SIGNLAB Co., Ltd.

THE COMPANY PROFILE

SIGNLAB

22. 5. 26.ver.

Business Areas

outstanding new service

We Strive for Innovative Service

SIGNLAB

Passionately Thinking & Making

Solution Development	Digital Transformation & Artificial Intelligence	Life Care Services
Smart Factory Solution	Manufacturing Data Analysis / AI Models	Intelligent Access and Security
Smart Building Solution	Energy Data Analysis / AI Models	Digital Signage(Parking, Access)
Smart Farm Solution	Farm Data Analysis / AI Models	VR/AR Contents
Life Care Solution		

Reliable Collaborative Partnership

iMES iWEM iDash i-SmartParking Dr.Consulting 스마트컨설팅 Dr.mom 생활건강 어드바이저 LIFE HEALTH 세이프엔 SafeEN see-U

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I

Solution Development

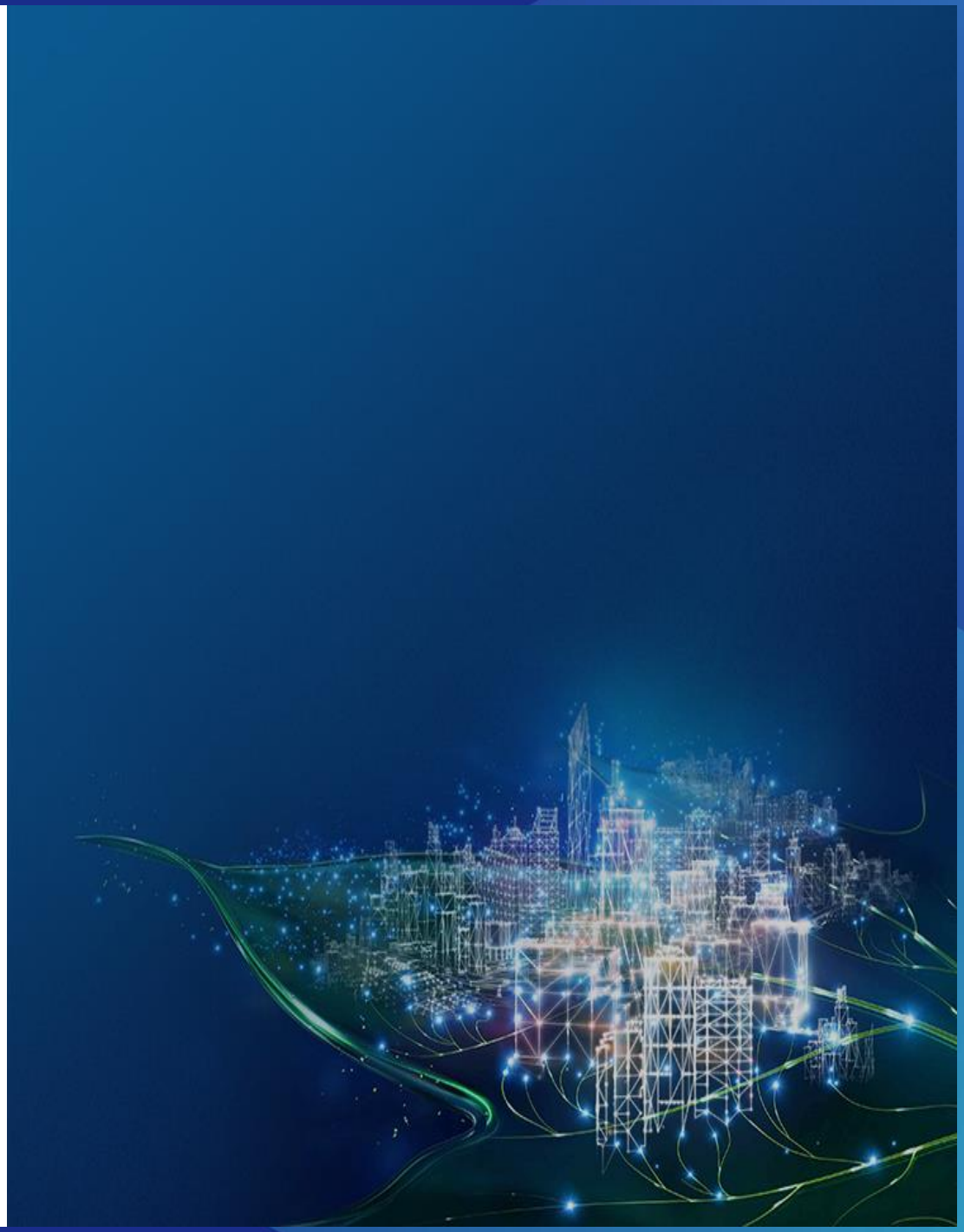
Solution Development

1.1 Smart Factory Solution

1.2 Smart Building Solution

1.3 Smart Farm Solution

1.4 Life Care Solutions

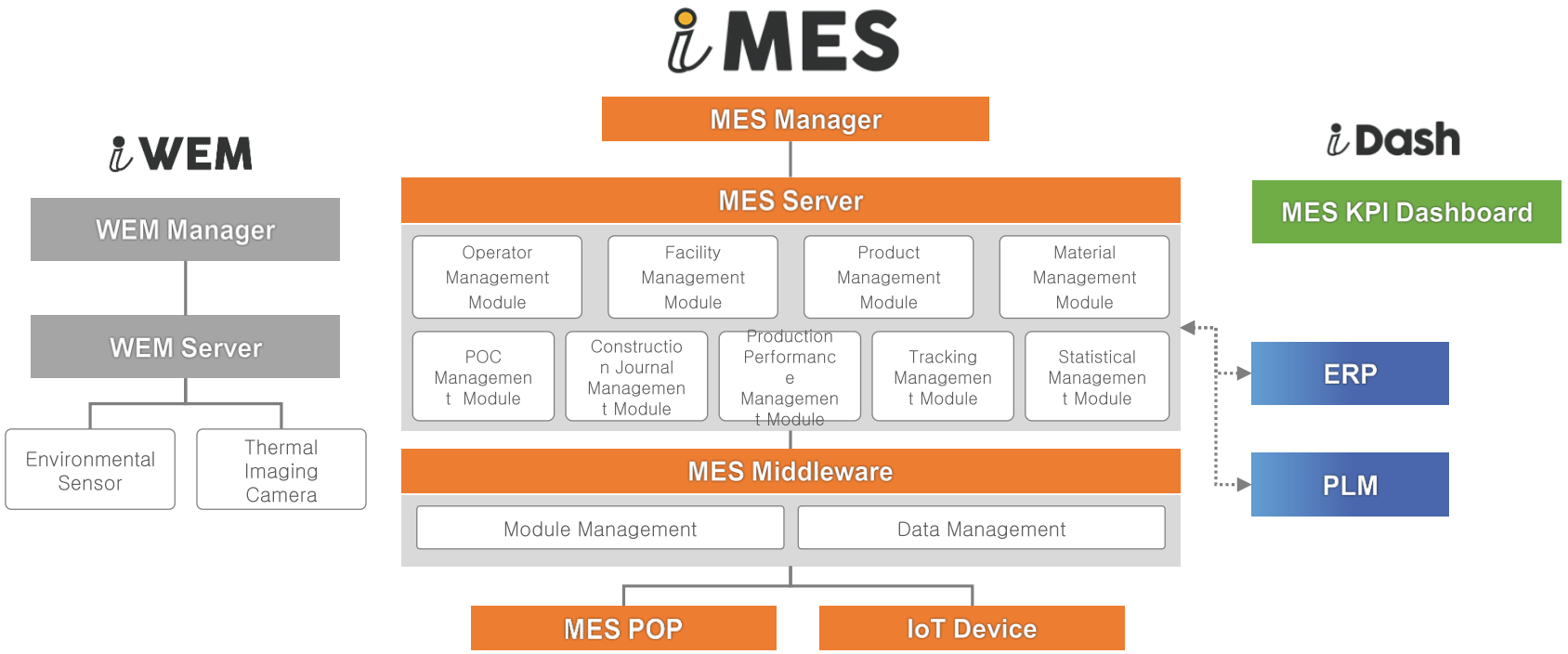


1 Smart Factory Solution (1/2)

Own Product and Solutions

iMES Diagram

Comprised MES for production management system and WEM, options



Tailored System Design / Development	Light Development / Operating Environment	Reasonable Price for Establishment	Improving the Reporting System / Visualization	Providing of Design / Development Document

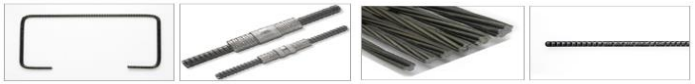
1 Smart Factory Solution (2/2)

A Track Record of Building MES(POP)

- Maintaining a high level of understanding and expertise in production data analysis based on the experience of establishing MES for manufacturing companies in various industries such as pipe drawing, ship supplies, engines, automobile parts, medical devices, and food

DaehanNetworks 대한네트워크스 — A rebar processing company

product



TZEN ㈜페리만&티젠 — A engine, APU manufacturer

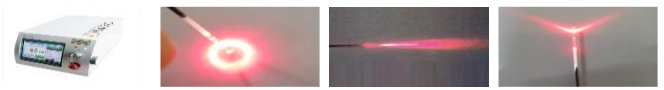
product

㈜원광정밀테크 — A automobile parts manufacturer

product

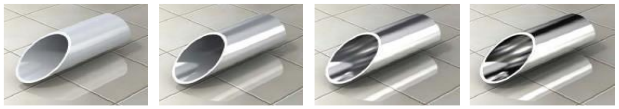
DIOTECH http://www.diotech21.com — A Medical Fiber-optic Manufacturers

product



(주)부광테크 BUKWANG TECH Co.,LTD. — A pipe drawing company

product

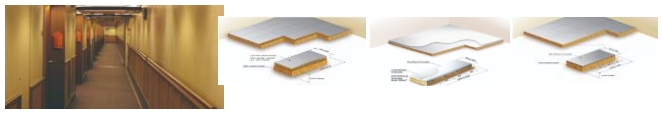


롯데제과 부산공장 — A food manufacturer

product

STACO shinhwa INTERIOR & TECHNOLOGY — A ship supplies manufacturer

product



HAN YOUNG — A stainless steel multifunctional drawer

product

Smart Building Solution (1/2)

Smart Building : Smart Parking System

Driving the vehicle in and out quickly

Parking guidance in accordance with access Grade Facilitates the flow of vehicles in the building

Integrated parking managements

Efficient management of visitor situations through data analysis

Smart Parking Environment

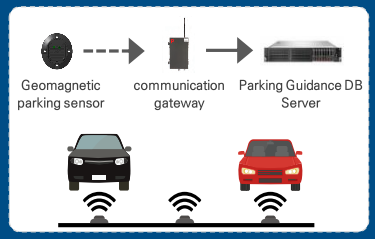
Direction of parking area for incoming vehicle Smart parking space management

Energy Conservation

Link to Smart Building Platform

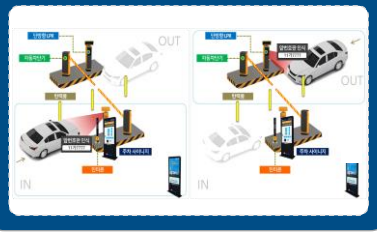
Parking Sensor

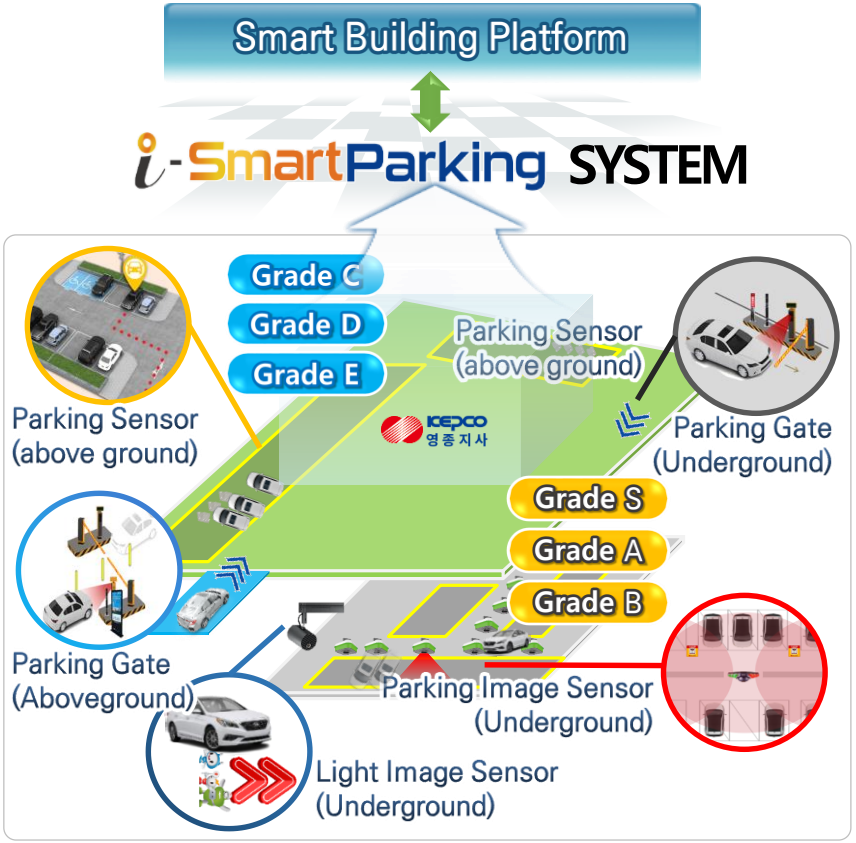
Vehicle parked on parking surface detected



Parking Gate (Above Ground)

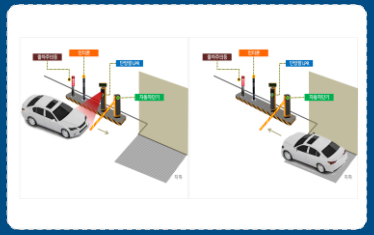
Recording all vehicle entry and Exit Parking Signage: Real-time provision of parking information





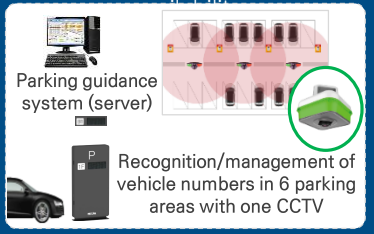
Parking Gate (Underground)

Recording entry and exit by Grade S/A/B Welcome phrase management by VIP schedule



Parking Image Sensor

Recognizing Parking space and license plate with omnidirectional camera,real-time detection of parking



Smart Building Solution (2/2)

Smart Building : Smart Security

Intelligent Access Security

- **Main Features**
  - Increased access control and security to employee-only areas
  - Summary of access status, statistics provided
- **Face Analysis Device : Key specifications**
  - Camera : 2MP Image quality, IR(58deg) + Visual(90deg)
  - A distance of walking through : 50 ~ 130cm
  - User Storage Capacity: 3,000 (1:N) / 30,000 (1:1)
  - Card compatibility: Mifare / EM, HID Prox / HID iClass, NFC, BLE

Intelligent Video Analysis

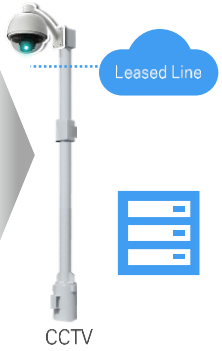
- **Operation(Service) Plan**
  - Analysis and control of each safety-threatening situation / CCTV video analysis and transmission
  - Automatic alarm in the center when an event occurs

Video-based event detection

- Use of real-time object recognition technology based on DNN technology
- Check for occurrence of events within the monitoring range (on Fire, smoke, wandering, falling out, etc.)

A secure area Intrusion detection

- Notification when approaching a prohibited location
- Alarm when intrusion conditions are met



- **Main Features**

Video-based event detection

- Increase detection reliability by applying deep learning technology
- Accident prevention effect and reduction of accidents by minimizing mis-detection

Security Area intrusion Detection

- Detection of wandering for a certain period of time in the danger zone
- Notification in case of intrusion into prohibited area

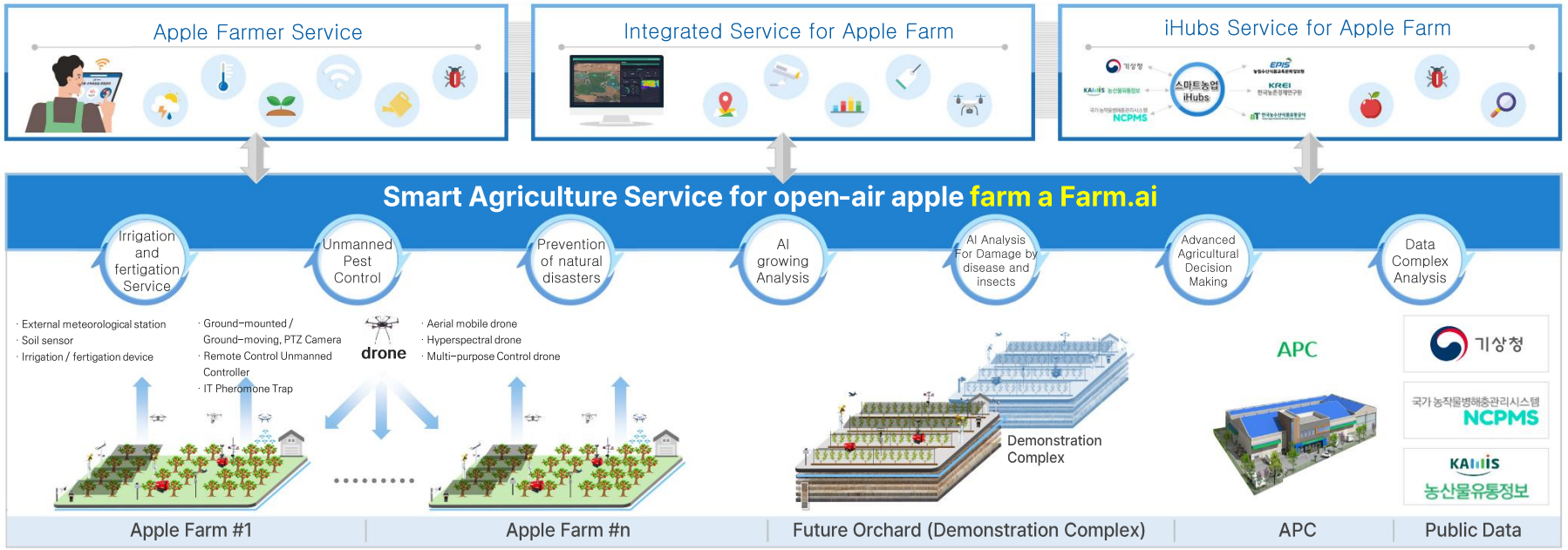
Expected Effect

- Establishment of Safety Control and Emergency Response System Using Deep Learning Technology
- Detection and alerting of dangerous acts such as not wearing protective gear(safety helmet)
- Enables rapid fire detection and rapid fire handling in and out of large factory complexes

Smart Farm Solution

Apple Smart Agricultural Platform Establishment

- Establishment of Integrated Management System for open-air apple farms based on big data analysis
  - Management of apple farms and monitoring of growing, pests using PC/tablet/Kiosk
  - Detects video events occurring at apple farms(human recognition, wildlife, etc.) and notifies farmers
  - Provides analysis results such as pesticide control, irrigation, and harvest timing by analyzing big data-based images collected in real time



Life Care Solutions (1/2)

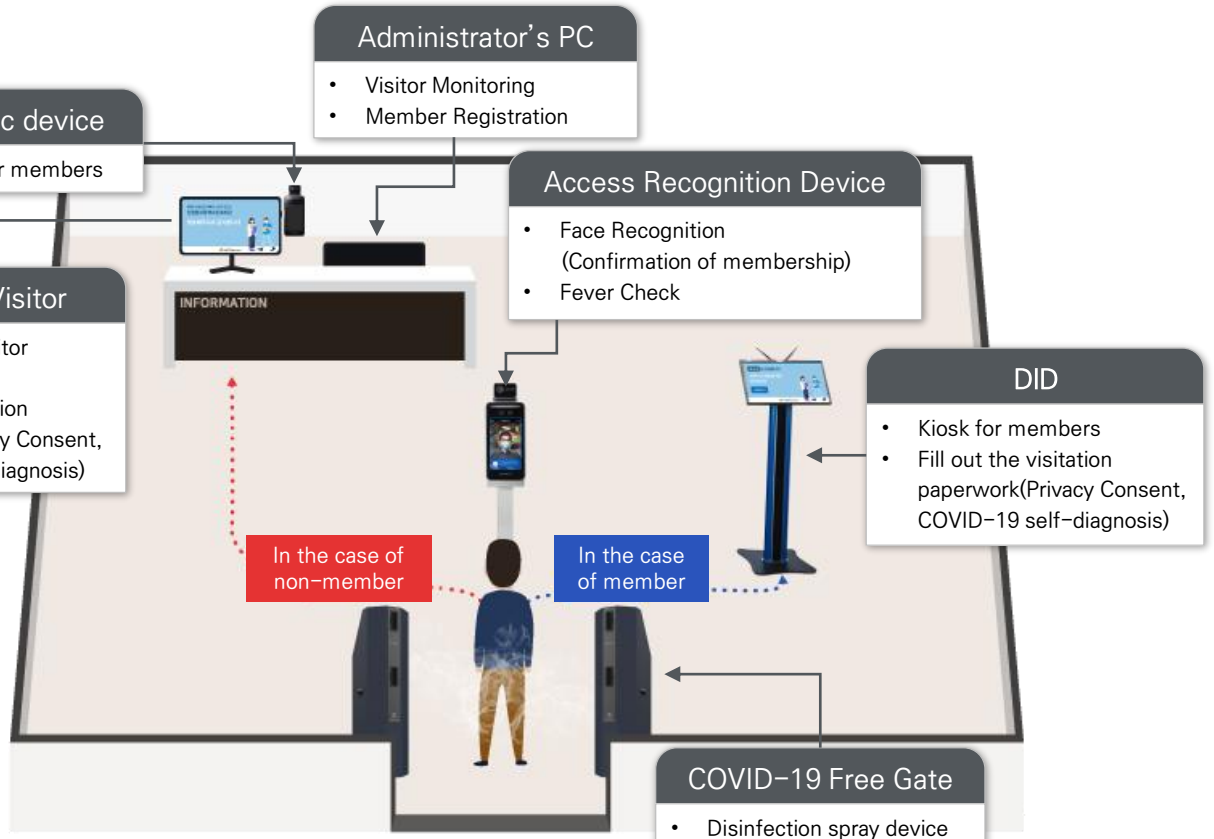
COVID-19 Free Access Control Service

세이프엔 SafeEN

In addition to improving quarantine to prevent infection,
Access & Anti-Virus management Service that minimizes the inconvenience of visitors

Service Concept

신장림사랑채노인복지관



Life Care Solutions (2/2)

COVID-19 Free Access Control Service - Smart Guestbook

see-U

A mobile guestbook that systematically and smartly manages the visit history of people entering and leaving the building

Mobile Guestbook

Reduction of access time and smart access history management

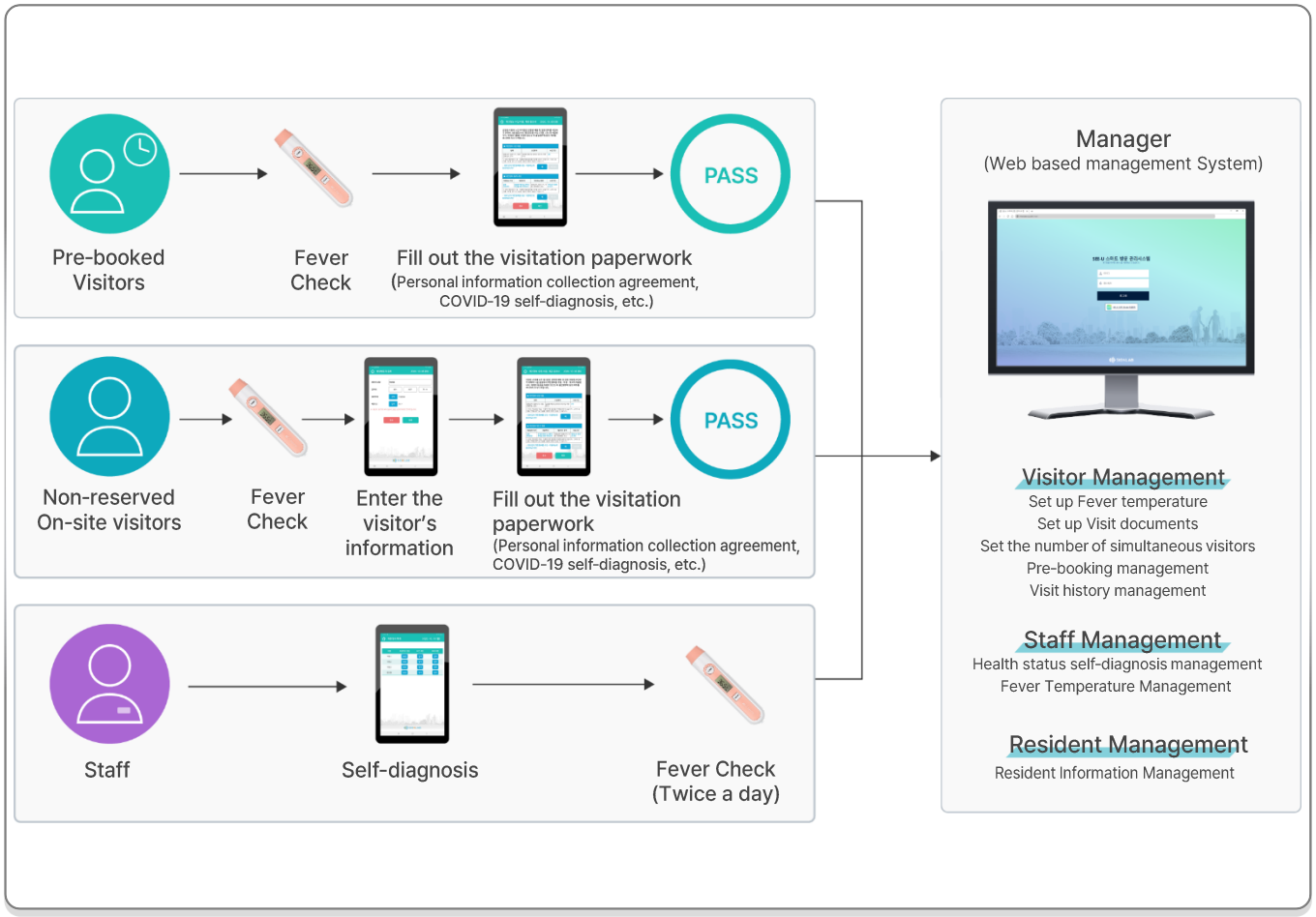
Staff Management

Checking the temperature of resident employees and managing their health conditions

Management System

Easy and intuitive web-based management system

System Scenario



II

Digital Transformation & Artificial Intelligence

IDX & AI

2.1 Manufacturing Data Analysis/ AI Models

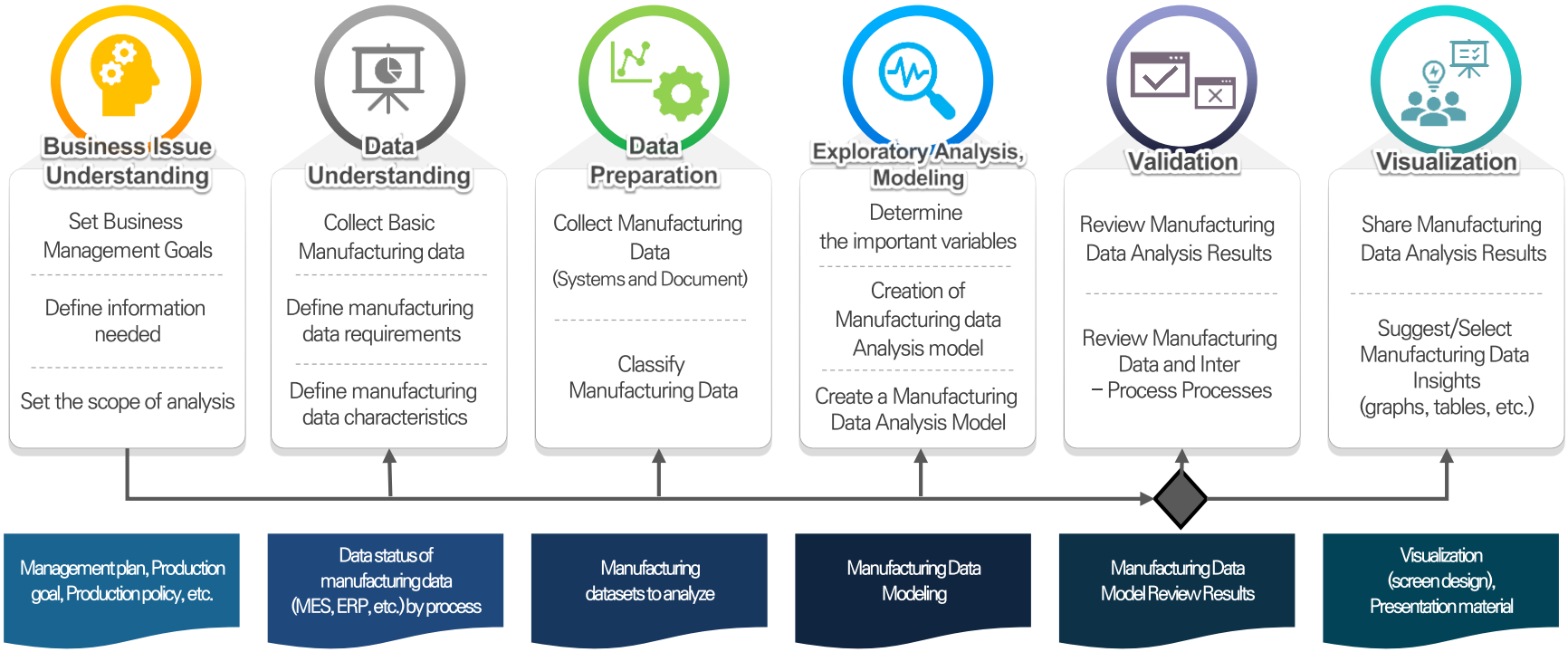
2.2 Energy Data Analysis / AI Models

2.3 Farm Data Analysis / AI Models

1 Manufacturing Data Analysis / AI Models (1/6)

Smart Factory Analysis — Manufacturing Data Analysis Consulting

Date	Designated Organization	Contents
2022. 1.	National IT Industry Promotion Agency	AI Voucher Supplier
2022. 1.	Korea Data Agency	Data Voucher Support Business Suppliers
2021. 7.	Korea Advanced Institute of Science and Technology	AI-based manufacturing data analysis solutions providers
2021. 8.	Busan IT Industry Promotion Agency	Big data Analytics Consulting Suppliers
2020. 3.	Busan Techno Park	A company specializing in data analysis of aging process manufacturing



1 Manufacturing Data Analysis / AI Models (2/6)

Smart Factory Analysis — Manufacturing Data Analysis Consulting Cases

Explore how to use detailed analysis of manufacturing data

Analysis of Aging Process Manufacturing Data (6 Companies)

KUMHA corporation	Aggregation of production quantity and data analysis of molding conditions through the introduction of automated equipment
동방테크주식회사 DONG BANG TECH CO., LTD.	Advanced hydraulic fitting robot automation machining process manufacturing data utilization using vision inspection system
DONGYEUN	Advancement of pipe calibration dimensional measuring device and analysis of calibration data
MONO	Establishment of process data acquisition platform for busbar production and quality control standardization
주식회사 성창사 SUNG CHANG CO.,LTD	Improvement of Old Wired Harness manufacturing Process through ERP Interlocking of Quick-build System and Vision Sensor Technology
WT (주)위너택	Plating process quality improvement and monitoring service development using industrial environment smart sensor

AI Data Processing (5 Companies)

HWA YOUNG AUTOMOBILE PARTS	Real-time Collection of Manufacturing data of resin steam bending process and UPH-based productivity analysis
MONO	Establishment of Busbar Surface Processing Production Condition Data Processing and Quality Management System for ERP Linkage
SENTECH	Facility use information analysis service for convenience and safety of using charging facilities
GANA GANA ENG Co., Ltd.	Development of power generation optimization prediction engine through power and REC transaction information and O&M data processing and AI learning in solar power plants
DH controls	Pre-accident data analysis and prediction using big data and machine learning of exhaust gas control valves for SCR-HP for the removal of nitrogen oxides from ship engine exhaust gases

Big Data Analysis Consulting (5 Companies)

주식회사 성창사 SUNG CHANG CO.,LTD	Analysis of wire harness compression process
㈜조이테크	Analysis of Drinking Water Quality and Application of Water Supply Control System
MONO	Process Quality Analysis of Silver and Tin Plating
WT (주)위너택	Process Quality Analysis of Automotive Plating Process
EasyGeo	Elementary, middle, and final data analysis and visualization

Examples of data analysis

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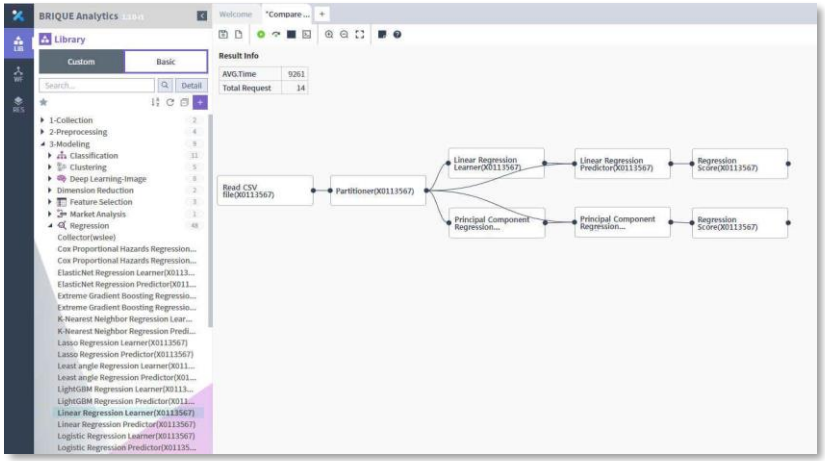
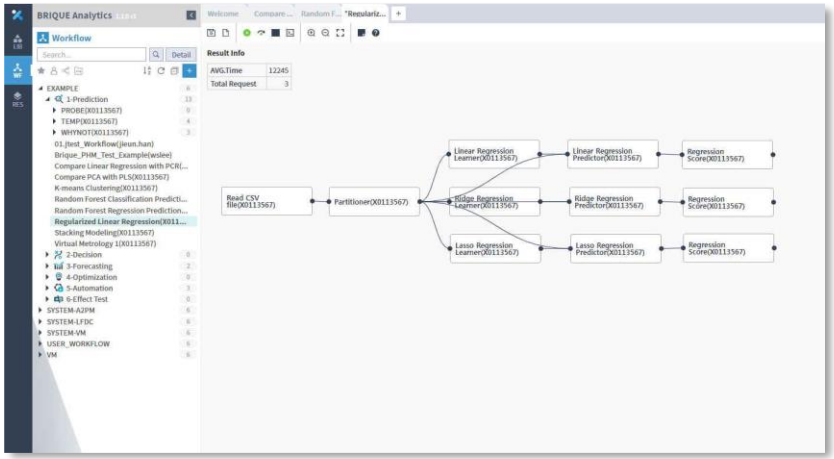
1 Manufacturing Data Analysis / AI Models (3/6)

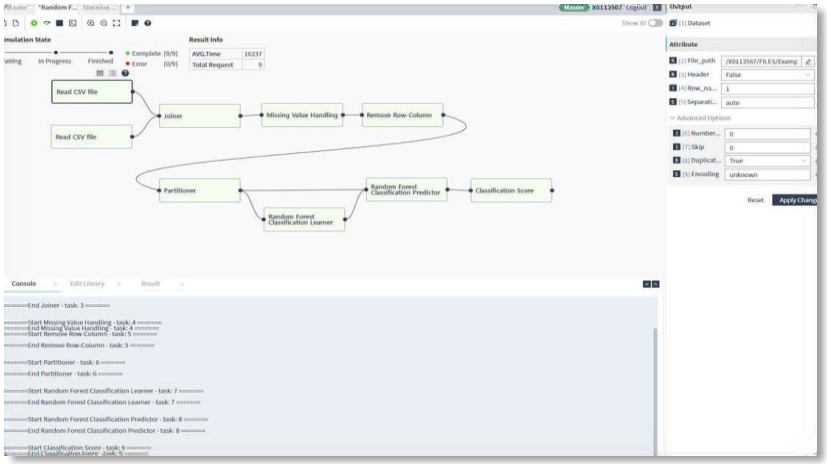
Smart Factory Analysis — Data Analysis Tools: iMES_DA Solution

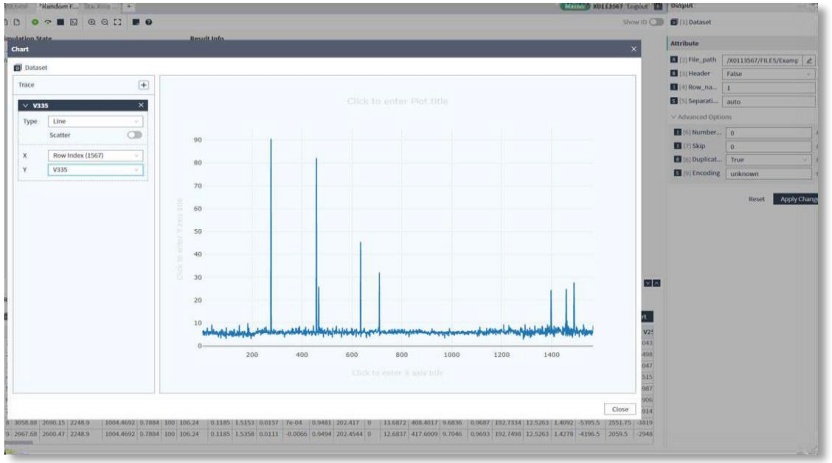
- Extract the optimized model by applying various response variables to the analysis model





- Test the analyzed workflow in real time, and immediately check and verify the execution result using console messages and charts





1 Manufacturing Data Analysis / AI Models (4/6)

Smart Factory Analysis Solutions in Data Analytics

Solution Name	IRP Number	Main Content
Manufacturing data Correlation Analysis Program	C-2021-038042	Analysis of Pearson's correlation coefficient and degree of correlation between factors affecting production to detect statistical rules and patterns of manufacturing data
Manufacturing data Visualization Program	C-2021-038044	Interworking with databases such as MES and ERP, data are filtered, grouped, sorted, and converted into charts to analyze data
Manufacturing data Preprocessing Program	C-2021-038043	A program that removes outliers and missing values from the input dataset to structure the raw data collected from manufacturing facilities.
Image Analysis Software	C-2016-020536	Detection of abnormal behavior such as human intrusion detection, collapse, disappearance, etc. from CCTV camera images.
Abnormal Sound source Analysis Software	C-2016-020537	Accurately recognize screams and rescue calls by recognizing the sound input into the microphone and analyzing the type of sound source
Failure Predictive Monitoring Software	C-2018-014402	Analyze digital signal data of equipment to detect normal/abnormal operation and predict failure
Failure Prediction Algorithm Software	C-2018-014403	Analyzing the maximum/minimum/hydraulic data sensed through the input sensor to predict the possibility of equipment failure
Korean Language Application Analysis System	C-2021-018998	After receiving Korean documents, perform morpheme analysis, extract emotional information (positive/negative sentences) and topics using morpheme as qualities
Korean Language Basic Analysis System	C-2021-018997	After receiving Korean sentences and dividing them into morphemes, basic statistical information(word /word ratio, frequency of word appearance) is extracted, visualized, and converted into vector expressions
Time Series Data Fundamental Analysis System	C-2021-018995	Predicts the pattern(periodicity, seasonality, repeatability) of time series data and future results by receiving time series data such as temperature, water temperature, and electric energy as input
Power Demand Forecasting System	C-2021-018996	Receive power demand data including date and time information as input and predict power demand patterns(periodicity, seasonality, repeatability) and future results

1 Manufacturing Data Analysis / AI Models (5/6)

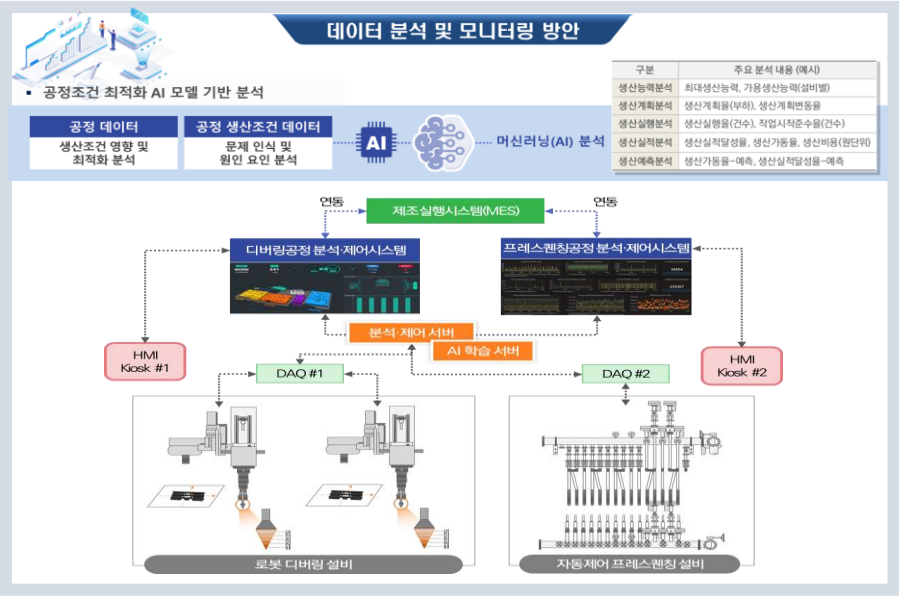
R&D Project execution and R&D Services

Selected as R&D task for 2022

Form of participation	Program Name	Implementing Ministry / Institution	Task Name
joint	2022 Intelligent root process system establishment project	National Root Industry Promotion Center	Intelligent system for hot deburring and press-quenching process
	2022 New product development business with purchase condition	Ministry of SME's and Startups	Development of continuous rolling casting equipment for AGM batteries over 300m and integrated monitoring technology

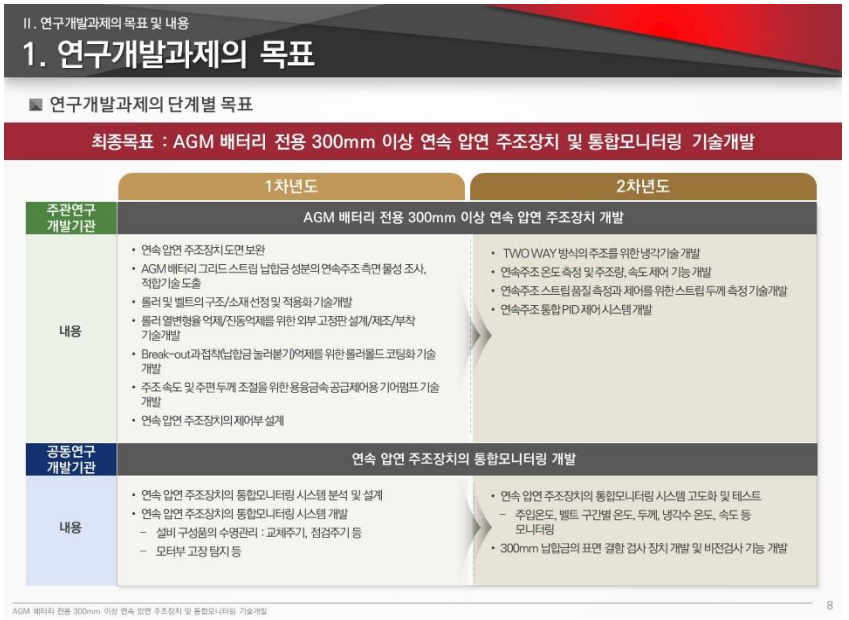
✔ Intelligent system for hot deburring and press-quenching process

Organizer : DongshinMetal Co.,Ltd. Joint Participation : Signlab Co., Ltd.



✔ Development of continuous rolling casting equipment for AGM batteries over 300m and integrated monitoring technology

Organizer : HONGICK HIM Co., LTD., Joint Participation : Signlab Co.,Ltd.



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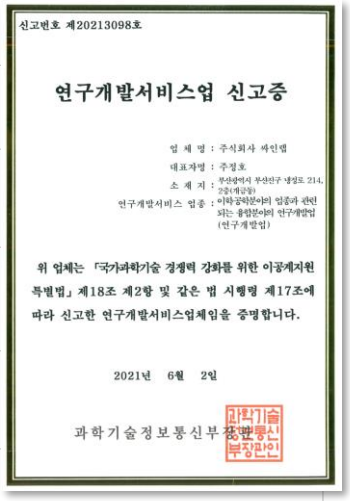
1 Manufacturing Data Analysis / AI Models (6/6)

R&D Project execution and R&D Services

Form of Participation	Program Name	Implementing ministries/institutions	Project Title
Organizer	Rapid Commercialization Support Project	Busan / Busan Techno Park	Commercialization of Parking Image Analysis Terminal and Parking Service Based on Power Line Communication
	Project to Support Export Sprout Enterprises for Specialized Industries in Busan	Busan / Busan Techno Park	Export commercialization of parking image analysis solution
	DA-R&BD Business	Dong-A University URP Project Team / Dong-A University	Development of current loop type MES information collection device capable of transmitting current data
	Living Lab Demonstration Enterprise Support Project	Busan / Busan Creative Economy Innovation Center	Production of AR emotional contents in Gamcheon culture Village based on storytelling in connection with urban regeneration / Service demonstration
	Project to support the development of leading companies	Busan Techno Park / Busan Techno Park	Development of manufacturing facility failure diagnosis and maintenance soundness management technology
	Start-up Growth Technology Development Project	Ministry of SMEs and Startups	Development of Integrated Solution for Complex and intelligent Fire Safety Response Factory Facilities
	Regional Enterprise Innovation Capability Reinforcement Project	Busan Creative Economy Innovation Center	Smart industrial environment monitoring service based on IoT and analysis algorithm
	DAURP 2018 Joint R&BD Project for Industry-Academic Convergence	Dong-A University URP Project Team / Dong-A University	Development of responsive MES tools based on Web standards
Participant	Living Lab Infrastructure Construction Project	Busan / Busan Creative Economy Innovation Center	Factory Living Lab Infrastructure Construction Project
	Networked Technology Development Project for SME in 2018	Ministry of SMEs and Startups	Development of disaster safety response system for special workshops such as shipbuilding and offshore plants


신고번호 제20213098호

연구개발서비스업 신고증

업 체 명 : 주식회사 싸인맵
대표자명 : 주정호
소 재 지 : 부산광역시 부산진구 냉정로 214, 2층(개금동)
연구개발서비스 업종 : 이학·공학분야의 엔지니어링과 관련되는 융합분야의 연구개발업 (연구개발업)

위 업체는 「국가과학기술 경쟁력 강화를 위한 이공계지원 특별법」 제18조 제2항 및 같은 법 시행령 제17조에 따라 신고한 연구개발서비스업체임을 증명합니다.

2021년 6월 2일

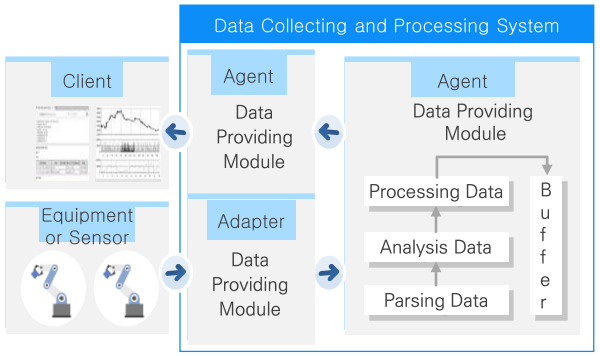
과학기술정보통신부장관

Energy Data Analysis / AI Models (1/3)

Smart Building (Energy)

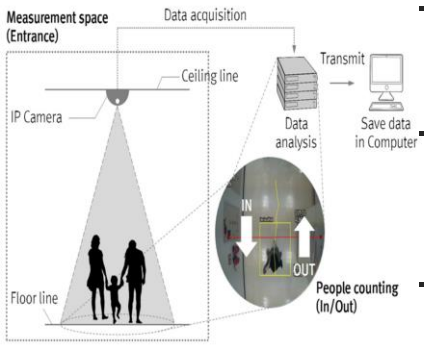
xEMS-based smart building platform construction – Analysis and prediction of occupancy density of buildings

① Data collection and preprocessing



- Collecting composite sensor data and thermal image data
- Processing of missing values and outliers for complex sensor data
- Complex sensor data grouping binning

② Calculation of occupant density for each space in a building



- Derive relational expressions through correlation analysis between cabin detection, temperature and humidity, CO2, thermal image and occupant density
- Confirm the correlation between occupancy, CO2 concentration, absolute humidity increase and decrease, and the correlation between CO2 concentration and absolute humidity
- Establishment of occupant density calculation formula that reflects external factors such as fluctuations in the amount of infiltration, opening/closing doors/windows/ and CO2 generation other than humans

③ Short-Term Prediction of Occupant Density

① Extraction of occupant density prediction features through correlation analysis between complex sensor/thermal image data and occupant density

② Ability to simplify training data and reduce overfitting of predictive models by applying dynamic statistical techniques to feature extraction and selection

③ Deriving an algorithm that optimizes the prediction of short-term occupant density through mutual comparison and improvement of existing machine learning algorithms

④ The ability to interactively provide occupant density prediction information and uncertainty of prediction by calculating and visualizing occupant density prediction confidence intervals

④ Display short-term forecast information

- Display of occupant density distribution by room/floor/division
- Display of short-term forecast information for occupant density by room/floor/division

2 Energy Data Analysis / AI Models (2/3)

Smart Building (Energy)

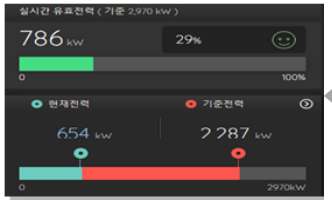
Energy forecasting in buildings

Building Consumer Energy Prediction with Multiple Regression Analysis

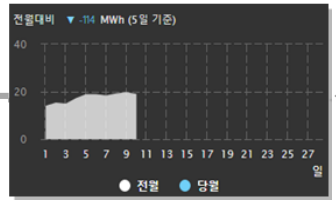
- By uploading building sample data, independent and dependent variables (energy usage) are selected, regression analysis is performed to measure the influence of individual independent variables, and out-of-range independent variables are removed
- The final completed regression model is completed through iterative regression analysis
- Based on the regression model and the real-time building customer energy consumption and the independent variable data, the function is implemented to calculate the predicted energy usage for each time period based on the time period

Regression Model Calculation Process Screen UI

Multiple Regression Mode l Analysis Screen UI



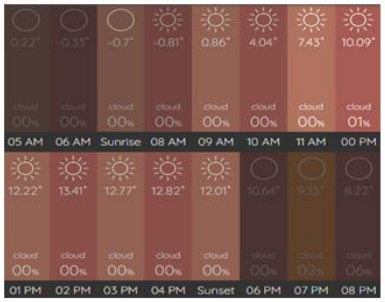
Estimate Energy Forecast Usage



Acquire Real-time Energy Usage Data

Prediction of Renewable Power Generation Using AI/Multiple Regression Analysis Based on Cloud Forecasting Data

- Collect cloud cover data from specific regions and collect historical climate data through API service linkage
- The function is implemented to calculate solar power generation forecast data based on cloud and meteorological data by applying artificial intelligence(AI) modules for the corresponding customers and multiple regression models



Collect Cloud Cover and Weather Data

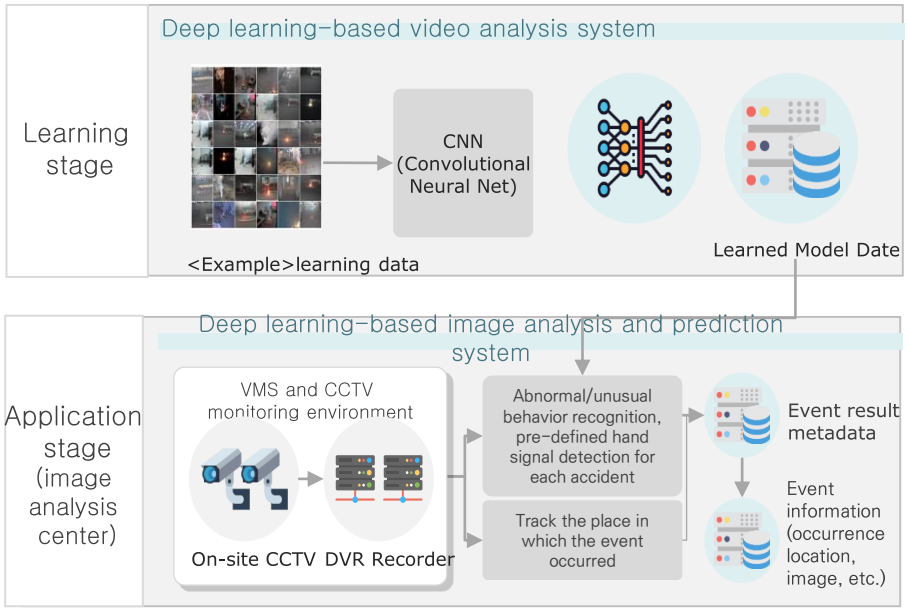
AI, Regression Model Establishment ScreenUI

Energy Data Analysis / AI Models (3/3)

Smart Building (Energy)

✓ Image-based behavior detection and occupancy management

Deep learning-based video analysis system



Development plan and types of AI-based Image analysis algorithm

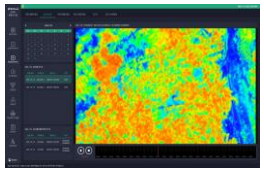
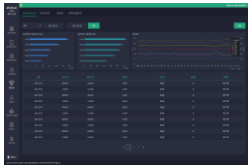
Intrusion	Wandering	Falling
		
Detects intrusion of unknown personnel in the area designated as a virtual area or in the no-entry area set through automatic fence recognition	Detect when an unknown person is wandering in a restricted area for more than a certain period of time set by the user	Detects whether a person is moving or has fallen

☑ Image-based behavior detection Object detection and matching algorithm

- The image analysis function analyzes using big data characteristics of dots, lines, faces of images, but improves as input data increases.
- Detects intrusion of unknown personnel in the area designated as a virtual area or in the no-entry area set through automatic fence recognition
- Detect when unknown people wander for more than a certain period of time in a set no-entry zone
- Save the corresponding image and time when an event occurs
- Can respond to changes in the external environment and ignore image detection for non-interest objects.

Farm Data Analysis / AI Models

Smart Farm

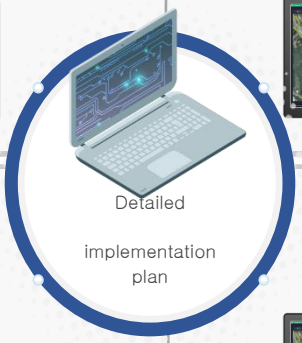
Integrated Management of Farm Data	GIS-based Monitoring	Growth, Pest Management	Decision-making for Future Orchard	GIS/NDVI Dashboard	Pest Control Activity management
					

GIS-based Dashboard

- Provide farmhouse distribution and farm collection status screen by using GIS map
- Provide detailed information by GIS-based region/ farmers (weather information, outdoor weather station, pest and growth status)

Statistical Analysis Based on Collected Data

- Provide Smart agriculture statistical information comprehensive situation board screen
- Cumulative status of information linkage and status of annual growth rate
  - Classification by province, by item, by collection (environment, control, growth, management)
  - Statistics on collected farm households, such as area, cultivar, production volume, and cultivation type



Visualization through Various Analysis

- Monitoring functions such as sensor information, environmental history information trend, driver operation status, irrigation/ liquid fertilizer, weather forecast, etc. are provided
- Provides a function to visualize images/photos collected with installed cameras and other equipment

Decision-making based on analytics data

- Provides data-based decision-making functions such as meteorological and soil data analysis, irrigation / liquid fertilizer ratio analysis, vegetation index trend analysis, and control machine operation time analysis

III

Life Care Services

Life Care Services

3.1 Intelligent Access Security

3.2 Signage(Parking, Access)

1 Intelligent Access Security

Intelligent Access Security

- Enhanced access control and security of employee-only areas with classified access control
- Summary of access status, statistics provided

Registration and Authentication Methods

Progressing Facial registration

Kiosk

Personal Information is encrypted and stored on BioStar

DB Server

Enter employee-only area after authentication from access security device

Access Security Device

- Register a photo that can be authenticated in the security system that enters and exits the employee-only area through the kiosk
- Take pictures and send them while viewing them directly at 1080 x 1920 display resolution
- Produced results are encrypted and stored as personal information
- Pre-registration server DB configuration
  Name, workplace, affiliation, phone, number, creation verification code

Digital Signage Systems for Parking Systems and Access control Syster

Signage System for Parking Information

✓ Real-time provision of parking information and display of announcements, etc.

DID for Parking notice at the front gate

DID for promotion at the front gate

Parking information notice for underground parking lots

i-SmartParking

Example of outdoor Installation

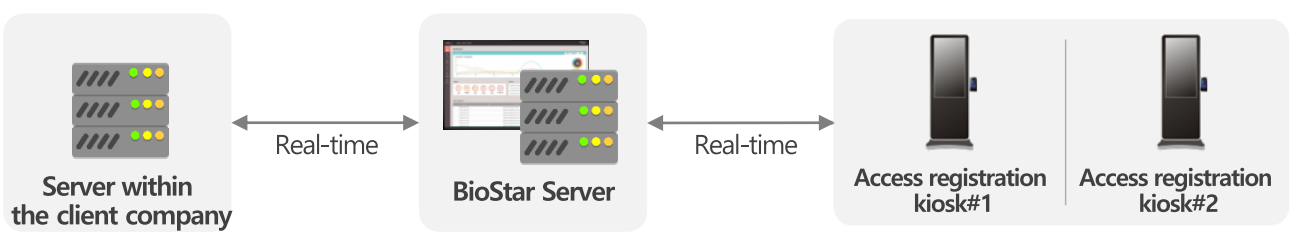
Example of main screen

2 Digital Signage Systems for Parking Systems and Access control Syste

Signage System for Access Control

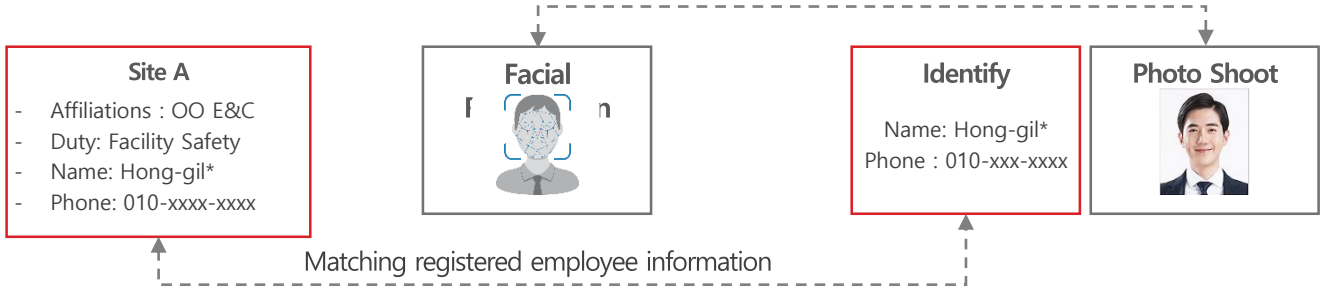
KEPCO남서울본부 신세계 건설 하나은행

✓ Access authentication of personnel
whose face photos are pre-registered in the customer's security system

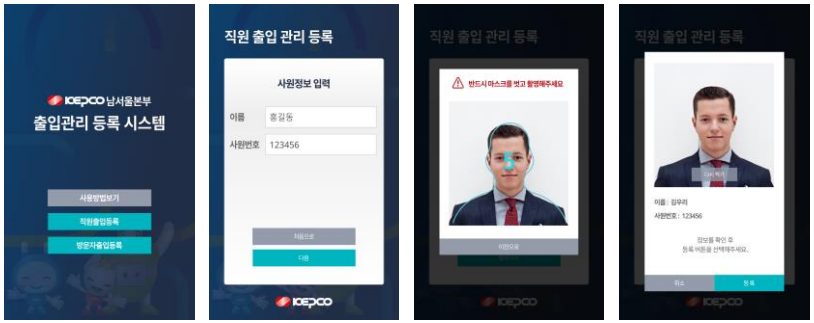



Desk Type


Stand Type



Installation Examples



KEPCO남서울본부

신세계 건설

하나은행

SIGNLAB

Ⅳ

About Us

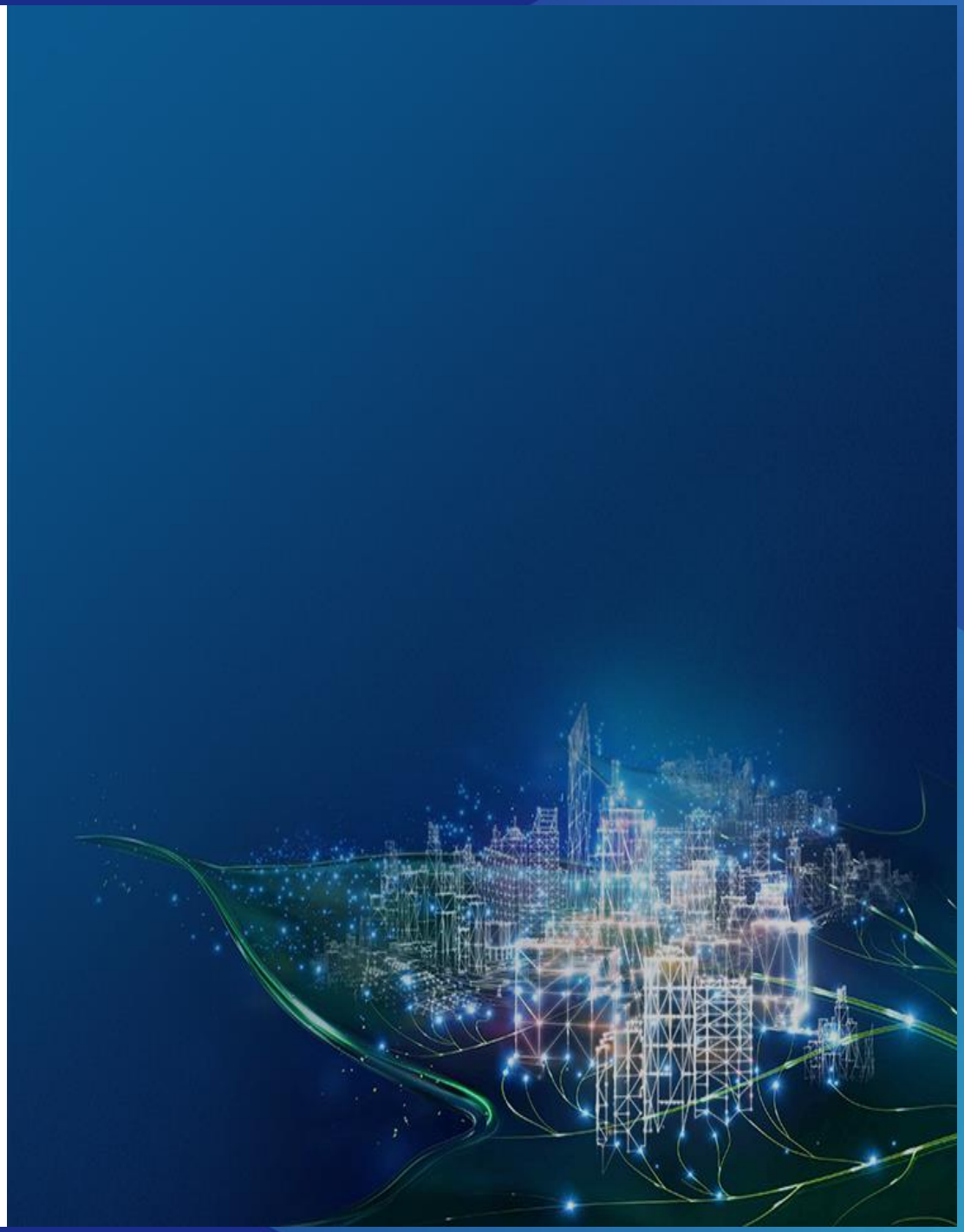
Signlab co., Ltd.

5.1 Company Overview

5.2 Company History

5.3 Organizational Structure

5.4 Certification & Intellectual Property Rights



1 Company Overview

Company Overview

Company Name		Signlab Co., Ltd.	Foundation Date	2015. 10. 1.
CEO		Lim Ho Seop	Corporate Registration Number	847-88-*****
Location	Head Office	(47378) 2F, 214, Naengjeong-ro, Busanjin-gu, Busan, Republic of Korea		
	Corporate R&D Center	(47378) 1F, 34, Bokji-ro 41-gil, Busanjin-gu, Busan, Republic of Korea		
Contact Number		82 -51-927-7111	Fax Number	82-51-980-7761
Homepage	Official Site	http://www.signlab.kr	E-mail	signlab@signlab.kr
	SafeEN Site	http://safeen.quv.kr		
Type of business(industry)		Service/Professional, Scientific and Technical Services (Software, System software development and supply / management consulting business, content, public relation service business)		
Production Items		Application Solution(Smart Factory, Smart Building, Smart Farm), Data Analysis and AI Solution, Life Care Services (Access & Anti-COVID management, Field Safety Management, etc.)		

2022. 1.	National IT Industry Promotion Agency	Registered as an AI Voucher Supplier
2022. 1.	Korea Data Agency	Registered as a data voucher supplier
2021. 7.	Korea Advanced Institute of Science and Technology	Registered as a supplier of AI-based manufacturing data analysis solution
2021. 6.	Busan IT Industry Promotion Agency	Registered as a big data analysis consulting supplier

2 Company History

Registration and Award status as a specialized company/supplier

Outstanding Technology Start-up In Busan Metropolitan City

Busan Metropolitan Million Club

Contribution to SME research manpower support project

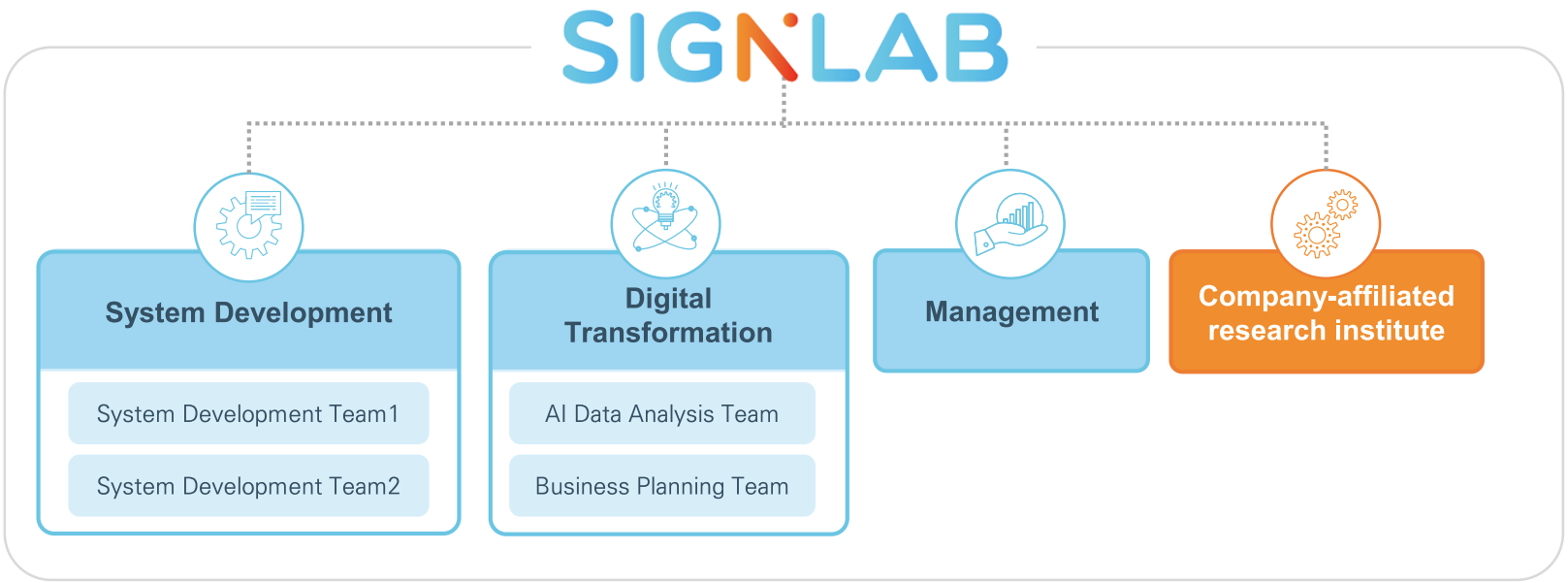
Awarded by the Minister of SMEs and Startups

Excellent R&D technology in Busan

Received the Busan Industrial Science Innovation Director Award

Date	Contents
2021. 5	Designated by Busan Metropolitan City as the representative startup company of Busan Million Club
2021. 5	Designated as a specialized ICT solution company for an urban regeneration company in Busan
2021. 4	Selected as a style tech professional technology company by Busan IT Industry Promotion Agency
2021. 3	Designated as a data voucher supplier by Korea Data Agency
2021. 2	Designated as a Family Company by Busan Techno Park Disaster Safety Center
2020.12.	Selected as an excellent company for SME research manpower support project by the Ministry of SMEs and Startups
2020. 9.	Registered as a consulting / prototype production voucher supplier by Regional Information Portal Service
2020. 6.	Registered in the AR/VR specialized company pool by Busan IT Industry Promotion Agency
2020. 3.	Registered as a data analysis specialist pool by Busan Techno Park
2019.11.	Selected for excellence in research and development in Busan by Busan Innovation Institute of Industry, Science & Technology Planning
2018.11.	Registered as a smart factory supplier by the Ministry of SMEs and Startups

3 Organizational Structure



Department	Main Task
Company-affiliated research institute	• AI modeling and solution development • Feasibility Study and Development of New Business • Hardware product design and development
System Development	• Smart Factory Solution development • Smart Building Solution development • Smart Life Care Solutions development
Digital Transformation	• Data analysis • AI Modeling • New business planning and proposal

Certification & Intellectual Property Rights

Acquired Certificate

〈Venture Company Registration〉

〈Corporate R&D Center〉

〈Korea Industrial Technology Association 〉

〈Excellent company for job invention compensation〉

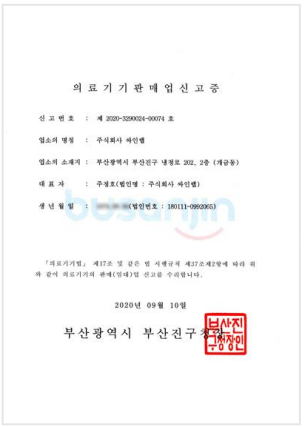
〈Performance -Sharing Company〉

〈Software Manufacturing Industry〉

〈Video Manufacturing Industry〉

〈Trade Business〉

〈Disinfection Industry〉



〈Medical Device Sales Business〉

Certification & Intellectual Property Rights

Acquired Intellectual Property Rights

Patent Application

No.	Year	Patent Application Country	Patent Name	Patent Number
1	2021	Domestic	System and method for providing non-face-to-face physical activity using 3D content	2021-0016067
2	2019	Domestic	Outdoor exercise equipment momentum measuring device and method using 9-axis sensor	2019-0165417
3	2019	Domestic	Outdoor exercise equipment management system	2019-0025977
4	2018	Domestic	Vestibular rehabilitation exercise system	2018-0153832
5	2018	Domestic	Industrial site complex fire detection system	2018-0144926
6	2018	Domestic	Real-time location tracking system	2018-0078781
7	2018	Domestic	Character hologram display method and device according to depth image	2018-0009950
8	2017	Domestic	Current loop information acquisition system	2017-0099183
9	2016	Domestic	Device and Method for Discriminating Composite Situation by Image and Voice	2016-0138415
10	2016	Domestic	Image processing-based parking management system and method	2016-0101239

Patent Registration

No.	Year	Patent Application Country	Patent Name	Patent Number
1	2021	Domestic	Outdoor exercise equipment management system	10-22229183
2	2020	Domestic	Real-time location tracking system	10-2153928
3	2019	Domestic	Device and Method for Discriminating Composite Situation by Image and Voice	10-1937836
4	2019	Domestic	Image processing-based parking management system and method	10-1937833
5	2017	Domestic	Beacon-based indoor position information, moving path control and accident reporting system	10-1728017

Certification & Intellectual Property Rights

Acquired Intellectual Property Rights

Program registration

No.	Year	IPR Application Country	IPR Name	IPR Number
1	–	Domestic	Manufacturing data correlation analysis program	
2	–	Domestic	Manufacturing data preprocessing program	
3	–	Domestic	Manufacturing data visualization program	
4	–	Domestic	Time Series Data Fundamental Analysis System	
5	–	Domestic	Power Demand Forecasting System	
6	–	Domestic	Korean Basic Analysis System	
7	–	Domestic	Korean Application Analysis System	
8	–	Domestic	Physical activity motion analysis and Physical Activity Measurement software	
9	–	Domestic	Integrated Safety Management Program for Complex Intelligent Fire in Factory Facilities	C-2020-047123
10	–	Domestic	Smart Visit Management System	C-2020-032081
11	–	Domestic	Smart Guestbook System	C-2020-032082
12	–	Domestic	Responsive MES tool based on web standards	C-2019-036831
13	–	Domestic	Optimal evacuation path algorithm by workplace based on data extracted by composite thermal imaging detector	C-2019-015681
14	–	Domestic	WEB(ASP) based data reception, storage and display module via temperature and humidity sensor	C-2018-035800
15	–	Domestic	DB for failure prediction, fire detection, production performance management and monitoring S/W	C-2018-014406
16	–	Domestic	Fire detection monitoring software	C-2018-014405
17	–	Domestic	Production performance management and monitoring software	C-2018-014404
18	–	Domestic	Failure Prediction Algorithm Software	C-2018-014403
19	–	Domestic	Failure Predictive Monitoring Software	C-2018-014402
20	–	Domestic	Abnormal sound analysis software	C-2016-020537

Certification & Intellectual Property Rights

Acquired Intellectual Property Rights

Trademark Application

No.	Year	IPR Application Country	IPR Name	IPR Number
1	2020	Domestic	SafeEN No.37	40-2020-0168843
2	2020	Domestic	SafeEN No.43	40-2020-0168856
3	2019	Domestic	OK one No. 37	40-2019-0045383
4	2019	Domestic	Dr.mom No.44	40-2019-0027888
5	2019	Domestic	LIFE HEALTH No.44	40-2019-0027895
6	2017	Domestic	Signlab No.42	Trademark-2017-0119438
7	2017	Foreign	SL SIGNLAB (Foreign)	87706817

Design Application

No.	Year	IPR Application Country	IPR Name	IPR Number
1	2020	Domestic	Augmented Reality Simulator	30-2020-0002924
2	2020	Domestic	Augmented Reality Simulator	30-2020-0002938

Design Registration

No.	Year	IPR Application Country	IPR Name	IPR Number
1	2020	Domestic	Augmented Reality Simulator	30-1072009

outstanding new service

Thank you.

SIGNLAB