2023
SCEWC KOREA Pavilion

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Transportation Equipment & Machine Material Part

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JS System Co.,Ltd.

01	AI-Model/AI-based integrated quality analysis system
02	Facility failure prediction through sensor data analysis
03	Data visualization/I'st ITS(Information Tracing System)

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Company Introduction

JS System Co., Ltd. is developing and building solutions necessary for manufacturing sites, including smart factories, and is a specialized SI solution development company that is also developing sonar system simulators, one of the defense solutions.

Starting with the development of an AI-based facility failure prediction solution for the advancement of smart factories, it is a reliable and excellent company that aims to contribute to the improvement of production and quality of manufacturers by completing the development of an AI integrated quality analysis platform for optimizing current production conditions.

01

AI-Model/AI-based integrated quality analysis system

Technology / Product	AI-Model/AI-based integrated quality analysis system
Detailed Genre	AI-based Solution
Product Type	AI Platform
Target Company	Manufacturers
Technology/Product video link	www.js-system.co.kr

Contents Introduction

To improve the quality of the final inspection results, the AI-based integrated quality analysis solution collects the conditions and measurement values that match the results, preprocesses the data, and uses statistical analysis and AI learning models to improve the analysis accuracy.
It is a solution that predicts defects in the final inspection using learning data from the production process and derives the optimal conditions of the process to reduce defects.

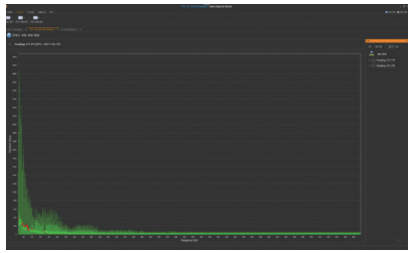
02

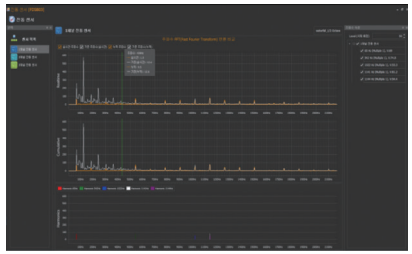
Facility failure prediction through sensor data analysis

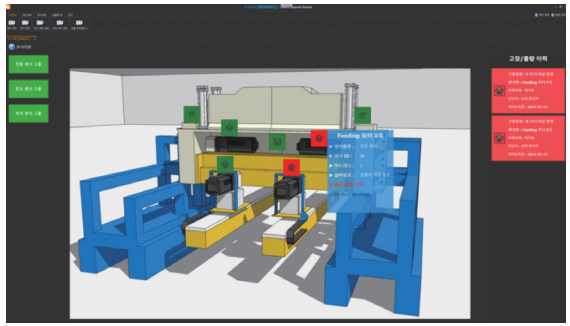
Technology / Product	Facility failure prediction through sensor data analysis
Detailed Genre	AI-based Solution
Product Type	AI Platform
Target Company	Manufacturers
Technology/Product video link	www.js-system.co.kr

Contents Introduction

Facility failure prediction system is a system that can predict facility failure in advance through sensor data analysis.
By analyzing the vibration frequency, which is data that predicts the direct failure of the facility, it is possible to not only predict the failure, but also to identify at which point the failure occurred and the type of failure, thereby reducing the losses that will occur due to the failure of the facility.







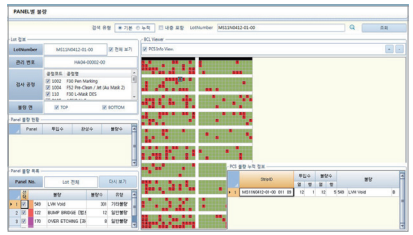
03

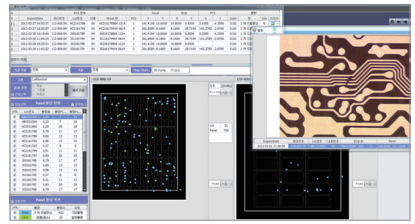
Data visualization/I'st ITS(Information Tracing System)

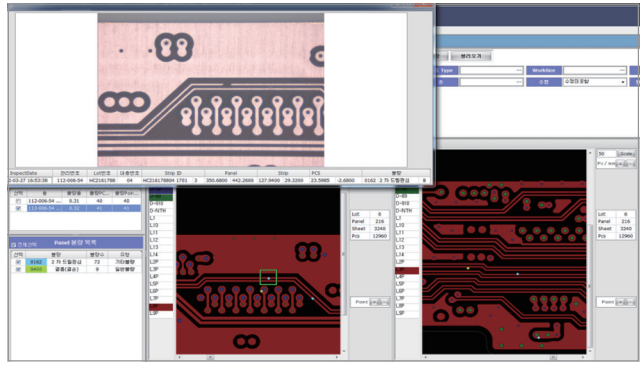
Technology / Product	Data visualization/I'st ITS(Information Tracing System)
Detailed Genre	Inspection Data visualization
Product Type	Client System
Target Company	PCB manufacturers
Technology/Product video link	www.js-system.co.kr

Contents Introduction

Through 2D barcode marking and recognition, it automatically manages the LOT of substrates in process. In order to prevent secondary defects that occur during the inspection process, this system improves inspection yield and reliability by not marking scratches or defective cells, only laser marking defective cell information, and sharing data between inspection processes through data transmission to customers.







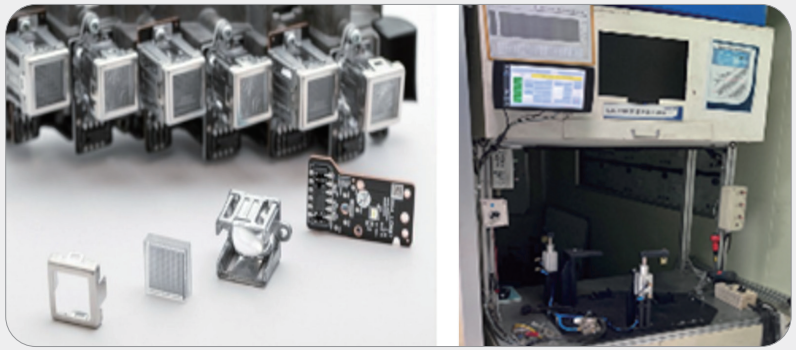
AI process condition analysis >>

AI process intelligence-based optimal working condition analysis solution

AS-IS

Conducting simple inspection on equipment by human (impossible to figure out the reason in a process)

Different analysis results by inspector (over 30% of defect rate, less than 40% of accuracy)



TO-BE

Creating relevant conditions and data analysis with AI (finding optimal conditions for a process)

24% of index-based productivity improvement rate, defect rate reduction by 53%

Cost reduction by over 53% required for inspection on reworks (KRW10 million)

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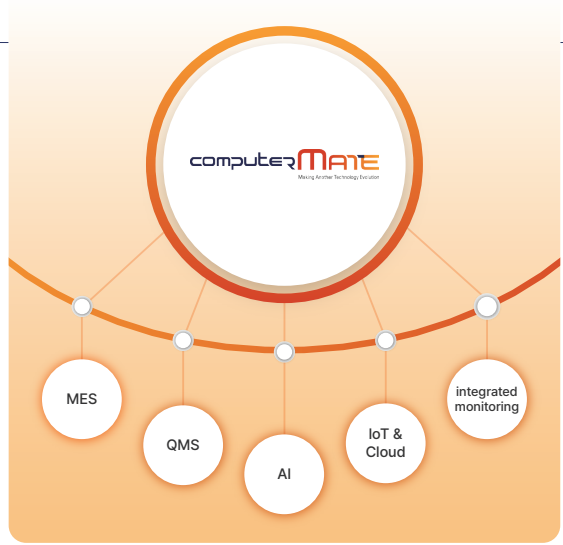
Category	AS-IS	TO-BE	Expected Effects
Creating optimal conditions for assembly process	Too much time consumed for process preparation (manual work analysis and conditions generation) and too much man hour input for reworks when defect occurs due to phase difference(10Hr/month)	Shortening preparation time by generating optimal conditions based on AI and reducing man hour for reworks thanks to decrease of defects in phase difference (6Hr/ month)	Improving process working hours by 40%
Advancing accuracy of prediction on the defect of phase difference	89% of accuracy	Over 93% of accuracy	Making up for human errors, improving confidence(Results differ depending on skill level)
Expanding application to injection process	Widening gap between skilled and non-skilled workers in the number of initial defect occurrence and preparation time due to conditions setting	Maintaining the same quality through AI-based conditions generation and shortening of preparation time	Decrease in time for preparation by over 20% Maintaining the same quality

COMPUTERMATE

leading the 4th industry,
is with you in building a successful smart factory.



COMPUTERMATE Co., Ltd

01	AI-based failure prediction system for equipment
02	AI model to predict process conditions in case of defects

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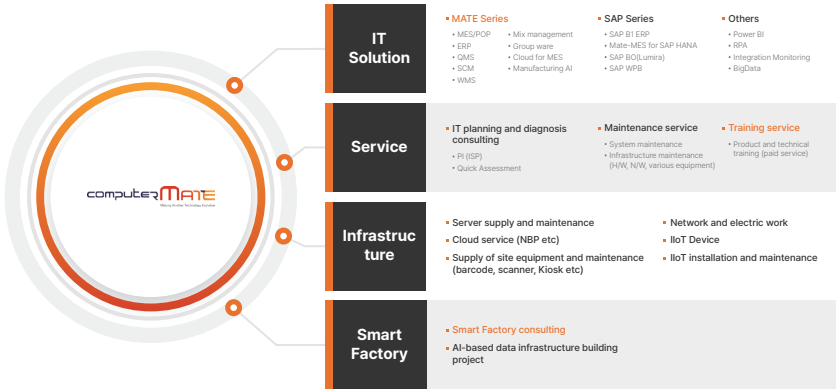
Company Introduction

- COMPUTERMATE Co., Ltd. which strives to lead the Fourth Industry is joining successful smart factory building.
- COMPUTERMATE Business Area Supports building of integrated solutions, including IT development, Manufacturing AI Solutions, infrastructure building, system maintenance, and training.



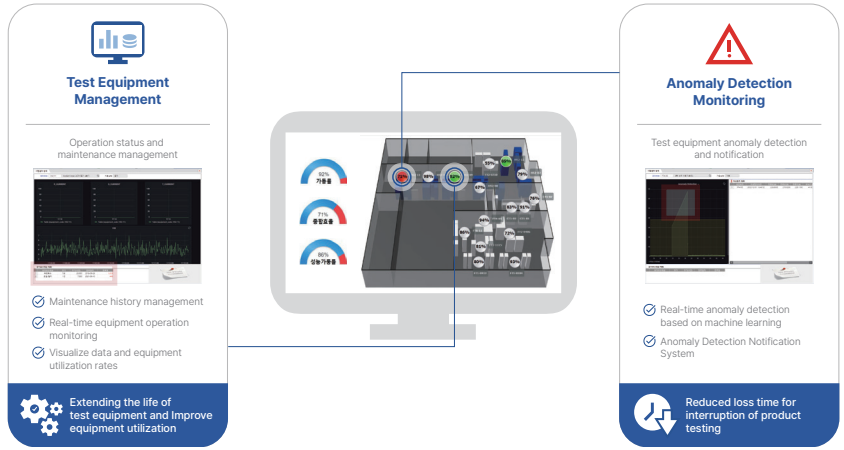
01

AI-based failure prediction system for equipment

Technology / Product	AI-based failure prediction system for equipment
Detailed Genre	Anomaly Detection
Product Type	Solution
Target Company	Manufacturing Company
Technology/Product video link	

Contents Introduction

- An AI solution that facilitates test management by monitoring the operation status of test facilities in real time and notifying abnormal detection of test equipment by AI.
- Reduce downtime by pre-notifying tester failures based on data from attached sensors.
- It is possible to check the operation status of the test equipment and extend the life of the test equipment by notifying the maintenance and replacement cycle.



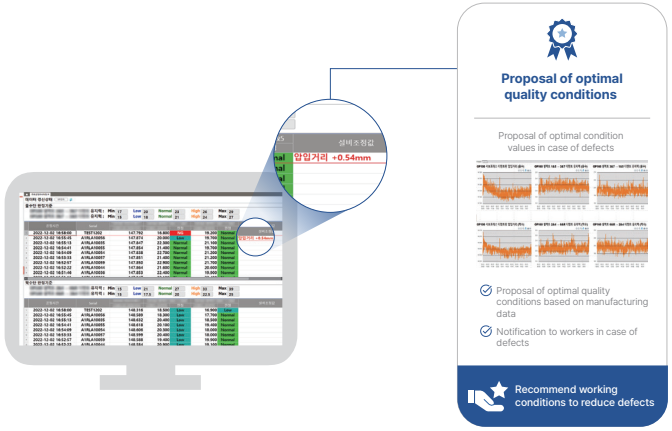
02

AI model to predict process conditions in case of defects

Technology / Product	AI model to predict process conditions in case of defects
Detailed Genre	Quality Prediction
Product Type	Solution
Target Company	Manufacturing Company
Technology/Product video link	

Contents Introduction

- AI solution that enables defect prevention by presenting equipment condition values to prevent mass defects.
- Reducing worker dependence and avoiding risks.
- Derivation of optimal conditions for equipment based on AI data, not product production based on worker experience.
- Contribute to improving productivity through the reduction of defects by preventing human errors of skilled or unskilled personnel.

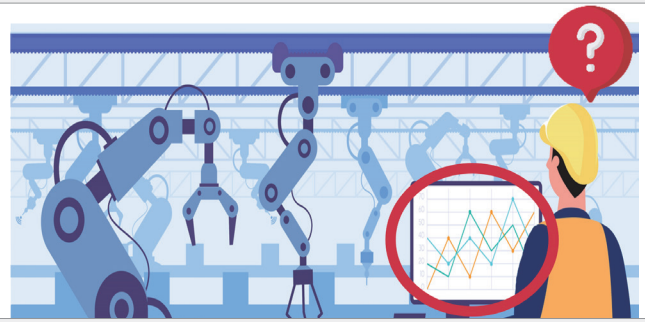


AI to predict process conditions when a defect is found >>

AI solution for actuator lines in the chassis shop

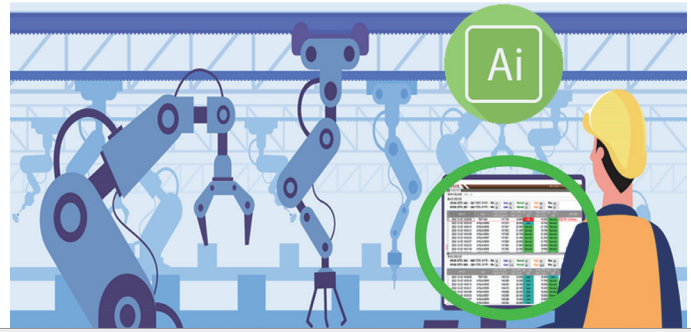
AS-IS

Checking the results of OP*** examination with the naked eye and adjusting equipment conditions using workers' intuition
UPH (96.73EA/H), quality costs(KRW3.6 mil.) defect rate 0.96%, man hour for rework (53.3M/H)



TO-BE

Presenting equipment condition values based on AI to minimize defect rates
UPH(101.95EA/H, up by 5.4%), quality costs (KRW13.91mil. down by 61%), defect rate (0.67%, down by 30%), man hour for rework (37.3 M/H, down by 30%)



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Classification	AS-IS	TO-BE	Expected Effects
Unit Per Hour(UPH)	96.73EA/H	101.95EA/H	Up by 5.4% in output
Defect rate of finished products	0.96%	0.67%	Down by 30% in defect rate
Man-hour for rework	53.3M/H	37.3M/H	Down by 30% in man hour for rework
Quality costs reduction	KRW36 million	KRW13.91 million	Down by 61% in quality costs
Equipment condition values that minimizes defect rate	Impossible to present	Presenting optimal equipment conditions by using AI-based quality defect prediction algorithm	Minimizing defect rate and removing human errors

AI-based test equipment abnormality detection >>

AI-based test control and test equipment failure prediction system

AS-IS

Test equipment abnormality occurrence rate (1.292%),
Manual preparation for test scheduling (10 min./case),
Test equipment operating rate (56%)

TO-BE

AI-based proactive notification on failure of test equipment, optimal scheduling for test, automatic collection of test result pages
Test equipment abnormality occurrence rate (0.731%, down by 43.42%), test scheduling (1 min./case, down by 90%), test equipment operating ratio (60%, up by 7%)

Classification	AS-IS	TO-BE	Expected Effects
Test equipment abnormality occurrence rate	Down time/(down time + up time)*100 1.292%	0.731% by predicting the malfunction of test equipment	Save time from requesting a repair to before repair Test equipment abnormality occurrence down by 43.42%
Test scheduling time	10 min./case	1 min./case	Down by 90% in test scheduling using AI
Test equipment operating ratio	Average operating ratio 56%	Average operating ratio 60%	Up by 7% in test equipment operating ratio
Test equipment maintenance	Immediate maintenance impossible due to the absence of system	AI-based alarm function on consumables of the test management system	Maintaining hydraulic motor at an optimal state to perform with proper periodic replacement

IDB Inc.

01	AI based safety monitoring technology (Protect Go)
02	Web editor based data visualization solution (T2V)
03	Equipment predictive maintenance (Baro Go AI)

IDB InnoDataBridge

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IDB InnoDataBridge

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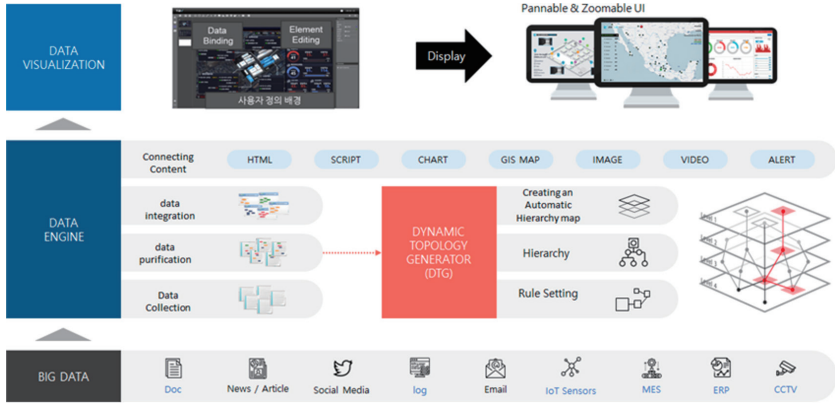
Company Introduction

IDB Inc. is a software company leading a new paradigm by convergence of IoT, AI analysis, and visualization technologies.
IDB Inc. develops IoT embedded systems platform that can be applied to smart factory, city, home, building and infrastructure industries, and develops applications and integrated monitoring through data analysis and visualization based on data collected from IoT data.
We are creating digital transformation innovation values for customer companies by utilizing IoT, AI, and data visualization convergence technologies.



01

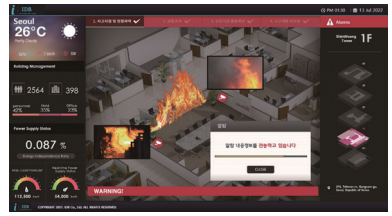
AI based safety monitoring technology (Protect Go)

Technology / Product	AI based safety monitoring technology (Protect Go)
Detailed Genre	
Product Type	Software
Target Company	Manufacture, Building automation, Smart city, Smart farm
Technology/Product video link	https://youtu.be/K8pPzIIVw4g

Contents Introduction

Protect Go is the system for manufacturing companies to manage risk factors in the workplace and to solve problems directly related to the lives of workers with fire and safety management solutions.
By introducing a preemptive smart safety management system step by step rather than a follow-up action after a fire or dangerous situation occurs, it is used as an sharing immediate situation and action execution system by operating a systematic intelligent integrated control system.
Workplace and to solve problems directly with fire and safety management solutions.

- Fire safety monitoring for Manufacturing plant, warehouse
- Detection and monitoring of electrical distribution board abnormalities in manufacturing plants
- Detection and monitoring of Hazardous gas transport pipeline leak
- Flammable gas tank and pipeline leak detection and safety monitoring
- Controlling worker's hard hat, falling, and access to unauthorized areas
- Integrated monitoring of working environment abnormalities through facility abnormality detection



02

Web editor based data visualization solution (T2V)

Technology / Product	Web editor based data visualization solution (T2V)
Detailed Genre	
Product Type	Software
Target Company	Manufacture, Building automation, Smart city
Technology/Product video link	https://youtu.be/K8pPzIIVw4g

Contents Introduction

IDB inc. is a company that specializes in digital twin technology, a cutting-edge technology that creates virtual models of physical objects and systems to optimize their performance.

Digital twin technology enables the collection and analysis of real-time data, allowing for accurate predictions and simulations that can help businesses make informed decisions. By creating virtual models of physical objects, the technology can simulate various scenarios and identify potential issues before they occur, preventing costly downtime and maintenance.

IDB inc..'s digital twin technology is widely used in various industries, including manufacturing, energy, and transportation. The technology has been proven to increase efficiency and productivity, reduce maintenance costs, and improve overall performance.

IDB inc. continues to develop new and innovative digital twin technology to meet the needs of the rapidly changing industrial landscape. Its solutions are trusted by industry leaders and experts, and are recognized for their reliability and effectiveness.

In conclusion, IDB inc.'s digital twin technology is a crucial solution for businesses looking to optimize their performance and improve their competitiveness. With its advanced technology and continuous innovation, IDB inc. is a leading player in the industry, providing reliable and efficient solutions for a variety of industrial needs.

03

Equipment predictive maintenance (Baro Go AI)

Technology / Product	Equipment predictive maintenance (Baro Go AI)
Detailed Genre	
Product Type	Software
Target Company	Manufacture, Building automation, Smart city, Smart farm
Technology/Product video link	https://youtu.be/K8pPzIIVw4g

Contents Introduction

IDB inc. specializes in equipment prediction and maintenance technology, a leading technology that utilizes artificial intelligence (AI) to prevent equipment malfunctions.

Equipment prediction and maintenance technology is a system that detects abnormalities in industrial equipment and takes measures before a malfunction occurs. This technology is based on machine learning and deep learning algorithms that enable precise data analysis and simulation, leading to optimized performance of equipment.

IDB inc.'s equipment prediction and maintenance technology is known for its ability to minimize downtime and improve productivity in a wide range of industries. By detecting abnormalities in real-time, the technology ensures quick responses and effective solutions, reducing maintenance costs and minimizing equipment damage.

IDB inc. is continuously researching and developing new technology to meet the needs of the constantly evolving industrial landscape. Its equipment prediction and maintenance technology is highly valued in the market and has earned recognition from various industry experts.

In conclusion, IDB inc.'s equipment prediction and maintenance technology is a state-of-the-art solution for the prevention of equipment malfunctions. With its advanced technology and continuous innovation, IDB inc. is a leading player in the industry, providing reliable and efficient solutions for a variety of industrial needs.

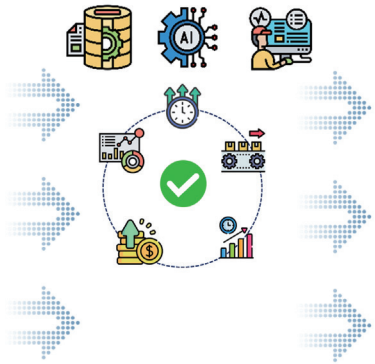
AI equipment predictive maintenance >>

AI-based equipment predictive maintenance quality process analysis solution

AS-IS

Equipment failure can be checked only by the worker in charge of the equipment in person, Impossible to predict unexpected abnormality and accidental failure of equipment

Machine learning-based prediction on equipment failure and affect factor analysis

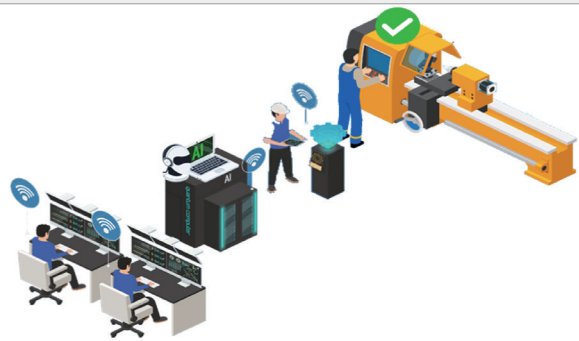


Predicting equipment abnormality

Failure affect factors tracking

TO-BE

Improving average repair time by 8% to 30 min. from 32.5 min. by predicting abnormality and failure of equipment based on sensor data unsupervised learning and failure affect factor analysis with AI



Classification	AS-IS	TO-BE	Expected Effects
Average repair time	32.5 min.	30 min.	Increasing productivity by 8.3% by improving the average repair time to 30 min. from 32.5 (non-operating hours/the number of equipment stoppage) Sales increase from KRW374.7 to KRW380.0 (billions), new employment 33(people)
Defect rate	978(PPM)	950(PPM)	
Saving lead time for delivery	5-day	4-day	
Improving the quantity in stock	18,500 EA	17,000 EA	

SUNGWON INFORMATION TECHNOLOGY

01 SWIT-MES

SWIT
SungWon Information Technology. Co, Ltd

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SWIT
SungWon Information Technology. Co, Ltd

SWIT
SungWon Information Technology, Co, Ltd

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Company Introduction

SUNGWON INFORMATION TECHNOLOGY provides IT solutions and consultation for smart factory construction, AI, IoT, and MES to both domestic and international manufacturing companies.
Established in 2002, our company has continually grown alongside the industry's increasing demands.
We specialize in comprehensive solutions based on our expertise in information systems for plastic and rubber injection molding and metal mold press.
Our goal is to enhance our customers' competitive edge in the market by offering services and technology built upon our accumulated experience with AI, IoT, MES, and BIG DATA. Furthermore, we strive to be an IT company by establishing a long-term partnership with our customers.
We also provide optimized digital solutions that adapt to the ever-changing business environment and invest heavily in R&D.
SUNGWON INFORMATION TECHNOLOGY is dedicated to becoming the top-rated customer satisfaction company by fostering mutual trust with our customers. We pledge to always do our utmost to be the best partner possible.

Our missions for transparency, innovation, and best teamwork:

- Our aim is to establish a transparent business model that adheres to global standards. We strongly believe that trust between our employees and the company is crucial for success in the industry. We are committed to setting the highest possible standard in this regard.
- Our mission is to fulfill our social responsibility by contributing to the local community through technological innovation and expanding our business globally with the advancements we make in technology.
- Our goal is to be the industry leader by promoting effective teamwork. We prioritize customer satisfaction by fostering a flat organizational culture that values creativity, teamwork, and leadership.

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01

SWIT-MES

Technology / Product	SWIT-MES
Detailed Genre	Smart Factory, MES, AI, BIG DATA
Product Type	Software
Target Company	
Technology/Product video link	

Contents Introduction

SUNGWON INFORMATION TECHNOLOGY offers a comprehensive manufacturing management system that includes SWIT-MES, SWIT-SPC, SWIT-WMS, and App-Monitoring.
SWIT-MES is a real-time system that collects statistical data from all manufacturing stages, which can help improve product quality, and ultimately, increase business profitability.

Characteristics of our SWIT-MES

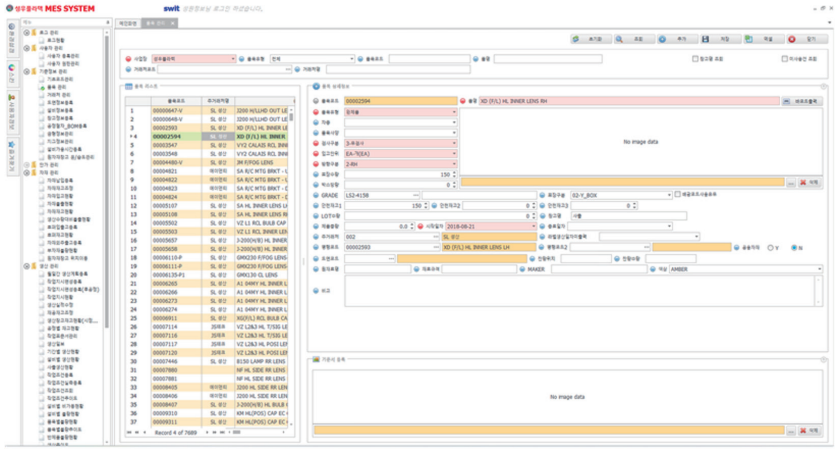
- Optimized manufacturing management system
  - Synergy effects by unifying the relation systems
  - Improve productivity through the system-based process
  - Improve quality through statistical quality control methods
  - Flexible system for the expansion of facilities

- Information structure based on system
  - Competitive quality products
  - Perfect sync between relation systems (ERP, WMS, APS...)
  - Manufacture planning based on schedule
  - Reliable on-site data (daily and monthly report)
  - Analyze manufacturing productivity

- Data consistency and flexible on-site response model
  - Automatic parameter data collection from manufacturing facilities
  - Instant adaptation to the improvements/expansion of facilities

- Applicable to various product groups and processes
  - Applicable from raw material to packaging
  - Flexibility for defining and changing the process

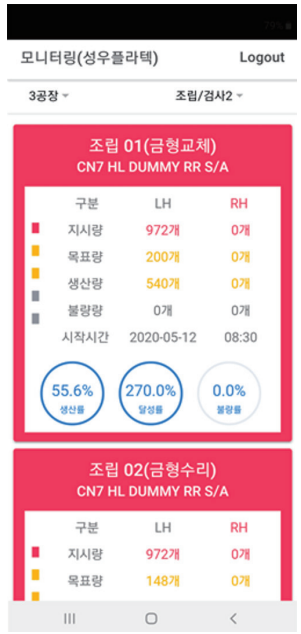
1. MES System



2. Production Monitoringystem

3. AI System

4. Mobile Application & PDA



AI process management improvement >>

AI/big data-based process management analysis and prediction solution

AS-IS

Low accuracy of analysis and confidence due to production plan and analysis made based on experiences of professional workers

TO-BE

With production plan and productivity analysis based on AI analysis (automatic production plan and reporting), targeting production increase (95%), defect rate decrease (5%)

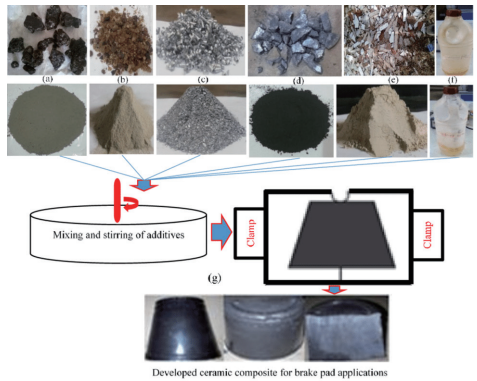
Category	AS-IS	TO-BE	Expected Effects
Production performance collection	Production performance collection of each worker 3 hour/day	Automatic collection No time taken	Expecting increase of work efficiency by 3 times, inventory accuracy by 2 times
Production plan	Establishing production plan by a manager 5 hour/month	AI-based production plan recommendation 1 hour/month	Expecting **97%** of achievement in production target
Production state analysis	About 10 items such as UPH, production output, number of defectives, etc.	Analyzing over 30~40 items based on AI, such as expected production output, parts consumption time prediction, load occurred lines, etc.	Expecting rise of profits by over 10% thanks to the enhancement of efficiency in management
Issue management	380PPM of defect due to handling after issues	360PPM with real-time control	Expecting decrease of defect rate by 5%
Product shipment timing prediction	Shipment preparation after checking inventory Lead time 3-day for shipment	Shipment preparation in advance through AI-based production prediction based on predicted order Lead time 1-day for shipment	Expecting reduction in costs of goods transportation by 5%
Sales increase	KRW397 billions before adoption	Up to KRW400 billions thanks to work efficiency improvement after adoption	Sales increase by KRW3 billion

AI mixture design intelligence >>

AI/big data-based mixture design simulation

AS-IS

Difficult to define a clear links to performance due to too many combinations in mixtures



TO-BE

With AI analysis data-based mixture design (simulation), Setting a target of design hit rate (53%), process capability achieving rate of developed products (50%)

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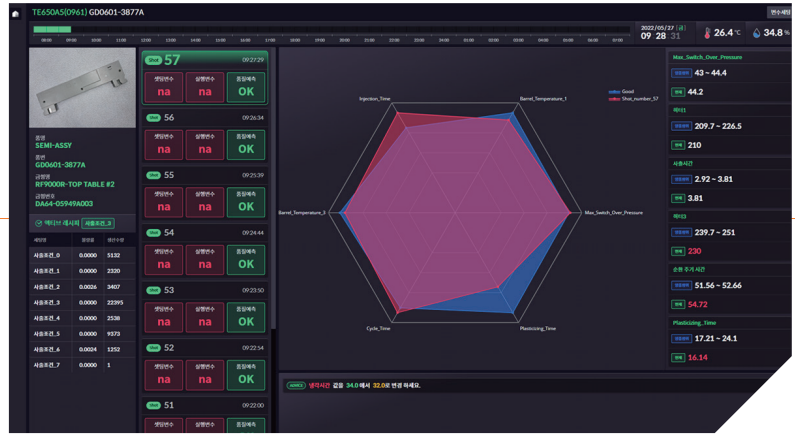
Category	AS-IS	TO-BE	Expected Effects
Test result data management	100 min./day of working time required for file management to upload data to DB in an excel file	10 min./day of working time consumed with data computerization and automatic collection	Expecting decrease in working time for data management by 10 times
Mixture recipe	160 hours/month for mixture recipe development by skilled researchers	20 hours/month for recipe development with recommendation based on AI analysis	Expecting decrease in product development time by 8 times
Feedback	53% of process capability achievement rate of developed products with feedbacks on performance test after development	76% of process capability achievement rate of developed products with feedbacks through AI simulation	Expecting increase in process capability achievement rate by 43% attributed by the decrease of trials and errors
Connection analysis	10 hours/month of working time due to various tests conducted for connection analysis between test data and the combination	1 hour/month of connection analysis time using AI	Saving the time required for analyzing the combination of the mixture by 10 times
Target development product hit rate	48% of mixture design hit rate due to wrong analysis data and combination which lead to falling short of targeted performance	Increasing to 55% of mixture design hit rate by minimizing errors in design through AI data utilization and data preprocessing	Expecting increase in mixture design hit rate by 15%
Sales increase	KRW397 billions before adoption	Sales increase to KRW400 billions thanks to work efficiency improvement after adoption	Sales increase by KRW3 billions



INTERX

01	INTERX Recipe.AI
02	INTERX Inspection.AI
03	INTERX Safety.AI

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Company Name	***INTERX***
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Company Introduction

INTERX.AI can predict development analysis and process quality based on the application of various process fields such as injection, welding, forging, pressing, drawing, and constraint. It can optimize process conditions for the production of products with optimal quality.
Additionally, it offers Manufacturing AI & Autonomous Factory Platform Services. Through production condition optimization analysis, quality prediction/ optimization analysis, quality inspection, and industrial safety/environmental analysis, among others, we transition from a post-quality response system to a pre-quality control system, enabling efficient production. We also strive to go beyond existing automated factories and build autonomous factories based on AI services.Through the INTERX.AI platform, the company not only provides PQCD (Productivity Quality, Cost, Delivery) optimization of manufacturing plants and professional services for autonomous factories to improve profitability but also acquires new competitiveness by automating the operational knowledge of manufacturing plants with AI.In addition, INTERX.DT can directly monitor equipment status in the virtual space through the Digital Twin service, providing more sophisticated services. We are working to build a Level 4.0 autonomous operation factory that surpasses the existing Level 2.0 automation factory with a solution based on virtual quality assurance AI service and data analysis by the Digital Twin service.We have more than 100 manufacturing AI-related construction achievements, and we hold the most significant number of manufacturing AI construction achievements in Japan. We have been recognized for our competitiveness.Furthermore, as members of global associations such as IIC in the United States and IDTA in Germany, we have secured worldwide certification and networks. We plan to promote overseas exports and business expansion through participation in international exhibitions and the establishment of a branch office in Germany this year.

01

INTERX Recipe.AI

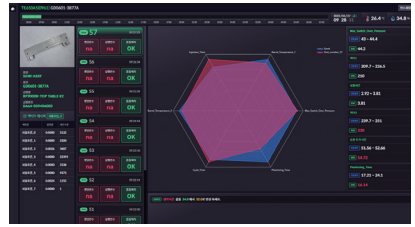
Technology / Product	INTERX Recipe.AI
Detailed Genre	Quality / Production condition Optimization Service
Product Type	AI Solution
Target Company	Manufacture company
Technology/Product video link	https://www.youtube.com/watch?v=wlp3UvKUduY

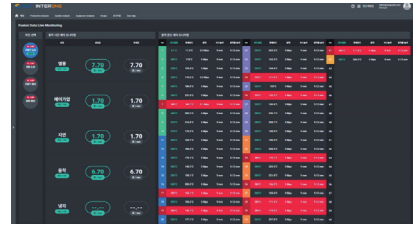
Contents Introduction

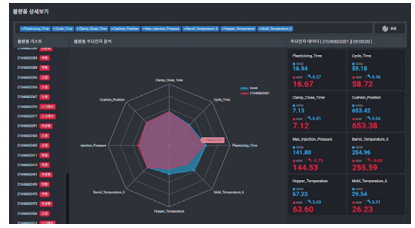
INTERX Recipe.AI provides quality prediction using various data gathered during the manufacturing process. It also offers production condition optimization services and guides operators toward optimal production processes.

By converting the post-quality response system into a pre-quality management system, we enable mass production condition optimization and quality prediction.

Additionally, Recipe.AI serves as an effective solution for improving energy efficiency and reducing carbon emissions by proactively responding to defects.







02

INTERX Inspection.AI

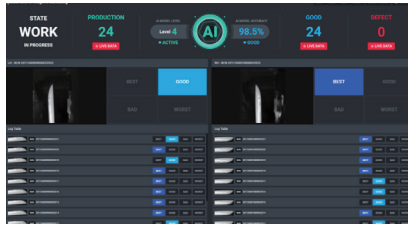
Technology / Product	INTERX Inspection.AI
Detailed Genre	Quality Inspection Service
Product Type	AI Solution
Target Company	Manufacture company
Technology/Product video link	https://www.youtube.com/watch?v=tUuT7YFSd-8

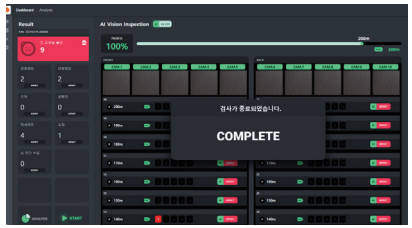
Contents Introduction

INTERX Inspection.AI is a solution that enhances the accuracy of defect detection by standardizing inspectors' defect judgments and applying AI technologies for defect detection.

This is made possible through the Core AI learning technique, which extracts crucial features from the manufacturing process. As a result, high-performance AI models can be developed even with a small number of images.

Inspection.AI effectively addresses existing challenges in defect analysis, including the high fatigue associated with a visual inspection, the complexity of responding to multiple product varieties, and the difficulty in quantifying quality standards. It offers innovative improvements in these areas.





03

INTERX Safety.AI

Technology / Product	INTERX Safety.AI
Detailed Genre	Industrial Safety AI Solution
Product Type	AI Solution
Target Company	Manufacture company
Technology/Product video link	https://www.youtube.com/watch?v=gmBgk25lnMk&t=2s

Contents Introduction

INTERX Safety.AI is developed to ensure human safety and provide flexible responses to various field situations. Safety AI is an AI-based solution for human detection that generates an alarm when a worker enters a dangerous area.

Safety.AI utilizes multiple sensors, i.e., thermal camera, night vision camera, and RGB camera to capture human activity for learning the human shape and motion data. Safety.AI solution has been developed to prevent various industrial accidents at industrial sites. Through image-based data analysis, it swiftly detects and identifies human activity in safety zones and hazardous areas, providing prompt risk notifications.

Faulty processing prediction >>

AI-based CNC faulty processing prediction solution

AS-IS

- The quality issues only found on a total inspection occur the productivity decline and low quality
- The production efficiency and productivity are set back by closer to failure of equipment or parts and repairing by failure occurred

The initial set point of processing factors is different by the proficiency of operators.
3.5% of defects has been occurred by changes in factors of processing conditions including Feed Rate and Spindle Speed.

CNC Processing Equipment

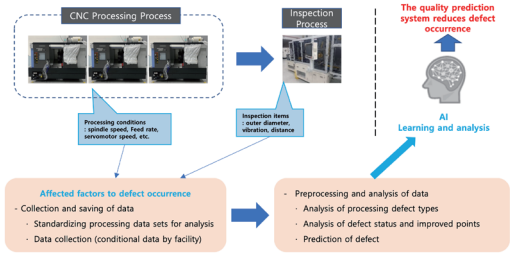
Inspection

CNC NC PGM

TO-BE

- Solving the quality problems, analysis of cause, and prevention of defects by in advance prediction of defects occur
- Decrease defect rates and improvement of productivity by applying the AI prediction model for low-quality based on collected process data

Machining factors data would be analyzed by using the AI-based CNC machining defect prediction solution.
The defect rate decreases from 3.5% to 3.2%, and the production efficiency increases from 60% to 80%.



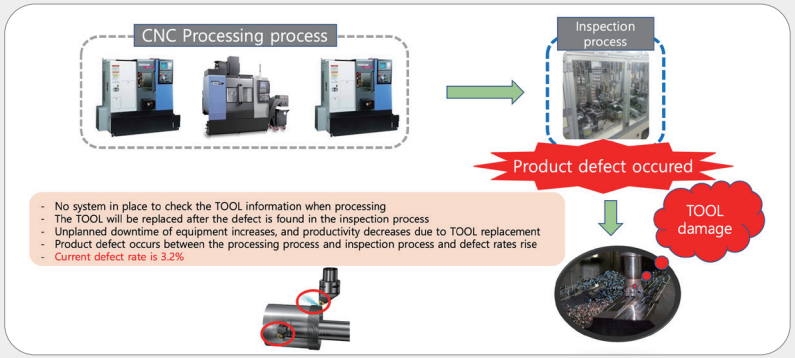
Classification	AS-IS	TO-BE	Expected Effects
Production Efficiency	• Defect rates (compared to total output): 3.5%	• Defect rates (compared to total output): 3.2 %	• Increase in the output of non-defective products by the decrease in defect rates
Process Defect Rates	• Daily average output: 225 EA • Production efficiency (standard CT-based): 66%	• Daily average output: 270 EA • Production efficiency (standard CT-based): 80%	• Increase in production efficiency by corrective actions taken based on defect prediction and downtime reduction
Note	**BALL RAMP 026 production line.**		

Faulty processing prediction >>

AI-based CNC faulty processing prediction solution

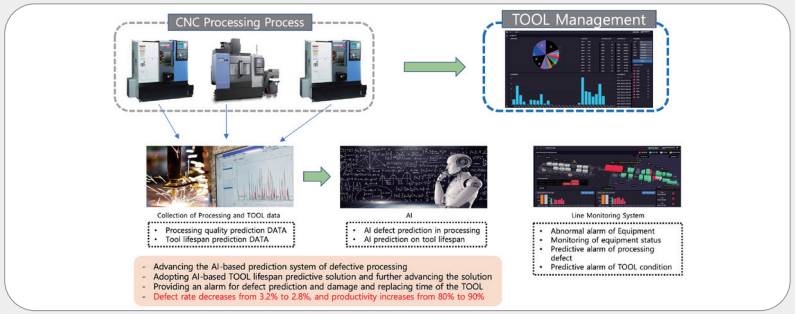
AS-IS

- No system in place to check the TOOL information when processing
- The TOOL will be replaced after the defect is found in the inspection process
- Defect rate increases and productivity decreases



TO-BE

- Advancing the prediction system of defective processing at the 1st year
- Adopting the prediction system of TOOL lifespan at the 2nd year
- Reducing defect rate and increasing productivity with a prediction system for defective processing and TOOL lifespan



Classification	AS-IS	TO-BE	Expected Effects
Processing defect rate	• Number of non-defective products: about 64,470 EA • Number of defective products: 2,096 EA • Defect rates : 3.2%	• Number of non-defective products: about 69,870 EA • Number of defective products: about 1,900 EA • Defect rates : 2.8%	• Increase in the output of non-defective products by the decrease in defect rates • Decrease in the incurred expense of defective products of KRW150 million annually
Production efficiency	• Daily average productivity: 195 EA / day • Production efficiency : 80%	• Daily average output: 237 EA / day • Production efficiency : 90%	• Increase in production efficiency by corrective actions taken based on defect prediction and downtime reduction • Sales increase by over KRW300 million annually by productivity enhancement
Note	**BALL RAMP 026 LINE**		