	Program, menu, user management and HACCP update log

Facility information

Real-time information

Process data input & collection

Real-time field monitoring



SMART HACCP

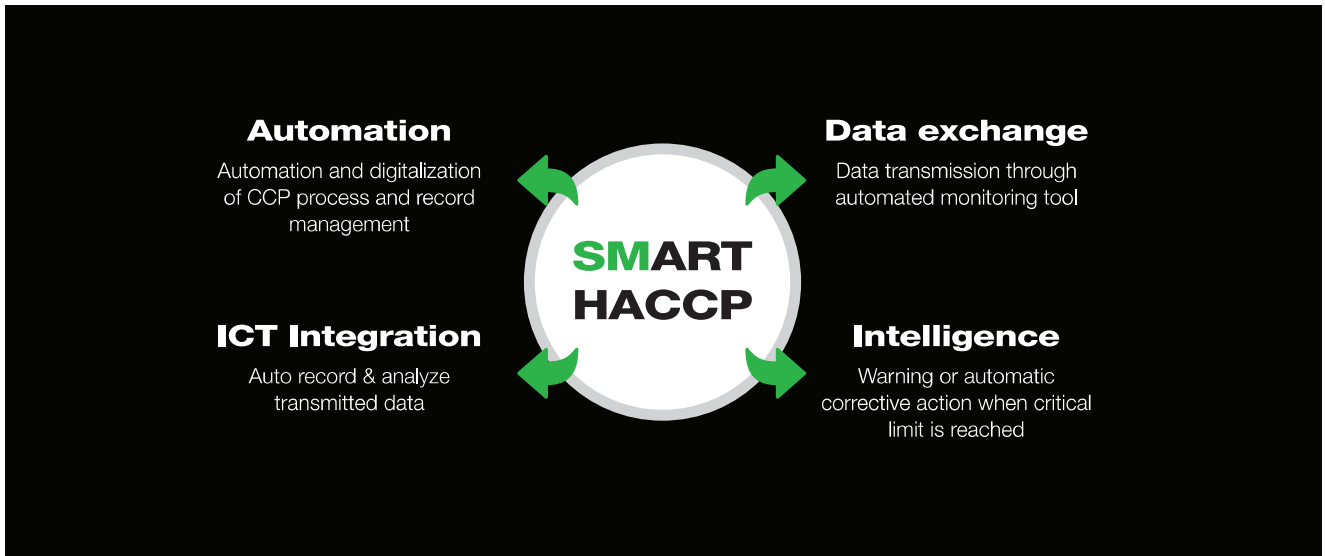
02

Realtime HACCP Total management system

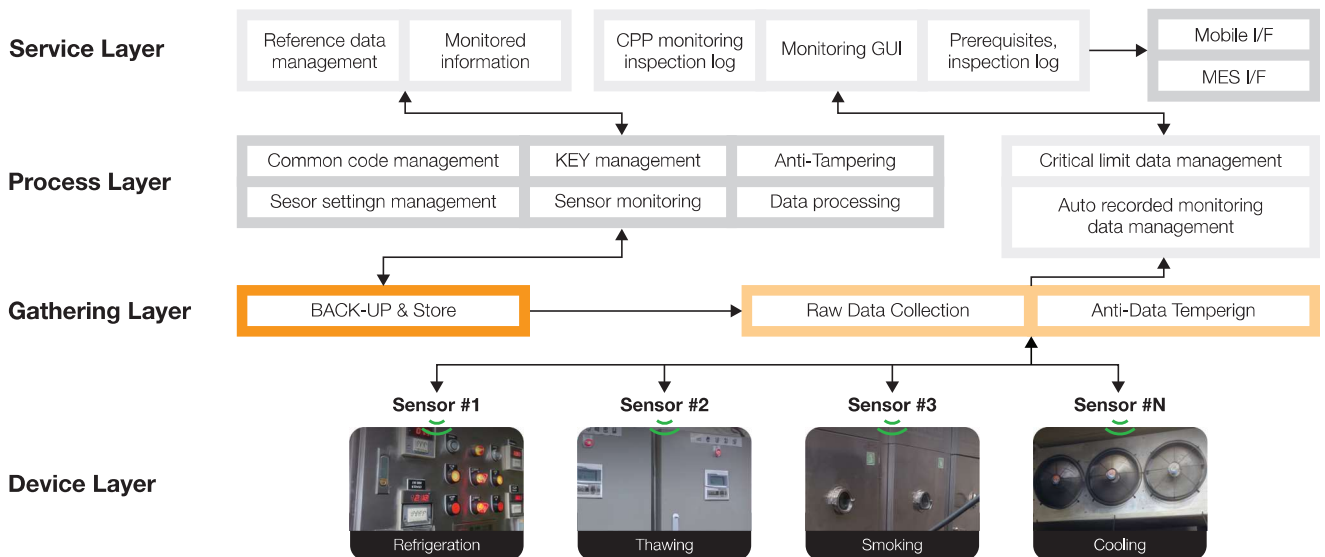


Critical Control Point(CCP) monitoring automation based on IoT, CPS with digitizing written documents for Collection, Management, and Analyzing HACCP data

- ✓ Realtime HACCP & CCP monitoring
- ✓ Critical limit & monitoring data
- ✓ CCP monitoring data hourly/daily visualization
- ✓ Automated inspection log creation (once per day)



SM-HACCP MODULE



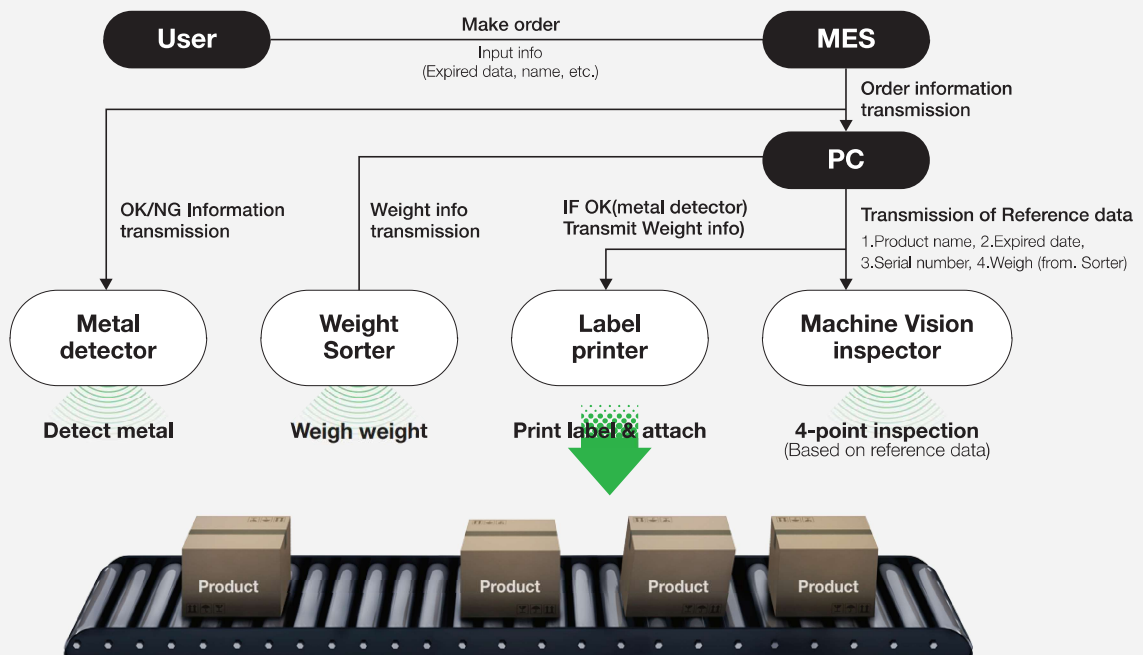
AI SOLUTION

1. Machine vision



Quality and Product management Optimization with AI based machine vision inspection system

- ✓ Specialized in High-mix Low-volume Production
- ✓ Label, expired data, etc. real-time validation
- ✓ Automated real-time aggregation (Specialized in Unstructured Data)
- ✓ Automated contactless data extraction
- ✓ Metal detection auto validating/counting



APPLICATIONS



Component Assembly

By integrating robot with machine vision system, it allows to assemble parts in position



Optimal Character Recognition (OCR)

Able to recognize printed characters for use



Defect inspection

Automatically inspect products for foreign substances, scratches, and other defects, and take corrective actions such as handling defective items.

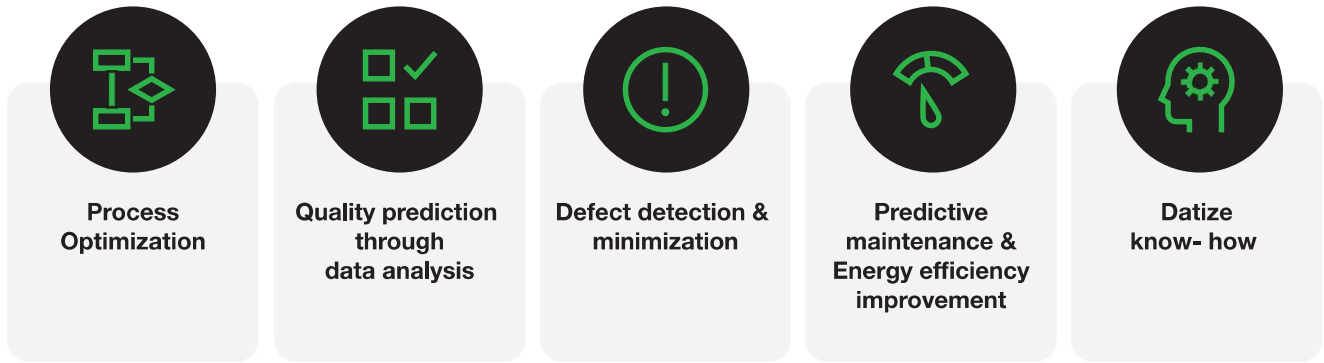


Barcode recognition

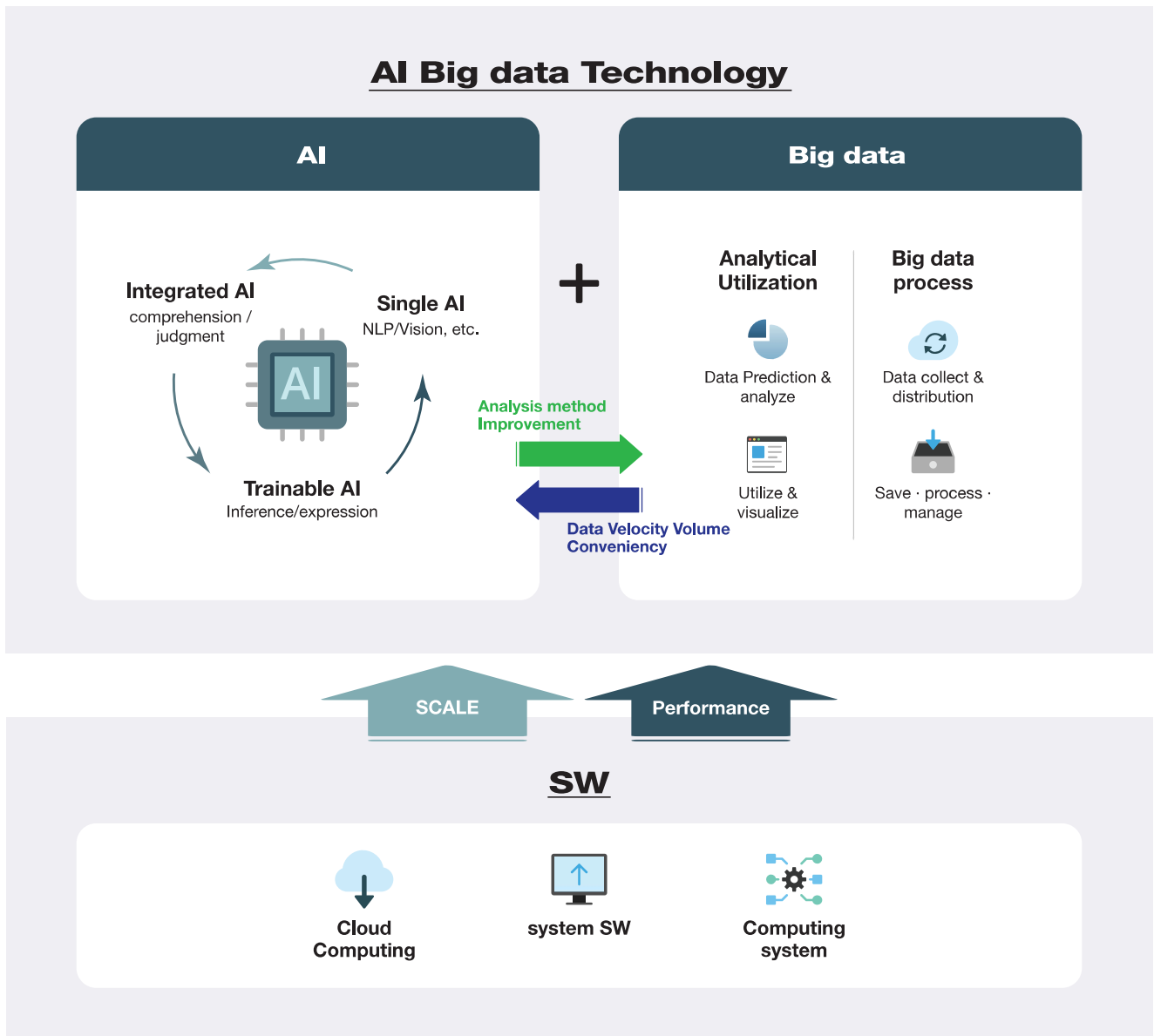
Able to recognize barcodes in various position

2. Predictive maintenance Solution

IoT based read-time predictive maintenance & quality prediction



3. Quality prediction



MATERIALS / SUPPLY MANAGEMENT

04

Label platform



Automated convenient Label management system

- ✓ Automated input and template management of Design and Tag information integrated with MES
- ✓ UI for user to Design, Edit, Print Label.
- ✓ Automated management of material requirements and inventory.
- ✓ Labels can be supplied at the same unit cost as existing label stock.

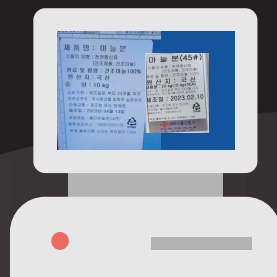
Why Label Platform?

Existing technology

- Management and output of handwritten data such as design, product information, manufacturing date, expiration date, and barcode information in Excel or Hangul documents.
- The complexity of manual management, risk of human error when changing output information, and product returns due to customer complaints.

Developed technology

- Configure the system to automatically input label design and product standard information by integrating with MES and production instructions and manage this through templates.
- Provide a UI that allows users to design, edit, and print labels directly. Automatically manage the consumption and inventory of auxiliary materials, handle automatic ordering, and process automatic purchasing and receiving.
- SM-HACCP can supply labels at the same price as the existing label supplier.



BEFORE




AFTER


Compatibility

Company	Category	ERP (order management tool)	MES (Production management tool)	SCM (Supply chain management)	FEMS (energy management)	Automatic Printing of Shipping Labels Integration	Food specialized smart HACCP	AI prediction (quality, demand)	Auxiliary material supply and distribution
	In addition to smart HACCP, we are consistently expanding our business in areas such as courier integration, AI prediction, machine vision, and auxiliary material supply. We are growing as a specialized DX company in the food industry.	○	○	○	○	○	○	○	○
Company A	Specialized in the food industry, smart HACCP is a strength, but there is a lack of diverse solutions.	○	○	○	×	×	○	×	×
Company B	After starting with smart factory solutions, we are expanding into the food manufacturing sector. However, there is a lack of diverse solutions and large-scale implementation cases.	○	○	○	×	×	○	×	×


SMHACCP Strength




Passion and Focus
 Experience in Food Industry Implementation
 Understanding of HACCP Operations
 Experience as HACCP Team Leader




Quick Decision-Making
 Technical Support and Personnel




R&D Research
 Government R&D Projects
 AI Vouchers



Food-Specific Platform
 Smart HACCP
 Machine Vision System
 AI Quality Prediction
 Automatic Shipping Label System
 Automated Livestock Tracking



Customer Value
 Enhancement of Technology/Service/Customer Satisfaction, Reduction of Implementation Costs
 Growth Together with Customers

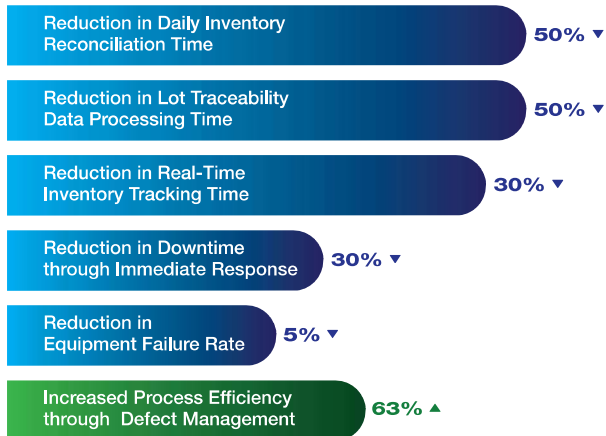


Outstanding Performance
 Implementation of 34 projects in the food industry Government support project acceptance rate of 87.5% (as of 2023)

Implementation Effects

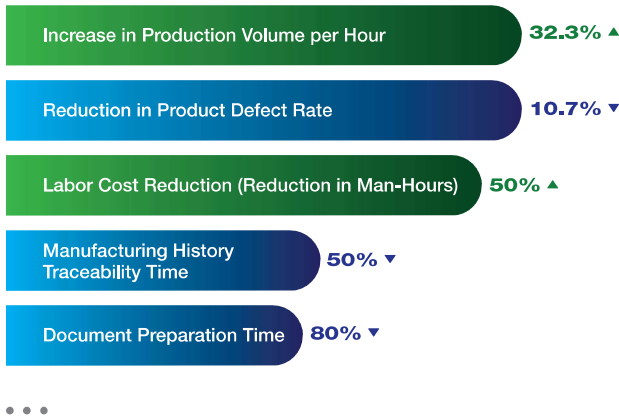
Kojoobu B&F Co., Ltd.

(Quantitative Results)



Felicita Roastery Co., Ltd.

(Quantitative Results)



Best Practices

Kojoobu B&F

Awarded a Certificate of Appreciation from the Chungcheongbuk-do

TYPE A

Solution Implementation and Maintenance



handwritten management of drying process related dryers' outer temperature/humidity data



real-time collection of drying process related dryers' outer temperature/humidity data, Optimization of Drying Process Conditions Through AI Modeling and Training



Equipment Power Consumption: Manual Management



Real-time Collection of Equipment Power Consumption Data, Integrated with MES Solution for Reduced Power Consumption and Cost Savings

Felicita Roastery

Recognized as a Leading Case of Innovation and Growth by Gyeonggi Daijin Techno Park

TYPE C

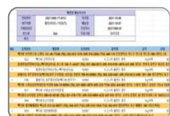
Solution Implementation + Auxiliary Material Sales



Difficulty in Real-Time Monitoring of Process Equipment Status and Conditions



Real-Time Monitoring of Production Performance and Production Site



Manual Management of Shipping Labels and Manual Printing and Attachment of Labels



Automatic Integration with Shipping Label Attachment Machine

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