

a company that understands people and develops technology for people

# KOUNOSoft

introduction to the company





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# 01

# Introduction

- Greeting
- Vision & Mission
- history



Kounosoft is an IT company specializing in understanding people and developing technologies for people by **recognizing the situation between people and people, people and machines, and machines and machines** based on new technologies such as artificial intelligence, blockchain, security, and IoT.

Since its foundation in 2009, Kounosoft Co., Ltd. has grown into an IT development company through steady technology development such as IoT, security, artificial intelligence, and blockchain.

We are leading the way in realizing customer value based on global standards and high-quality IT solutions. Since its establishment, it has developed space monitoring IoT solutions through constant technology accumulation and investment, considering various experiences and know-how, innovative talents, and excellent products accumulated with top-class companies as core values.

**“Hello, I’m Jo JangGwan, CEO of Kounosoft.”**

We promise to become a company that understands people based on new technologies such as IoT, security, artificial intelligence, and blockchain and joins customers in the huge trend of the 4th industry based on the vision of a technology development company for people.

Join Kounosoft's passionate challenges and changes.  
Thank you.





# 01 Vision & Core value



Implementing a Hyper-intelligent, Secure society through AIoT-based situation recognition solutions

## Hyper-Convergence



### AIoT-Based

Artificial Intelligence | Internet of Things | Blockchain | AR/VR  
Cryptographic Technology

## Hyper-Connectivity



### Context-Aware Solutions

Smart Outlet | Multi-Sensor Terminals | Environmental Monitoring  
AR Asset Management Server | Energy Management Server  
Vehicle Reservation for Transport-Disadvantaged Individuals  
Sharing Economy Server

## Hyper-Intelligence



### Implementation of a Safe Society

24h Unmanned Access Control | Customized Air Quality Comfort  
AR Asset Management | Energy Efficiency | Safety Prediction/Alerts  
Vehicle Reservation for Transport-Disadvantaged Individuals  
Sharing Economy



# 01 History

## 2018 - 2019

- Blockchain based ICT establishing SK Future Hall(with SKT)
- Renewal of the county e-learning website and establishment of a mobile web (MMAA)
- Implementation of SME technology innovation development projects(TIPA)
- Selected as a joint research institute for ICT R&D voucher business(IITP)

## 2021

- MOU with technology company in China
- Implementation of private intelligence information diffusion project(NIPA)
- Select Global New Service Development Support Project(with Urastech)
- Selection of the Seoul Innovation Challenge(SBA)

## 2020

- Acquired certification of Hi-Seoul Enterprise
- Service Industry Promotion Commendation(Ministry of Economy and Finance)
- Commendation for the Promotion of Research Projects(Ministry of Science and ICT)
- MOU on smart space management technical cooperation(with Solideos)
- MOU on DID development agreement(with Reappay)
- MOU on the training of technical personnel(with CKcollege, Sangilmedia highscholl etc.)

## 2022

- International Research Industry Convention 2022 Minister of Science and Technology Commended
- Establishment of ESG-based Smart Campus Asset Management Platform(Korea Univ.)
- Korea University Mobile Integrated App - Location-Based Service Establishment(Korea Univ.)
- AI Convergence Illegal Reproduction Reading System Project(NIPA)
- Korea University Smart Energy Campus Service Project - Establishment of Carbon Neutral Asset Management System(with SKT)
- Implementation of digital national land information technology development project (Ministry of Land, Infrastructure and Transport)
- Selected as a joint research institute for ICT R&D voucher business(IITP)



## 2023

- On-site Application Model for Response to Emergency Reporting Situation(ETRI)
- GIS-based Fire Protection Big Data Construction and Risk Prediction System (with SoBang119)
- Development of Global Intelligent B2B Enterprise Matching System (Platform) (with Urastech)
- Development of Korea University Shuttle Bus and Mobility Support System for the Transportation Vulnerable(Korea Univ.)
- 119 Production of demonstration model prototypes to respond to emergency reporting situations(ETRI)
- Create audio signal processing sample plug-in interface(ETRI)
- Development of a personalized noise mitigation system based on AI bio-information (Ministry of Trade, Industry and Energy)

## 2024

- The Certification of Excellent Technology Evaluation Company
- Industry-Academia Cooperation Agreement with SeoJeong University
- VST Stereo Sound Realization SW Implementation (ETRI)
- Acquired certification of Hi-Seoul Enterprise
- Factory Registration for Development and Supply of System Software by Korea Innovation Foundation
- Patent Acquisition for AI-Based Fire Spread Prediction System
- Implementation of Unity Plug-in SW for MPEG-I Audio Function Simulation (ETRI)
- VST Audio Sample Variations SQ Implementation (ETRI)
- ESG-based Smart Campus Asset Management System Advanced Maintenance Work
- The 3rd Year of Establishing an Integrated Utilization and Operation Verification System for Converged Data to Realize Hyperconnected Digital Territory





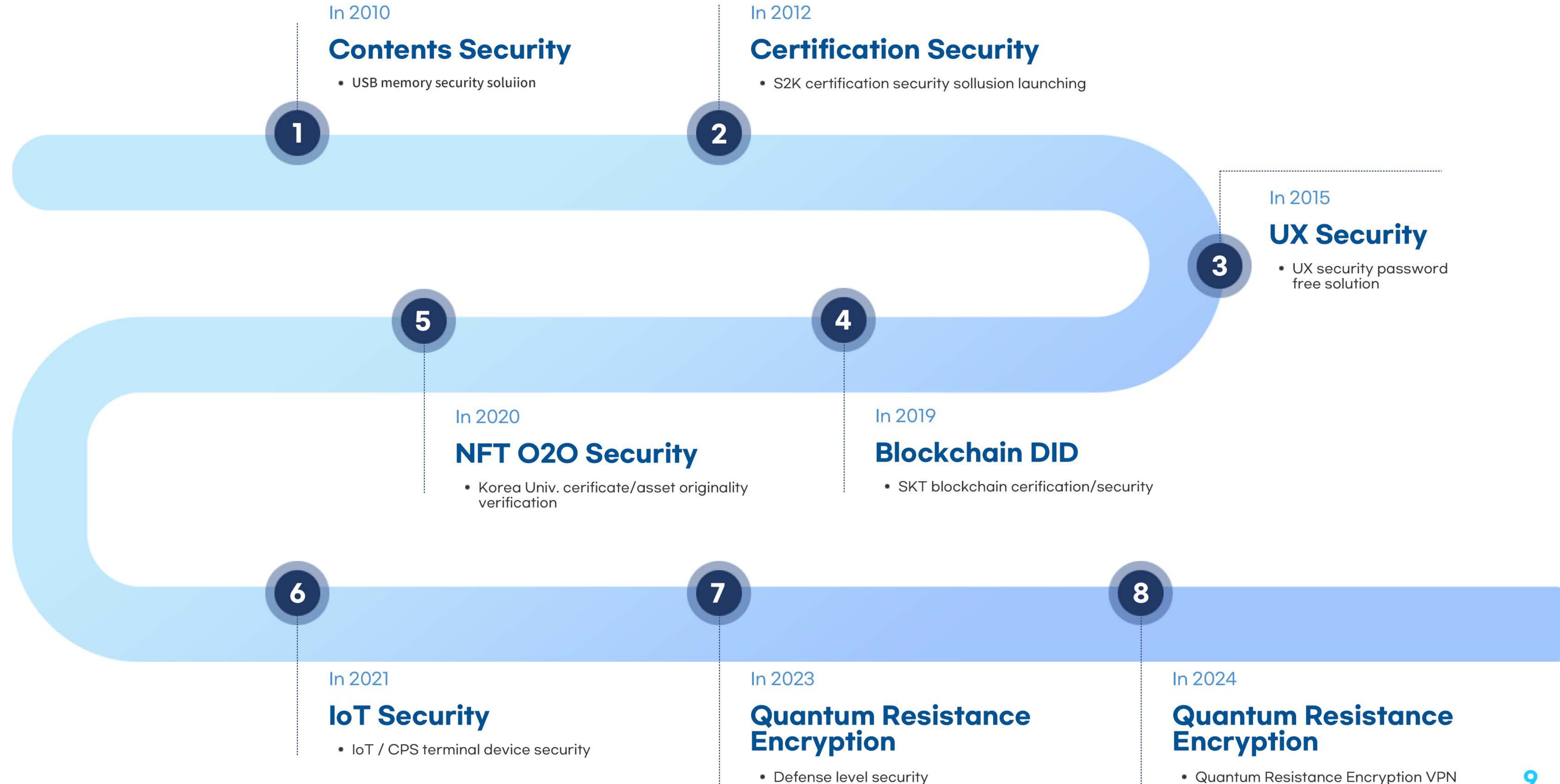
# 02

# Core Competency & Services

- Core Competencies
- Technology Development Accomplishments
- Product & Service

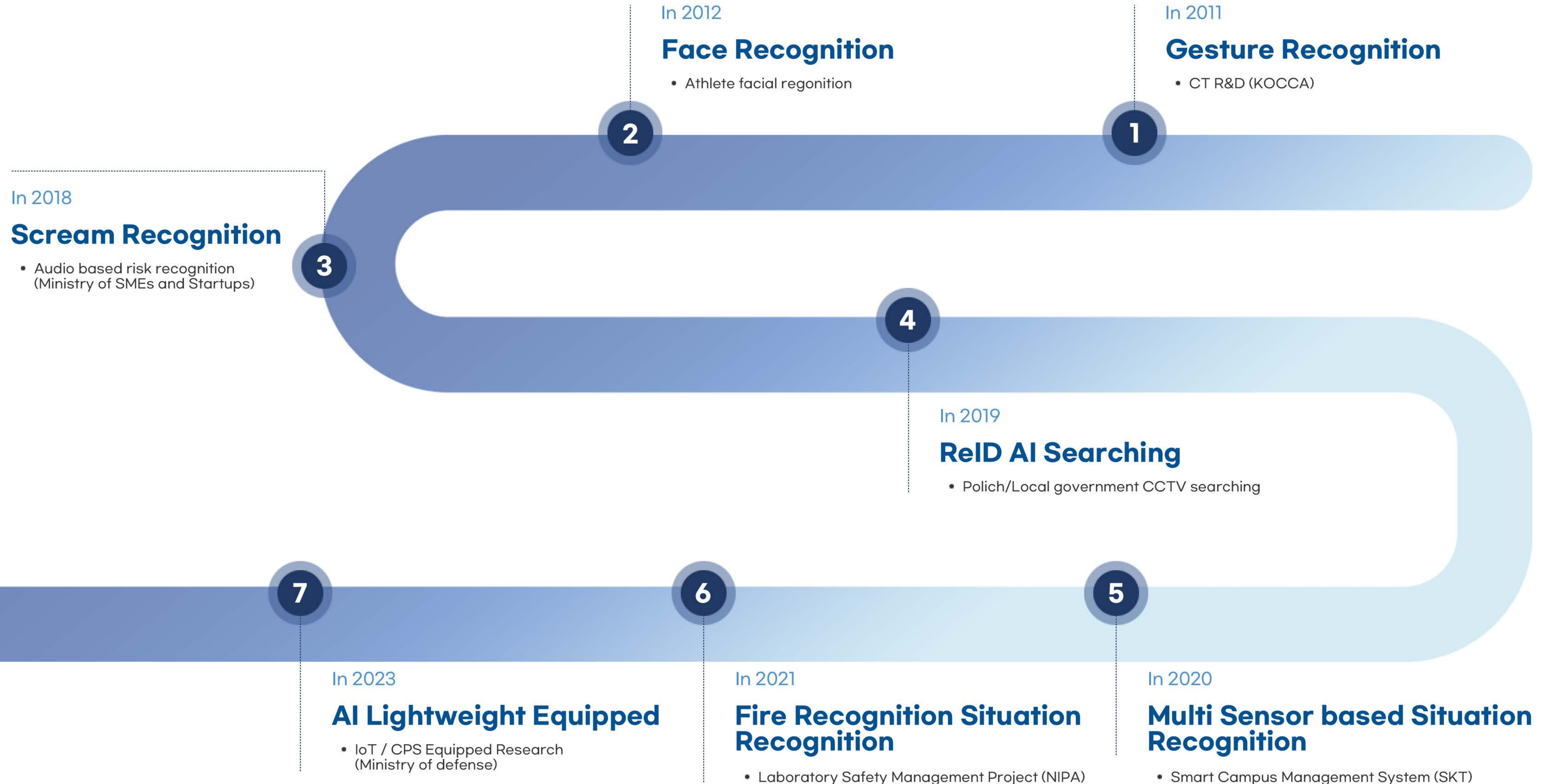


# 02/ Core Competencies - IT Security / Certificate / Blockchain / Security Chip / Internalizing Quantum Resistance Encryption Technology





# 02/ Core Competencies - Voice / Video Recognition / AI Searching / Sensing based Situation Recognition / AI Lightweight

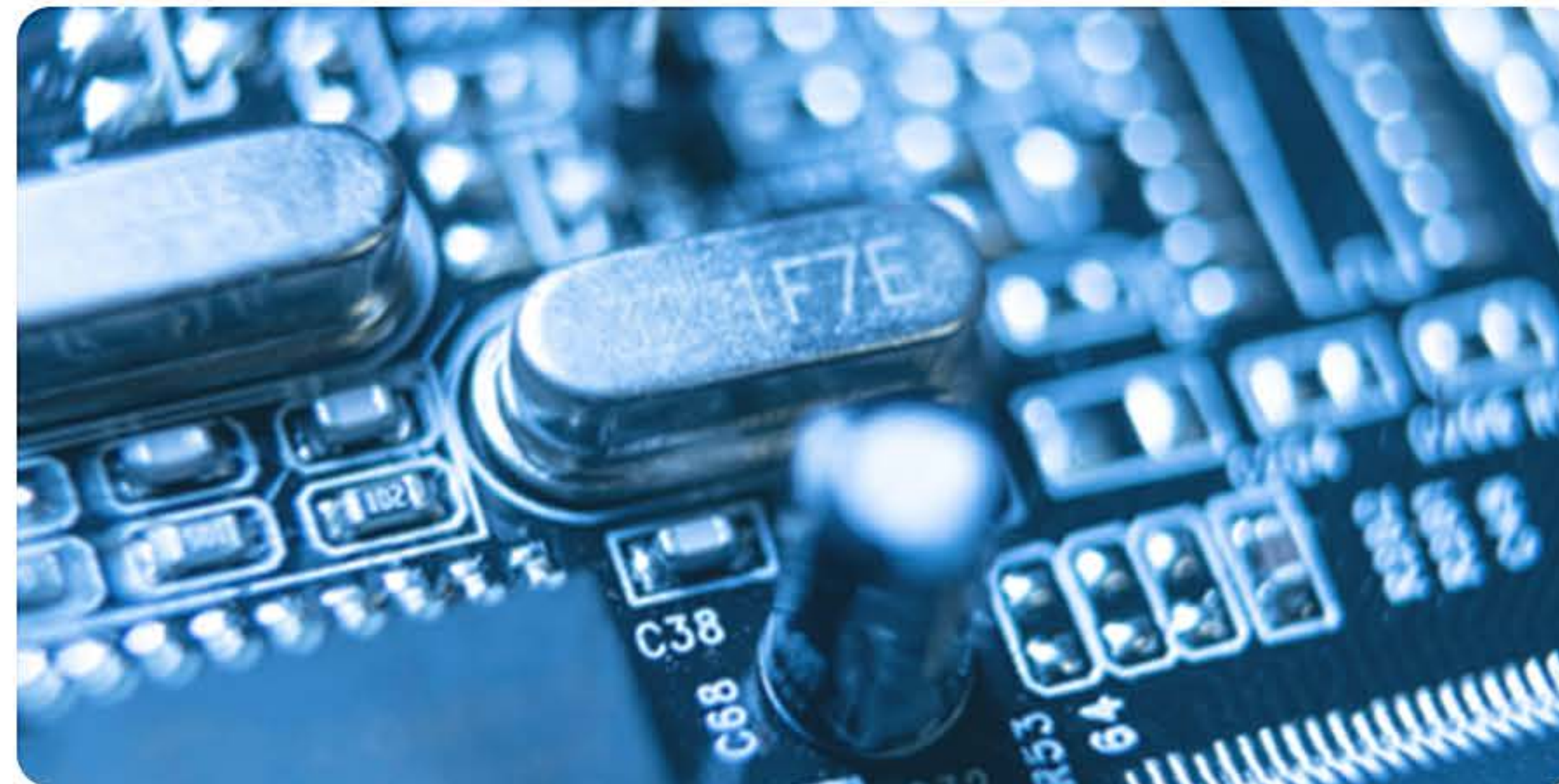




# 02/ Technology Development Accomplishments

01

About 80 technology developments



## About 80 technology developments

Has a track record of technology development in various fields

- AI - 20 cases
- Blockchain - 10 cases
- Audio - 10 cases
- IoT/drone ROS - 10 cases
- Land Security - 3 cases
- Aerospace Research - 1 case
- Smart campus/building - 10 cases
- Real-time data processing. Etc.

02

AllSense solution commercialization



## AllSense solution commercialization

AllSense solution commercialization performance

- Kyrgyz Republic LOI conclusion (\$5m)
- SKT construction - 2 cases
- Korea Univ. construction - 7 cases
- Symtra construction - 1 case
- Nuri telecom construction - 1 case
- Morobogi construction. Etc.

03

Registration as a professional R&D business operator



## Research company (RNDIA) R&D project contract

Securing and Successfully Completing Various R&D Projects

- R&D service - 2 cases
- R&D voucher - 4 cases
- Ministry of SMEs and Startups - 1 case
- SBA - 3 cases
- NIPA - 2 cases
- KOCCA - 2 cases
- Ministry of Land, Infrastructure and Transport - 1 case
- ETRI - 1 case

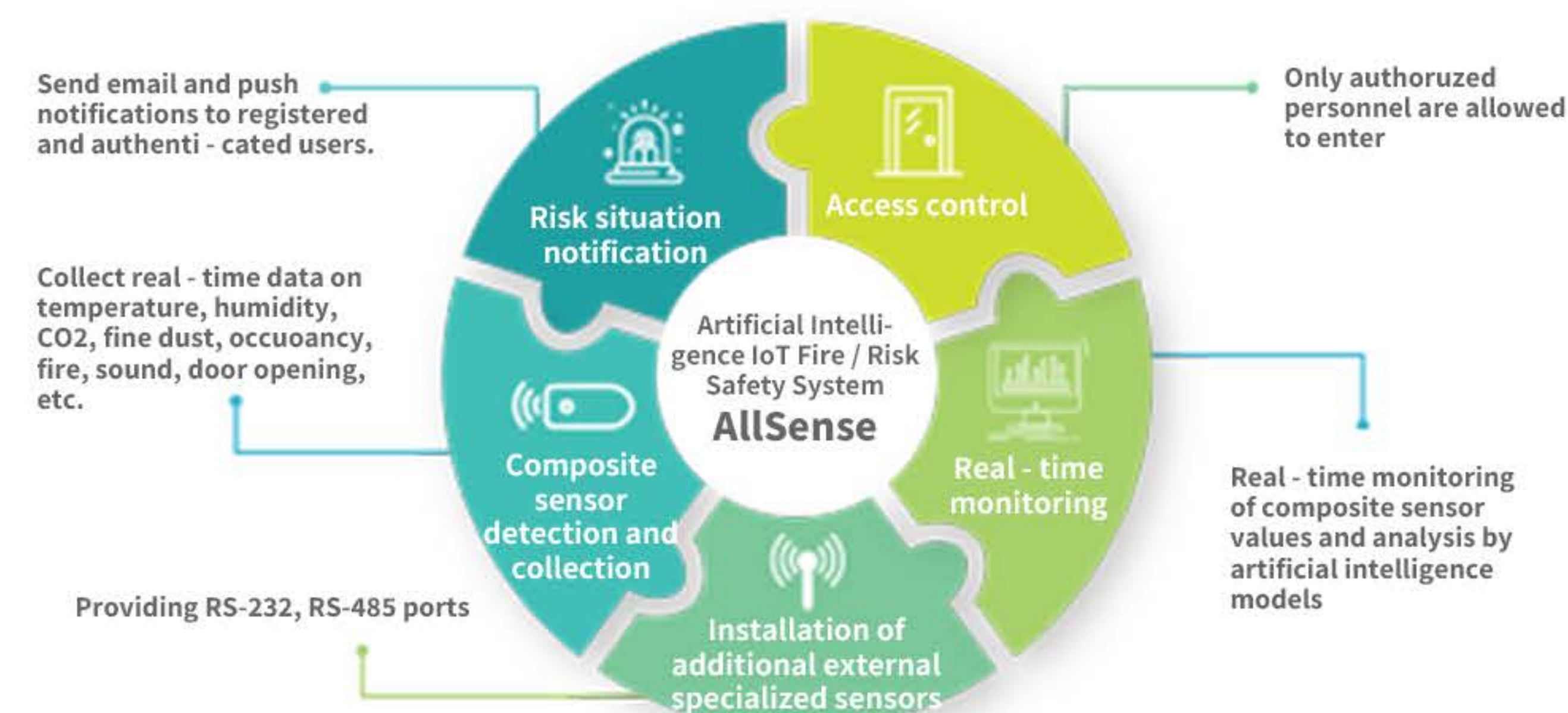


## IoT for human, AllSense

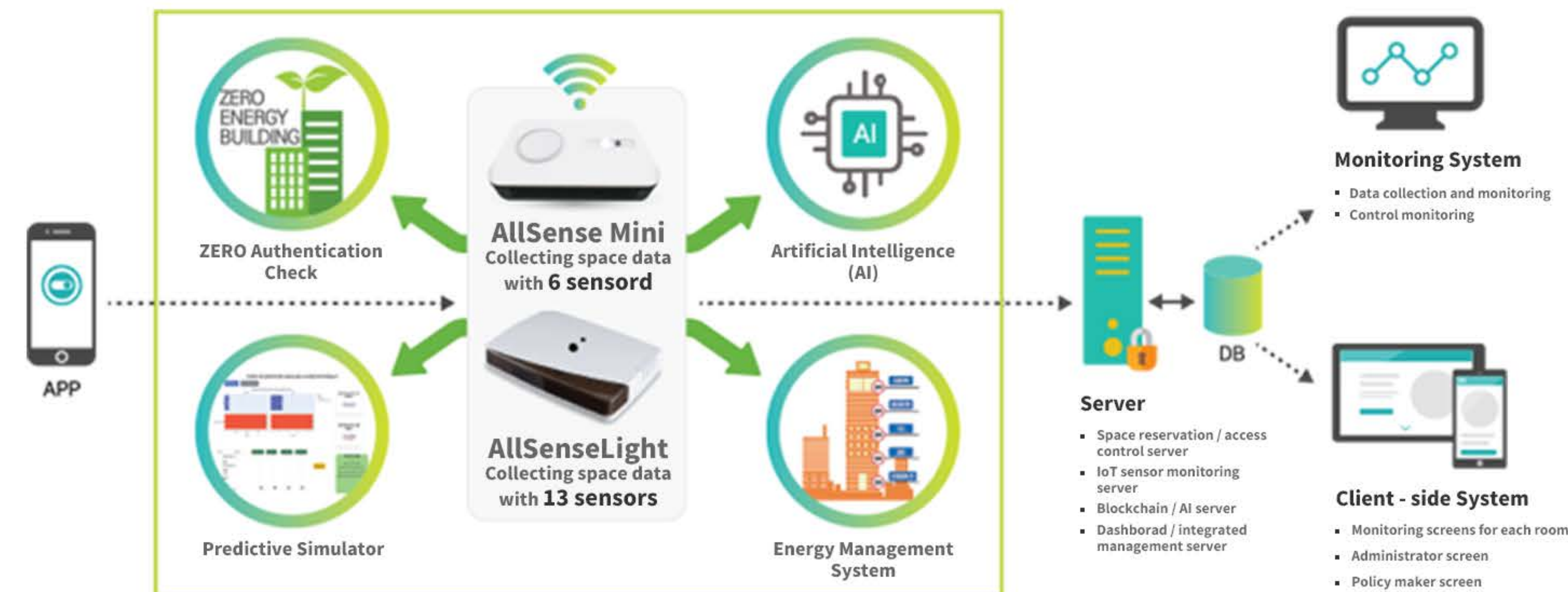
AllSense is a combination of "all," which means all, and "sense," which means sense, and is a representative brand that expresses the Internet of Things for people, which is the core technological value of Kunosoft

### AllSense Functionality / Characteristic

Real - time sensor data analysis and risk prediction using artificial intelligence IoT edge technology



### AllSense Diagram



### AllSense Product image



### Platform concept

- AllSense Basic
- AllSense Advance
- AllSense Premium

#### AllSense Basic

Smart Reservation / Ordering System  
"Sslayo"



Reservation, Cancellation, Access through smartphone app

Smart Reservation / Ordering System  
"Sslayo"

Reservation, Cancellation, Access through smartphone app

- Smart space Reservation
- Smart space Utilization
- Smart space Cancellation

#### AllSense Advance

Smart Attendance Management System  
"Inclass"



Data detection via Beacon / Tag

Smart Attendance Management System  
"Inclass"

Data detection via Beacon / Tag

- Entry Registration
- Exit Registration
- Abnormal Body Temperature Detection

#### AllSense Premium

Smart Spatial Management, Lab Monitoring System Configuration  
"Smart Spatial Management System"



Data detection via Gateway

Smart Spatial Management, Lab Monitoring System Configuration  
"Smart Spatial Management System"

Data detection via Gateway

- Temperature / Humidity / Fine Dust
- Flame Detection / Motion Detection
- Sound Detection / Door Open Detection
- CO2 Detection



# 02 Product & Service - AllSense IoT Edge Light

## 13 sensors, space management essentials AllSense Light



### Versatile Usage Environments

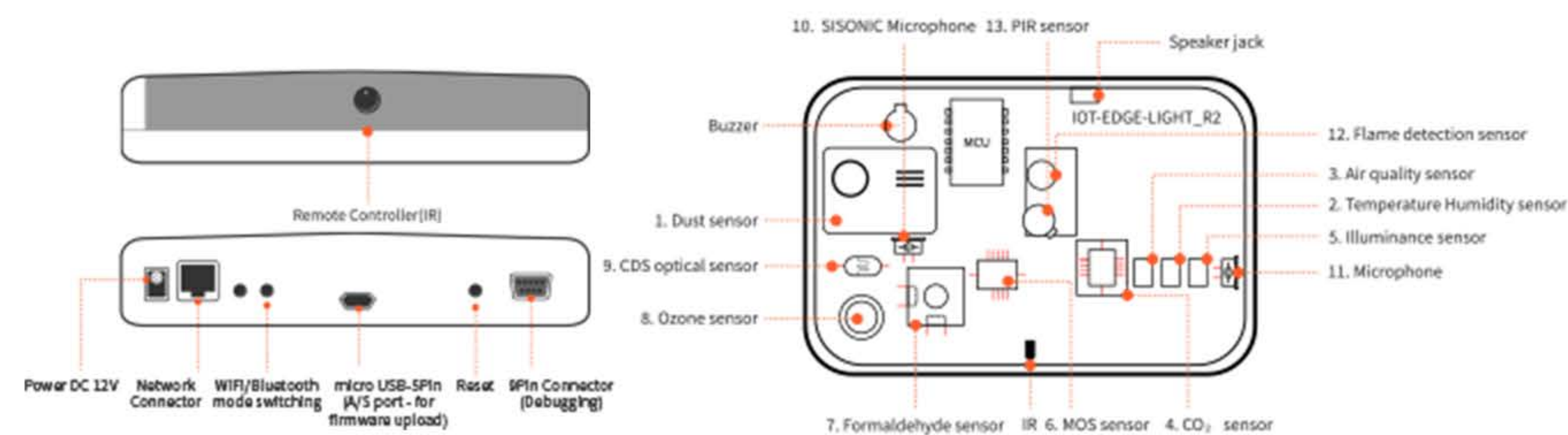


“ Maintain a pleasant indoor environment  
Energy Saving and Safety/Security  
Convenient usability and security  
Maximize space utilization and management efficiency ”

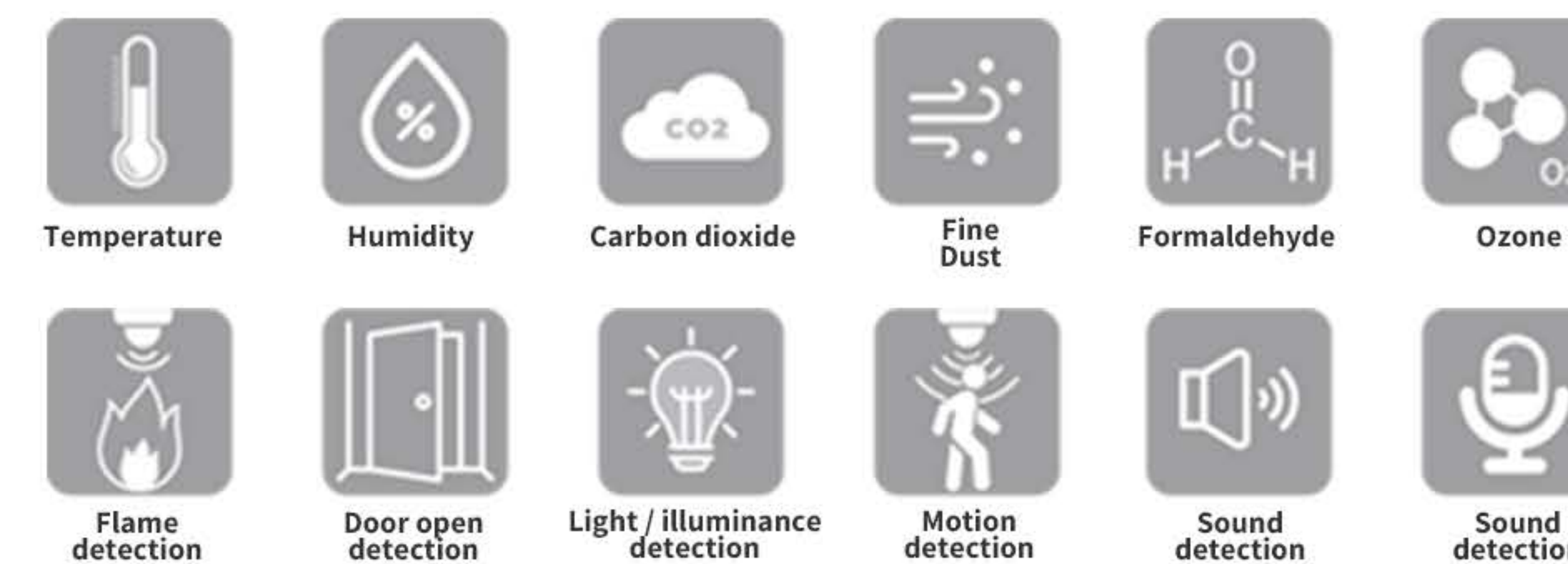


AllSense Light is designed for public institutions and research facilities where indoor comfort and safety matter. It supports large-scale installation for real-time HVAC, lighting, hazard detection, and energy optimization using environmental data. This ensures a safe, eco-friendly work and research space. Its easy setup and operation also make it ideal for homes, helping to improve air quality, save energy, and protect health and security. By setting a new standard in smart environmental control, AllSense Light fits seamlessly into various spaces.

### Product Structure



### Introduction to 13 Sensors



#### Hazardous Gases Detected by the MOS Sensor

- |                   |            |              |
|-------------------|------------|--------------|
| ① Carbonmonoxide  | ④ Hydrogen | ⑦ Propane    |
| ② Nitrogendioxide | ⑤ Ammonia  | ⑧ Iso-butane |
| ③ Ethanol         | ⑥ Methane  |              |

All Sense Light is equipped with 13 sensors including dust sensor, temperature and humidity sensor, air quality sensor, CO2 sensor, light sensor, MOS sensor, formaldehyde sensor, oxone sensor, CDS light sensor, SISONIC microphone, microphone, flame detection sensor, and motion detection sensor. It continuously sends data to the server at regular intervals, and the data from these sensors can be viewed and managed on the server.

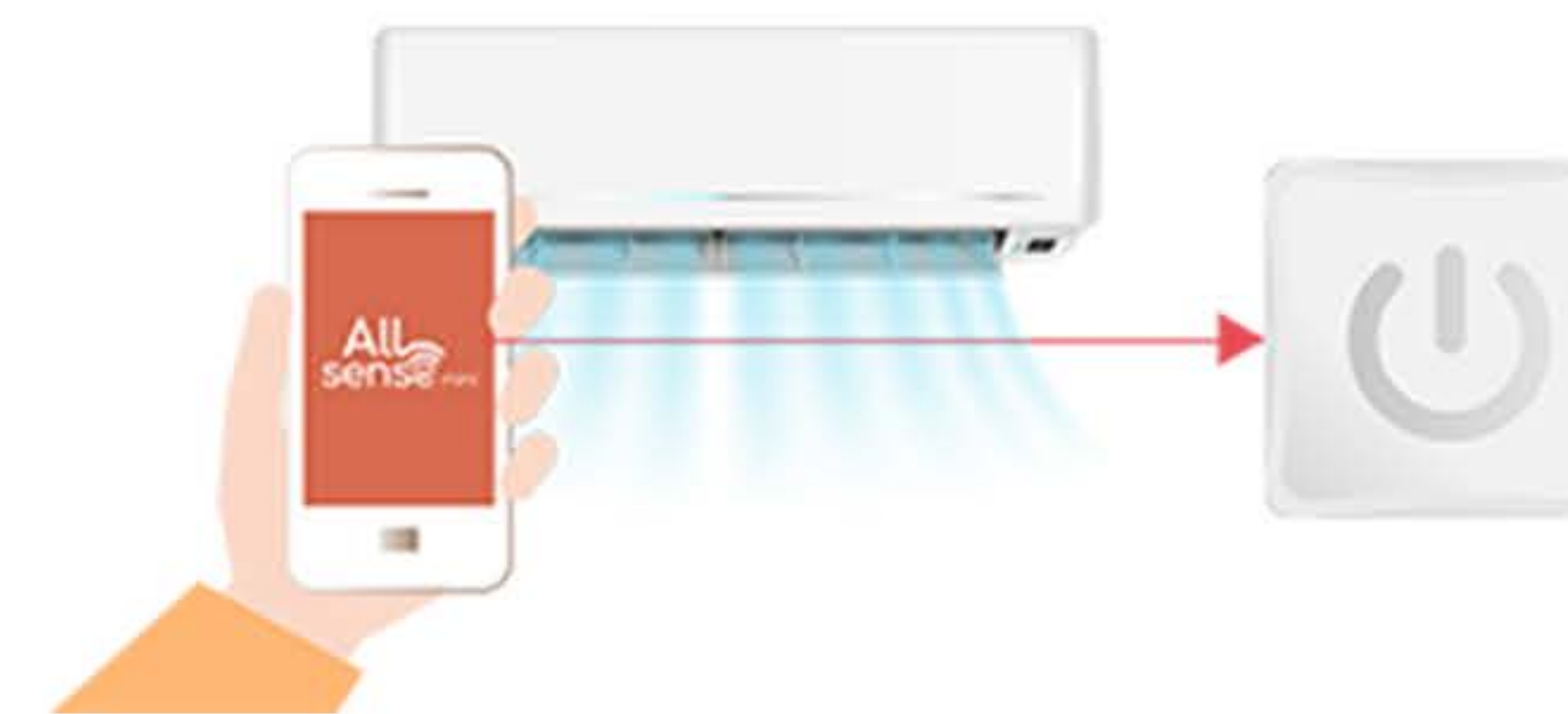


# 02 Product & Service - AllSense IoT Edge Mini

## Essentials for optimal indoor environment AllSense Mini



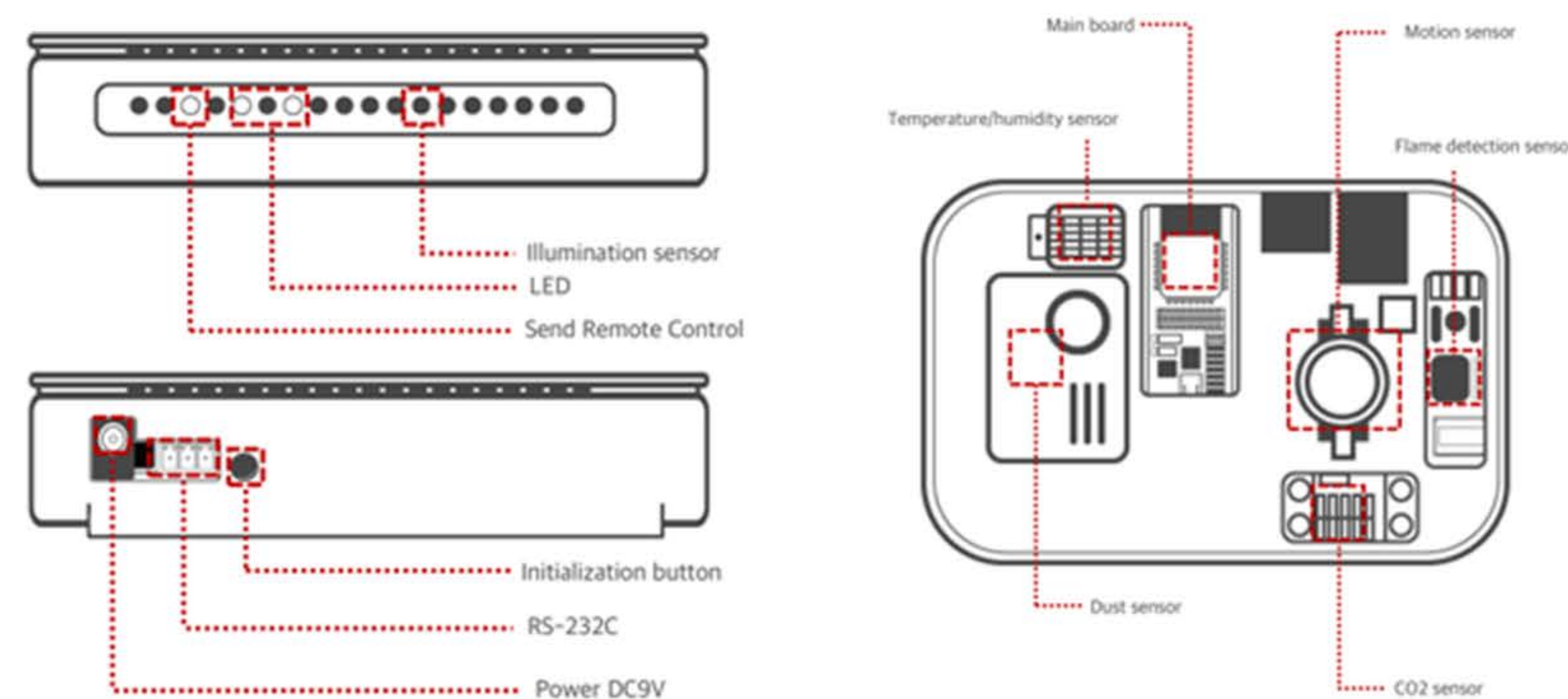
### Versatile Usage Environments



**AllSense Mini**, with its compact size and exceptional scalability, collects and analyzes **key environmental data** such as temperature, humidity, and CO<sub>2</sub> in real time. It integrates with automated control systems to reduce energy waste while enhancing user comfort and health, making it **a core device for intelligent environmental management**. Its simple installation and minimal space requirements make it easily deployable in confined areas such as meeting rooms, classrooms, storage spaces, and smart homes.

**Small but powerful, AllSense Mini makes more spaces safer and smarter.**

### Product Structure



### Introduction to 6 Sensors



**All Sense Mini** can monitor **6 sensors** including temperature, humidity, carbon dioxide, motion detection, flame detection, and fine dust. By attaching an RFID device as an additional option, it can be used for asset management and theft prevention, and by inputting IR codes for external devices such as air conditioners, it is possible to control them.

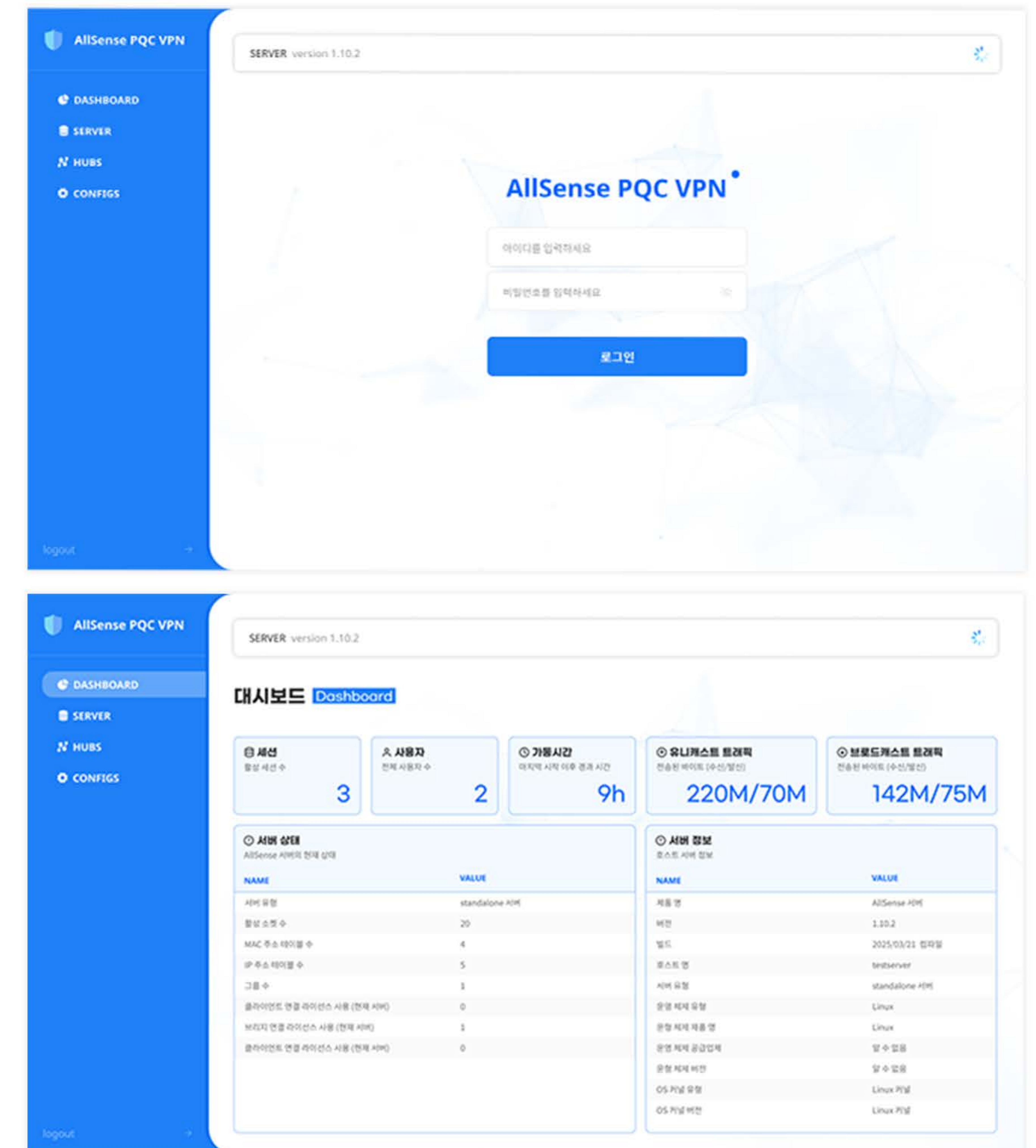
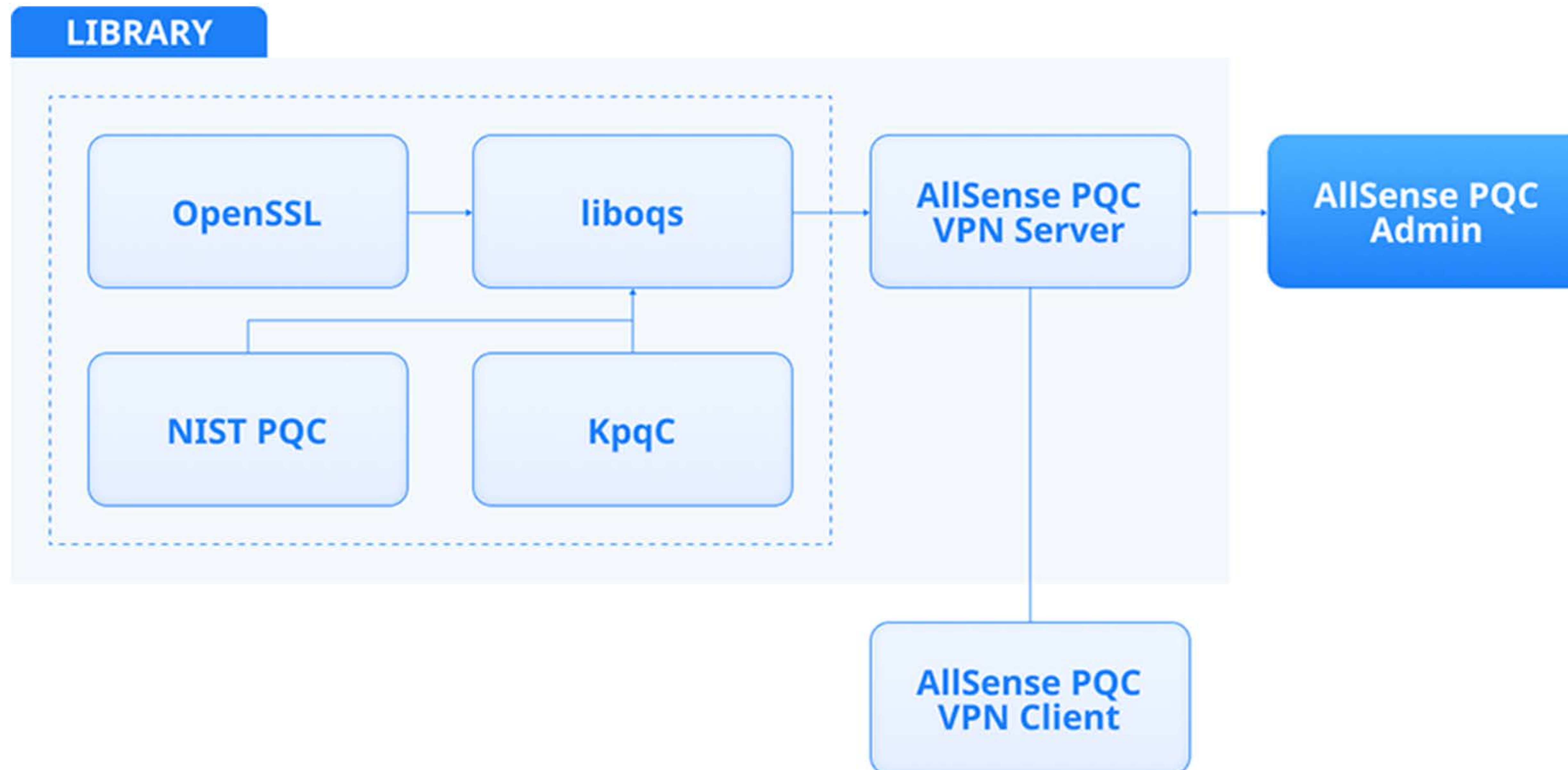


# 02 Product & Service - AllSense PQC VPN

## Quantum Resistance Encryption 'AllSense PQC VPN'

A next-generation security solution that enhances security by adopting 'post-quantum cryptography' for the communication encryption of VPNs, which encrypt data over public networks to provide secure connections

### System Structure Chart







# 03

# Business

- Business Performance
- Ongoing Project
- Develop Process



# 03 Business Performance

## 01. Korea Univ. SK Future Hall space reservation system #CAMPUS

Development and Provision of Blockchain-Based IoT Smart Space Management System at Korea University's SK Future Hall



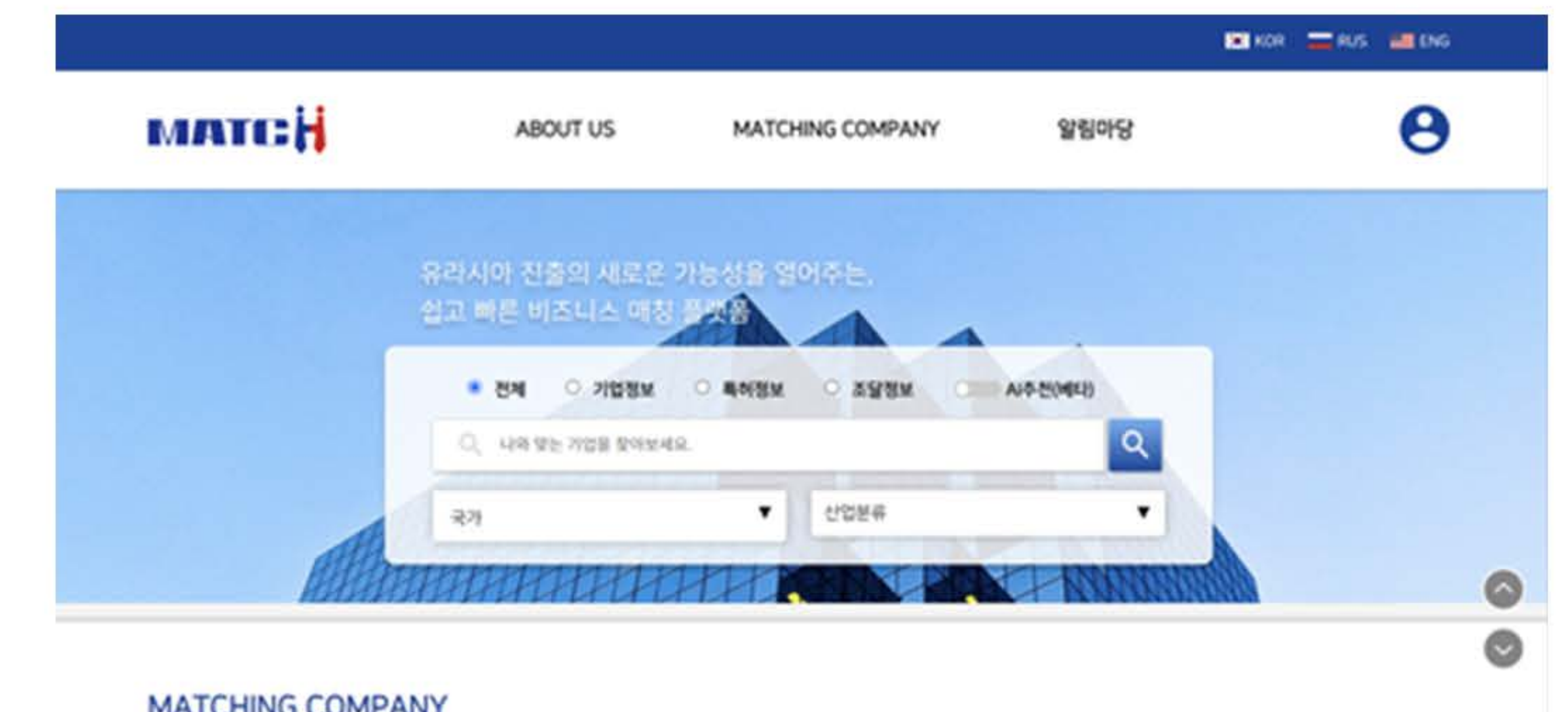
## 02. AI based Laboratory Safety Management Service #CAMPUS #LABORATORY

Installation of Korea University's Multi-Sensor IoT Edge Terminals to Monitor Laboratories and Use Context-Aware AI Models to Detect and Alert Risk Situations



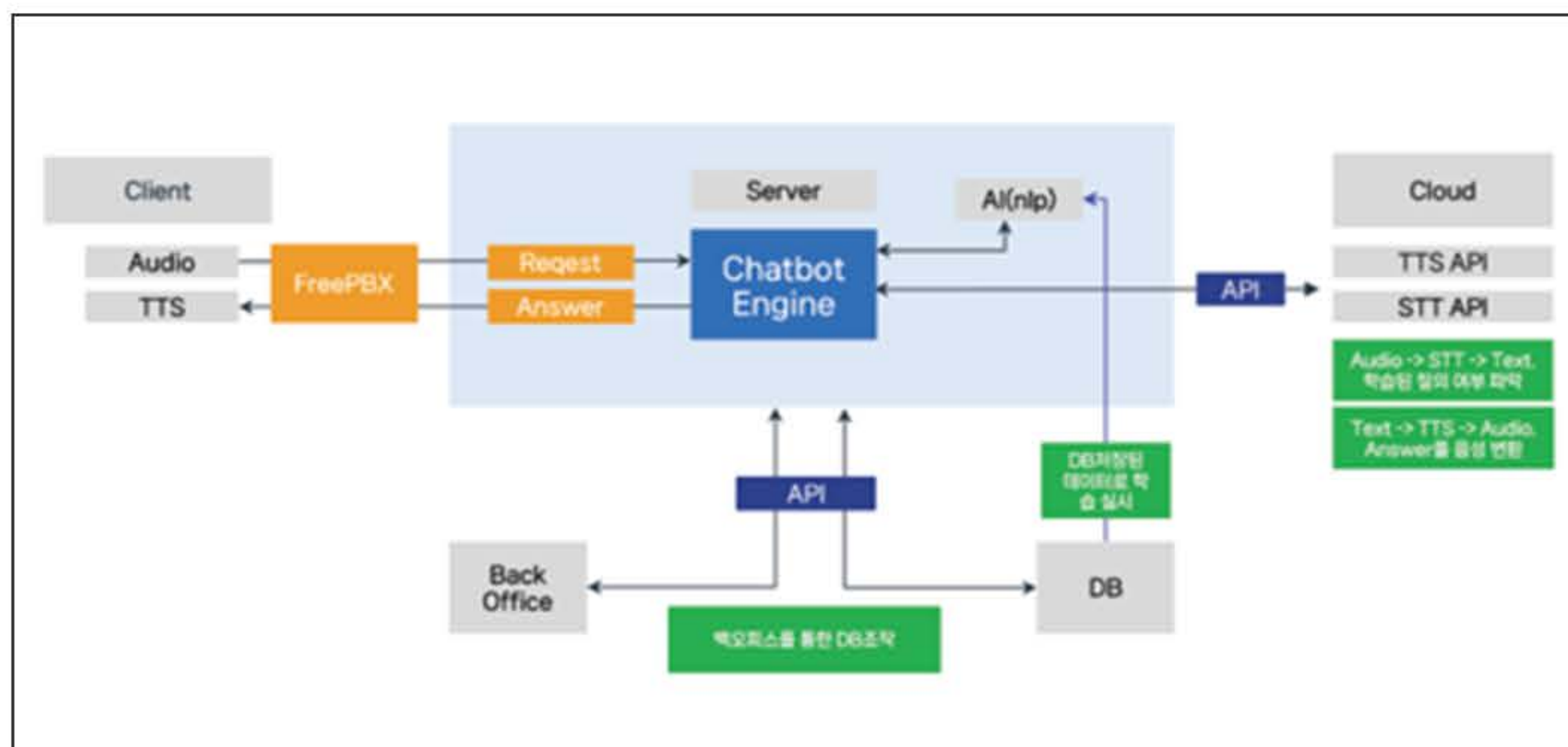
## 03. Knowledge based operator matching system #BUSINESS

Provision of the MATCH System through EurasTech Co., Ltd., which Collects Eurasian Company Data to Match Businesses



## 04. ARS AI Chatbot #BUSINESS

Utilization of Chatbots for Simple Requests, Such as Orders and Inquiries, to Focus Time and Resources on Core Services



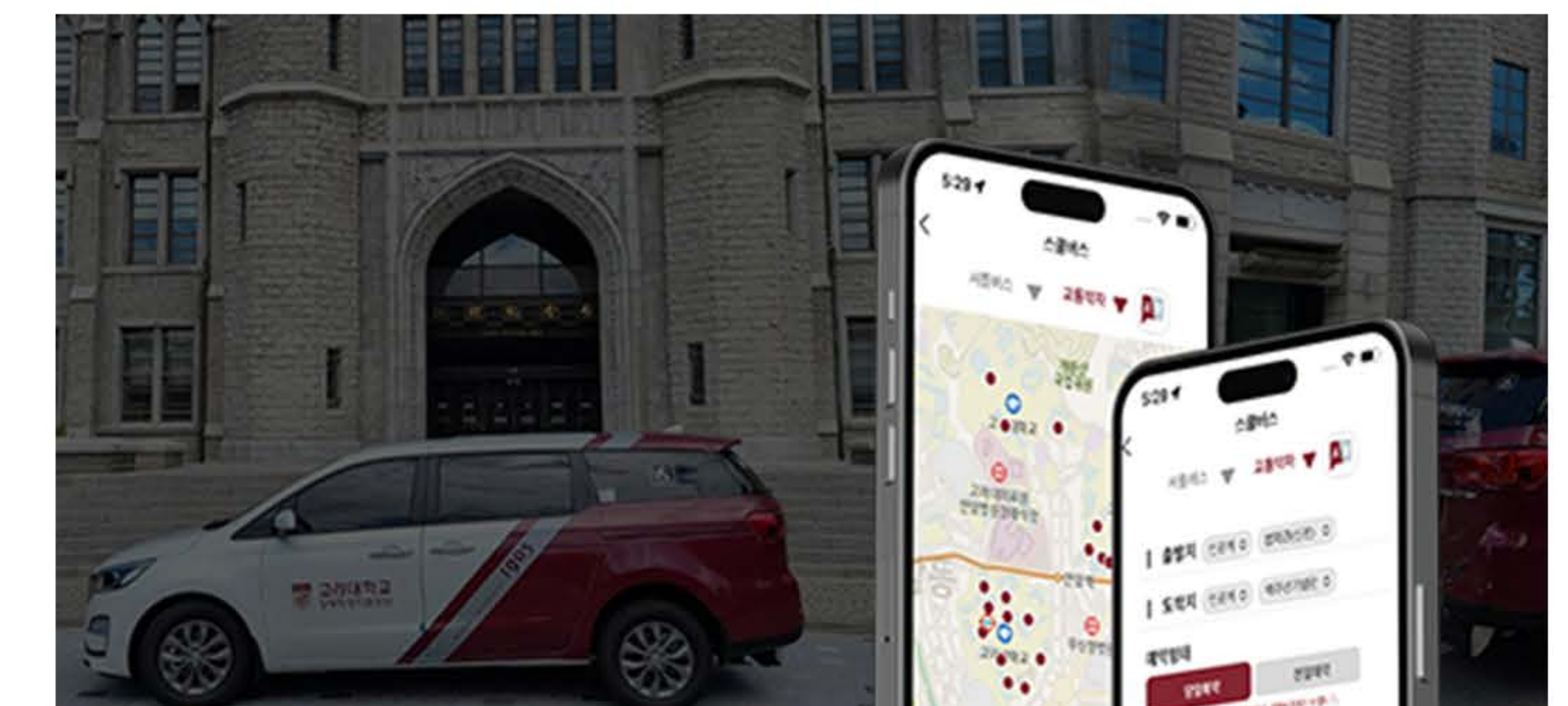
## 05. SoBang 119 #PUBLIC

GIS based real-time fire safety management master system



## 06. Transportation disadvantaged mobility information service #CAMPUS #PUBLIC

Transportation disadvantaged mobility information service

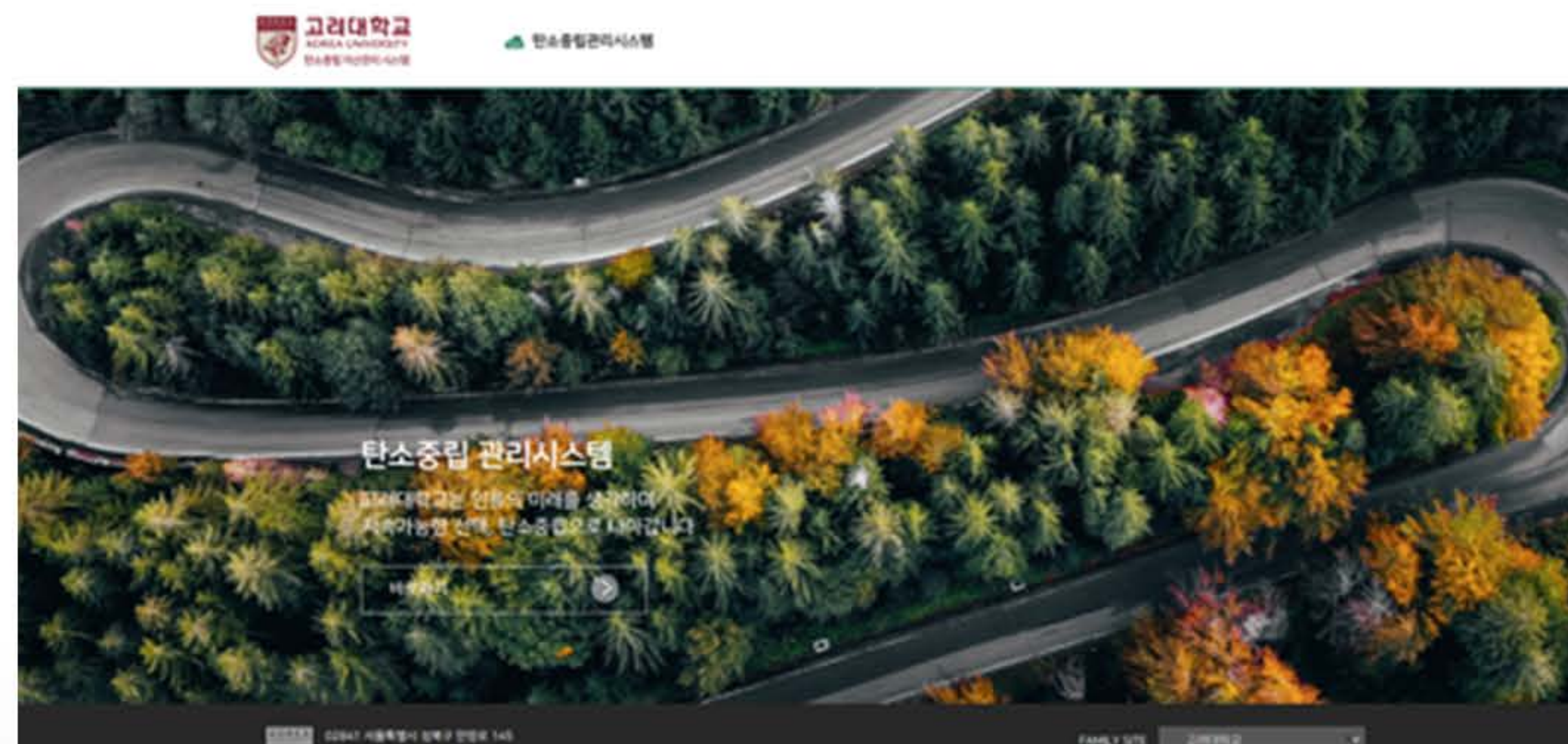




# 03 Business Performance

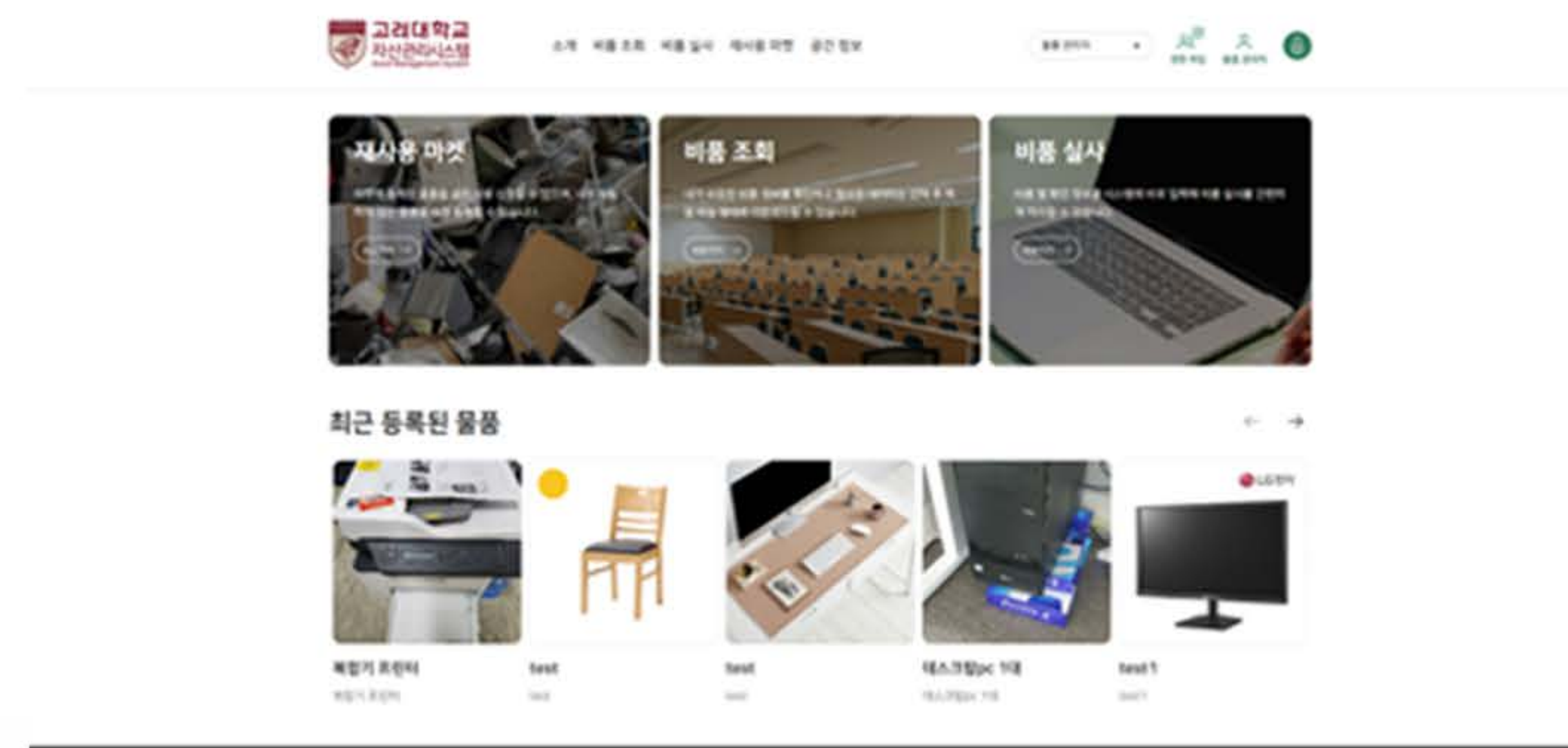
## 07. Korean Univ. CAMS #CAMPUS #PUBLIC

Systematic Management of Korea University's Equipment Inventory and Reuse to Promote Efficient Resource Utilization and Realize ESG Management Goals



## 08. Marketplace System for Reusing Equipment #CAMPUS #PUBLIC

Systematic Management of Korea University's Equipment Inventory and Reuse to Promote Efficient Resource Utilization and Realize ESG Management Goals



## 09. NIPA AI-Converged System for Detecting Counterfeit Products #PUBLIC

Using 500,000 Product Image Training Data and Multi-Camera Studios to Detect Counterfeit Products by Returning Registration Numbers and Design Information, Gaining High Satisfaction from Customs

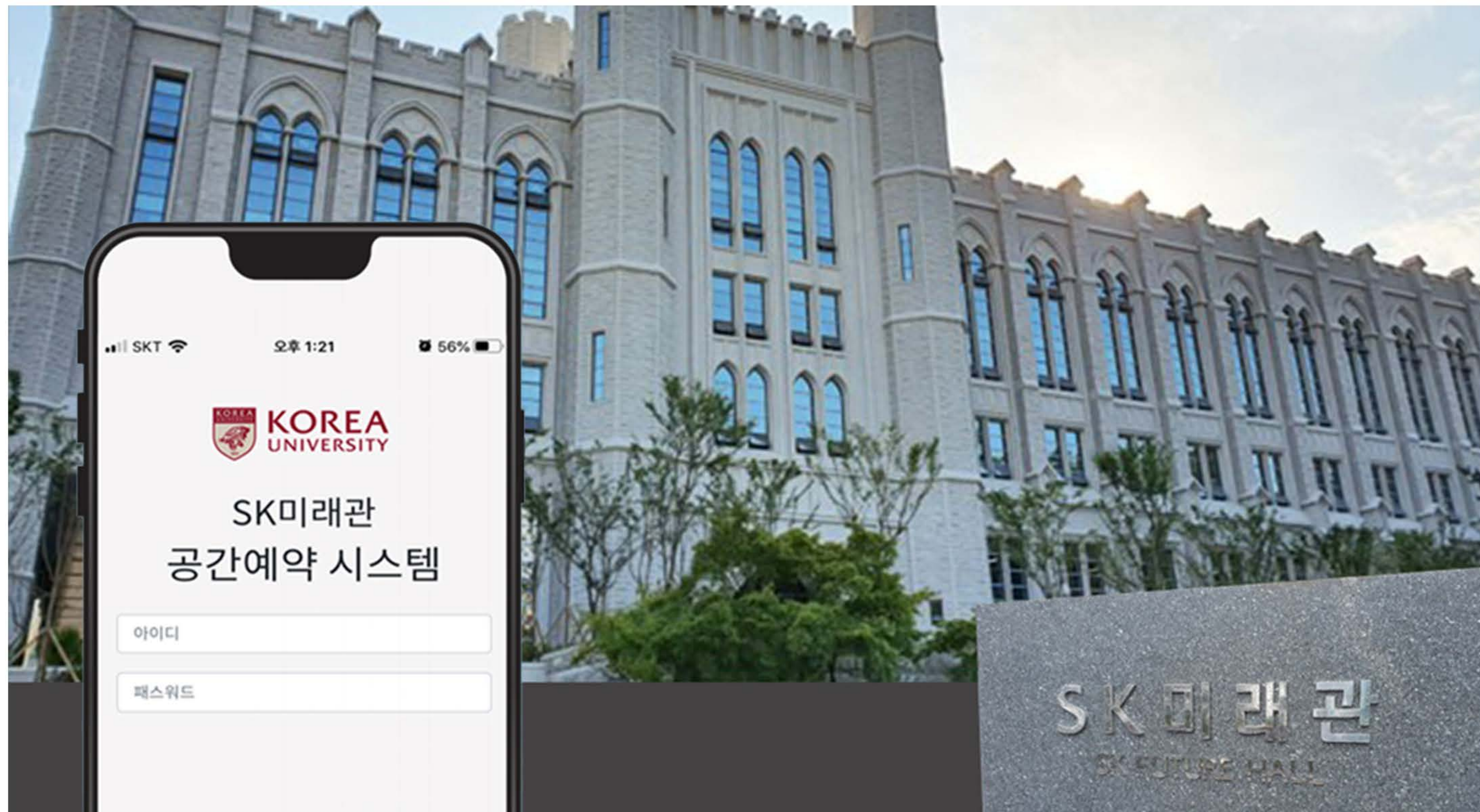






# 03 Business Introduction - Space Reservation System

## Korea Univ. SK Future Hall 'Space Reservation'

With the blockchain-based IoT gateway AllSense, all activities such as space reservation, occupancy management, and sensor monitoring can be performed via smartphone, providing students with a comfortable learning environment





SK미래관 공간예약시스템

출입하시려면 카드를 눌러주세요.

예약하러 가기

고객센터 000-0000-0000  
상당가능시간: 평일 오전10시~오후6시


[운영정책] 운영정책 사항

[예약하기] 다수 인원예약은 어떻게 하나요?

[예약취소] 다수 인원예약이 취소되었어요.

[예약취소] 예약을 취소 하고싶어요.

[출입하기] NFC



SK미래관 공간예약시스템

### 예약하기

유형 및 시간 선택하기

예약하실 공간의 유형을 선택해 주세요.

캐럴실  
(1인실)

토론실  
(8~10인실)

예약 날짜 / 시간 선택

2019-12-23 12:13 30분

종별 예약 가능 공간 조회

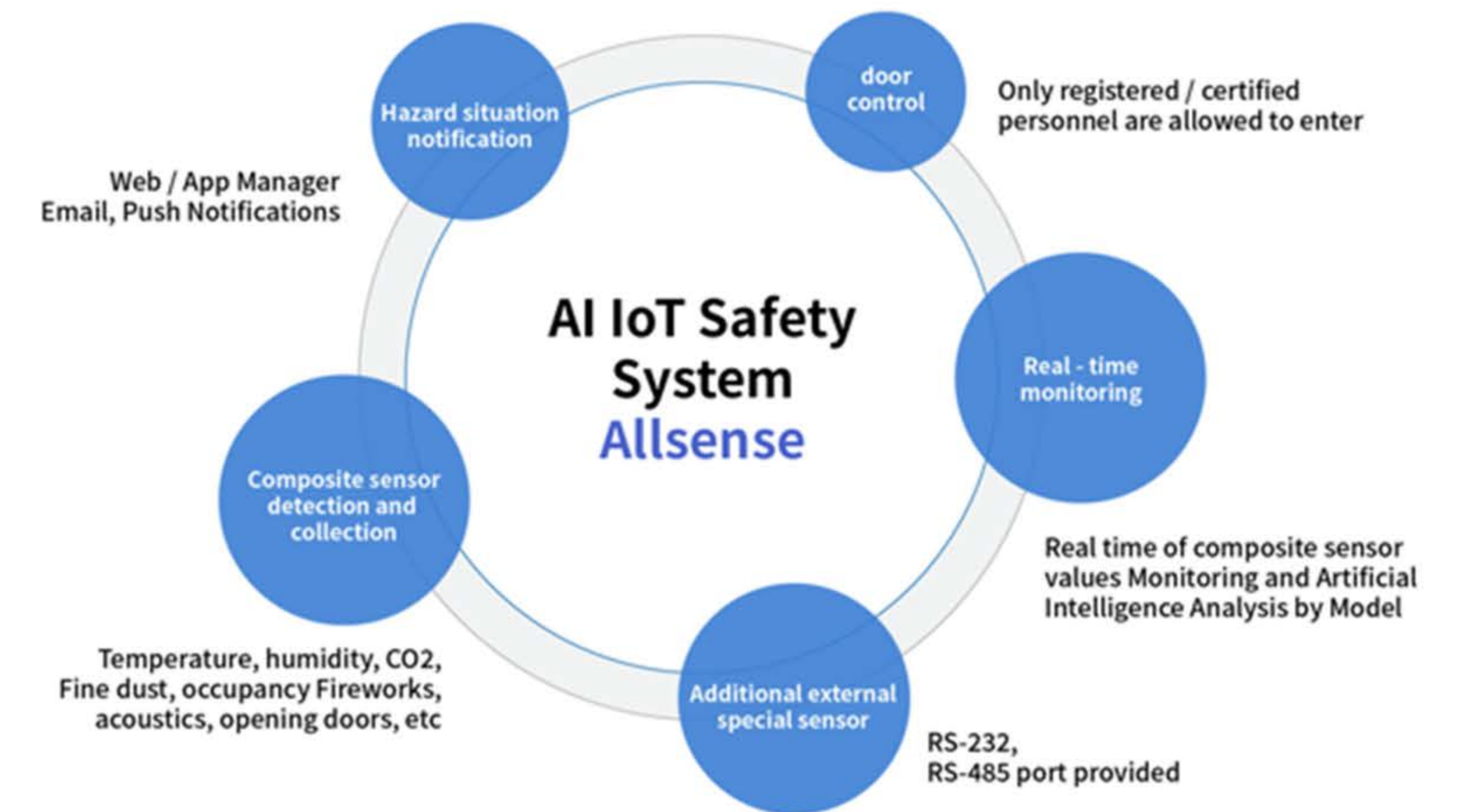
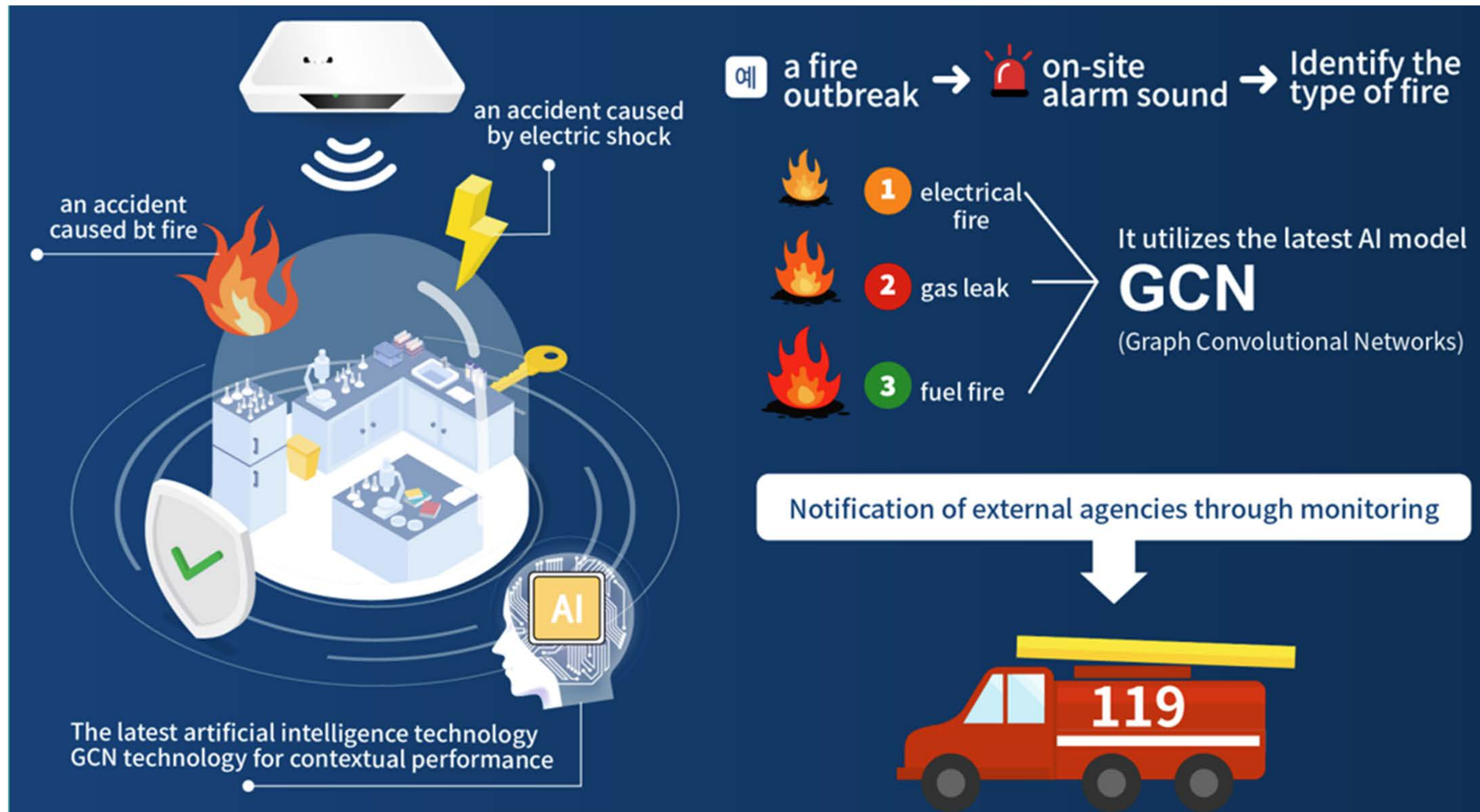
키오스크에서 예약하기

고객센터 000-0000-0000  
상당가능시간: 평일 오전10시~오후6시



## AIoT 'Laboratory Safety System'

Using Artificial Intelligence IoT Edge technology, real-time sensor data analysis and risk prediction notify research institutes/laboratories and external organizations of potential dangers, preventing human accidents



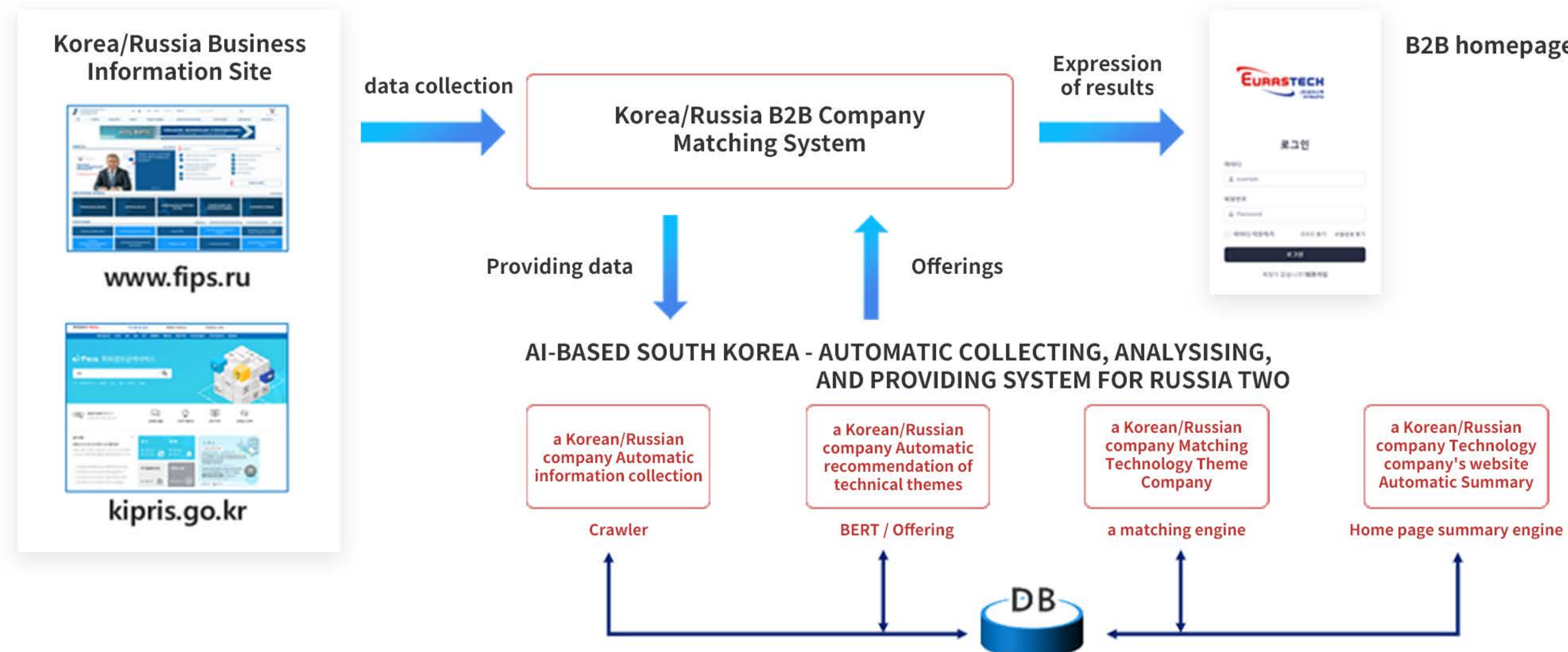


# 03 Business Introduction - Knowledge based operator matching system

## Eurasian Enterprise Matching Platform 'MATCH'

A system that classifies Eurasian companies based on the Korean Standard Industrial Classification (KSIC) to provide a list of companies in the desired industry group, and supports transactions and communication through matching between companies and companies

### Service Architecture Diagram



KOR RUS ENG

MATCH

유라시아 진출의 새로운 가능성을 열어주는, 쉽고 빠른 비즈니스 매칭 플랫폼

전체 기업정보 특허정보 조달정보

AI추천(베타)

나와 맞는 기업을 찾아보세요.

국가 산업분류

PATENT DATA

러시아 유망 기술에 대한 특허를 확인해보세요.

A 섹션 생활물수용 6431

B 섹션 처리조작 운수 8299

C 섹션 화학 야금 3154

D 섹션 섬유, 지류 201

E 섹션 고정구조물 706

F 섹션 기계공학 조립, 가열, 무기계 화학 1349

G 섹션 물리학 3890

H 섹션 전기 5142

MATCHING COMPANY

내가 원하는 산업분야의 매칭기업을 찾아보세요.

A. 01-03 농업, 임업 및 어업 1294

B. 05-08 광업 492

C. 10-34 제조업 1845

D. 35 전기·가스 증기 및 공기 조질 공급업 2283

RUSSIA EXCHANGE RATE

러시아 RUB 1 루블

=

대한민국 KRW 14.32 원

2024.02.22 하나은행 환율 기준



# 03 Business Introduction - Knowledge based operator matching system

## ARS AI Chactbot Necessity



Frequent service interruptions and burdens caused by simple orders and handling of inquiries



the sensational trend of interactive artificial intelligence ChatGPT

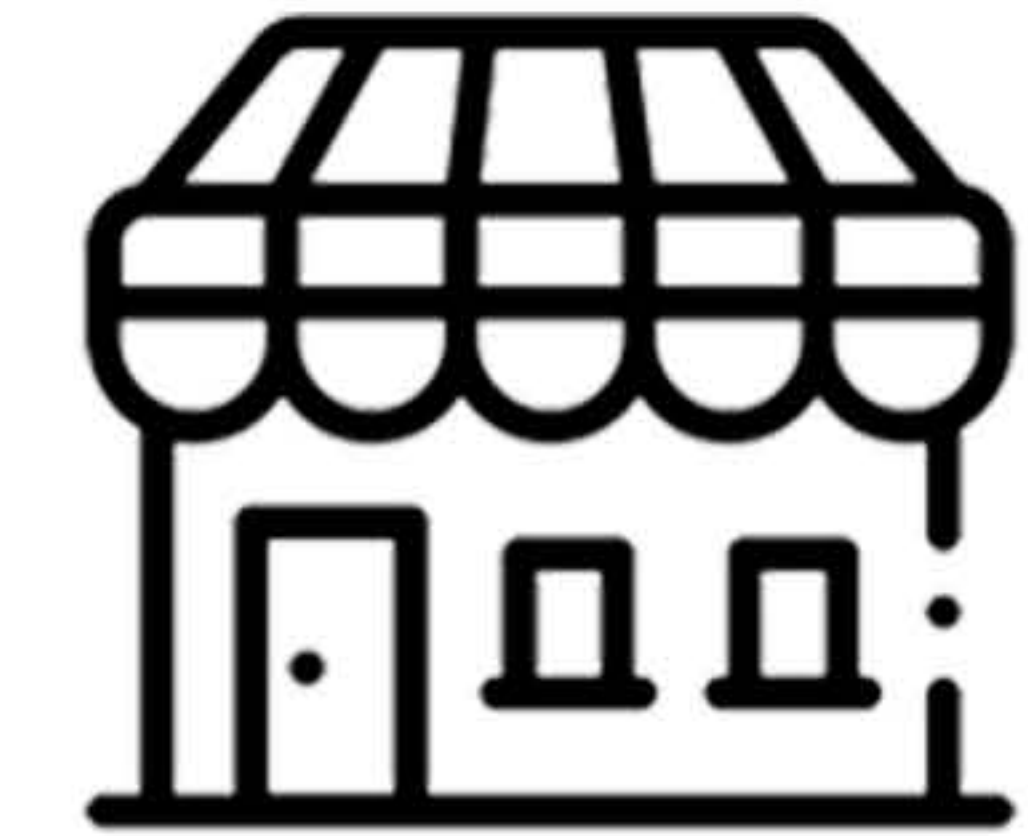


Apply simple requests to chatbots to **focus time and people on service**

## ARS AI Chatbot



Order contents



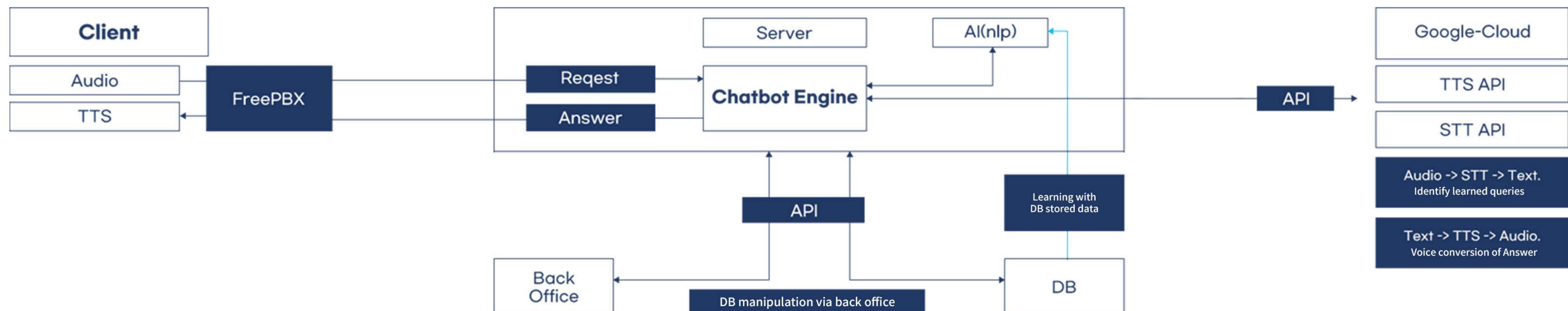
### Simple order

Ex)  
What are your opening hours?  
I'll order four glasses of americano and go get them

### Responding to and accepting orders

Ex) Business hours are until 10 p.m.  
I've received your order for 4 cups of americano.

## System architecture of ARS AI Chatbot

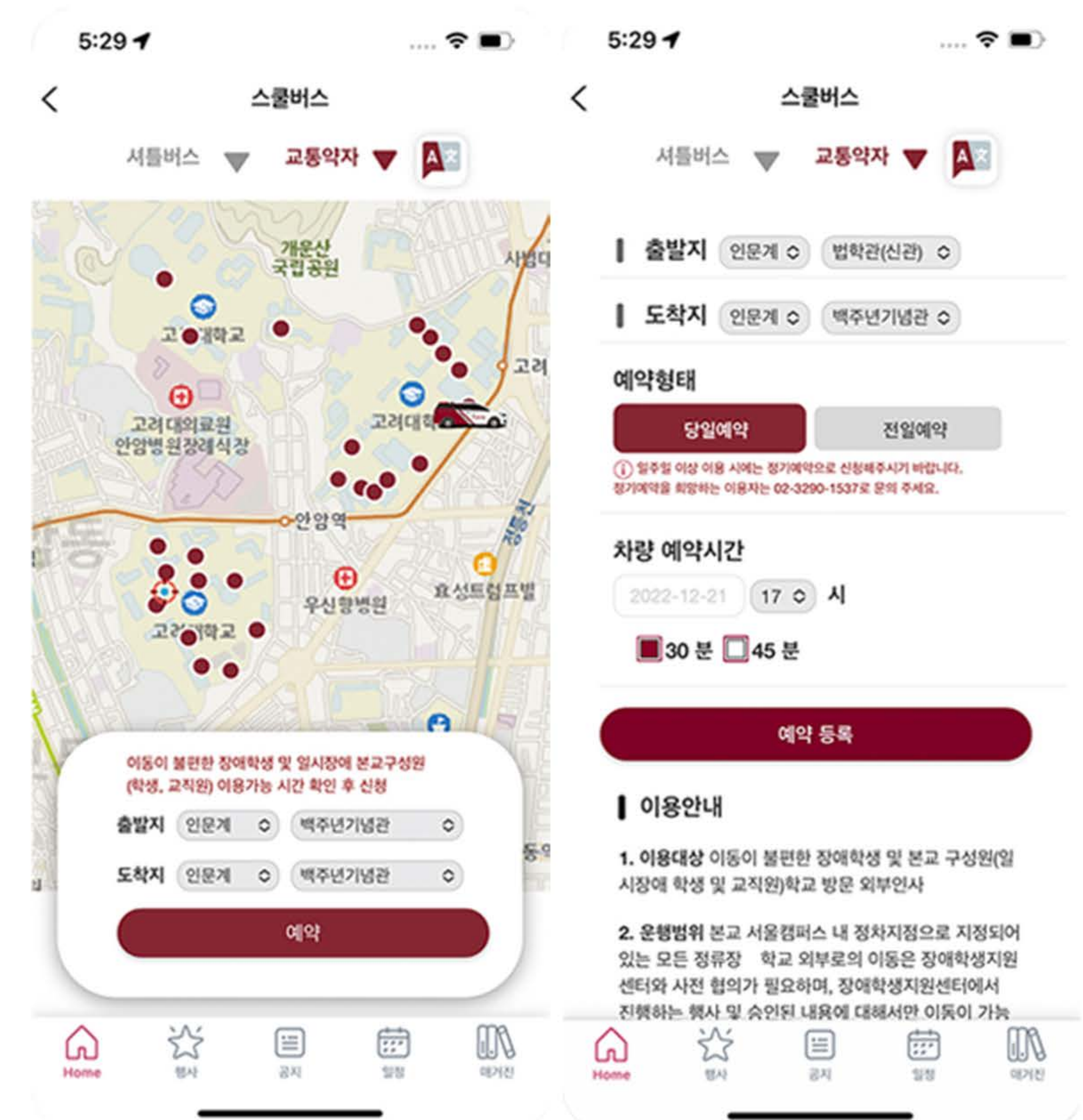
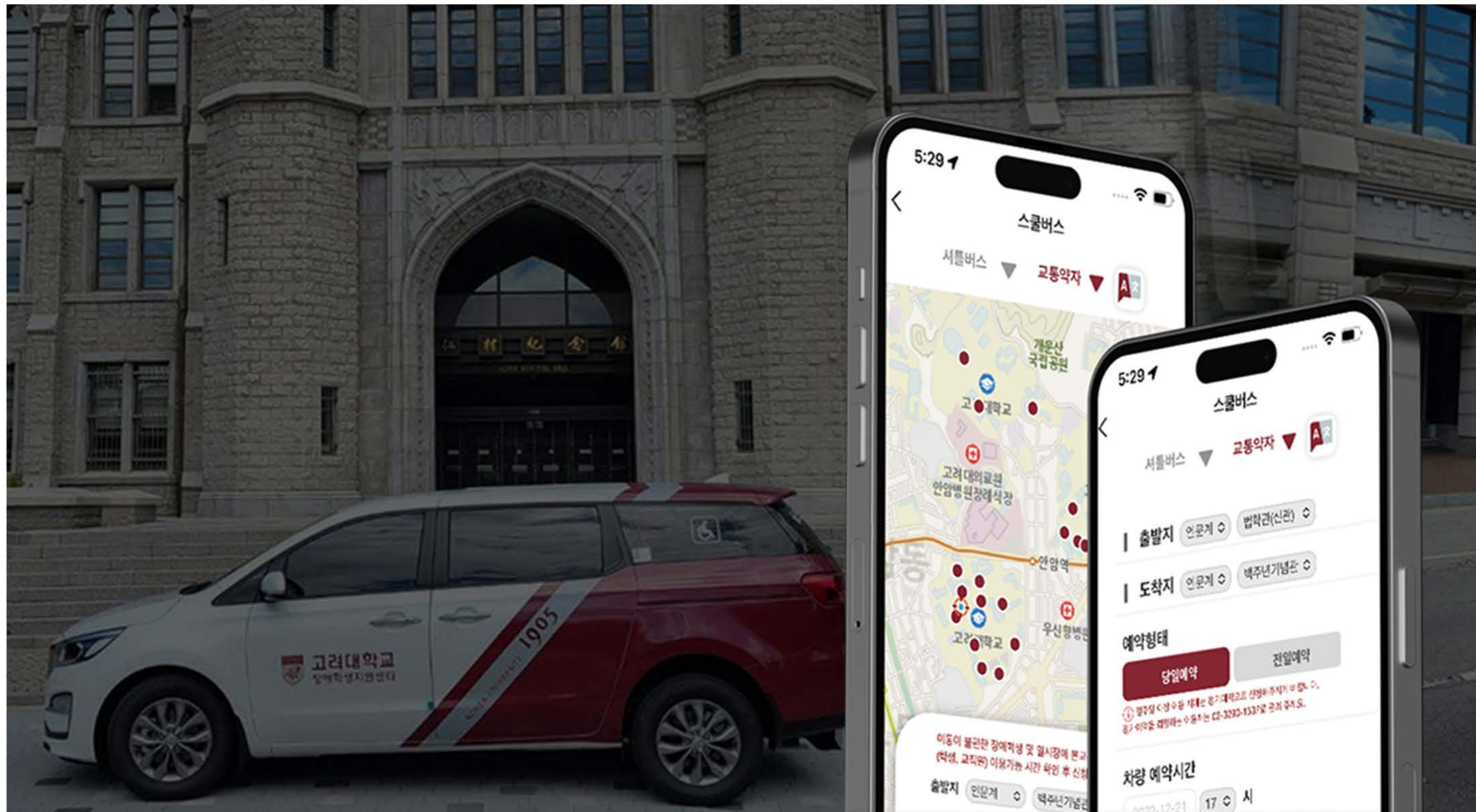




# 03 Business Introduction - Transportation disadvantaged mobility information service

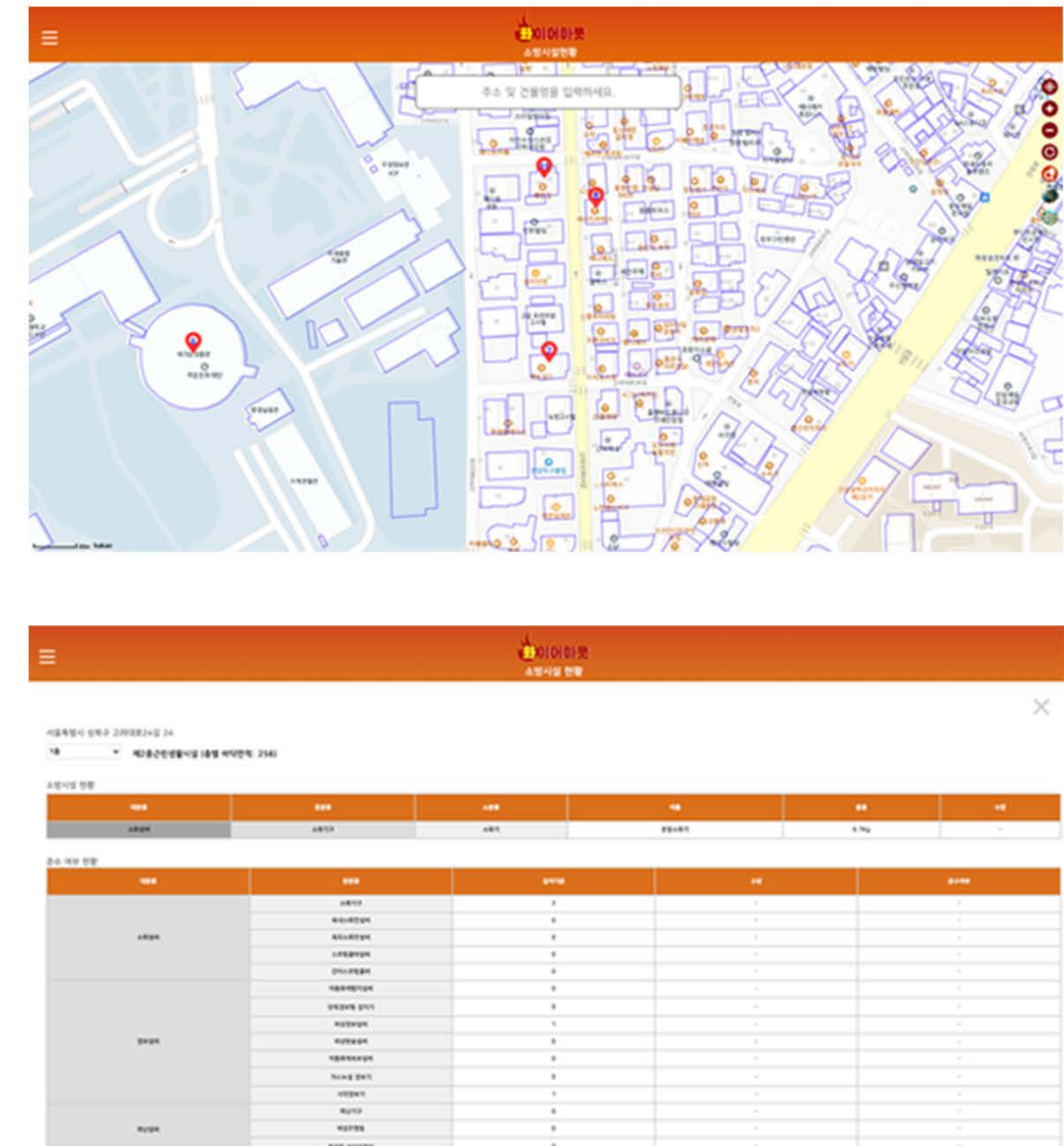
## Location based Convenience Service ‘Transportation Disadvantaged Mobility’

A location-based convenience service that allows students with transportation difficulties to book mobility support vehicles and check/manage their reservation history.



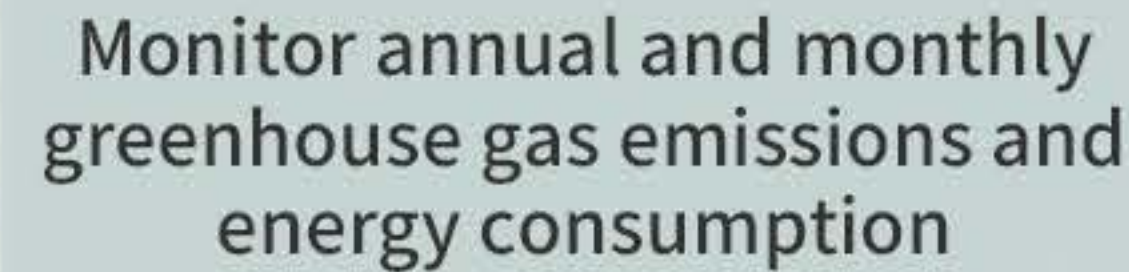


Using the National Building Information Data of the Ministry of Land, Infrastructure and Transport and the National Fire Service's Fire Protection Facility Status Data Location-based LBS technology is applied to predict fire risk situations based on complex sensor values collected from IoT sensor terminals





The Carbon-neutral Asset Management System is designed to address environmental issues, reduce carbon emissions, achieve carbon neutrality, and generate revenue through effective asset management



Understand carbon  
neutrality and wealth  
management all at once

Understand the status of smart asset management/failure inspection

Apply a variety of devices with responsive web/apps



제34호 10

나눔 활동

삼성 모니터 27인치  
LS27F350FHKXXR

4k 빔프로젝터 LG HU70LA

화이트보드 칠판 보드 120  
\*90cm

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作者声明 利益冲突  
The authors declare no conflict of interest.

신청하기 이메일 보

신형하계 매일 보내주기

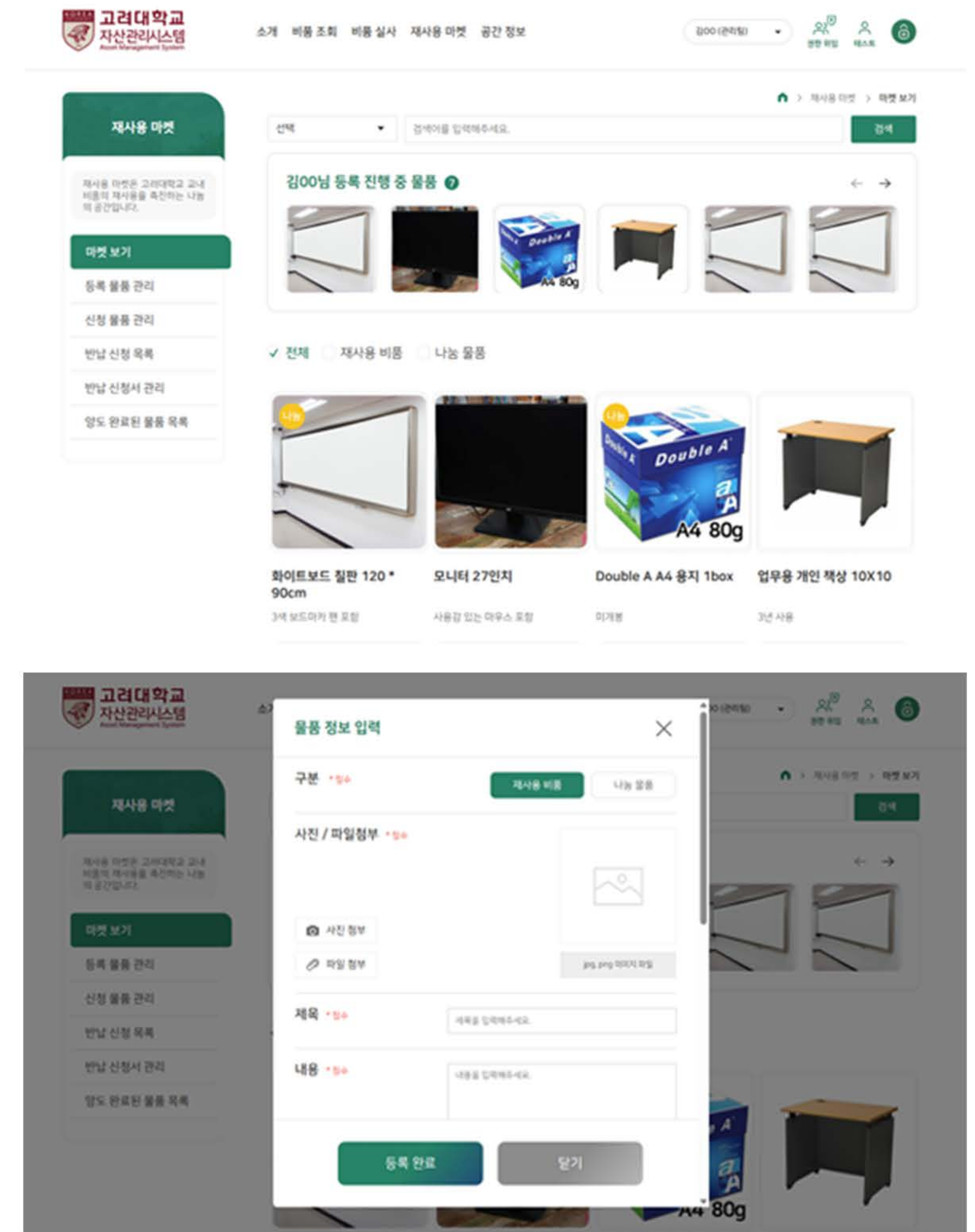
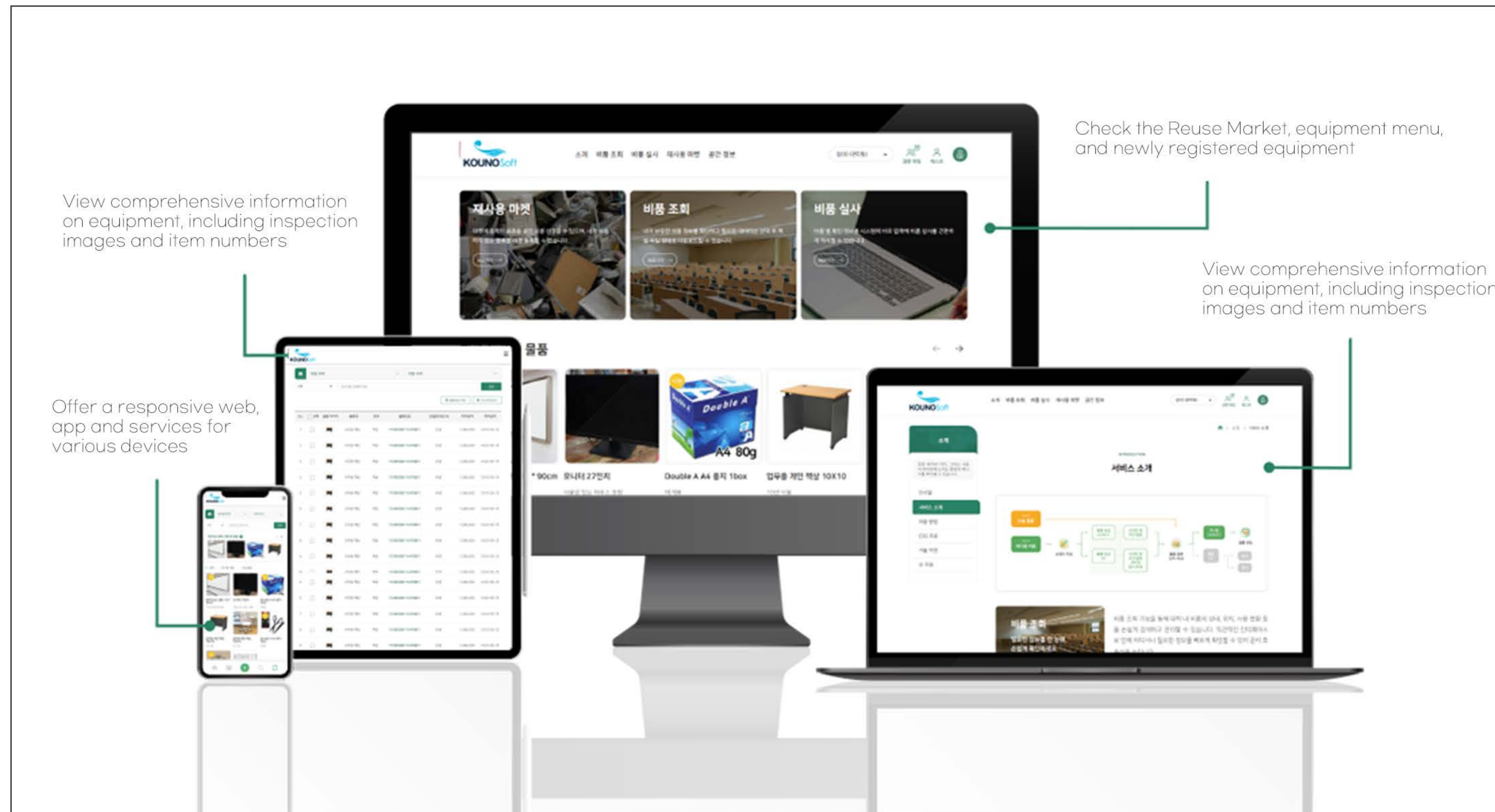
신형하게 매일 3



# 03 Business Introduction - Marketplace System for Reusing Equipment

## The Equipment Reuse System 'Reuse Market'

A system that contributes to achieving ESG management goals by promoting efficient resource utilization and resource circulation, reducing carbon emissions, and systematically managing equipment through inventory inspections and reuse support

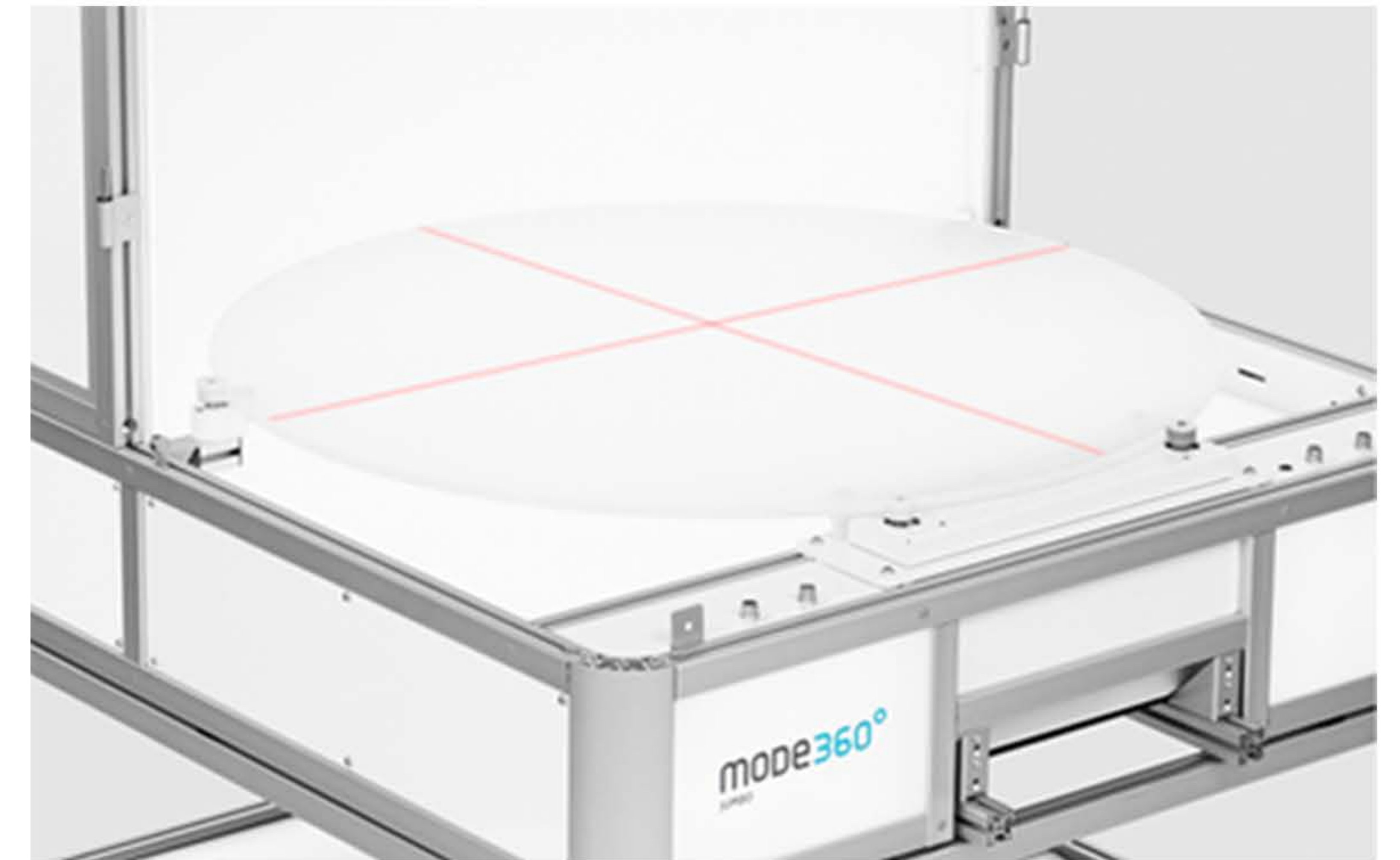
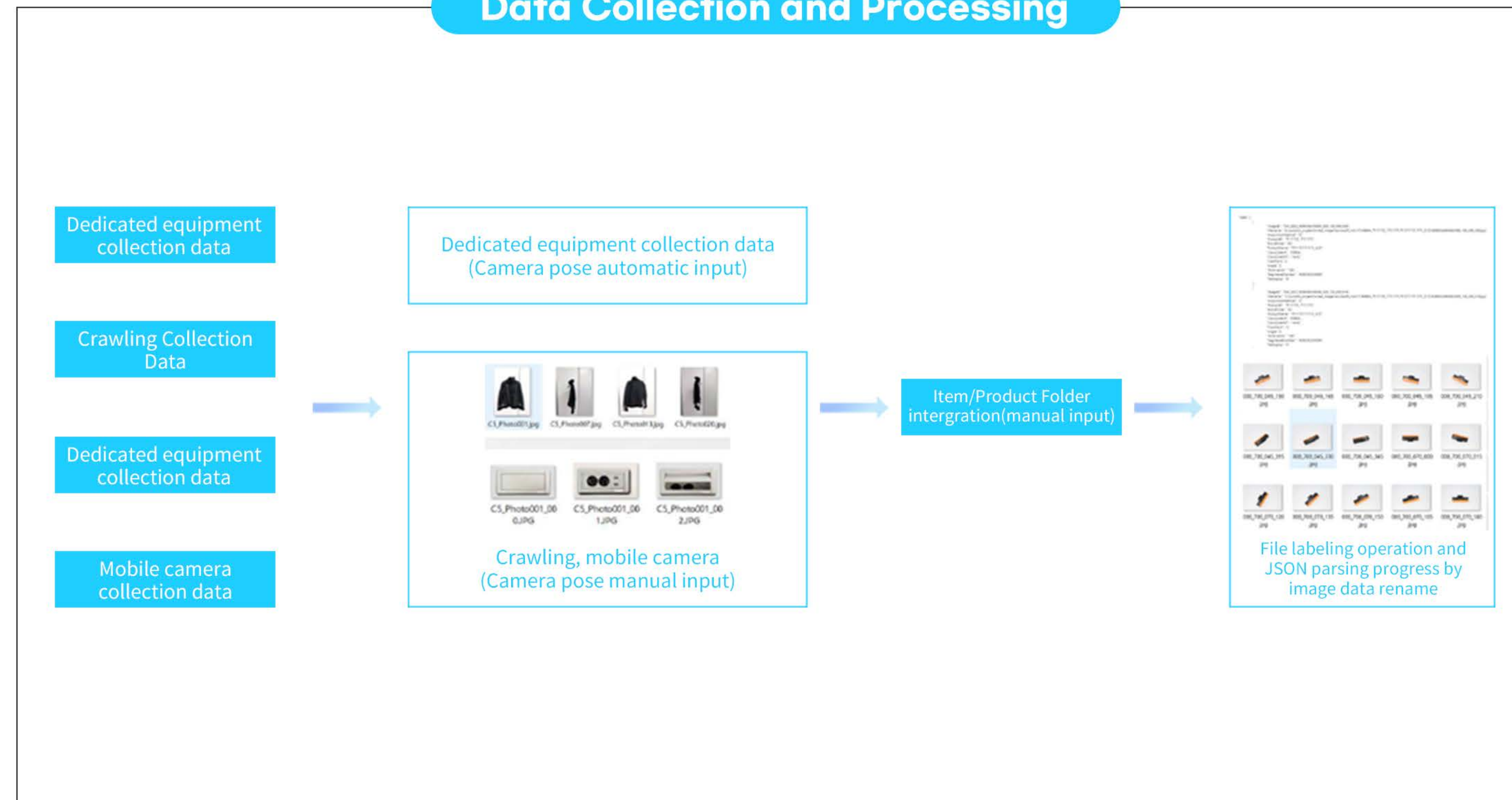




## [NIPA] 'AI Convergence Illegal Reproduction Reading System'

Developing an app that returns information on registration numbers and drawings that match the items for reading pirated goods  
High satisfaction evaluation results obtained from empirical tests through customs agents

### Data Collection and Processing







04

# Technology & Certificate

- Technology Possessed
- Certificate



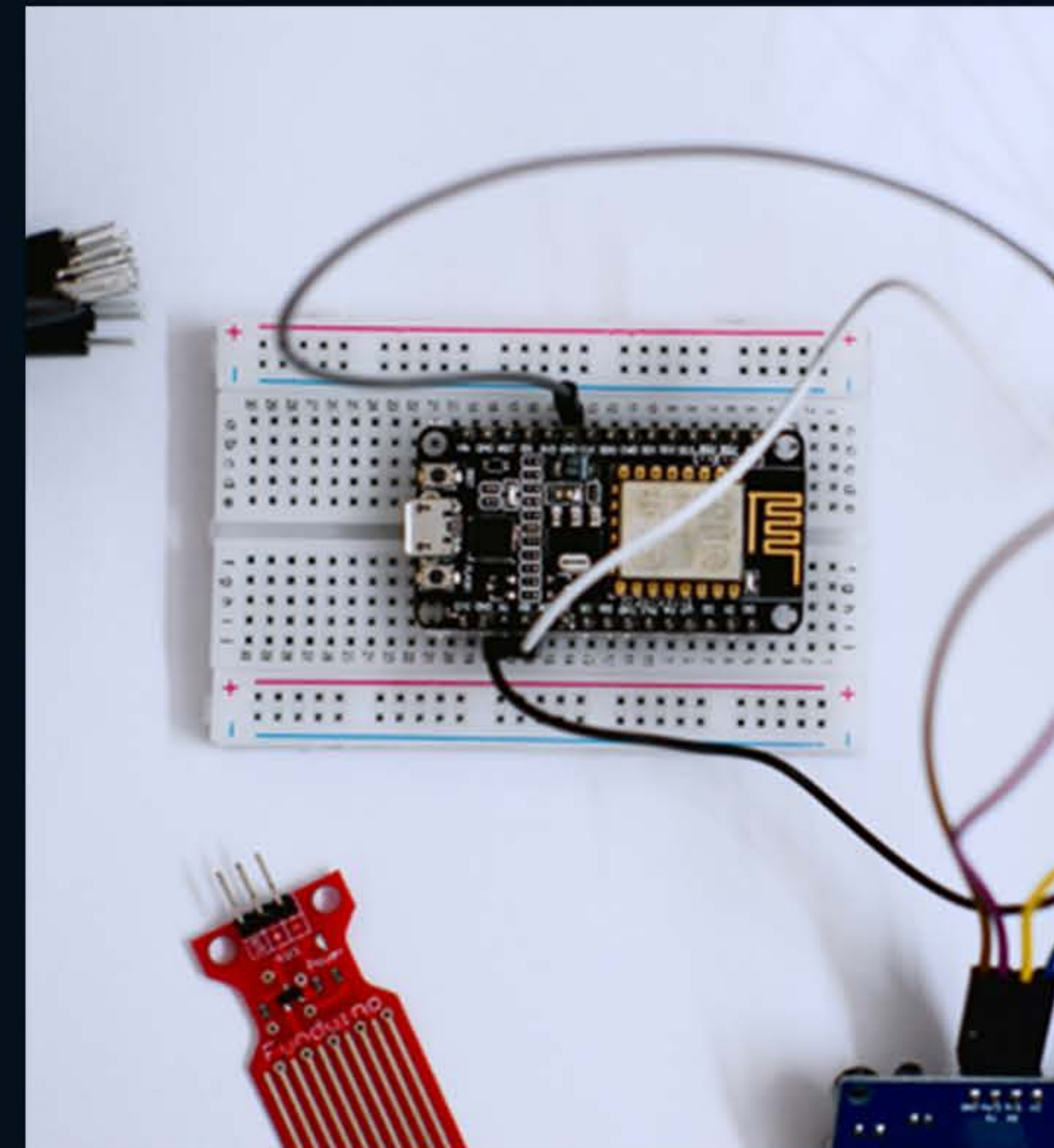
# 04 Technology Possessed

Kounosoft is an IT company specializing in understanding people and developing technologies for people by **recognizing the situation between people and people, people and machines, and machines and machines** based on new technologies such as artificial intelligence, blockchain, security, and IoT.



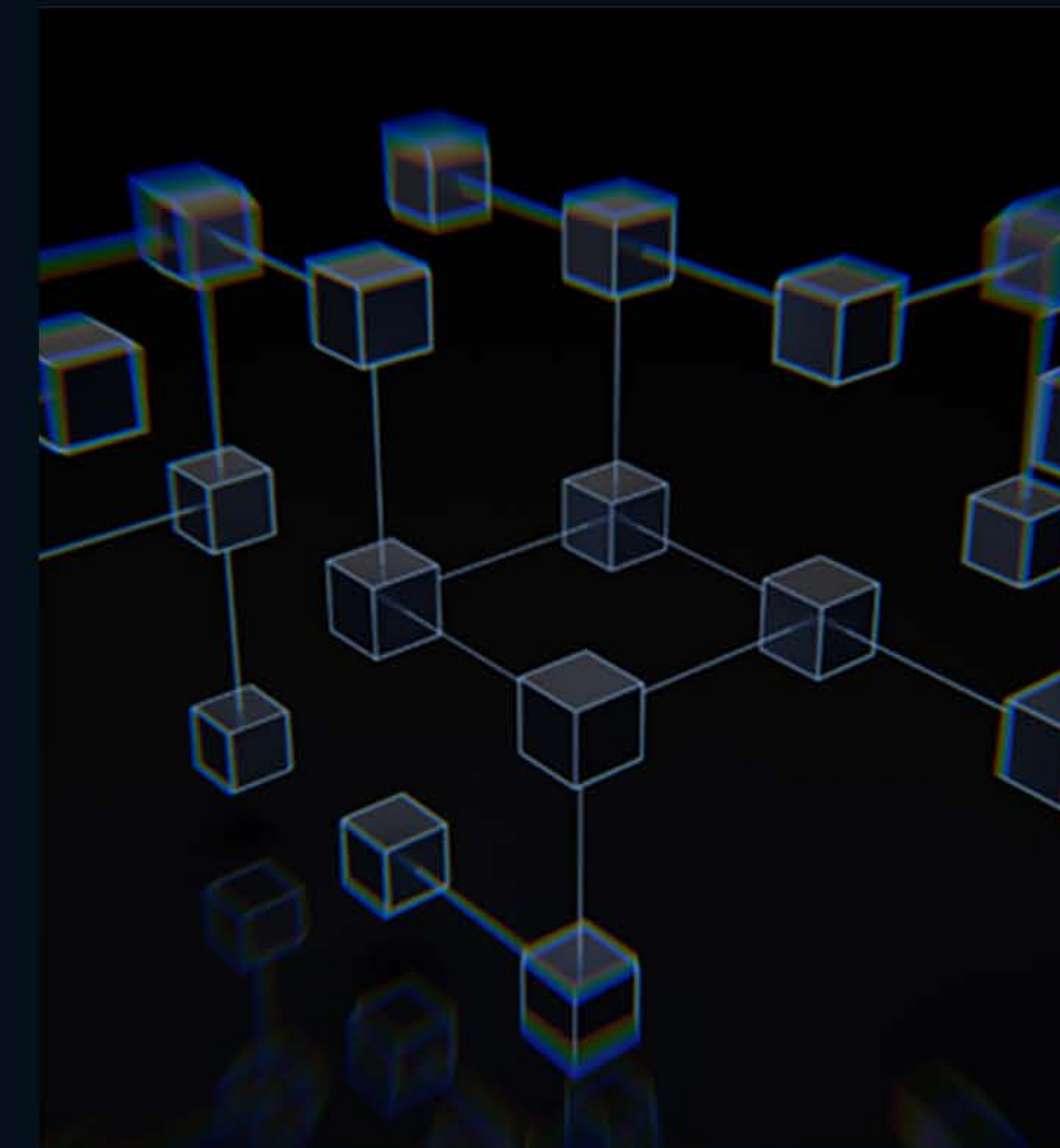
## AI

We are striving to implement technology for people by incorporating the latest artificial intelligence technologies such as LSTM, CNN, and GNN into smart space management solutions through our IoT sensor gateway.



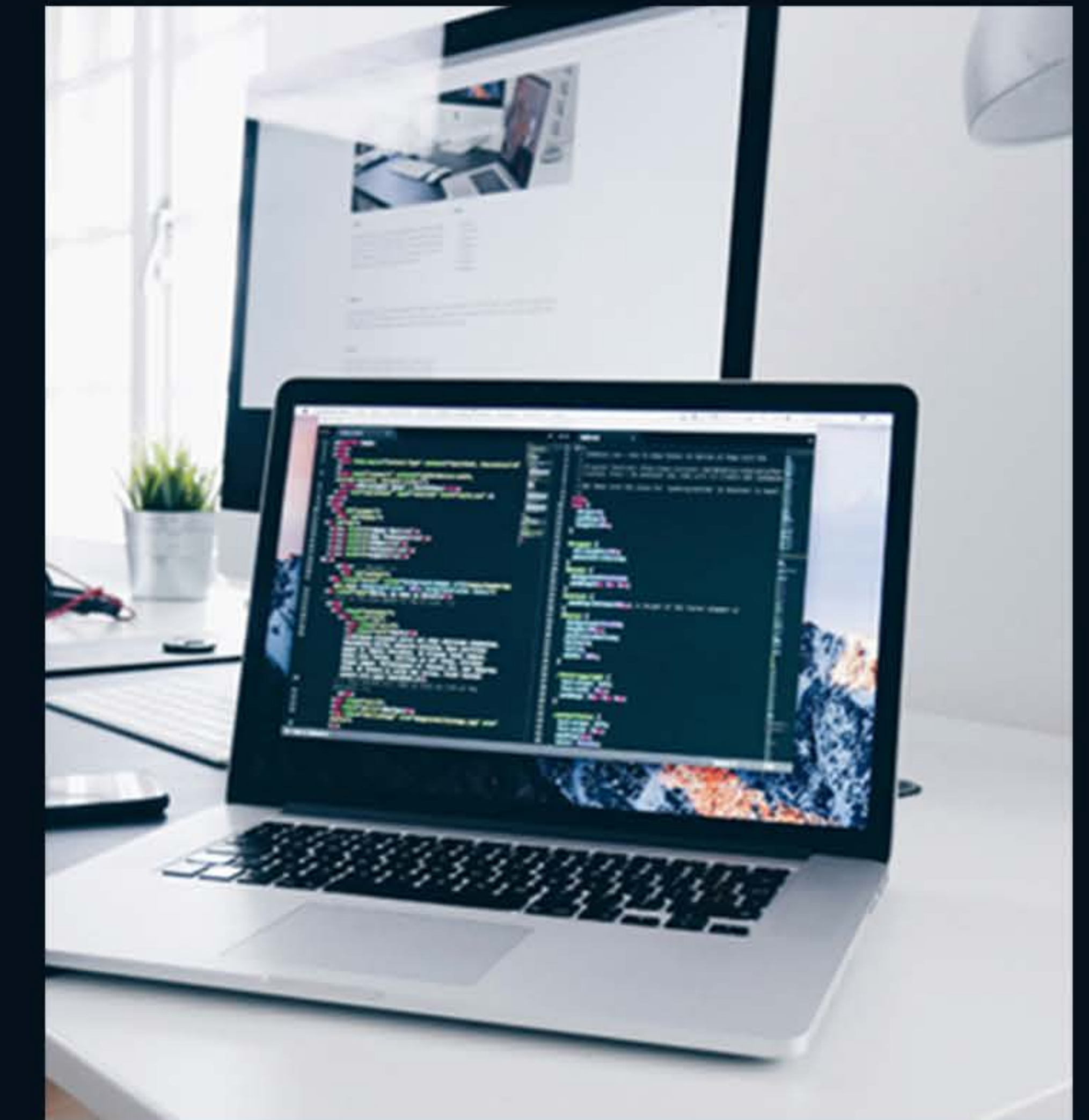
## IoT

We design and manufacture IoT edge gateways equipped with various sensors such as temperature, humidity, and fine dust, and apply them to Korea University's SK Future Hall, and we will continue to develop technologies for smart IoT space management.



## BlockChain

We provide solutions necessary for real life by developing application technologies such as providing simple identity authentication with an application that applies DID technology

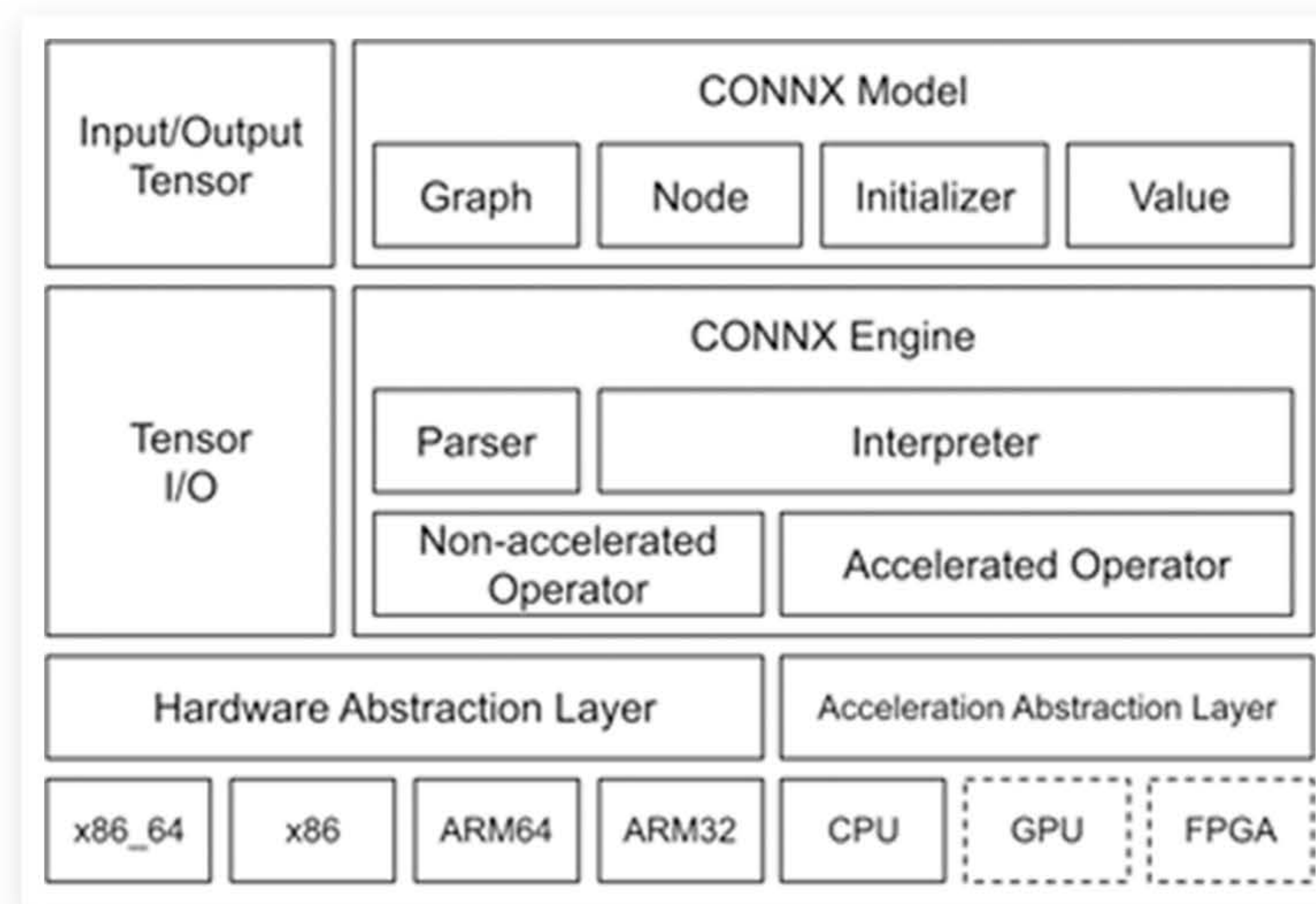


## IT Security

Since its inception, we have grown into an IT security company by developing S2K security technology. We have IT security technology that prevents unauthorized access to computers, networks, data, and other computer assets such as hackers' intrusion and ransomware prevention



## ONNX (Open Neural Network Exchange)



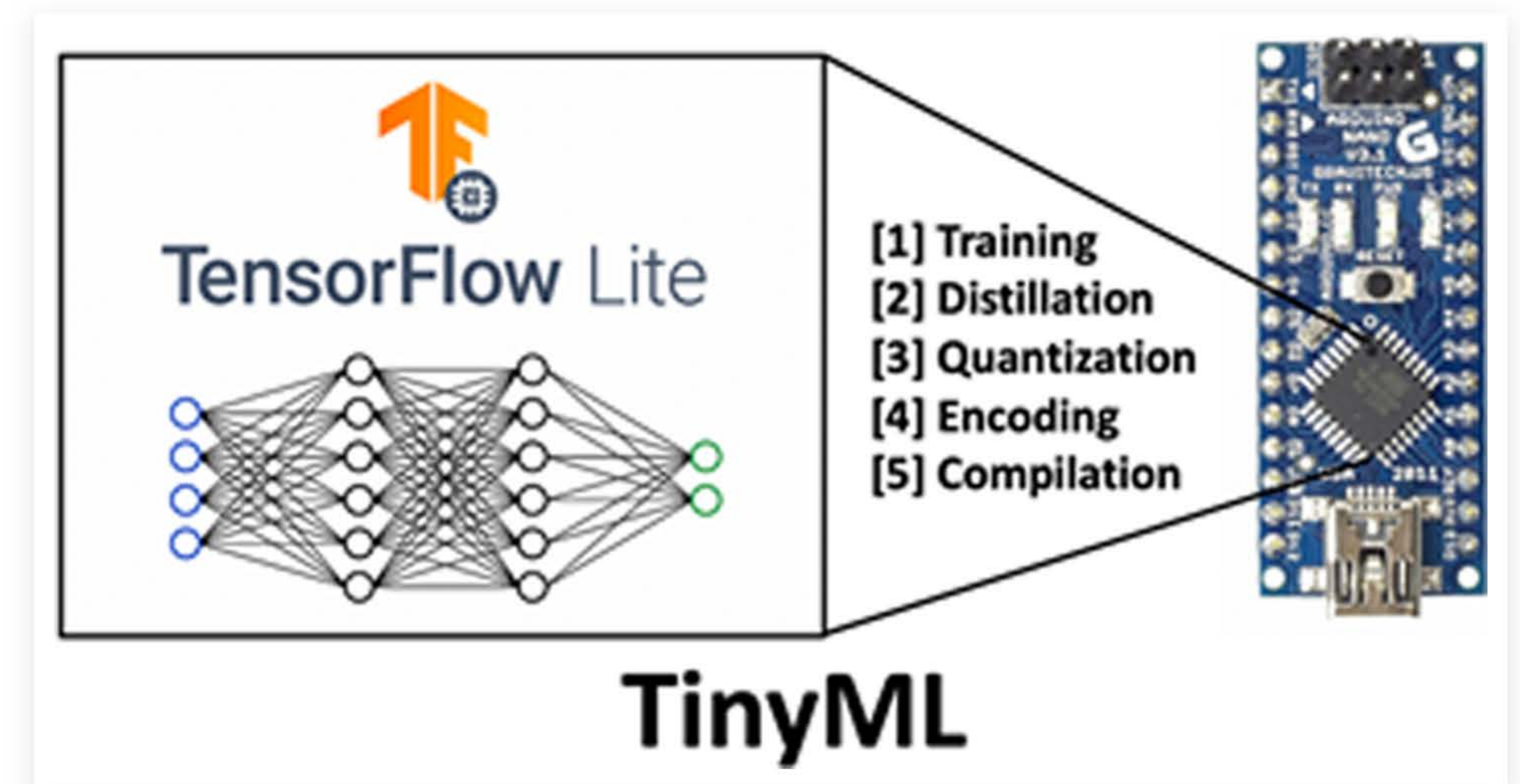
A shared platform that helps compatible use models made in different DNN framework environments

The ONNX itself is built to ensure compatibility with different models

ONNX runtime enables inference on cross-platform

Pytorch or Tensorflow => ONNX format => ONNX runtime run

## CONNX



ONNX runtime implemented in C language

Alternative of Tensorflow Lite

Operates on low-power devices such as ESP32, Raspberry Pi 3/4, FreeRTOS, etc.

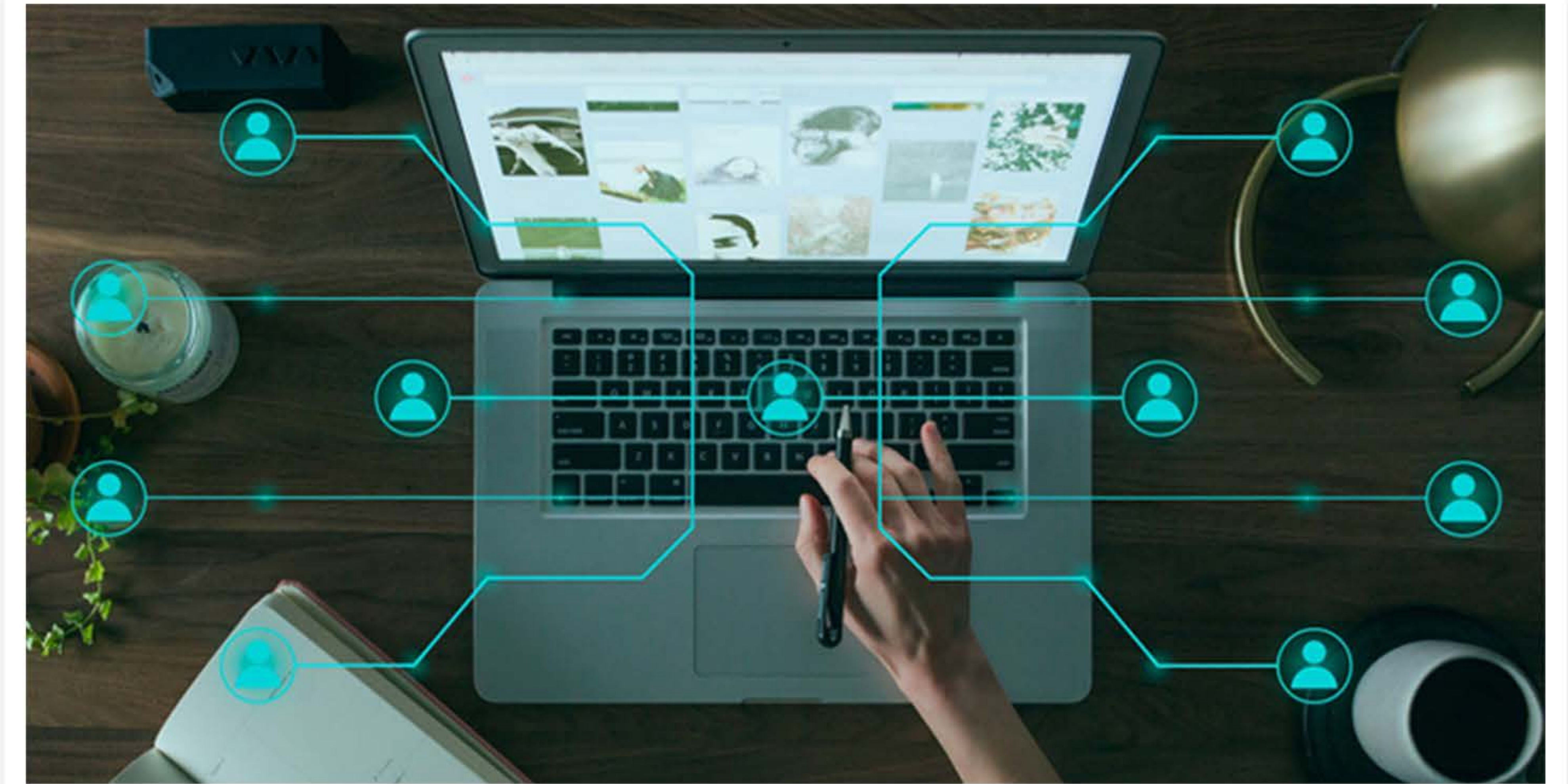


# 04 Technology Possessed - Metaverse AIoT Security Technology

Metaverse



IoT



Metaverse AIoT security plan

Firmware security  
/ Chip security

Object DID

NFT security

S2K

Low

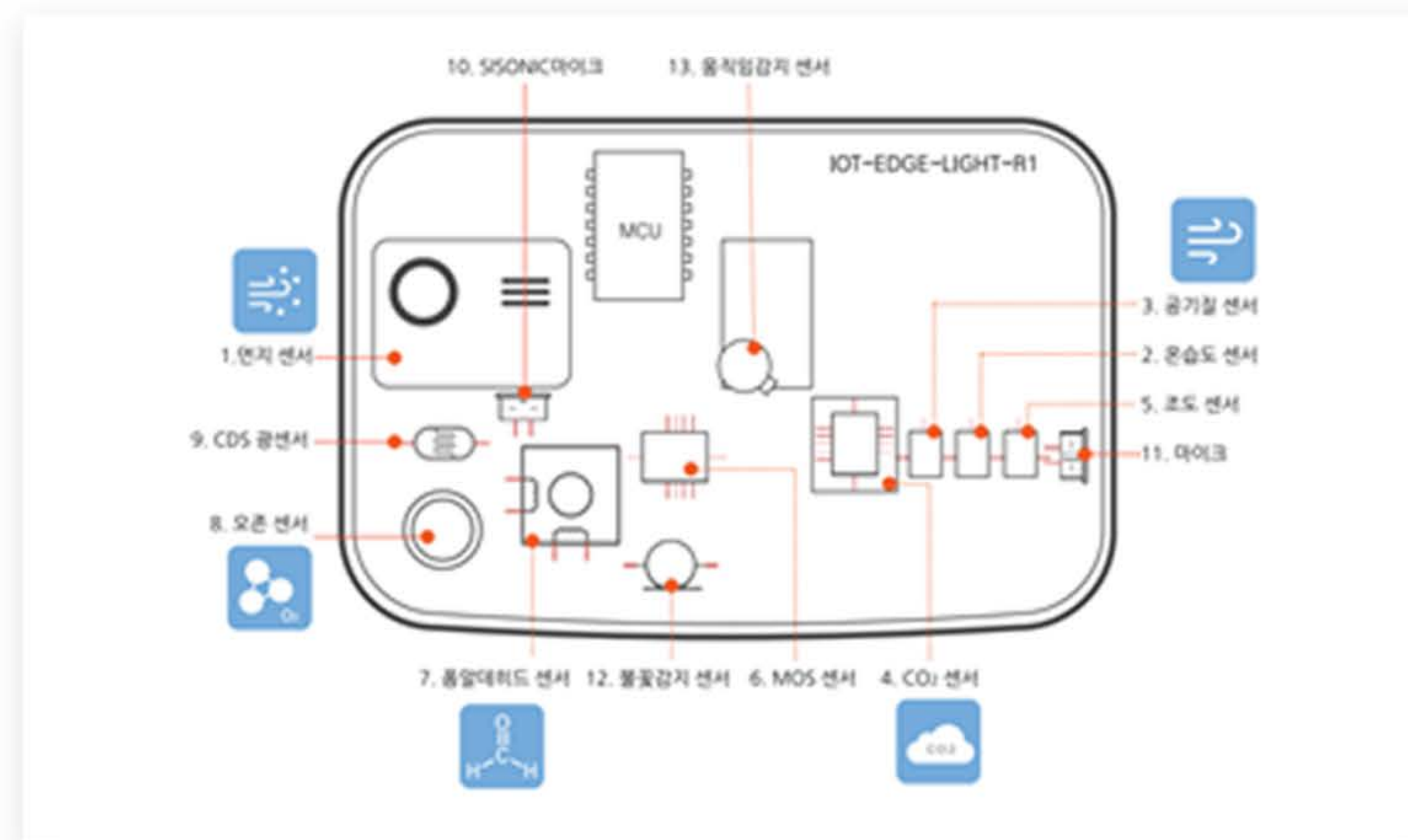


High

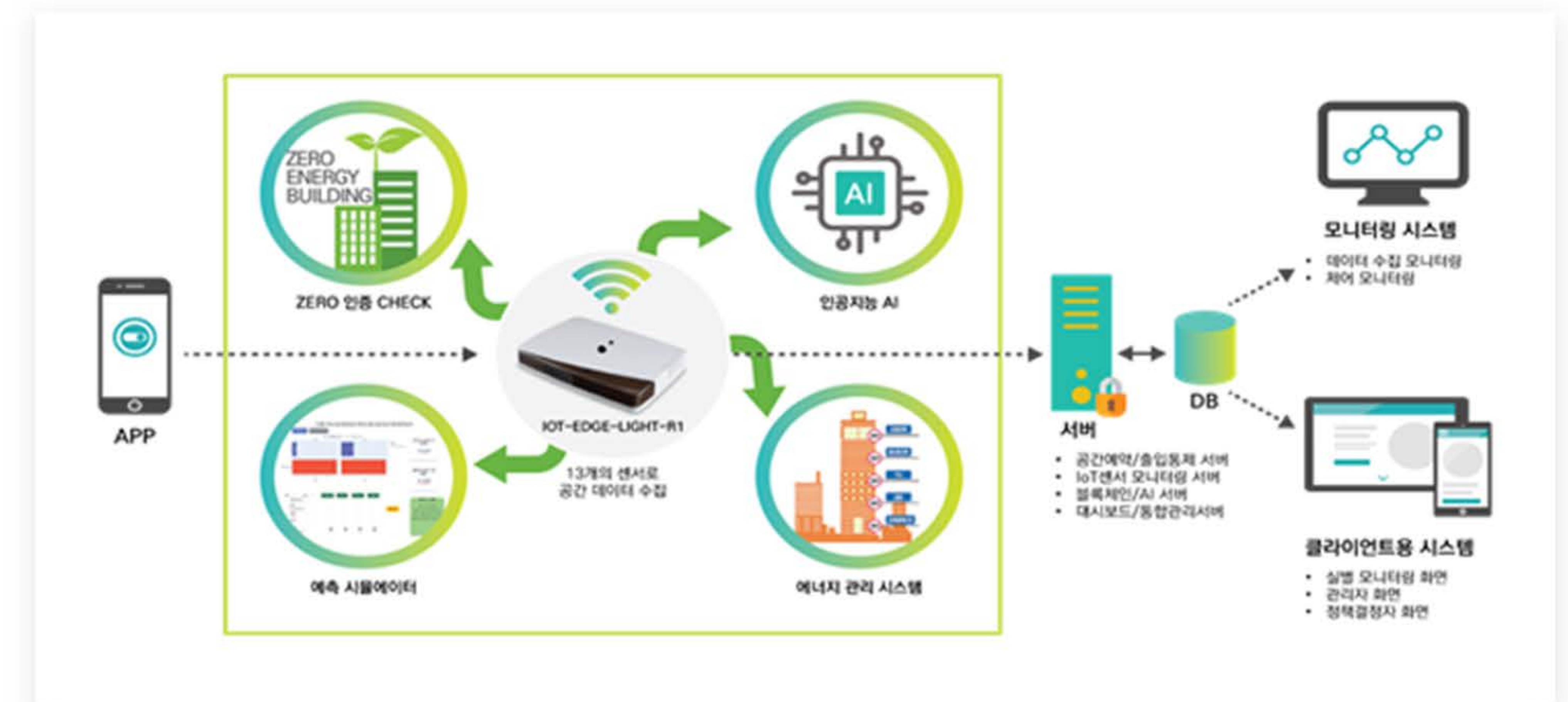


# 04 Technology Possessed - IoT Edge Multisensory Terminal Device Technology

## IoT Edge multisensory terminal device technology



IoT Edge multisensory terminal device structure diagram



Sensor based space monitoring service



Data collection/ analysis/prediction

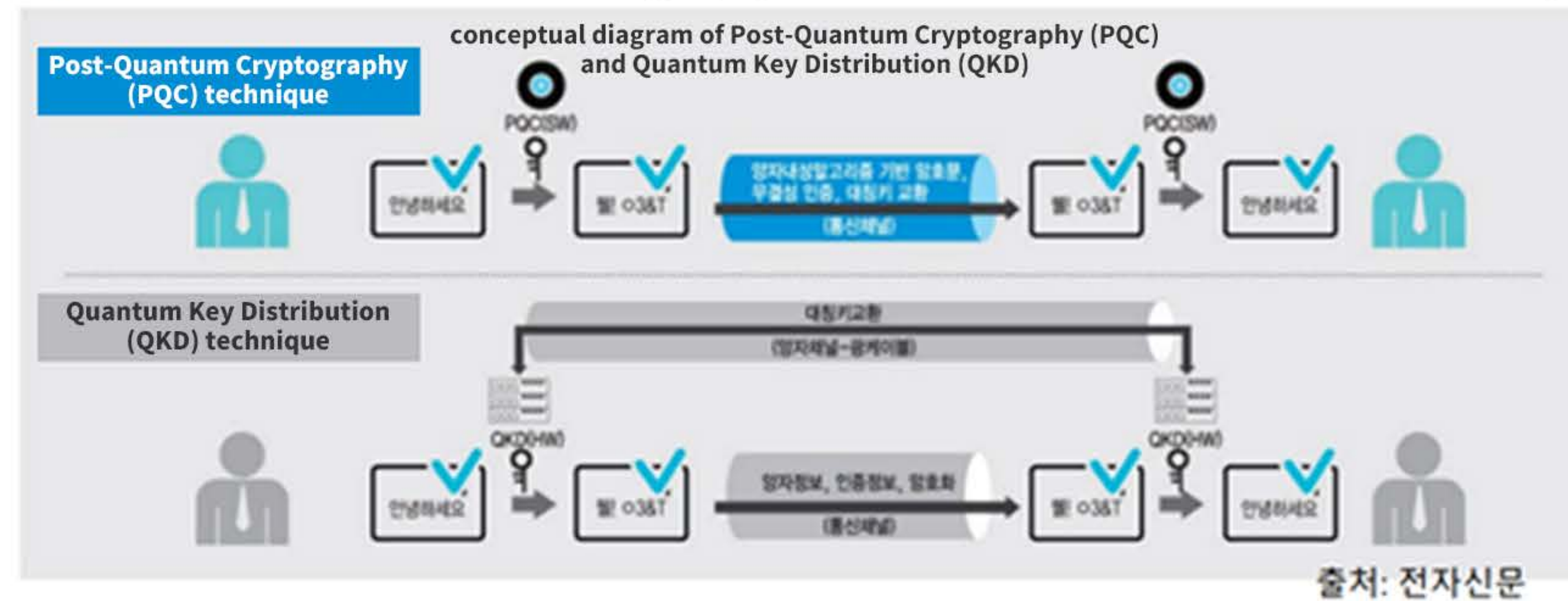


Sensor based hazard monitoring service



## Isomorphic Encryption-Based Quantum Resistance Encryption Technology

### ❖ Differences between Post-Quantum Cryptography (PQC) and Quantum Key Distribution (QKD) techniques



	알고리즘	표준상태	분류	Security	Public	Private	Signature
전자서명	Dilithium	표준	격자기반	128	1,312	2,528	2,420
				256	2,592	4,864	4,595
	Falcon	표준	격자기반	128	897	1,281	690
				256	1,793	2,305	1,330
	SPHINCS+	표준	해시기반	128s	32	64	7,856
				256s	64	128	29,792
	알고리즘	표준상태	분류	Security	Public	Private	Ciphertext
KEM	Kyber	표준	격자기반	128	800	1,632	768
				256	1,568	3,168	1,568
	Classic McEliece	4라운드	부호기반	128	261,120	6,492	128
				256	1,044,992	13,932	240
	BIKE	4라운드	부호기반	128	1,540	280	1,572
				256	5,122	580	5,154
	HQC	4라운드	부호기반	128	2,249	40	4,481
				256	7,245	40	14,469

(단위: bytes)

## Core Development Technology Contents and Advantages

- The quantum resistance cipher applied to this system is the CRYSTALS algorithm and is considered to be applied as KYBER proposed in the KEM method
- Quantum cryptography is a cryptographic technology based on quantum mechanical properties (overlapping, entanglement, and uncertainty) that uses quantum cryptographic key distribution to share secret keys
- Both PQC and isomorphic encryption are based on grid encryption, but isomorphic encryption is used to enhance sensitive information security without data decryption



# 04 Certificate - Patent Certificate



## patent certificate

Rewards-based advertising methods and systems using wearable portable terminals



## patent certificate

Card payment system and payment method that can be checked before a transaction using a wearable portable terminal



## patent certificate

Password free authentication system using sliding



## patent certificate

How to control IoT devices that are not affected by communication status



## patent certificate

Artificial Intelligence Fire Spread Prediction System



## patent certificate

User terminals and computer programs that support deep learning-based indoor map creation and augmented reality indoor navigation



## patent certificate

GCN-based Situation Classification IoT Edge Gateway



## patent certificate

AI Fire Spread Prediction System





program registration card

AI-based enterprise matching software



program registration card

Deep Learning Fire Risk Situation Awareness Management Software



program registration card

Development of a shared kitchen mobile ordering system responsive web/app(for shopkeeper)

- Search for Russian companies, patents, procurement information, matching web application software
- Artificial intelligence based technology theme classification software
- Automatic translation and summary software of AI-based corporate homepages
- Fire fighting facility status monitoring software
- Data-linked integrated security model concept verification software
- Data Access Security Concept Verification Software
- Security Architecture Concept Verification Tense Software
- Kounosoft IoT Edge Gateway Firmware Software
- IoT edge mini firmware software





program registration card

Development of a shared kitchen mobile ordering system responsive web/app(for customer)



program registration card

Artificial Intelligence Gas Leakage Situation Inference Detection Software



program registration card

IoT security application software linked to risk recognition sensors

- Artificial Intelligence Fireworks Situation Inference Detection Software
- Artificial Intelligence Temperature Abnormal Situation Inference Detection Software
- AR Map Generator
- IoT device security firmware update software
- IoT Device Visualization Visualization Visualization Server Software
- IoT Device CA Authentication Management Software
- Sejong Jeongbo Specialist
- Sejong Jeongbo Public Software
- Finger gesture motion recognition software development kit
- A Program for testing the printer board



introduction to the company

# Thank you

