

Vol. 1

Use Cases of Public AI Service

December 2025

TABLE OF CONTENTS

OVERVIEW.....	5
Social Care	
SOCIAL ISSUE 01 Disability-Inclusive Communication Assistance based on Large Multimodal Models (LMM).....	7
SOCIAL ISSUE 02 Development of a Hyper-scale AI-Based Service for Early Identification and Support of Slow Learners	9
SOCIAL ISSUE 03 AI Chatbot Service Based on Child Health Policies	11
SOCIAL ISSUE 04 Ballistocardiogram (BCG)-Based Senior Life Log Monitoring System	13
Low Birth Rate	
SOCIAL ISSUE 05 Establishment of a Fertility Management Service Platform Based on Infertility Big Data	16
SOCIAL ISSUE 06 Region-Specific Smart Integrated Management Service for Pre- and Post-Pregnancy.....	18
Welfare Benefits	
SOCIAL ISSUE 07 Eliminating Welfare Blind Spots through AI-Powered Initial Counseling	20
SOCIAL ISSUE 08 AI-Based Customized Youth Policy Recommendations and Notifications	23
SOCIAL ISSUE 09 Pedestrian Safety Information Service for Persons with Disabilities.....	26
SOCIAL ISSUE 10 Barrier-Free Travel Support Service	28
SOCIAL ISSUE 11 Development and Demonstration of Generative AI-Based Barrier-Free Content Production Technology for Persons with Disabilities, the Elderly, and Others.....	30
Crime Prevention	
SOCIAL ISSUE 12 Support for AI-Based Proactive Response System Against Online Sexual Exploitation of Children and Youth	33
SOCIAL ISSUE 13 Development of a Sexual Crime Crisis Response (Investigation, Safety, Support) Platform	35
SOCIAL ISSUE 14 Establishment of an Integrated Support System for Vacant House Maintenance	37
Economic Activities	
SOCIAL ISSUE 15 Establishment of AI Labor Law Consultation and AI Labor Inspector Support Systems.....	40
SOCIAL ISSUE 16 Development of Specialized Services such as Support for Young Farmers to Settle Down	43

SOCIAL ISSUE 17 AI-Data-Based Customized Public Bidding Recommendations	46
SOCIAL ISSUE 18 Small Business Big Data Platform	49
SOCIAL ISSUE 19 Development of an AI-Based Solution for Recommending Types of Industrial Accidents and Employment Insurance Programs	51
SOCIAL ISSUE 20 Development and Demonstration of AI-Based Integrated Job Search and Recruitment Support Solution	53
SOCIAL ISSUE 21 Development of an AI-Based Quality Grading Solution for Dried Seaweed	54
SOCIAL ISSUE 22 Development of Trade and Investment GPT Service Based on Overseas Country and Certification Information	55
SOCIAL ISSUE 23 World Job Plus AI Demonstration for Citizen Service and Operational Support	57
SOCIAL ISSUE 24 Demonstration of Public Inquiries for Workers' Compensation Insurance Decisions	59
SOCIAL ISSUE 25 Establishing AI Models and Customized Support Platforms for Enterprise-Specific Information	61
SOCIAL ISSUE 26 Food Service Statistics Inquiry Service	63
SOCIAL ISSUE 27 Establishment of an Integrated Mall Management Platform for Small Businesses	65
SOCIAL ISSUE 28 Boosting Exports for Provincial SMEs Using AI Chatbots	66
SOCIAL ISSUE 29 Chatbot Service for Searching Precedents Related to Customs Disputes	68
SOCIAL ISSUE 30 Demonstration of Service for Determining Compliance/Non-Compliance with Employment Rules	70
SOCIAL ISSUE 31 Demonstration of Public Inquiry Response Utilizing Public Inquiry Data, Customs	72
SOCIAL ISSUE 32 HomeTax Comprehensive Income Tax Chatbot Demonstration	73

Healthcare

SOCIAL ISSUE 33 Establishment of a Real-Time Medical Resource Information Platform	76
SOCIAL ISSUE 34 Establishment of a Personal Medical Information Sharing System and Regional	78
SOCIAL ISSUE 35 Viewing and Managing Medical Records, Even from Home	80
SOCIAL ISSUE 36 LLM Chatbot-Based Clinical Trial Participation Information Query System	82

Disaster Response

SOCIAL ISSUE 37 Establishment and Operation of a Data-Based K-Infection Management Support System	84
SOCIAL ISSUE 38 AI-Based Forest Pest Control Support	87

SOCIAL ISSUE 39 AI-Integrated Hazardous Chemical Substance Detection System	89
SOCIAL ISSUE 40 E-Bio Reactivomics-Based AI Monitoring Service for Crop Stress Environments	91
SOCIAL ISSUE 41 AI-Based Condensation Prevention Automation System	93
SOCIAL ISSUE 42 Development of ICT-Based Crowd-Dense Public Data Utilization Management	95
SOCIAL ISSUE 43 Development of an AI-Based Ground Subsidence Detection System for New Building	97
SOCIAL ISSUE 44 Automated Analysis of Aviation Safety Issues: Hyper-Scale AI PoC	99
SOCIAL ISSUE 45 Landslide Risk Prediction Program Using Precipitation Data	101
SOCIAL ISSUE 46 Development of a Fire Access Route and Evacuation Route Guidance System based on the BDAp (Fire Remote Control Service)	103
SOCIAL ISSUE 47 Development of AI Prediction and Control Solution for Fine Dust Reduction in Multi-Use	105

Traffic Safety

SOCIAL ISSUE 48 Hyper-scale AI-Based Urban Rail Transit Safety GPT Service.....	108
SOCIAL ISSUE 49 AI-Based Police Traffic Safety System	110

Environment

SOCIAL ISSUE 50 Development and Demonstration of AI-Based Light Pollution Image Analysis Solution	113
SOCIAL ISSUE 51 Development and Demonstration of an AI-Based National Land Change Detection Solution ...	114
SOCIAL ISSUE 52 Development of the ‘AME’ AI-Based Water Quality Analysis Support System	115
SOCIAL ISSUE 53 Establishment of an Integrated Environmental Information Platform for Public-Private Cooperation in Environmental Management of the Miho River Basin	117
SOCIAL ISSUE 54 Development and Service Demonstration of AI-Based Illegal Banner Detection Technology	119

OVERVIEW

Objective and Approach

The report aimed to address a total of 110 major AI service demonstration cases promoted by the Korean government since 2022 to help each administrative and public institution as a reference case when planning AI tasks and developing services.

The three strategic goals of public AI are '**Solving Social Problems**', '**Innovating Public Service**', '**Improving the Way of Working**', and presenting major technology elements, development contents, performance, and expected effects for AI utilization in each case.

Use Cases

The project represents projects discovered, supported, or planned through the public sector Hyper-scale AI service development project from 2022 to March 2025, serving as representative examples related to Hyper-scale AI among all projects.

Between 2022 and March 2025, a total of 110 public AI service demonstration projects were carried out across sectors below.

- ✔ **Hyper-scale AI Service:** Deploying hyper-scale AI models to enhance government services.
- ✔ **National Dream Project:** Executing a set of high-impact initiatives designed to address major public and corporate needs.
- ✔ **GovTech Startup Support:** Fostering AI-driven GovTech solutions that strengthen public infrastructure.
- ✔ **Digital Government Infrastructure:** Building a data-driven administrative foundation for intelligent service implementation.
- ✔ **Ministry-Collaboration AI Diffusion:** Promoting AI adoption across ministries by sharing models, data, for coordinated government innovation.
- ✔ **Flagship Project:** Integrating AI into core public services and launch high-profile flagship projects to drive nationwide digital transformation.
- ✔ **Digital Government Collaboration:** Fostering cross-sector collaboration between government, private sector, and local governments.

Of these, 54 projects were implemented under the Social Problem Resolution category, focusing primarily on social care, low birth rate, welfare benefits, crime prevention, economic activities, healthcare, disaster response, traffic safety, and environment. A further 37 projects were conducted in the Public Service Innovation category, encompassing areas such as information provision, counseling support and user convenience. In addition, 19 projects were carried out in the Work Method Innovation category, targeting general administration like R&D, documentation, customs clearance, business processing etc.

Overall, these demonstration projects reflect the government's efforts to expand the adoption of AI technologies across diverse public sectors to enhance citizen convenience and improve the quality of public services.

1

Social Care



SOCIAL ISSUE 01

Disability-Inclusive Communication Assistance based on Large Multimodal Models (LMM)

KEY TECHNOLOGICAL FEATURES

- ✓ **Fine-tuning:** Facial expressions, lip movements, upper-body gestures, and voice signals were converted into tokens and used to fine-tune an open-source model Llama 3.0 for the purpose of personalized intent recognition.
- ✓ **Reinforcement Learning from Human Feedback (RLHF):** The model's ability to recognize individual communicative expressions in real-life environments was enhanced through reinforcement learning. Parents and caregivers provided feedback in the form of "correct" or "incorrect" responses to the system's interpretations, which were incorporated into model updates to improve inference accuracy.

OVERVIEW

Although public services leveraging hyper-scale AI such as ChatGPT are gaining popularity, relatively little attention has been paid to developing services for persons with disabilities, particularly those with severe impairments.

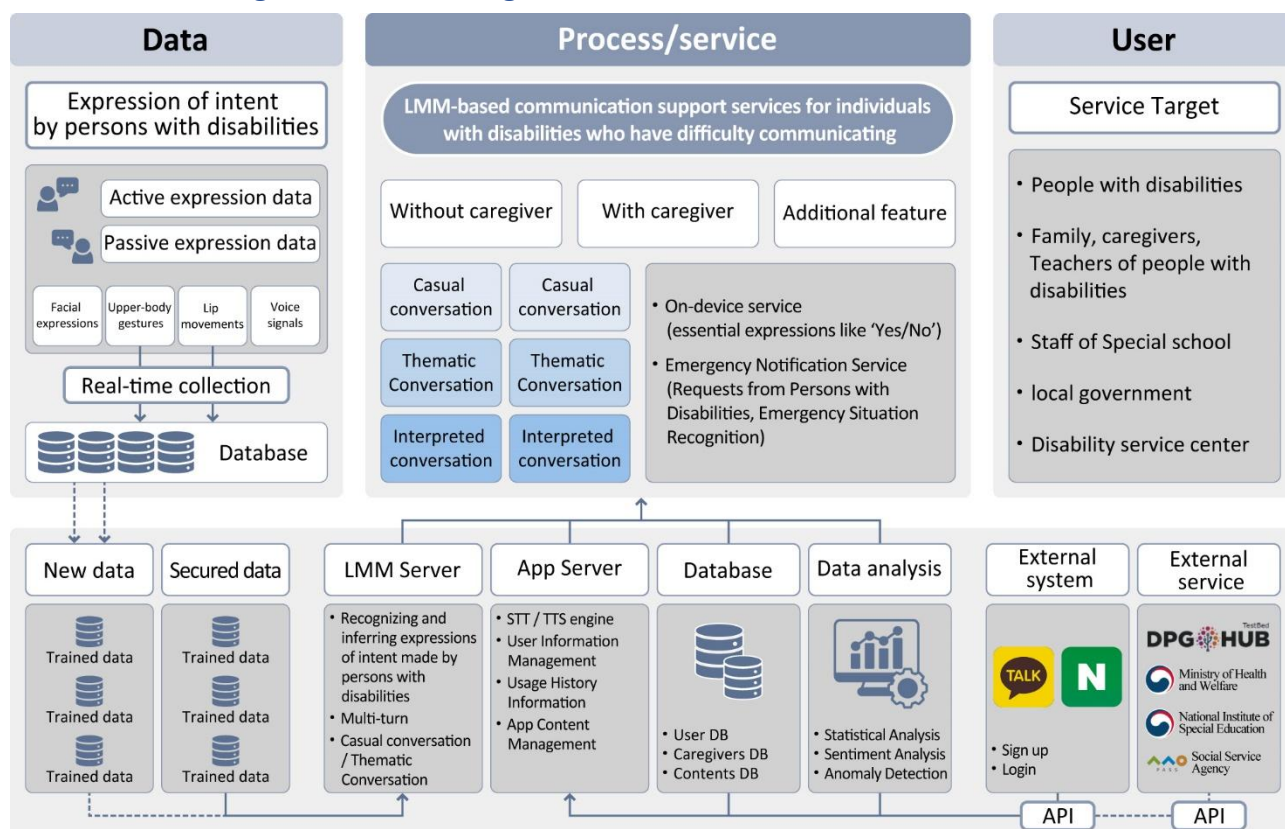
As of 2022, approximately 250,000 individuals with brain lesions and 260,000 with developmental disabilities were reported in Korea. The 2023 Gyeonggi Province Survey on 24-Hour Care for persons with severe developmental disabilities indicated that nearly all respondents were classified as linguistic minorities, experiencing significant communication barriers with the public.

The project aimed to develop a service that supports mutual communication between persons with disabilities who are unable or have difficulty communicating and their parents, caregivers, or other third parties, by utilizing hyper-scale AI technology.

Table 1. Project Detail

Project Category: Hyper-scale AI Service (2024)
Implementing Agency/Partner Organization: Special School, Airpass Co., Ltd., etc.
Project Description A hyper-scale multimodal AI Service was developed to recognize and infer communicative intent of persons with disabilities. Multimodal data—including facial expressions, voice, upper-body gestures, and lip movements—were tokenized and used to fine-tune an open-source model (Llama 3.0). Reinforcement learning incorporating feedback from parents and caregivers in real-life settings further improved the model's personalized recognition capabilities. The resulting service enables two-way communication between persons with disabilities and non-disabled individuals, enhancing daily care and support.

Figure 1.1. Processing flow of communication assistance service



EXPECTED OUTCOMES

By providing communication tools and services that facilitate interaction between persons with disabilities and non-disabled individuals, the project has helped lay the foundation for a lifelong care society and improved labor-intensive care services. For persons with disabilities, the service offered opportunities for learning and enhanced both language acquisition and communication skills. For parents and caregivers, it provided much-needed respite and prevented mental and physical exhaustion.

Data for the project were collected through MOUs with Hanguk Woojin School, Angels' Haven, Korea Parents' Association of Severe Multiple Cerebral Palsy, and Guro Brain Lesion Disability Vision Center. Following the service's development (December, 2024), a satisfaction survey conducted among persons with disabilities and their caregivers who used the service recorded a high satisfaction score of 93.4 points.

SOCIAL ISSUE 02

Development of a Hyper-scale AI-Based Service for Early Identification and Support of Slow Learners

KEY TECHNOLOGICAL FEATURES

- ✓ Establishing a system leveraging RAG (Retrieval Augmented Generation) and LLM (Large Language Model) to support the early detection of slow learners.
- ✓ The RAG module retrieves relevant information in response to user queries, while the LLM generates personalized responses based on the retrieved content.
- ✓ Providing analysis by major cognitive domains (language, memory, perception, attention, processing speed), and implementing real-time consultation by linking a Fast-API-based server with the frontend.

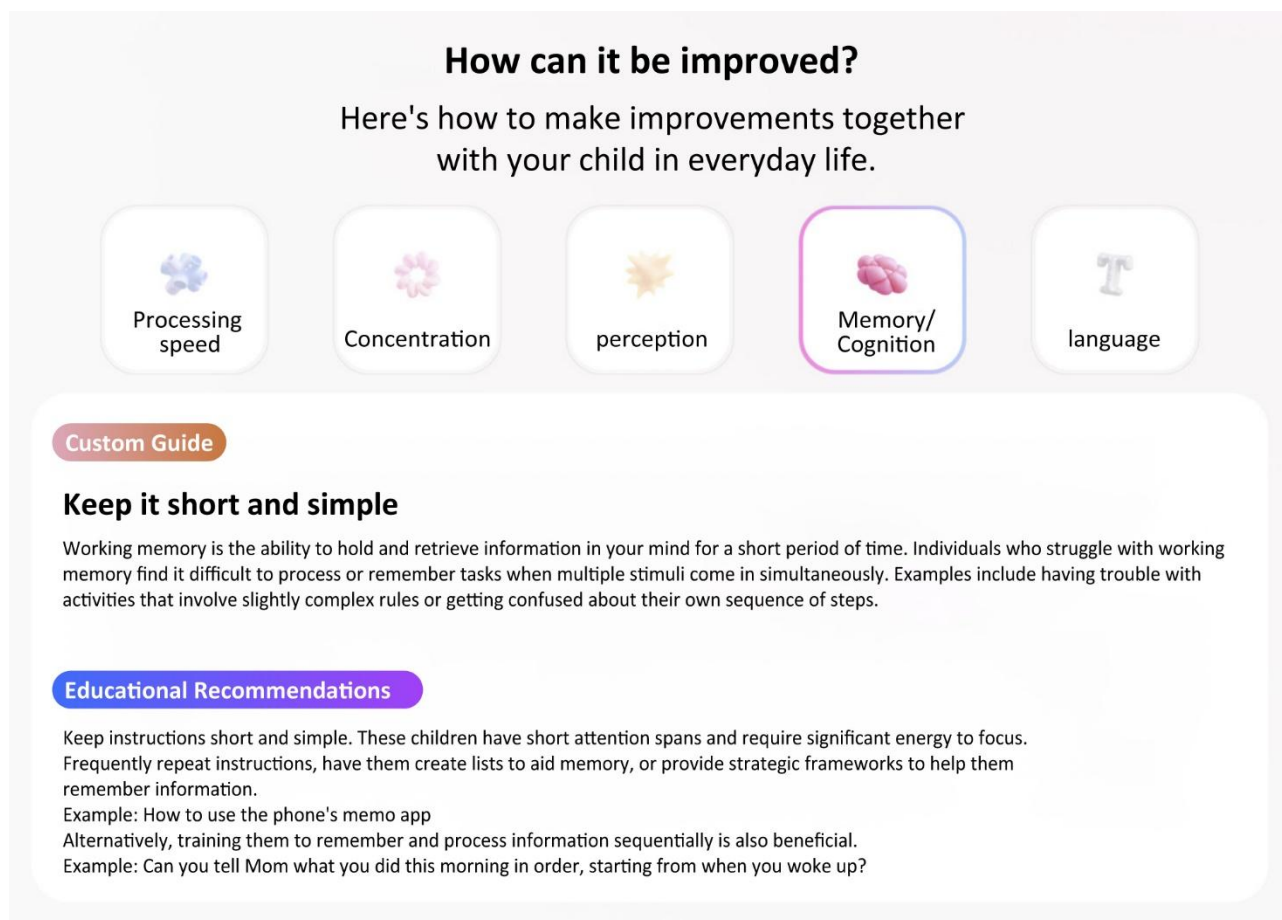
OVERVIEW

As the number of borderline intelligence individuals (slow learners) increases, social issues related to childcare in homes and educational institutions are intensifying. Establishing a proactive prevention system to detect these issues early is crucial. The service utilizes cutting-edge AI technologies such as RAG (Retrieval Augmented Generation) and LLM (Large Language Model). This service assists parents in recognizing their children's developmental and learning challenges early on and enables timely intervention. It is expected to minimize learning gaps for slow learners and contribute to ensuring more children receive appropriate support.

Table 2. Project Detail

Project Category: Hyper-scale AI Service (2024)
Implementing Agency/Partner Organization: Chonnam National University Children's Hospital, Jaranda Co., Ltd., etc.
Project Description The goal is to build an optimized AI system through data accumulation and processing, AI model training, and validation to develop a service supporting the early detection of slow learners. First, behavioral data of slow learners will be collected and processed to build a RAG-based question-answering dataset. Subsequently, pre-training and fine-tuning will be performed to enable effective LLM learning, followed by iterative validation and improvement processes to enhance the model's response accuracy. The primary service processing method operates by having RAG retrieve relevant information based on questions entered by parents, with an LLM then providing customized responses based on this information. The analysis targets key cognitive domains such as language, memory, perception, concentration, and processing speed. It supports real-time counseling by linking a FastAPI-based server with the frontend. This enables the early identification of children requiring learning support and assists parents in implementing appropriate interventions.

Figure 2.1. Childcare app



EXPECTED OUTCOMES

The service enables parents to more easily understand their children's learning difficulties and receive expert-level advice, thereby improving the home learning environment. For public officials and educational institutions, accumulated data can be leveraged to more effectively identify children requiring policy support, enabling the establishment of personalized educational policies. Furthermore, this system enhances accuracy through continuous data learning, increasing its scalability for future use in education and counseling fields. Based on these achievements, it is being supplied to up to 200 caregivers within the Seoul Metropolitan Government's Borderline Intelligence Program from 2024 to March 2025.

SOCIAL ISSUE 03

AI Chatbot Service Based on Child Health Policies

 KEY TECHNOLOGICAL FEATURES

- ✓ Implemented with advanced Q&A capabilities using a CLOVA X LLM-based model grounded in natural language understanding (NLU) technology
- ✓ Enhanced information retrieval accuracy by configuring an independent RAG (Retrieval-Augmented Generation) module.
- ✓ Integrated real-time data retrieval with generative AI responses for improved user experience.

 OVERVIEW

The annual unmet medical care rate in Gimhae City, with a population of 560,000, stands at 12.7%, which is significantly higher than the national average of 5.3%.

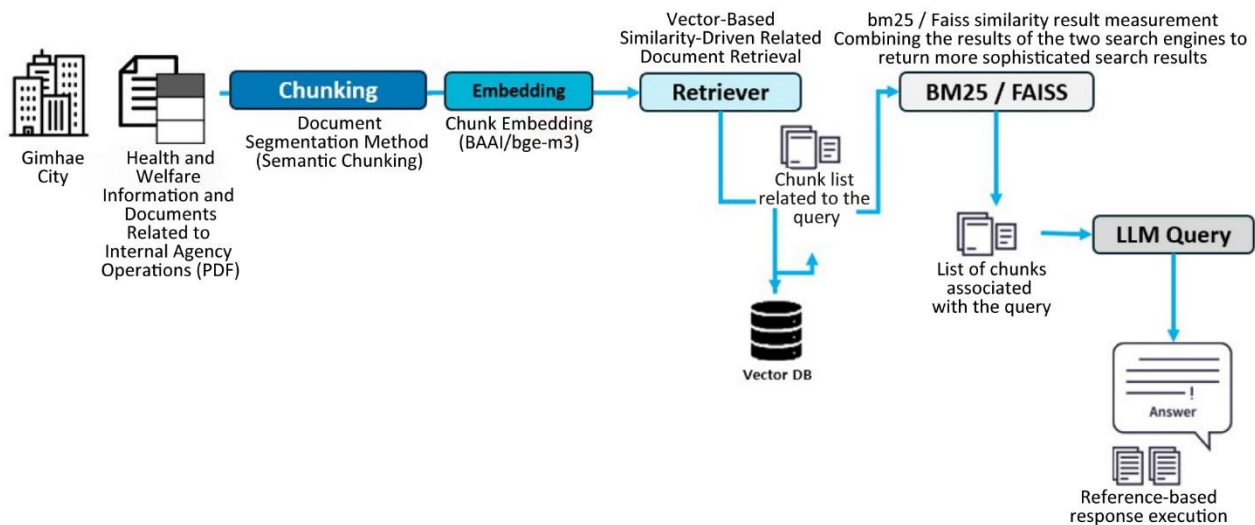
This rate is particularly high among people in their 20s to 40s, who represent the primary child-rearing generation. Limited access to pregnancy, childbirth, and pediatric healthcare services can adversely affect children's overall health management.

To address this issue, the project aims to develop a practical mobile application that provides child health management information using hyper-scale AI technologies, enabling all caregivers to conveniently access essential healthcare guidance anytime, anywhere.

Table 3. Project Detail

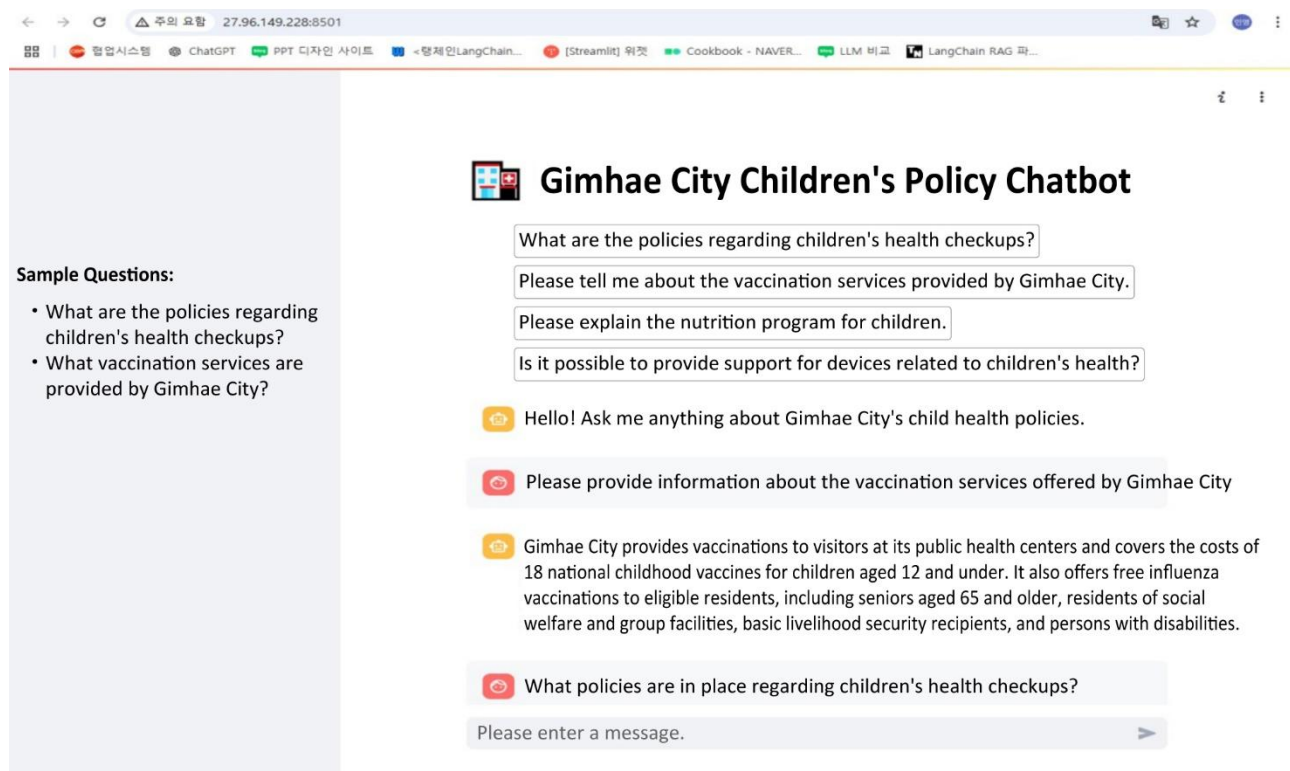
Project Category: Hyper-scale AI Service (2024)
Implementing Agency/Partner Organization: Gimhae City
Project Description A 240MB PDF document containing 33 child health and welfare policy items was processed through text and image analysis as well as OCR technology, and subsequently trained using the Hyper CLOVA-X AI model. This allowed the development of a child health policy chatbot capable of handling natural—language Q&A related to child healthcare and welfare services. The system employs CLOVA Studio's RAG technology to search for documents similar to user queries in real time, enabling the AI to generate contextually accurate responses based on relevant reference materials.

Figure 3.1. Processing flow of communication assistance service



The Chatbot offers personalized, AI-based consultation on child health policies, enabling citizens to access real-time information on support programs, vaccination schedules, and application procedures at any time.

Figure 3.2. Demonstration of AI chatbot service



EXPECTED OUTCOMES

The service is expected to bridge information gaps among parents' and improve access to healthcare services. By automating health and welfare policy guidance through AI, the system will reduce administrative workload, enhance response accuracy, and increase overall service efficiency.

SOCIAL ISSUE 04

Ballistocardiogram (BCG)-Based Senior Life Log Monitoring System

 KEY TECHNOLOGICAL FEATURES

- ✓ **Non-contact Heartbeat detection based on Ballistocardiogram (BCG):** Analyzes health conditions by non-contact measurement of biochemical gradient.
- ✓ **AI-Based Biosignal Analysis Algorithm:** Predicts health risks by analyzing heart rate variability (HRV) and breathing patterns.
- ✓ **Emergency Detection and Automatic Notification System:** Enables immediate connection to emergency services through real-time health monitoring
- ✓ **Integration with Public Data and Welfare Service:** Operates in conjunction with regional health and welfare data for comprehensive senior care.

 OVERVIEW

As society rapidly ages, the demand for senior care services is growing. Traditional approaches to elderly health management systems primarily focus on physical health, offering limited support for emotional and psychological well-being. In addition, wearable health devices are often uncomfortable, leading to low user adherence among seniors.

To address these challenges, *Clomental* was developed — a non-contact biosignal monitoring system that continuously tracks seniors' physiological status and enables immediate emergency response when abnormalities are detected.

Table 4. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Gyeongsangnam-do Public Agency for Social Service, Dolbom-Dream, etc.
Project Description The system collects and analyzes seniors' biosignal data in real time, offering personalized health management and emergency response functions. ✓ Non-contact Ballistocardiogram (BCG) Sensor-based Vital Sign Monitoring – Clomental monitors seniors' health status by capturing ballistocardiogram data without physical contact. It analyzes indicators such as heart rate variability (HRV) and respiratory patterns to detect potential health issues and provides personalized care recommendations. ✓ AI-Based Biosignal Analysis and Health Prediction – By applying AI algorithms to the collected data, the system identifies health risk factors, supporting early detection of abnormalities and enabling prompt response. ✓ Emergency Detection and Automatic Notification – Upon detecting abnormal signals, the system automatically alerts caregivers and welfare agencies. If necessary, it connects to emergency services, ensuring the safety of elderly individuals living alone or in high-risk conditions.

✓ Integration with Public Data and Welfare Systems

- Through collaboration with the Gyeongsangnam-do Public Agency for Social Service, the system integrates health and welfare data to provide personalized welfare services.

Figure 4.1. Before and after implementation (AS-IS vs TO-BE)

Before (AS-IS)			After (TO-BE)		
Multi-monitoring  Difficulty of single caregiver to monitor multiple elderly individuals simultaneously.	Real-time data  Difficulty responding in real time to emergencies such as falls, cardiac arrest, and respiratory distress	Emotional Management and Support  Loneliness due to reduced social activities Difficulty managing depression, anxiety, and stress	 Real-time monitoring via smart devices	 Providing personalized services for accurate data analysis	 Problem Prediction and Emergency Notification
A single caregiver struggles to monitor multiple seniors indoors, respond to emergencies in real time, and provide emotional care simultaneously.			Enables highly accurate real-time response even from outside facilities; offers better practicality and responsiveness compared to AI speakers or other passive devices.		



EXPECTED OUTCOMES

The project enhances the overall level of elderly health management and emergency response capacity.

Additionally, by leveraging public data to deliver personalized care services, the project improves welfare service efficiency and contributes to the creation of a safe, data-driven senior care ecosystem.

Low Birth Rate



SOCIAL ISSUE 05

Establishment of a Fertility Management Service Platform Based on Infertility Big Data

KEY TECHNOLOGICAL FEATURES

- ✓ **Machine Learning and Data Mining-Based Predictive Model:** Predicts pregnancy likelihood by training AI models using infertility treatment and lifestyle data, analyzing infertility factors, and providing optimal solutions.
- ✓ **Core Algorithms:** Random Forest (RF), XGBoost
- ✓ **Utilizing Data Lake:** Model performance optimized using SparklingSoDA

OVERVIEW

In response to Korea's declining fertility rate, the project utilized AI-driven analysis of infertility treatment data to develop an innovative digital fertility management service.

The service seeks to develop an innovative digital platform that boost fertility through:

- ① Predicting pregnancy likelihood and providing solutions based on infertility data
- ② Building an innovative platform to enhance fertility, by providing self-management services based on lifestyle and health management factors.

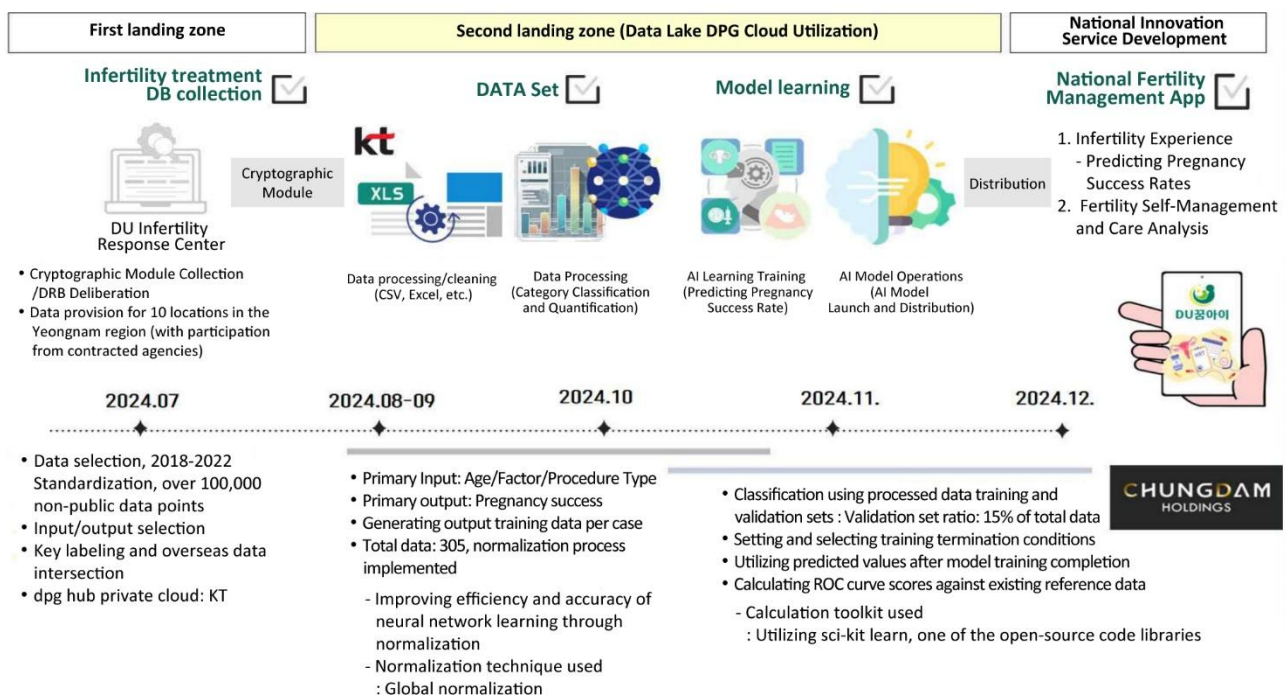
Table 5. Project Detail

Project Category: Digital Government Infrastructure (2023-2024)	
Implementing Agency/Partner Organization: Daegu University Industry-Academy Cooperation Foundation	
Project Description In 2024, South Korea entered the ranks of countries with an ultra-low birth rate. As of the fourth quarter of 2023, the total fertility rate reached a record low of 0.65. Despite the government's various birth support policies, the birth rate continues to decline. Meanwhile, the number of people diagnosed with infertility and the number of procedures performed are rapidly increasing. However, due to a lack of awareness and support for fertility management to achieve pregnancy, effective responses are not being implemented. Therefore, this project aims to develop innovative services, such as pregnancy probability prediction and fertility management services, by introducing big data and AI technologies.	
✓ Data Collection and Processing – Collected and refined infertility treatment data accumulated from 2018 to 2023 at eight medical institutions in the Yeongnam region and established a big data-based analysis environment. The main data types are infertility treatments history, patient health status, and treatment response data. This data was standardized and integrated into a data lake. ✓ Dataset Composition – After review by the Busan Pseudonymised Data Utilization Center, pseudonymization was performed, and data labeling for machine learning was conducted. Subsequently, to enhance the accuracy of pregnancy probability prediction, external health data, genetic information, and lifestyle habit data were linked and combined to enable multidimensional analysis.	

✓ AI Model Training Design

- The constructed dataset was designed to enable AI model training, comprising refined infertility treatment data, health information, and environmental factor data. This established the foundation for developing a more reliable pregnancy probability prediction model.

Figure 5.1. Development process of innovative fertility management service



EXPECTED OUTCOMES

By digitizing previously handwritten infertility treatment data, approximately 35,000 records from medical institutions were selected, refined, accumulated, and shared. Based on this dataset, the service provides daily care support for infertile individuals and predicts fertility success rates.

By managing information such as infertility treatment history and women's occupational data, the service established the foundation for providing personalized health management solutions that enhance fertility outcomes for individuals facing infertility.

Furthermore, it contributed to raising public awareness about infertility prevention and reproductive health through a self-diagnosis feature available to the public.

Evaluation of the AI algorithm model for predicting pregnancy success rates achieved an accuracy exceeding 90%. Through continuous outreach and dissemination, it contributed to improving public awareness regarding infertility prevention and health management.

Moving forward, the project will continue to collect and refine additional infertility and fertility-related data to further enhance the performance of its AI learning models. Continuous improvement of the algorithms will enable more accurate and effective data analysis and utilization.

To scale the service beyond the current Daegu and Gyeongbuk regions, the project plans to establish a nationwide collaboration network with public health centers and hospitals, and to develop a user-friendly platform accessible via both mobile and web interfaces.

SOCIAL ISSUE 06

Region-Specific Smart Integrated Management Service for Pre- and Post-Pregnancy

KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Pregnancy Prediction and Health Analysis Model:** Analyzes user data to predict fertility and health status
- ✓ **Region-Specific Medical and Welfare Information Provision:** Providing customized information linked to medical and welfare services in the user's residential area
- ✓ **Real-time Data Analysis and Monitoring System:** Analyzes changes in the user's health status in real time to provide personalized guidance
- ✓ **Smart Chatbot and AI Consultation Features:** AI consultation features that address pregnancy and childbirth-related questions

OVERVIEW

Pregnancy and childbirth are processes that significantly impact women's health, making proper management essential. However, existing pregnancy and childbirth management services focus heavily on providing standardized information, while customized services linked to individual health conditions or regional medical and welfare services remain insufficient. This project utilizes AI technology to analyze individual health data and provides customized pre- and post-pregnancy management solutions reflecting regional medical and welfare services. This enables support for safer and more systematic pregnancy and childbirth management.

Table 6. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Dable Inc.
Project Description This service provides customized pre- and post-pregnancy health management solutions tailored to the user's health status and regional characteristics. It delivers real-time information, analyzes risk factors, and supports appropriate responses. ✓ Development of AI-based Pregnancy Probability Prediction and Health Analysis Model – Predicts pregnancy probability based on user health data and analyzes fertility and health status. This enables the provision of personalized health management guidance and suggests lifestyle improvement plans for users with low pregnancy probability. ✓ Regional Customized Medical and Welfare Service Integration – Based on the user's residential area, it provides information on nearby hospitals, public health centers, and postpartum care centers, while also guiding users to available support programs and welfare services in that region. This supports more systematic pregnancy and childbirth management. ✓ Real-time Data Analysis and Monitoring System: – Analyzes user-input data in real time, monitors changes in health status, and recommends appropriate actions. Additionally, provides notifications recommending visits to medical institutions when specific health abnormalities are detected.

- ✓ **AI-Based Smart Chatbot and Counseling Functionality:**
 - Utilizes AI chatbots to provide Q&A on pregnancy and childbirth, automatically recommending personalized health guidance. This enables users to easily access necessary information before and after pregnancy and respond promptly.

EXPECTED OUTCOMES

This system enables more systematic health management before and after pregnancy, ensuring the health and safety of expectant mothers by linking with regional medical and welfare services. Additionally, real-time health monitoring and AI consultation capabilities allow for faster and more effective responses.

Figure 6.1. Before and after implementation (AS-IS vs TO-BE)

Before (AS-IS)		After (TO-BE)	
Current Status of the Problem	Existing Solutions	Recommended Solution	
Low procedure success rate (30%) Infertility-related depression/anxiety (50%)	Reducing the burden of procedures (support for hospital/test fees) Infertility counseling support (Infertility Depression Counseling Center, etc.)	Requires a precision care perspective Early Overcoming of Infertility, Preemptive Prevention, Tailored Policies Pregnancy, Childbirth, and Healthy Family Formation at Desired Times Reducing the Number of Infertility Treatments and Improving Quality of Life Through Tailored Policies 	
Average number of infertility treatments per person: 8 times Quality of life remains unchanged (Frequent hospital visits, career interruptions due to treatment failures, and other issues arise)		 <pre> graph LR A((Overcoming Infertility Preparing for Pregnancy)) --> B((Visit the Infertility/ Obstetrics and Gynecology Consultation Center)) B --> C((Pregnancy/ Childbirth Newborn Care)) C --> D((Childcare Child Development)) D --> E((Life Log Data Integration)) </pre>	
Cost support focused on treatment, such as hospital expense assistance after infertility diagnosis and counseling for infertility-related depression		Enhance pregnancy efficiency through early prediction and intervention for infertility, preemptively addressing emotional difficulties during the infertility process, and efficient linkage throughout the pregnancy and childbirth journey	



SOCIAL ISSUE 07

Eliminating Welfare Blind Spots through AI-Powered Initial Counseling

KEY TECHNOLOGICAL FEATURES

- ✓ An AI voice bot (interactive scenario-based voice bot) automatically calls crisis households from an AI-powered initial consultation information system to conduct scenario-based counseling
 - After common questions (short-answer, essay-type) related to health, economic, employment, and care crises, additional questions regarding crisis information are performed
 - Classifies crisis types using 47 types of crisis information (e.g., power/water disconnection) via STT (Speech-To-Text), TTS (Text-to-Speech), standardized counseling task grouping, and bot-to-bot scenario BPM (counseling process reassembly) functionality

OVERVIEW

The AI-powered initial counseling service provides AI-based initial counseling to high-risk households vulnerable to power, water, or gas disconnections (selected based on big data) and welfare crisis subjects reported via the welfare crisis alert app. This supports access to necessary welfare services or benefits.

The wide range of social security programs, combined with complex eligibility criteria, has resulted in persistent cases in which individuals fail to receive welfare benefits due to a lack of awareness of the system. This project was implemented to efficiently and proactively identify welfare blind spots and streamline the welfare delivery system.

Table 7. Project Detail

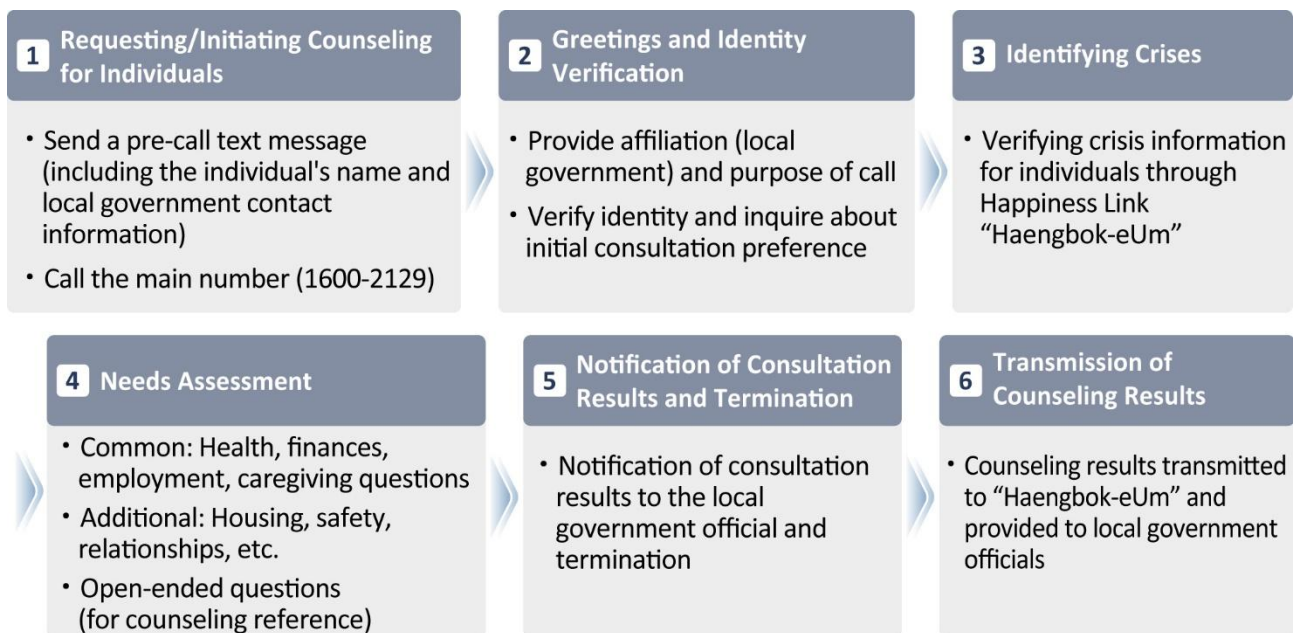
Project Category: National Dream Project (2022-2023)
Implementing Agency/Partner Organization: Ministry of Health and Welfare, Korea Social Security Information Service, etc.
Project Description Individuals identified as welfare crisis cases through big data analysis of utility disconnections (electricity, water, gas) and reports via the welfare crisis alert app receive preemptive SMS notifications. AI then initiates an initial consultation call to the individual. During the call, the nature of the crisis and welfare needs—such as health, economic, employment, housing, and safety—are assessed. The consultation results are then transmitted to the responsible local government official. Based on the AI initial consultation results, the local government reviews and provides in-depth counseling and necessary welfare service support.

Figure 7.1. System overview



*System Operating Agency: Korea Social Security Information Service (SSIS)

Figure 7.2. AI initial consultation scenario flow



EXPECTED OUTCOMES

Following pilot operations in select local governments starting December 2023, the service was fully launched nationwide across all 229 local governments starting November 2024. In 2024, initial AI consultations were provided to 220,000 people, with plans to expand to 500,000 people annually in 2025.

By utilizing big data analysis, AI initial consultations, and welfare crisis alert apps, this project can more swiftly identify households in crisis. By linking scattered public and private welfare resources and services to provide necessary support, this project can eliminate welfare blind spots and strengthen the welfare safety net. Furthermore, AI phone consultations will support initial counseling tasks, and data-driven rapid customized welfare services are expected to enhance administrative efficiency.

SOCIAL ISSUE 08

AI-Based Customized Youth Policy Recommendations and Notifications

 KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Policy Recommendation and Application Automation:** Utilizes our proprietary recommendation model (AI) to suggest policies tailored to user profiles, with key policies enabling seamless in-platform application via the developer's DLP (Direct Link Policy) technology*
 - * Enables streamlined and efficient policy linkage, seamlessly connecting users from policy exploration to application within the Wello platform flow
- ✓ **Data Integration and Authentication System:** Utilizes patented technology to collect, classify, and analyze nationwide policies. Integrates with an authentication system to automate eligibility verification and application processing.
- ✓ **Customized Policy Guidance and Notification Feature:** Only policies matching eligibility criteria are selected and delivered to users via real-time notifications.

 OVERVIEW

Youth policies are operated separately by central government ministries, local governments, and public institutions, resulting in fragmented policy information that makes it difficult for users to find policies suited to their needs. Furthermore, existing policy platforms are limited to simple viewing and keyword-based search functions, making it challenging to quickly explore and identify policies appropriate for one's specific situation among the vast array available.

Based on private platforms frequently used by young people, the service automatically collects and categorizes youth policy data nationwide. It recommends personalized policies using AI technology. Furthermore, eligible policies can be easily applied for within the platform via DLP (Direct Link Policy) technology, while real-time notifications for key policies ensure young people receive benefits in a timely manner.

Table 8. Project Detail

Project Category: National Dream Project (2023)
Implementing Agency/Partner Organization: Ministry of Science and ICT, Wello Co., Ltd., etc.
Project Description The Youth Policy Customized Platform collects and categorizes youth policies through private platforms to provide tailored recommendations, offering a one-stop service where key policies can be applied for directly. ✓ Integrated Youth Support Policy Search: – Policy data from central government ministries, local governments, and other institutions are being collected and maintained on a daily basis, enabling users to search for various youth support policies in one integrated location. ✓ Customized Policy Recommendations: – Based on profile data such as age, housing type, and income level, AI-based analysis considers young people's diverse and complex situations to recommend personalized policies optimized for each

individual

✓ Simplified Application Service:

– For key policies, this project will build and integrate application service APIs to enable convenient one-stop applications directly within private platforms.

* Korea Student Aid Foundation 'Post-Employment Repayment Student Loan Borrower Reporting Service', Jeju Special Self-Governing Province 'Youth Dream Counseling Application Service'.

✓ Policy Support Grant Notification Service

– This project provides a Policy Support Grant Notification Service that quickly identifies personalized policy support grants by comparing individual profile information with policy data, linked with KB Pay.

✓ Community Service:

– This project provides community features where users can freely share opinions not only on policy-related information but also on all aspects of daily life, thereby activating policy participation and information sharing among users.

Figure 8.1. Policy recommendation app

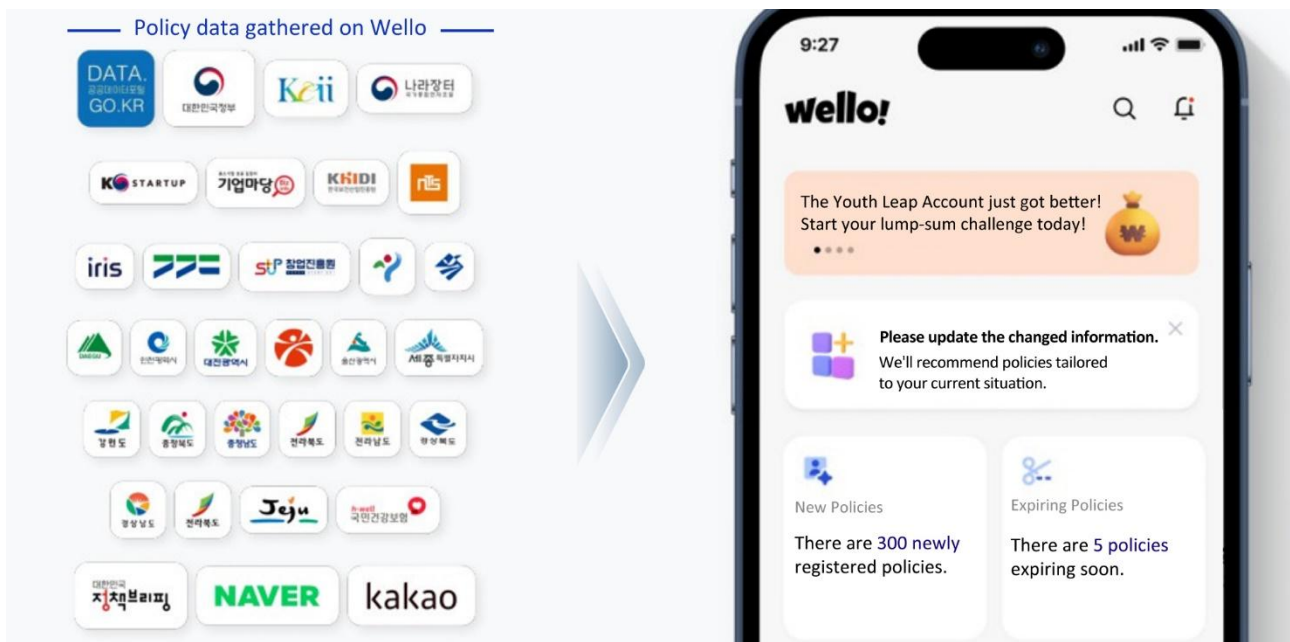
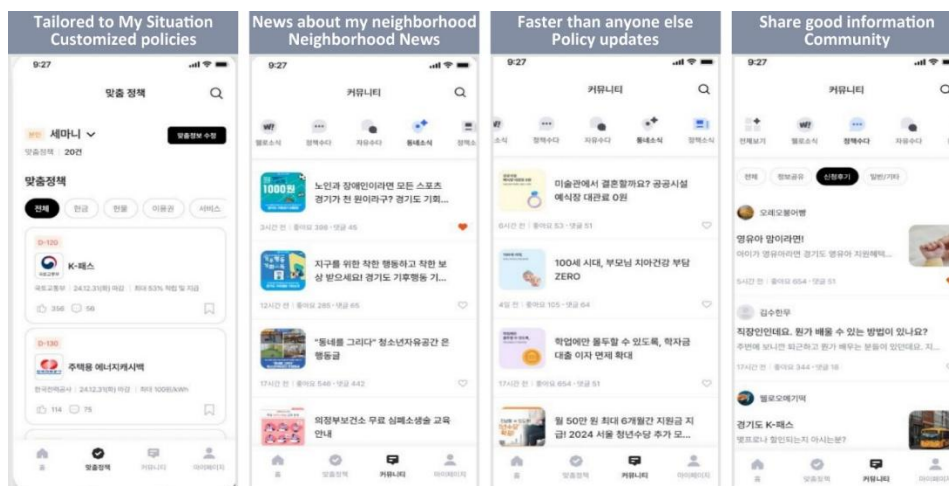


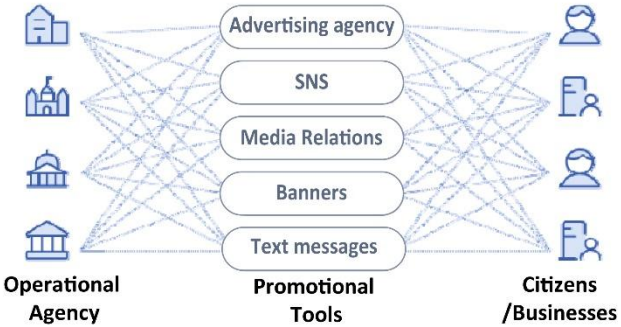
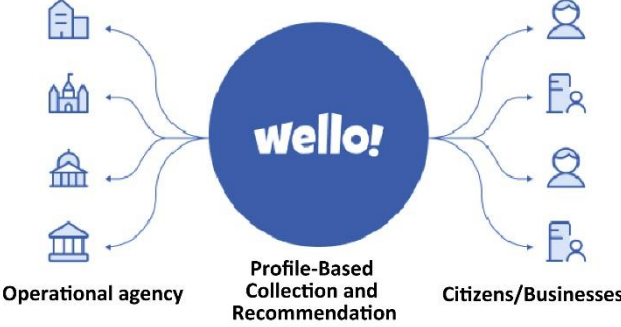
Figure 8.2. Policy recommendation app



EXPECTED OUTCOMES

The service enables parents to more easily understand their children's learning difficulties and receive expert-level advice, thereby improving the home learning environment. For public officials and educational institutions, accumulated data can be leveraged to more effectively identify children requiring policy support, enabling the establishment of personalized educational policies. Furthermore, this system enhances accuracy through continuous data learning, increasing its scalability for future use in education and counseling fields. Based on these achievements, it is being supplied to up to 200 caregivers within the Seoul Metropolitan Government's Borderline Intelligence Program from 2024 to March 2025.

Figure 8.3. Before and after implementation (AS-IS vs TO-BE)

Before Implementation (AS-IS)	After Implementation (TO-BE)
Information that doesn't apply to me is being delivered Increased policy promotion costs even to people who aren't the target audience 63% are unaware of support measures, 75% are unable to apply  Operational Agency Promotional Tools Citizens/Businesses Policies issued by numerous institutions through various channels	Recommend only information tailored to me Check, apply, and manage all in one channel  Operational agency Profile-Based Collection and Recommendation Citizens/Businesses Connecting individuals, businesses, and institutions through data systems
(Current) Many cases where citizens fail to receive benefits due to lack of awareness of policies and complex application processes	(Improved) Effective search for government policies, establishment of an automated application system, and simplification of support policy application procedures

SOCIAL ISSUE 09

Pedestrian Safety Information Service for Persons with Disabilities

 KEY TECHNOLOGICAL FEATURES

- ✓ **AI-based Route Optimization Algorithm:** Provides personalized walking routes by learning walking patterns for each disability type; AI analyzes real-time traffic and terrain data to recommend optimal travel paths
- ✓ **Geographic Information System (GIS) Integration:** Links accessibility data for public and private facilities with GIS to evaluate accessibility, analyzes facility-specific access feasibility, and provides real-time updates for the latest information
- ✓ **Real-time Data Updates and Navigation:** Enhances mobility for people with disabilities by providing transportation information such as bus stops and subway stations. Guides optimal routes reflecting real-time variables like road construction and elevator malfunctions

 OVERVIEW

Domestic map services focus primarily on route guidance for general pedestrians, presenting limitations that make them difficult for transportation-disadvantaged individuals such as the visually impaired and physically disabled to use. Furthermore, insufficient pedestrian pathways and safety facilities for the disabled persistently cause problems, such as difficulty entering buildings due to narrow thresholds.

Particularly, pedestrian route information for persons with disabilities often fails to reflect the accessibility status of individual facilities, frequently leading to inconvenience when encountering unexpected obstacles during travel. Therefore, this project developed a pedestrian safety information provision system for persons with disabilities, based on AI analysis, to support optimal route guidance.

Table 9. Project Detail

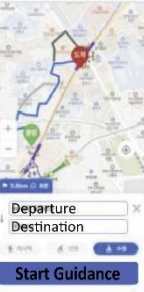
Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: LBS Tech Co., Ltd.
Project Description This system provides optimized walking navigation tailored to specific disability types, supporting safe mobility for individuals with visual and physical disabilities. ✓ AI-Based Optimal Walking Route Guidance – It guides users along AI-based optimal walking routes tailored to the specific walking characteristics of each disability type, such as visual or physical impairments. It also provides real-time movement routes that comprehensively consider road conditions, sidewalk width, and the presence of obstacles. ✓ Providing Public Transportation Accessibility Information – By analyzing and providing real-time availability of bus stops, subway stations, and other facilities, it enhances mobility for people with disabilities. It also improves public transportation convenience by providing detailed information such as the presence of elevators and ramps. ✓ Providing Accessibility Information for Public and Convenience Facilities

- AI analyzes the accessibility of hospitals, public institutions, cultural facilities, and more to enhance the convenience of daily life for people with disabilities. It also provides practical mobility support by offering information on facility operating hours, access routes, and dedicated entrances for people with disabilities.

EXPECTED OUTCOMES

It is expected that the user base for this specialized navigation system, designed not only for persons with disabilities but also for those with walking difficulties, will expand to include general pedestrians. Furthermore, it can be extended to various fields such as smart city welfare platforms and barrier-free tourism services.

Figure 9.1. Before and after implementation (AS-IS vs TO-BE)

Before (AS-IS)				After (TO-BE)			
Road  98%	Sidewalk  Less than 50%	Private facilities  55%	Public facilities  49%	 Guidance for People with Disabilities	Guidance provides navigation for individuals with low vision and physical disabilities  NEXT	It enables users to reach their destination quickly and safely via customized routes  NEXT	 Start Guidance
Pedestrian Path Information Collection Status				Accessibility and Guidance Facilities for Persons with Disabilities			
Insufficient guidance facilities for pedestrian paths and disabled safety facilities; absence of navigation services for safe pedestrian routes for the disabled				Accessibility information for customized routes, facilities, and public transportation can be provided through a unified pedestrian system offering a seamless experience			

SOCIAL ISSUE 10

Barrier-Free Travel Support Service

 KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Route Optimization Algorithm:** Deriving Optimal Travel Routes Through Intermodal Transportation Integration
- ✓ **Development API:** Low-floor bus route information, barrier-free train information lookup, mobility-impaired passenger lookup, taxi call list lookup, operation history lookup

 OVERVIEW

In 2021, the number of registered persons with disabilities in Korea was 2,644,700, accounting for 5.12% of the total population. However, due to inadequate mobility rights guarantees, persons with disabilities require 2 to 3 times longer travel times compared to non-disabled individuals, and 45.3% go out three times or less per month. Accordingly, to improve the quality of life and convenience for transportation-disadvantaged individuals, it is necessary to derive optimal travel routes through the integration of various transportation modes and provide comprehensive services (barrier-free services) such as call and reservation systems. To this end, this project developed and opened an API, and utilized it to develop public transportation information guidance and taxi services for transportation-disadvantaged individuals.

Table 10. Project Detail

Project Category: Digital Government Infrastructure (2023)
Implementing Agency/Partner Organization: Konatus, etc.
Project Description The System was developed to open the necessary APIs for the service, enabling high-utilization private taxi platforms (such as KakaoT and T Map Taxi) to easily integrate public taxi features for transportation-disadvantaged individuals. ✓ Transportation Accessibility API Development – The project developed and released an API that provides mobility-support data for people with disabilities, allowing integration with commercial navigation services. The public transportation API provides information on fixed-route, scheduled public transportation such as buses and trains available along the route to the destination. The taxi API developed functions such as taxi hailing based on user information and data retrieval for voucher payments to provide services linked with local governments. ✓ Implementation of Taxi Services for Transportation-Disadvantaged Individuals – The service includes an app that provides welfare taxi service information near the departure location for individuals with mobility challenges and supports voucher payments and settlements for local governments. ✓ Platform Enhancement – The platform was enhanced to allow private taxi-hailing services (such as KakaoT) to provide functions like reservation and hailing for local government welfare taxi services. Additionally, for persons with disabilities. The project also plans to develop a demand forecasting service model that analyzes boarding information using AI to minimize taxi waiting times for call taxi users and thereby enhance satisfaction.

Figure 10.1 Project overview

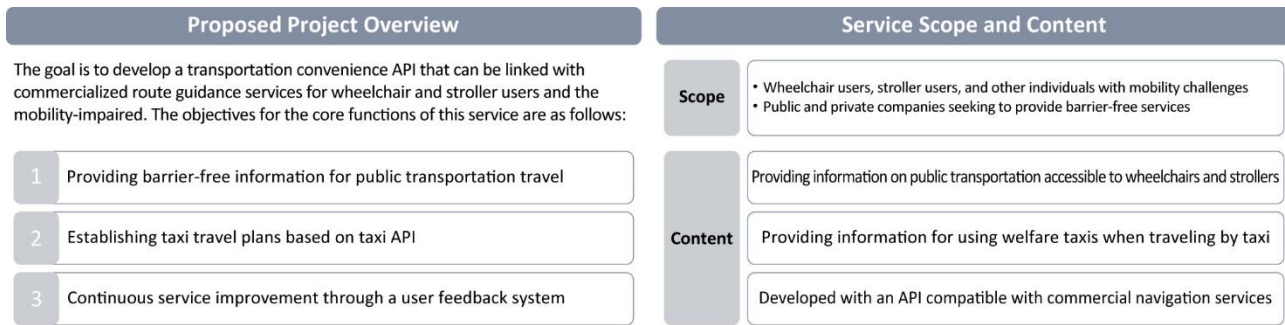
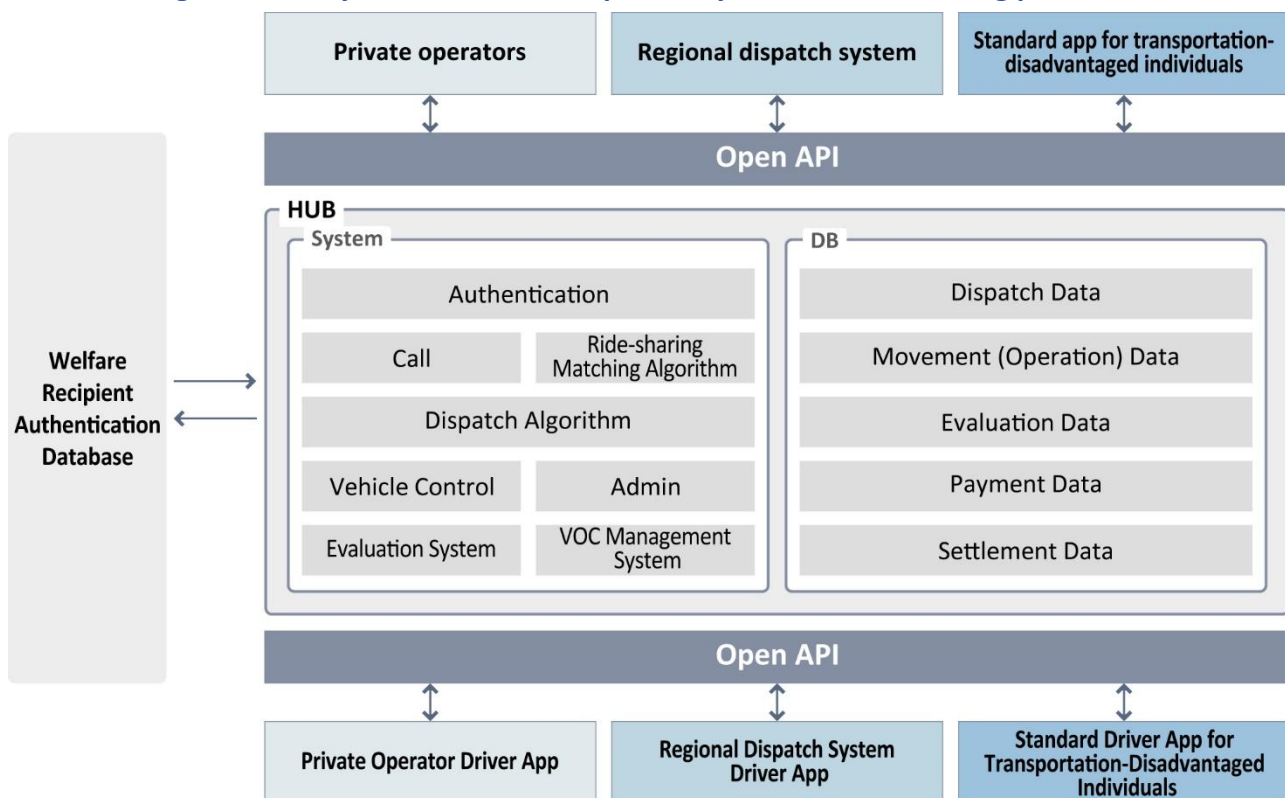


Figure 10.2 List of newly developed and opened APIs

List of Newly Developed and Opened APIs	Public Transportation API	① Low-floor bus operation information API along travel routes ② Barrier-free train information query API
	Taxi API	③ API for Querying Transportation-Disadvantaged Individuals ④ Taxi Call List Inquiry API ⑤ Trip history inquiry API

Figure 10.3 Key features for interoperability between taxi-hailing platforms



EXPECTED OUTCOMES

By creating a barrier-free environment, the urban environment will improve, making mobility and daily life more convenient for all citizens. Enhanced mobility for wheelchair and stroller users, as well as those with limited mobility, will increase social inclusion and expand opportunities for marginalized groups to participate in society. Furthermore, providing safe route guidance and transportation convenience information is expected to reduce traffic accidents.

SOCIAL ISSUE 11

Development and Demonstration of Generative AI-Based Barrier-Free Content Production Technology for Persons with Disabilities, the Elderly, and Others

KEY TECHNOLOGICAL FEATURES

- ✓ **Multimodal Captioning (AI) Model (CLIP):** Screen Feature Extraction, Sound Feature Extraction
- ✓ **Generative LLM (LLaMA3 (8B)):** Outputs barrier-free subtitles and screen description text
- ✓ **Text-to-Speech (FastSpeech2):** Screen descriptions for the visually impaired trained on user data, then executed with minimized errors

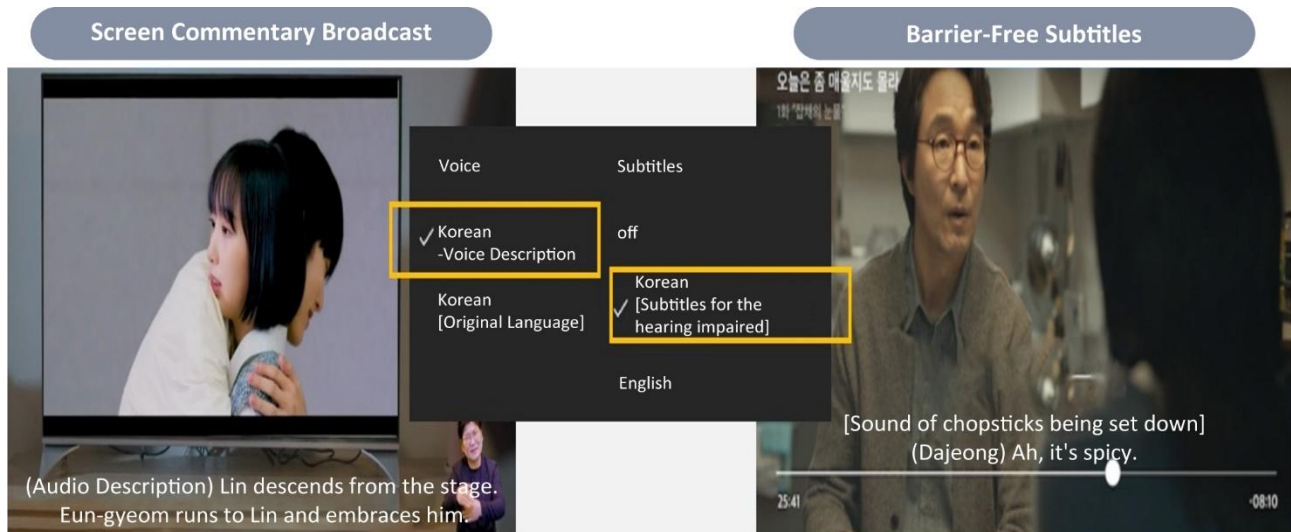
OVERVIEW

Media-vulnerable groups such as persons with disabilities and the elderly find it difficult to understand recent broadcasts—which feature rapid plot developments and emotional shifts—using standard subtitles that convey only the speaker's voice. The government mandated that 132 broadcasters provide hundreds of thousands of hours of TV captions for the disabled. However, existing human-based captioning services face issues like cost. Introducing generative AI technology can automate most captioning tasks and also incorporate background, atmosphere, and external sounds into the content, enabling improvements in public services.

Table 11. Project Detail

Project Category: Flagship Project (2024-2025)
Implementing Agency/Partner Organization: WiseNut Consortium
Project Description For AI training, 1,000 hours of video and 8 million sentences are collected from broadcasters like KBS and JTBC. Through training, the AI generates text from the speaker's voice in broadcast videos and extracts background, atmosphere, and ambient sounds from the screen. These results are then converted into barrier-free subtitles and inserted into broadcasts. This service provides user-friendly subtitles for media-disadvantaged viewers while simultaneously supporting broadcasters by reducing costs and enabling diverse revenue streams. These include story/audiobook services, short-form content production, scene search services, and translation services.

Figure 11.1. Barrier-free video content



EXPECTED OUTCOMES

By automating broadcasters' subtitling services—which previously relied entirely on human labor—through AI technology, this initiative is expected to contribute not only to public services but also to the overseas export of high-quality K-content. The developer, the WiseNut Consortium, plans to expand the Barrier-Free Subtitle Service beyond its 2024 pilot at Mokpo MBC to include nationwide regional MBC stations, KBS cable broadcasts, cable VOD services, terrestrial OTT platforms, and advertising by 2025.

4

Crime Prevention



SOCIAL ISSUE 12

Support for AI-Based Proactive Response System Against Online Sexual Exploitation of Children and Youth

KEY TECHNOLOGICAL FEATURES

- ✓ **Image Analysis (OCR):** Applying image-based character recognition technology (OCR) to identify text within online sexual exploitation content and developing models adaptable to diverse image environments
- ✓ **Self-Learning Text Classification Technology:** Utilizes TA Analytics (content classification, text mining, natural language processing) technology to automatically classify collected text and detect suspected sexual exploitation expressions in advanced forms through iterative learning

OVERVIEW

Recently, digital sex crimes targeting children and adolescents have rapidly spread, primarily in online environments, increasing their social severity.

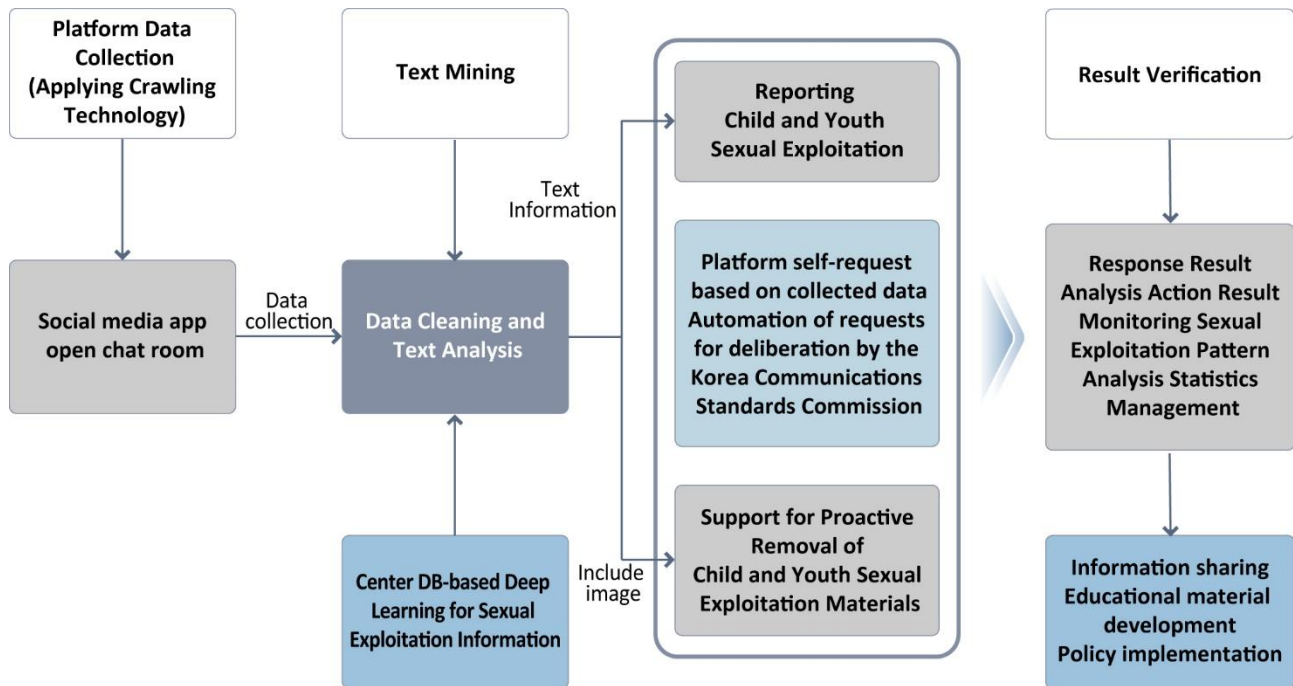
The number of teenagers victimized by digital sex crimes surged from 111 in 2018 to 2,209 in 2023, with the nature of these crimes rapidly evolving. In 2024, the use of deepfake technology to create false sexual content has increased significantly, with minors accounting for 48.8% of victims, reaching alarming levels. This project aims to establish a system that swiftly responds to digital sex crimes by leveraging artificial intelligence (AI) to analyze text and images in real-time online.

This system will use text mining and data mining technologies to identify warning signs, automatically block or report suspected sexual exploitation content, and prevent the spread of harm proactively.

Table 12. Project Detail

Project Category: Digital Government Collaboration (2025)
Implementing Agency/Partner Organization: Ministry of Gender Equality and Family
Project Description The project aims to develop a system that proactively prevents harm by monitoring online luring and suspicious information related to child and adolescent sexual exploitation, then reporting and supporting its removal. AI can rapidly analyze large volumes of data that are difficult for humans to process manually and detect risk indicators in real time. Specifically, by utilizing text mining technology, it can identify attempts at online luring and grooming early on and structure meaningful patterns, enabling swift response. Furthermore, through data mining-based analysis, it learns and detects not only existing patterns but also modified or newly emerging types of sexual exploitation content, enabling the automatic blocking or reporting of suspicious content. By operating online counseling channels for victims, it enables the early detection of children and adolescents at high risk of sexual exploitation and provides methods to prevent the spread and prolongation of sexual exploitation.

Figure 12.1. Flowchart after introducing the proactive response system for sexual exploitation materials



EXPECTED OUTCOMES

Starting in 2025, the project plans to establish a self-learning online sexual exploitation proactive response artificial intelligence (AI) system. The system will automatically collect online content and create an environment for continuous, automated monitoring of sexual exploitation materials 24 hours a day, 365 days a year. Furthermore, the service aims to prevent the spread of harm through the swift detection and blocking of illegal and harmful content, enhance victim protection, and thereby improve public trust.

SOCIAL ISSUE 13

Development of a Sexual Crime Crisis Response (Investigation, Safety, Support) Platform

KEY TECHNOLOGICAL FEATURES

- ✓ Utilizing hyper-scale text data, pre-trained large language models (LLMs) are employed for various natural language processing tasks, including summarizing victim statements, classifying types of sex crimes, and providing support for similar precedents and legal information.

OVERVIEW

The Gwangju Metropolitan Police Agency anticipates over 30,000 crimes annually, yet public support provided through its victim protection and support unit (8 personnel) amounts to only about 900 cases per year, representing roughly 3% of the total. Due to insufficient police personnel (Gwangju Metropolitan City has a total of 5 police stations), delays occur in linking investigations, safety measures, and support. Furthermore, frequent personnel transfers lead to variations in the content of victim support provided, depending on the capabilities of individual officers.

For socially vulnerable groups such as children, adolescents, the elderly, and persons with disabilities, reporting sexual crimes is often delayed due to an inability to recognize the harm, or even among the general public, due to social stigma, shame, helplessness, post-traumatic stress, the burden of legal procedures, perpetrator intimidation, distance, or hospital admission. This delay raises concerns about additional harm during this period. Furthermore, victims often lack the specific awareness needed to search through the scattered online and offline information available.

A support system is therefore required that enables any sexual crime victim to receive specialized, tailored crisis intervention services—including investigation, safety, support—at any time, and from anywhere, independent of the capabilities of police officers or experts.

Table 13. Project Detail

Project Category: Digital Government Collaboration (2025)
Implementing Agency/Partner Organization: Gwangju Metropolitan Police Agency
Project Description This project develops an 'AI-based crisis intervention (investigation/safety/support) service' that utilizes LLM to provide non-face-to-face and assessment of victim details, along with personalized 1:1 solution. These solution cover guidance on investigation procedures, economic, housing, legal, medical, psychological, and safety support, helping victims recognize the severity of their situation and support the prompt initiation of investigations. Additionally, an 'AI-based administrative support service' for police officers and experts will be developed. This service will provide LLM-based summary reports (including investigation guides such as details of harm and classification of sex crime types, legal support including precedents, assessment of harm severity, and information on protection and support agencies) to support rapid crisis identification and enhanced expertise.

Figure 13.1. Process flow



EXPECTED OUTCOMES

Development of this service is scheduled to begin in 2025. It is expected to enhance the government's crisis intervention capabilities for sex crime victims, thereby improving the level of safety support for national society.

The service will be provided in two formats: text and video. A text version will be available for use in open spaces such as public areas, while a video version will be provided for users who have difficulty with text input, including the elderly, children, individuals with intellectual disabilities, or the visually impaired, as well as those who prefer face-to-face service.

This will support preventing unnecessary investigations through pre-screening before complaint acceptance, allowing investigative resources to focus on crimes. It will also provide swift procedures for victims requiring police protection, ensuring their personal safety.

SOCIAL ISSUE 14

Establishment of an Integrated Support System for Vacant House Maintenance

KEY TECHNOLOGICAL FEATURES

- ✓ Extracting value from large datasets of structured or unstructured data and analyzing results for vacant house statistical analysis
- ✓ **AI Model (Boosting)**: Utilizing an algorithm that combines multiple weak learners sequentially to enhance prediction or classification performance, as one of the machine learning ensemble techniques, to build a vacant house occurrence risk prediction function

OVERVIEW

Vacant homes are rapidly increasing from 1.06 million units in 2015 to an estimated 1.53 million units in 2023, driven by population decline, aging, and regional development imbalances. Projections indicate that by 2050, vacant homes will reach approximately 3.24 million units, accounting for 13% of all housing stock. This situation necessitates moving beyond existing support for demolition and renovation to develop systematic, data-driven countermeasures.

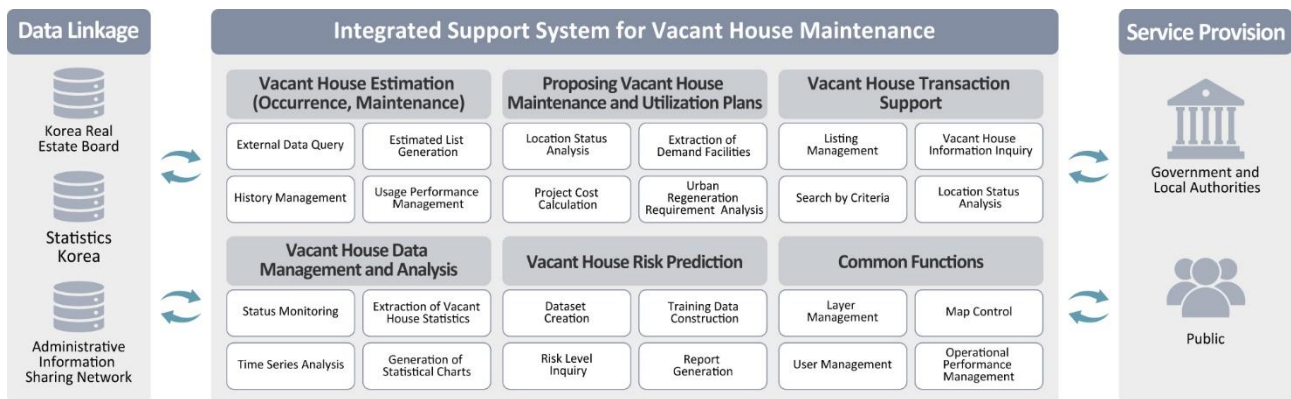
Calls for solutions to the vacant housing problem persist from local governments, the National Assembly, and the media. The government is also actively preparing countermeasures, including operating a cross-ministerial vacant housing support team involving four ministries.

Accordingly, this project aims to systematically address the vacant housing problem by establishing an integrated support platform. This platform will manage data from individual local governments at the national level, analyze vacant housing remediation plans, predict the risk of vacant housing occurrence, and support vacant housing transactions. It seeks to contribute to balanced national development and the resolution of regional depopulation issues.

Table 14. Project Detail

Project Category: Digital Government Collaboration (2025)
Implementing Agency/Partner Organization: Korea Real Estate Board
Project Description Through an integrated vacant house management platform, it enables real-time management of newly occurring vacant houses and renovation results by local governments, establishing a nationwide monitoring system for vacant house status. It supports the derivation of regeneration and utilization plans for vacant houses that reflect their current status and regional demand for renovation and utilization. It provides information on available vacant houses for transaction and buyer-centric data to predict the risk of vacant house occurrence using vacant house databases and statistical data, while also supporting public vacant house transactions.

Figure 14.1. Service concept diagram



EXPECTED OUTCOMES

Starting in 2025, this project plans to build a system to support the establishment of systematic vacant house policies by national and local governments through nationwide vacant house data analysis and the proposal of maintenance plans. This project is also expected to achieve budget savings, such as reduced survey costs and consulting fees for maintenance planning, by improving the vacant house identification rate, as well as reduced social costs through the early prediction of areas prone to vacant houses.

5

Economic Activities



SOCIAL ISSUE 15

Establishment of AI Labor Law Consultation and AI Labor Inspector Support Systems

KEY TECHNOLOGICAL FEATURES

- ✓ Considering task difficulty and infrastructure, utilize various LLMs such as ChatGPT, Llama, and MAAL (Maum AI's proprietary LLM) to provide answers to user queries, draft petitions, and supply relevant laws and precedents.

OVERVIEW

Despite strengthened labor inspections and labor law education/consulting to protect workers, labor law violations such as wage arrears persist, with the resulting harm concentrated on vulnerable workers like those in small businesses and young job seekers. These persistent labor law violations stem from a shortage of labor inspectors (approximately 2,000) relative to the number of workplaces (about 2 million) and the volume of complaints received by the Ministry of Employment and Labor (approximately 400,000 cases annually) regarding issues like unpaid wages. Furthermore, the complexity of labor laws themselves makes it difficult for employers and HR personnel to comply, which also contributes to the continuation of these violations.

Generative AI can support faster and more accurate handling of labor inspections and grievance cases, help citizens easily understand labor laws, thereby establishing labor law compliance practices and significantly strengthening the protection of vulnerable workers. Accordingly, the Ministry of Employment and Labor is pursuing a project to build an AI support system for labor inspectors, envisioning "an AI labor law expert available 24/7 for all citizens" and "an AI colleague with 30 years of labor inspection experience for every labor inspector."

Table 15. Project Detail

Project Category: Hyper-scale AI Service (2024)
Implementing Agency/Partner Organization: Ministry of Employment and Labor, Maum AI
Project Description The four functions of the Labor Inspector AI Support System are Kakaotalk AI Labor Law Consultation (QR code on the right), Petition Submission Support, Interactive Reference Material Search, and Document Dialogue. Anyone can access the service via smartphone or PC at 'https://ai.moel.go.kr' to try it out. (Excluding 'Document Dialogue', a service exclusive to labor inspectors) Kakaotalk AI Labor Law Consultation is a service where citizens can ask questions in natural language via Kakaotalk about wages, working hours, and unemployment benefits, and receive natural language responses based on laws, precedents, and official Q&A. Complaint Submission Support is a service that assists in preparing thorough complaints and enables labor inspectors to handle cases swiftly and accurately. When submitting various labor cases, such as wage arrears or workplace harassment, to local employment and labor offices, AI conducts conversations with the complainant to verify basic facts by case type, replacing the labor inspector. Reference Material

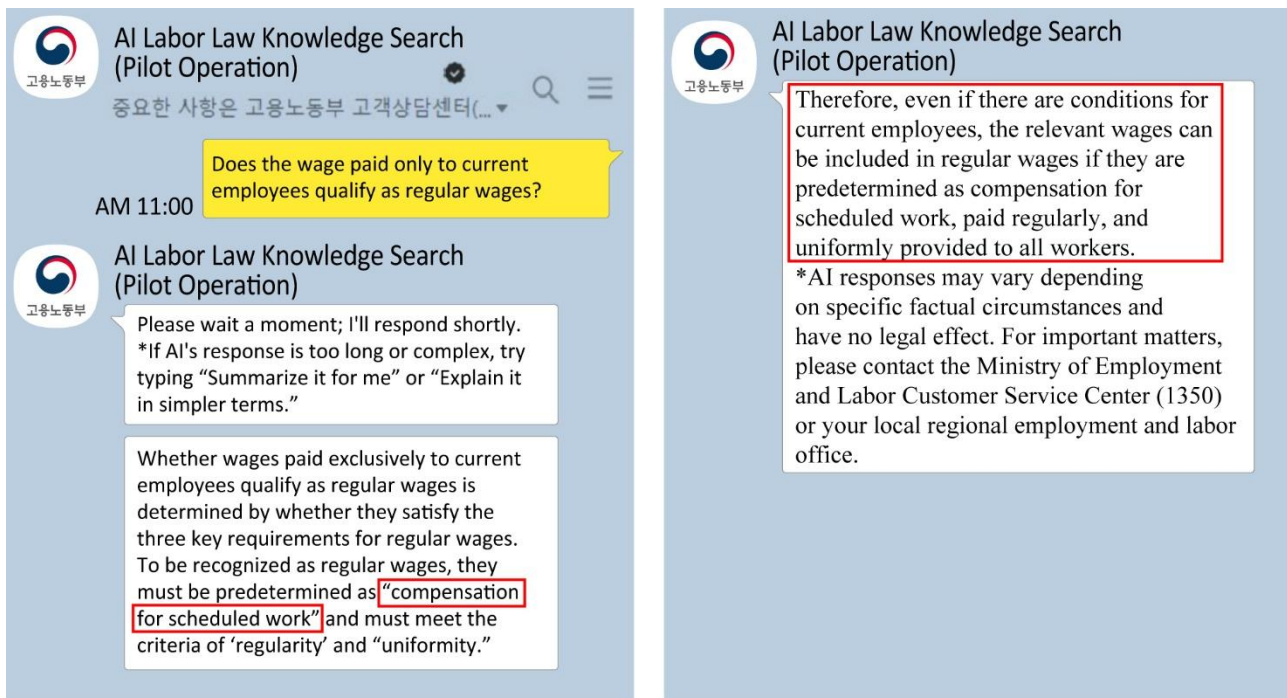
Interactive Search is a service that instantly displays the relevant page of a manual when citizens ask questions in natural language. It also allows convenient searching of statutes, case precedents, and responses to inquiries through conversation with AI. Document Dialogue is a service that summarizes statements from complainants, suspects, and witnesses spanning dozens of pages and analyzes the key issues.

This project processed laws, manuals, and actual counseling data to create high-quality AI training data. Considering task difficulty and infrastructure, this project utilized various large language models (LLMs) such as ChatGPT, Llama, and MAAL (Mind AI's proprietary LLM).

Figure 15.1. QR code



Figure 15.2. Kakaotalk AI labor law consultation service



EXPECTED OUTCOMES

After unveiling the AI support system for labor inspectors at the 2024 Korea Government Expo in November, 2,528 citizens used the Kakaotalk AI labor law consultation service 11,682 times over the following month.

In March 2025, the Ministry of Employment and Labor signed a "Business Agreement for AI Transformation in Employment and Labor Administration Focused on Vulnerable Workers" with the Korea Certified Labor Consultants Association. It formed an AI Labor Law Consultation Improvement Support Team comprising 173 certified labor consultants to enhance the accuracy of AI labor law consultation services and expand the consultation scope to cover the entire Labor Standards Act, childcare support systems, and industrial accident prevention.



Furthermore, the Ministry is focusing all efforts on its AI transformation by conducting studies to identify new AI service demands in employment and labor administration, analyzing the costs and benefits of an AI support system for labor inspectors, and researching proof-of-concept for ontology-based AI service development.

Figure 15.3. Expected Effects of the AI Support System for Labor Inspectors

Category	Current	Future
Labor Vulnerables	Internet Search for Labor Laws, Labor law customized consultations for the public, Time-consuming and costly	- AI searches SNS and websites - Customized labor law consultations for the public, - Interactive search of laws and manuals, etc. – (Workers) Providing accurate legal information - Prompt support for rights redress – (Employer) Easily understand and comply with labor laws → Protect workers
Small business owners	Lack of capacity for labor management, first violate the law, Correct violations upon inspection	
Labor inspectors	Limits to swift and accurate handling of increasing cases	- AI analyzes statements, searches case law, etc. - Labor Inspector Work Support – Accelerate case processing, – Expand the number of supervised workplaces - Strengthening Worker Protection

SOCIAL ISSUE 16

Development of Specialized Services such as Support for Young Farmers to Settle Down

KEY TECHNOLOGICAL FEATURES

- ✓ **Information Provision:** Data-driven personalized LLM guidance based on user location, products, crop seasons, etc.
- ✓ **LLM:** Utilizes HyperCLOVA with over 97% Korean language coverage.
- ✓ **MLOps:** Supports stable automation for optimization, deployment, and operational management to connect machine learning models to services.

OVERVIEW

This initiative aims to support the early establishment of young farmers in agricultural operations by addressing challenges arising from the increasing proportion of elderly populations in rural areas and the lack of agricultural technology experience among young farmers. It also seeks to improve rural aging.

The Rural Development Administration built an agricultural technology consultation chatbot based on a super-large AI language model (June 2024) to provide 24/7 agricultural technology consultation services. This initiative alleviated the burden of agricultural failure for young farmers and supported efficient, data-driven farming practices.

Table 16. Project Detail

Project Category: Hyper-scale AI Service (2024)
Implementing Agency/Partner Organization: Rural Development Administration, Naver Cloud
Project Description To provide farming information quickly and easily to farmers and the general public, the Rural Development Administration's mobile app 'Latest Agricultural Technology Notifier' has integrated a hyper-scale AI-based service. Following review by farming experts and preliminary evaluation by young farmers, the official service launched in February 2025, available 24/7, 365 days a year to anyone. ✓ Agricultural Encyclopedia: Developed a service that summarizes and facilitates easy search of information based on agricultural manuals held by the Rural Development Administration and the Nongsaro website (www.nongsaro.go.kr) when agricultural technology queries are made via chatbot conversation. ✓ Agricultural Education: Provides the latest farming information through video content, tailored to users (considering region, crops grown, etc.), enabling easy acquisition of farming techniques from cultivation to harvest. ✓ Farming Design: Developed to support early farming establishment, this service offers customized consulting for crop selection—the most challenging aspect for young farmers—along with initial investment costs, budgets, and income. It utilizes income information compiled and analyzed by the Rural Development Administration over many years. ✓ Smart Alerts: One of the hardest parts of crop cultivation is when hard-grown crops become

unsellable due to constantly changing weather and pest outbreaks. Young farmers, especially those with limited experience, often struggle to prepare for seasonal pests and diseases, leading to greater losses. This service uses massive AI to send immediate alerts with weekly pest occurrence information and weather forecasts, helping young farmers prevent agricultural risks.

EXPECTED OUTCOMES

In 2024, the study analyzed 467 volumes of agricultural technology publications, and aims to analyze a cumulative total of 760 volumes by 2025. Through continuous learning from the agricultural encyclopedia, the project is expected to improve performance (speed, answer satisfaction) in question-answering.

Using this ultra-large AI service will reduce the burden of agricultural failure for novice farmers and enable efficient farming based on the high-quality data from the Rural Development Administration. It is also expected to provide accurate information to individuals planning to return to farming or rural areas, supporting the early settlement of young farmers in rural communities and injecting vitality into rural areas threatened by depopulation and aging. Furthermore, it will contribute to stabilizing crop supply and demand through yield and profit analysis.

To enhance user satisfaction, this project plans to provide more accurate information and diverse data in response to user queries through additional training and expert verification of answers. The project will particularly strive to make farming techniques, which were previously perceived as difficult, more accessible by developing additional content tailored to the needs of both the general public and farmers. Training programs are being planned through the institutions' own education centers to facilitate utilization by 155 local agricultural agencies and agriculture-related universities.

Figure 16.1. Service flow

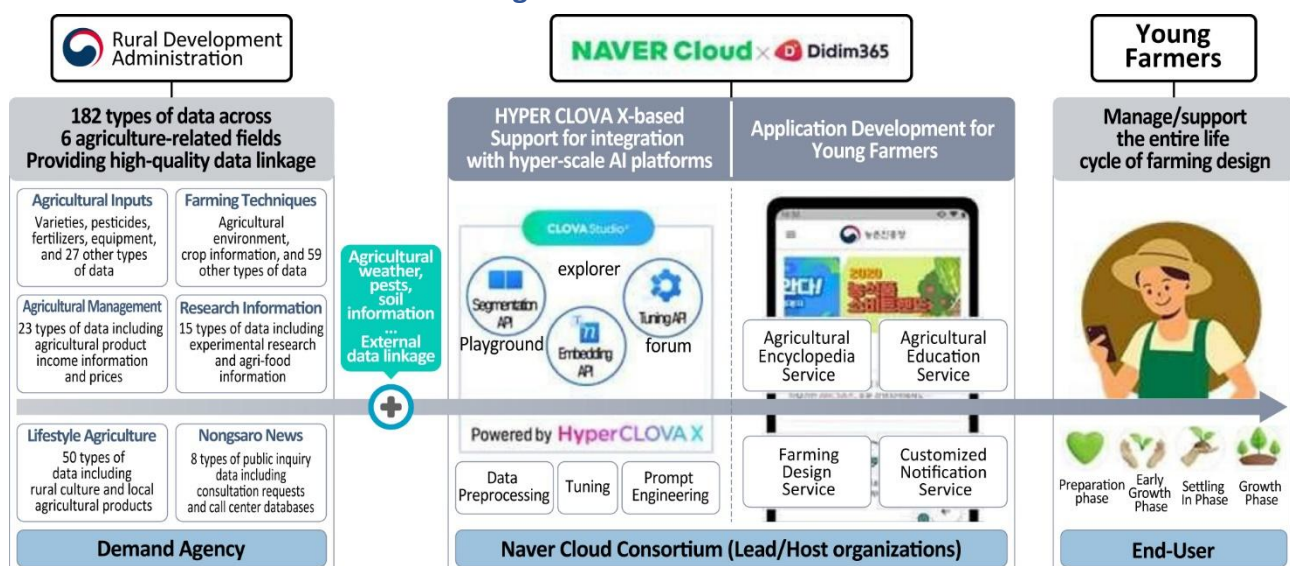
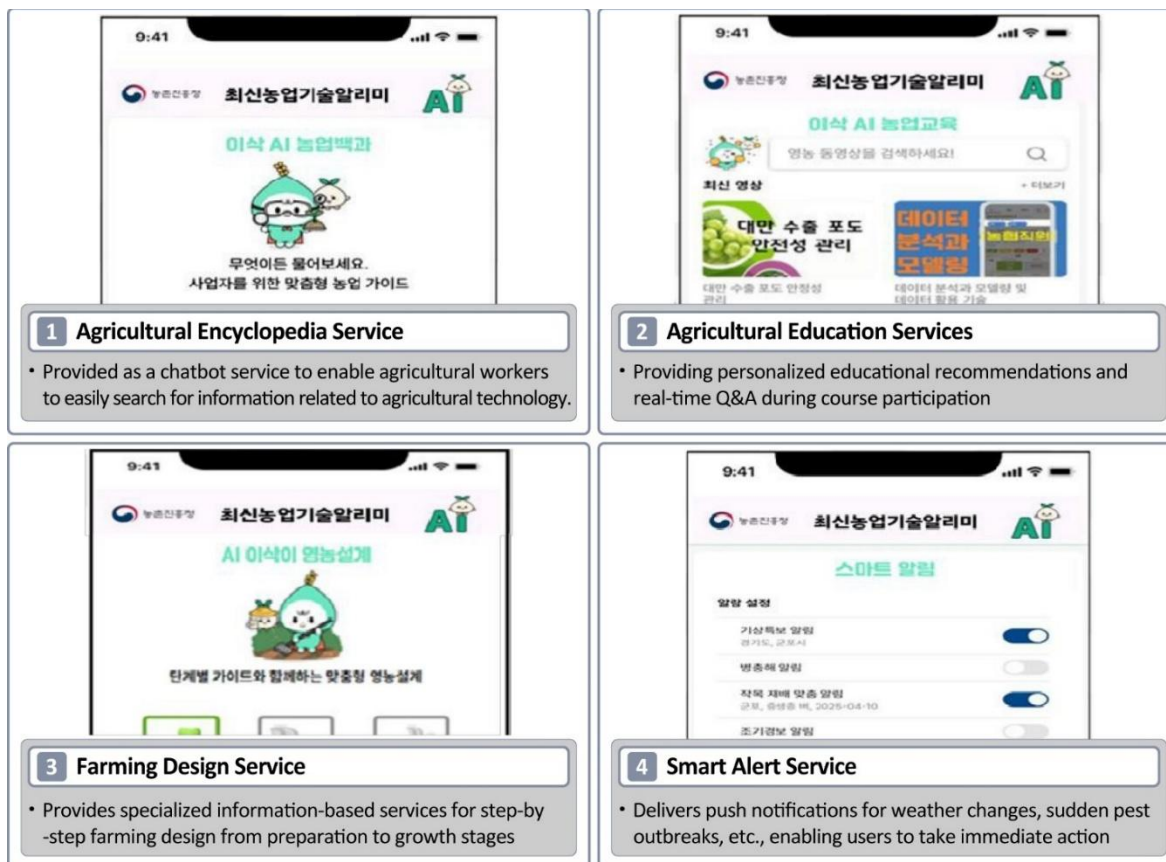


Figure 16.2. Kakaotalk AI labor law consultation service



SOCIAL ISSUE 17

AI-Data-Based Customized Public Bidding Recommendations

 KEY TECHNOLOGICAL FEATURES

- ✓ A customized bidding service platform collects and categorizes public bidding notices and business support information scattered across national agencies, local governments, and public institutions
- ✓ Companies can view integrated bidding and support notices on the service platform
- ✓ AI automatically extracts key information from company proposals and automatically combines it with company data to provide customized notice recommendations and consulting

 OVERVIEW

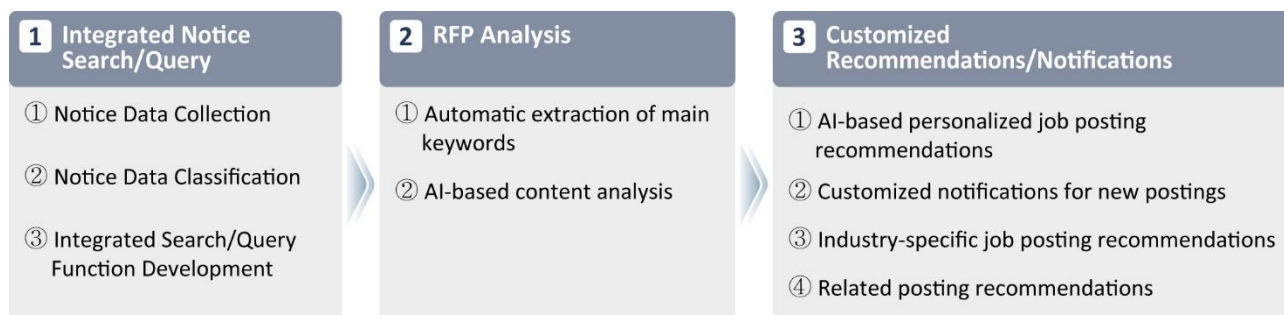
The customized corporate bidding recommendation service was developed to address the inconveniences faced by companies. These include the significant manpower and time required to search for scattered information on public procurement projects from various institutions and corporate support programs (private competitions, R&D, vouchers), as well as missing deadlines due to not accessing information in time.

The project team developed an innovative service that integrates and searches dispersed public bidding information, enabling customized notice recommendations and consulting services through procurement data analysis, extraction of request for proposal (RFP) meaning, and matching key corporate data.

Table 17. Project Detail

Project Category: National Dream Project (2023)
Implementing Agency/Partner Organization: Ministry of Science and ICT, Wello Co., Ltd.
Project Description The customized corporate bidding recommendation service integrates scattered bidding announcements from the National Procurement Service and various public institutions. It combines AI analysis of procurement documents with corporate data to recommend and provide tailored announcements. ✓ Enhancement of customized announcement recommendation algorithms and consulting services through procurement data analysis, RFP (Request for Proposal) meaning extraction, and key corporate data matching ✓ Collect and analyze hyper-scale data to create innovative private-sector services, developing high-precision, high-quality services to support the discovery of best practices and the creation of new markets This service is provided simultaneously on three enterprise-focused platforms (NICE BizLINE, B-WISE, NICE ESG) in collaboration with the project operator, Wello Co., Ltd.

Figure 17.1. Key service features



EXPECTED OUTCOMES

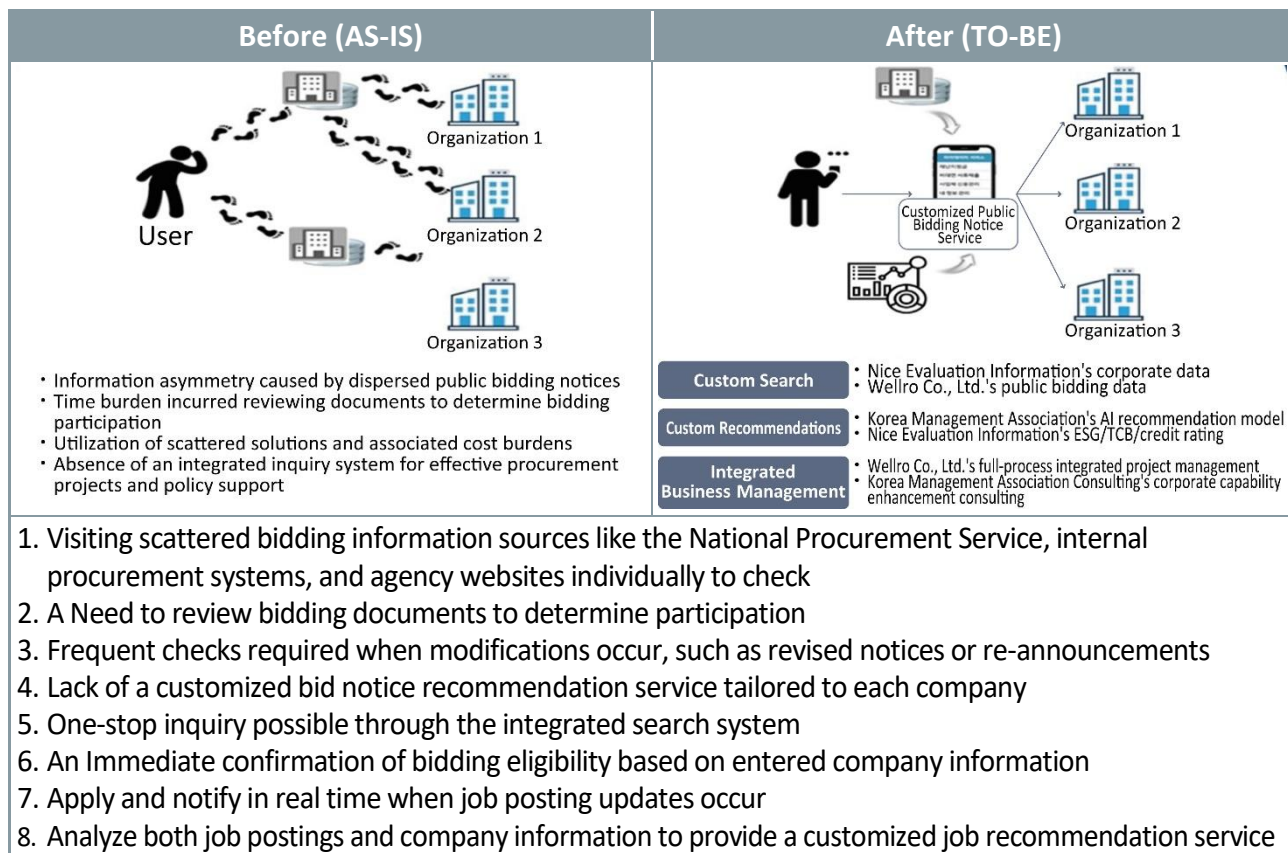
Companies can view over 2,000 bidding and support announcements consolidated on a single private platform, receive easy and convenient recommendations, and get daily updates on new information through this customized bidding support service. By utilizing this data-driven recommendation service, companies are expected to reduce information search costs, thereby lowering barriers to entry in the public sector and creating conditions that allow them to focus more on substantive business activities.

* (As of end-2024) The estimated monthly savings in labor and costs for companies utilizing the platform average approximately 690,000 won

By 2025, through its advancement into a comprehensive bidding platform, Wellobiz plans to develop a feature enabling corporate members to form consortia within the platform itself. This will strategically facilitate consortium formation, which previously relied on networking, addressing the initial barrier to entry for participating in government bids. Furthermore, within the Wellobiz service, this project plans to develop and expand features that enable companies to continuously support their growth by providing functionality to place and receive orders for projects such as R&D, research, goods procurement, and construction.

Additionally, plans are underway to launch global services, including analyzing target countries for expansion and reviewing the establishment of overseas branches (2026), launching an English version service, and conducting beta tests for local companies (2027).

Figure 17.2. Before and after implementation (AS-IS vs TO-BE)



SOCIAL ISSUE 18

Small Business Big Data Platform

 KEY TECHNOLOGICAL FEATURES

- ✓ **GIS-based System:** Collects, generates, and processes data at spatial units such as commercial districts, business zones, and establishments. Provides GIS-based visualization and analysis services at administrative district and business zone levels.
- ✓ **User-Customized Information Provision:** Monthly delivery of business district and management information tailored to each business location via subscription/notification services
- ✓ **AI Interactive Policy Information:** Enhance information readability by providing small business support policy information interactively through an AI chatbot service
- ✓ **OPEN API Provision:** Offering key Small Business 365 services via iframe-based OPEN API to expand service integration and utilization, creating new business models

 OVERVIEW

Small business owners often attempt startups without accurate prior information or market analysis, perpetuating a 'high birth, high death' cycle of repeated startups and closures. While digital transformation accelerated post-COVID-19, existing systems faced limitations in meeting evolving demands.

Based on the existing commercial district information system, this project aims to build a platform that collects and processes dispersed commercial district data to provide aspiring entrepreneurs and small business owners with the information necessary for starting and managing their businesses.

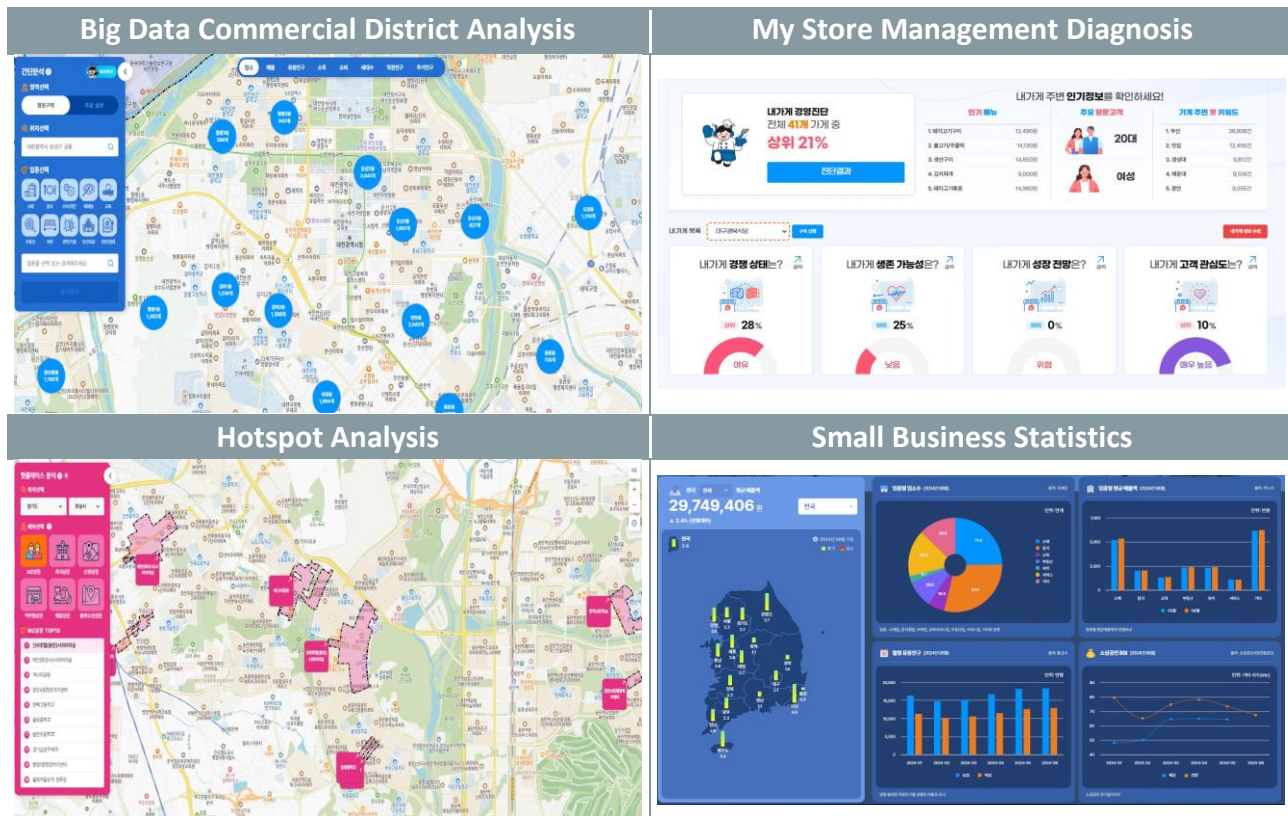
Table 18. Project Detail

Project Category: National Dream Project (2022)
Implementing Agency/Partner Organization: Ministry of SMEs and Startups (MSS), Small Enterprise and Market Service (SEMS)
Project Description 'Small Business 365 (Big Data Platform)' integrates and analyzes small business and commercial district data* held by public and private entities to provide customized services for individual small business owners and support data-driven administrative operations. * Provides information services by linking and integrating 64 types of data through collaboration with 21 institutions
✓ Commercial District Analysis – Provides information by analyzing diverse data such as sales, population, delivery, and business types for customized areas like commercial districts and administrative neighborhoods. ✓ My Store Management Diagnosis – Analyzes the business environment and current status of each small business owner to provide analytical information essential for business growth, including competitiveness, viability, growth prospects, and customer interest levels. ✓ Commercial District & Market Hot Trends – Provides recent issue information such as big data-based hotspot theme commercial districts and SNS trends, as well as information of interest to small business owners like festivals and tourism.

Statistics

- Visualizes the status of small business owners by region and industry, enabling real-time tracking of fluctuations.

Figure 18.1. Real-time tracking



EXPECTED OUTCOMES

After the platform launch, service usage reached a total of 1.464 million instances, a 238% increase compared to the previous two-year average (same period comparison with the Commercial District Information System). Users reached 15,000 (as of February 2025), a 462% increase compared to the previous period (December 2024).

Services that comprehensively guide small business owners through big data-driven commercial district analysis, individual store management diagnostics, latest market trend analysis, and government support policy information can be expected to enhance management efficiency and build digital competitiveness. This lays the foundation for stable business operations and innovative growth.

SOCIAL ISSUE 19

Development of an AI-Based Solution for Recommending Types of Industrial Accidents and Employment Insurance Programs

KEY TECHNOLOGICAL FEATURES

- ✓ **AI OCR Model:** Building AI training data through processing and refining years of accumulated workers' compensation and employment insurance application data (business registration certificates, financial statement certificates, etc.)
- ✓ **AI Recommendation Model:** Implementation of features such as recommending types of workers' compensation and employment insurance businesses using AI technologies (e.g., BERT).

OVERVIEW

The business type (industry category) of a workplace is critical benchmark information for setting premium rates for workers' compensation insurance. Due to recent changes in the industrial structure, determining business types has become increasingly complex. This necessitates overcoming the limitations of relying solely on the experience of existing staff members for business type classification.

To address this, a project was launched in 2023 to develop and validate a business type recommendation solution. This initiative supports an AI expert consortium to enhance operational efficiency by recommending the optimal business type through AI implementation.

Table 19. Project Detail

Project Category: Ministry-Collaboration AI Diffusion (2023-2025)
Implementing Agency/Partner Organization: Ministry of Employment and Labor, EZ AI
Project Description The Ministry of Employment and Labor and the Korea Workers' Compensation & Welfare Service are developing and demonstrating an AI solution equipped with a function to recommend types of industrial accident and employment insurance programs. This is achieved by building and training AI learning data using information from various documents and other data held by these organizations. * (Structured) Total of 30 types of business category determination data / (Unstructured) Various submitted documents [in file formats (HWP, PDF, image)] that provide workplace basic information and confirm workplace conditions The AI-based Work Injury and Employment Insurance Business Type Recommendation Solution utilizes various reference materials and data necessary for determining business types to recommend appropriate Work Injury and Employment Insurance categories. It provides a service that explains the rationale behind each recommendation in detail to enhance user understanding of the results.

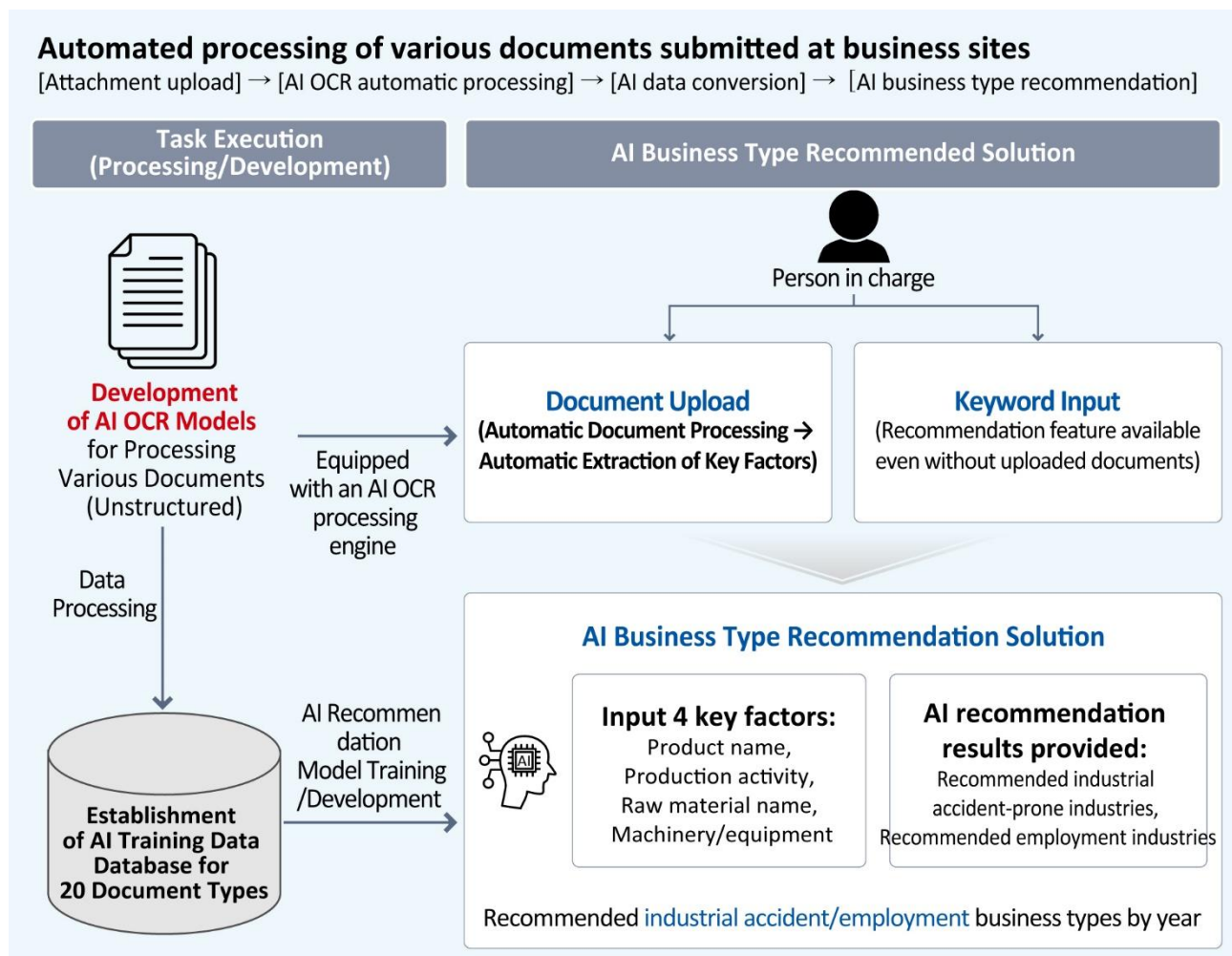
Figure 19.1. Processed data volume

Category	2023	2024
Data Processing	50,000 structured records 50,000 unstructured pages	50,000 structured records 50,000 unstructured pages

EXPECTED OUTCOMES

The AI-based industrial accident and employment insurance business type recommendation solution achieved 92% accuracy in industry recommendations through development and performance enhancement starting in 2023. Furthermore, the AI solution underwent a pilot application for Korea Workers' Compensation & Welfare Service investigators by the end of October 2024. When reviewing multiple documents to change or determine workers' compensation and employment insurance program types, it reduced the time per case from a maximum of two months to just 30 seconds. The introduction of this AI solution is expected to enhance public trust by securing the fund's financial soundness and improving administrative efficiency, while also ensuring the stable operation of workers' compensation and employment insurance programs.

Figure 19.2. Process flow chart



SOCIAL ISSUE 20

Development and Demonstration of AI-Based Integrated Job Search and Recruitment Support Solution

KEY TECHNOLOGICAL FEATURES

- ✓ Development of AI Prediction Models Using the Employment24 Recruitment Dataset
- ✓ Building an RAG-based AI job matching support solution in an on-premises environment using LLM models, job ontologies, knowledge dictionaries, and other data

OVERVIEW

In the rapidly changing labor market, job mismatches between employers and job seekers (including fraudulent job postings) generate social costs, with the burden of time and expense increasing annually. There is a growing need to provide efficient services, such as offering reliable job information to job seekers and supporting employers in creating job postings through AI adoption. Accordingly, an AI-based integrated job matching support solution has been developed and demonstrated, and the project is being advanced with support from an AI specialized consortium starting in 2024.

Table 20. Project Detail

Project Category: Ministry-Collaboration AI Diffusion (2024-2026)
Implementing Agency/Partner Organization: Ministry of Employment and Labor, Wanted Lab
Project Description The Ministry of Employment and Labor utilizes its data—including job postings and job seeker resumes—to build AI training datasets. These datasets are employed to develop and validate an initial model capable of verifying job postings, assisting in writing postings, identifying successful hiring patterns, and recommending talent. Key services include providing monitoring teams managing job postings with the capability to identify and block problematic postings, such as fraudulent job offers. For hiring companies, services will support automated job posting creation, hiring probability prediction, and talent recommendation.

EXPECTED OUTCOMES

The introduction of the AI solution is expected to reduce social costs and save time and money by shortening the time required for the job posting monitoring team to identify false postings and for employers to recruit talent. Furthermore, applying it to systems like Employment24 in the future will increase the utilization of government recruitment platforms and contribute to resolving job mismatches.

SOCIAL ISSUE 21

Development of an AI-Based Quality Grading Solution for Dried Seaweed

KEY TECHNOLOGICAL FEATURES

- ✓ Integrated analysis of image and numerical data for 5-grade classification
- ✓ Integration of vision AI models for impurity and hole detection with non-destructive automatic measurement hardware systems: Provides a real-time grading evaluation environment capable of determining quality within an average of several seconds

OVERVIEW

Although South Korea is the world's leading producer of dried seaweed, the country lacks quantitative and objective grading standards, creating a need for reliable price calculation and fair-trade practices. To address this, a specialized AI consortium has been supported since 2024 to establish an AI-based quality evaluation system that utilizes seaweed appearance images and nutritional data, establishing an objective and automated grading system.

Table 21. Project Detail

Project Category: Ministry-Collaboration AI Diffusion (2024–2026)
Implementing Agency/Partner Organization: Ministry of Oceans and Fisheries, TmaxTibero Co., Ltd.
Project Description By processing and utilizing diverse quality data, such as seaweed appearance images, held by the Ministry of Oceans and Fisheries and fisheries food support agencies, this project is developing and validating an AI quality measurement solution. This involves training AI solutions for seaweed quality grading and models for detecting holes and impurities. This solution provides services including: - AI seaweed grading functionality that automatically assigns a 5-tier grade based on appearance and composition data; - Hole and impurity detection capabilities that identify foreign matter and surface defects; - An automated quality measurement system for rapid quality assessment.

EXPECTED OUTCOMES

Through AI solutions, this project expects to enhance the accuracy of kim grade classification, reduce measurement time, and increase quality evaluation throughput. Furthermore, by linking the system to dry kim processing sites and automating quality judgments—previously reliant on subjective evaluations—AI is expected to improve the reliability and consistency of evaluation.

SOCIAL ISSUE 22

Development of Trade and Investment GPT Service Based on Overseas Country and Certification Information

KEY TECHNOLOGICAL FEATURES

- ✓ Building Datasets by Refining and Processing Source Data in Various Forms (PDF/Text/Tables, etc.) on Webpages Using Topic-Based Chunking Strategies
- ✓ Building RAG (Retrieval-Augmented Generation)-based models using on-premises proprietary LLM and external API integration
- ✓ Performing model-specific response comparisons using APIs such as GPT-4o, HCX-003, and SoLAR-MINI

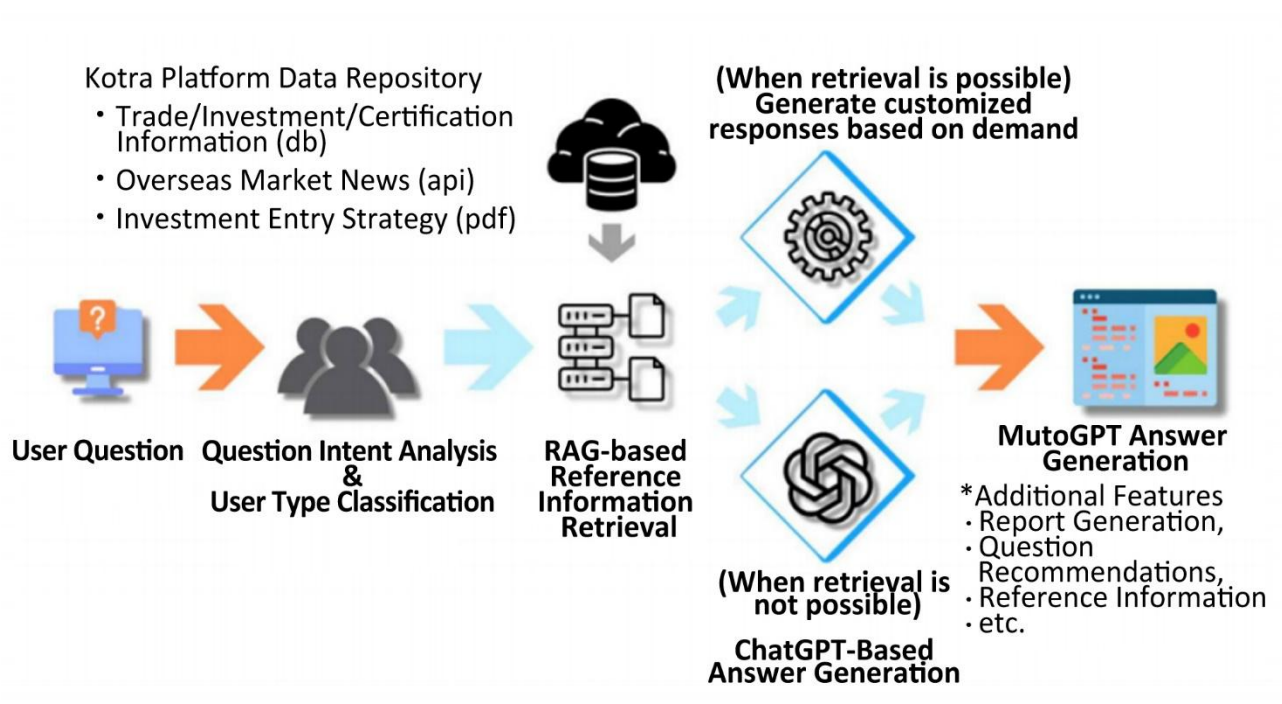
OVERVIEW

Existing trade and investment platforms operate independently, limiting data linkage and analysis capabilities. Accordingly, this project proceeded with the goal of establishing a Trade and Investment GPT to integrate country-specific trade and investment information and create a foundation that anyone can easily utilize.

Table 22. Project Detail

Project Category: Digital Government Infrastructure (2024)
Implementing Agency/Partner Organization: Korea Trade-Investment Promotion Agency (KOTRA), etc.
Project Description KOTRA collected and integrated its country-specific trade information, investment information, and overseas certification data. Based on this, it built a QA dataset and RAG model for AI training. The collected trade information includes trade agreements, promising export items, and logistics systems for 96 countries, while the investment information reflects each country's investment trends and important considerations. Additionally, overseas certification information was refined and processed, encompassing data on over 1,180 certification procedures, agencies, costs, and required durations. Based on this data, this project developed an AI-based trade and investment GPT model and implemented it to provide accurate information in real time through a chat service utilizing RAG technology. The developed service was designed to be linked with KOTRA's TriBIG (Trade and Investment Big Data Platform) for public access, enabling businesses and citizens to more easily utilize overseas market information.

Figure 22.1. Trade and investment GPT service concept



EXPECTED OUTCOMES

The establishment of the Trade and Investment GPT will enable users to view previously scattered overseas market information at a glance, significantly improving access to such information for businesses and citizens. In particular, companies preparing for exports will reduce the burden of individually searching for information and can establish more effective market entry strategies by utilizing AI-based customized information. Furthermore, it is expected to provide practical assistance by allowing companies preparing for overseas expansion to easily grasp investment information.

SOCIAL ISSUE 23

World Job Plus AI Demonstration for Citizen Service and Operational Support

KEY TECHNOLOGICAL FEATURES

- ✓ Collecting Q&A-format training data and performing data preprocessing using PDF annotation tools
- ✓ Implemented a retrieval engine and developed integration with the maumGPT baseline model and fine-tuned models
- ✓ Building a unified Korea Employment Agency-specialized GPT model through individual API packaging of the search engine and LLM model and creating an integrated workflow

OVERVIEW

The burden of human and material resources required to support diverse languages for users of 'World Job Plus'—which provides integrated information on overseas employment, entrepreneurship, volunteering, and other international ventures—has increased.

Accordingly, the Korea Human Resources Development Service (KHRD) sought to provide ongoing overseas employment support services, including AI-based chatbot customer service, to job seekers using World Job Plus by leveraging super-large AI technology.

Table 23. Project Detail

Project Category: Hyper-scale AI Service (2023)
Implementing Agency/Partner Organization: Korea Human Resources Development Service
Project Description An AI service was developed for public customer service and operational support by utilizing key data from the Korea Employment Agency (World Job Plus inquiry board data, various announcement documents, job seeker-related information). It was built and processed training data from collected information, then trained and constructed a language model to implement a resume editing GPT capable of handling inquiries and complaints while supporting multiple languages. Additionally, a multilingual resume-based mock interview question generation GPT was implemented to enable 24/7 customer support without time or location constraints, allowing job seekers to access overseas employment support services.

Figure 23.1. Service demonstration



EXPECTED OUTCOMES

World Job Plus is expected to significantly enhance the efficiency of public service delivery and drastically reduce the time required for the Korea Human Resources Development Service's public inquiry response operations by providing a GPT model for citizen-facing interactions and operational support.

SOCIAL ISSUE 24

Demonstration of Public Inquiries for Workers' Compensation Insurance Decisions

KEY TECHNOLOGICAL FEATURES

- ✓ API Interoperability Specification Development Based on Pulmonary Function Test Guidelines Using Merge Engine
- ✓ Generation of training data via Retriever, GPT, etc., and customer service chatbots and search services

OVERVIEW

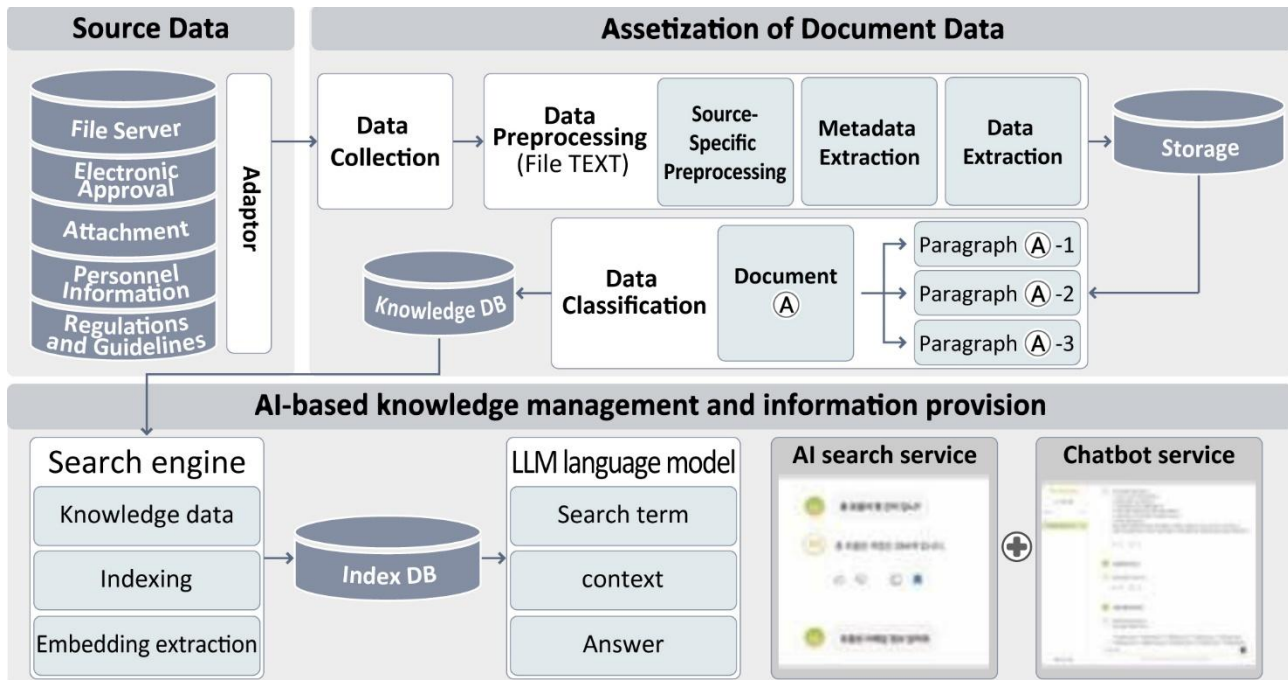
Workers' compensation administrators repeatedly search relevant materials to process over 160,000 annual workers' compensation cases. To address processing delays caused by repetitive searches and the need to learn case knowledge, the introduction of AI was considered.

Accordingly, the Korea Workers' Compensation & Welfare Service aimed to enhance service reliability by training AI on workers' compensation insurance decision judgments, review decisions, disease determination certificates, etc. This would streamline workers' compensation insurance administration and improve public service response by answering inquiries from injured workers.

Table 24. Project Detail

Project Category: Hyper-scale AI Service (2023)
Implementing Agency/Partner Organization: Korea Workers' Compensation & Welfare Service
Project Description The project was conducted to implement a business chatbot for intelligent document search and analysis, and a public-facing chatbot for industrial accident processing, by unifying internal and external data. Relevant laws, ordinances, regulations, and other materials, along with internal data from the Korea Workers' Compensation & Welfare Service (case precedents, review decisions, disease determination results, etc.), were utilized for training the service model. The model training procedure involved: ① parsing and refining document data, ② vectorization via chunking followed by an embedding model, ③ storing the vectors in a database, and providing responses through a Retrieval-Augmented Generation (RAG) system.

Figure 24.1. Flow chart



Key service features include providing AI-based customer support services to assist workers with administrative decisions regarding work-related injuries. Additionally, workers' compensation case handlers can easily search for recognized work-related injury cases.

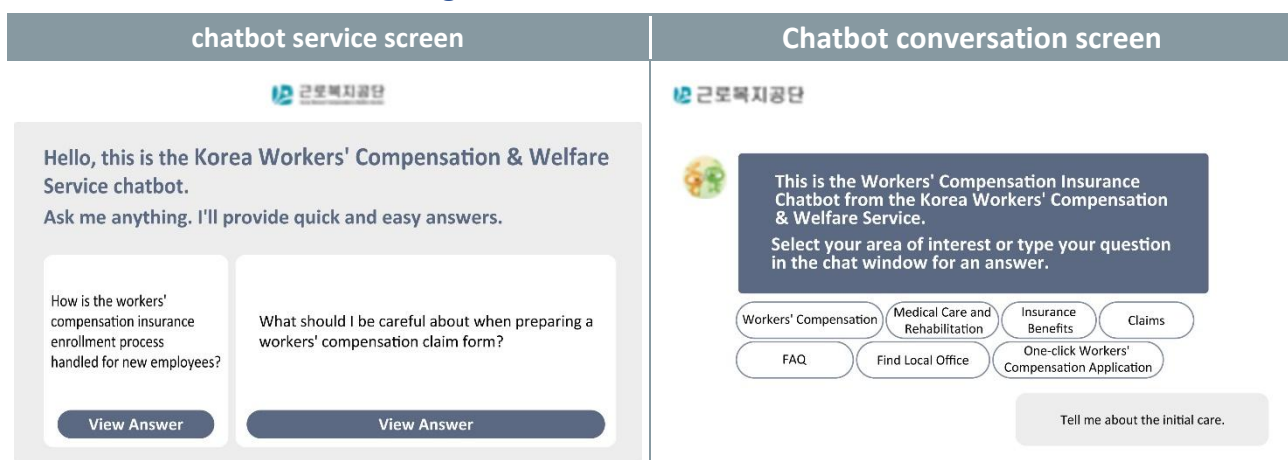


EXPECTED OUTCOMES

By utilizing GPT to provide chatbot and search services for customer support of workers' compensation claimants, case handlers can establish investigation directions for work-related injury claims filed by workers based on existing precedents, review decisions, and disease determination information, and use this as a basis for judgment.

Furthermore, by providing a service allowing users, such as injured workers, to search for recognized work-related injury cases, the reliability of injury recognition outcomes can be enhanced.

Figure 24.2. Service demonstration



SOCIAL ISSUE 25

Establishing AI Models and Customized Support Platforms for Enterprise-Specific Information

KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Data Analysis and Recommendation Model:** Recommendation of Customized Support Programs for Businesses Using Public Data
- ✓ **Crawling and Data Loading System:** Automated collection and refinement of information from over 60 public data channels
- ✓ **Startup-Tailored Support Program SaaS Platform:** Provides customized information per company and automates support program applications

OVERVIEW

The information on public support programs available to startups is vast, but there are challenges in effectively navigating and utilizing this information. As a result, many entrepreneurs miss out on suitable support opportunities or collect information inefficiently. This project aims to develop a customized AI model based on public data using AI and crawling technologies, and to build a SaaS platform enabling companies to more easily access the support they need.

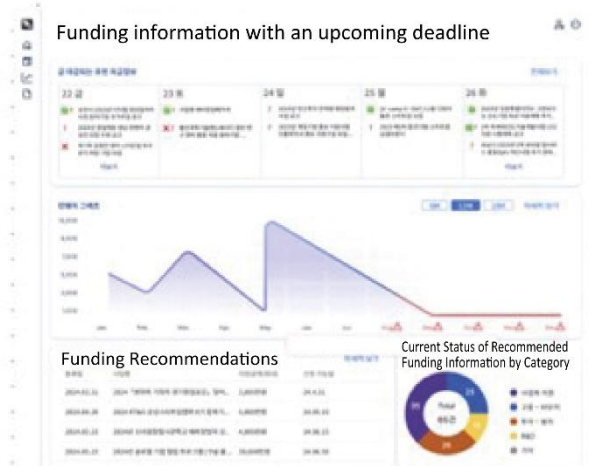
Table 25. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Witty Co., Ltd.
Project Description This system analyzes information necessary for startup support and growth in real time and provides customized data. ✓ AI-Based Customized Support Program Recommendation System – Analyzes public data to recommend customized support programs tailored to each company. Automatically guides businesses to appropriate support programs reflecting their industry, growth stage, and financial status, providing optimal support opportunities through machine learning-based data pattern analysis. ✓ Public Data Crawling and Automated Analysis – It automatically collects support program information from over 60 public data channels daily, refining and analyzing it to provide customized offerings for each company. Businesses receive necessary information automatically without needing to search for individual data points themselves. ✓ Operation of a SaaS Platform for Startup-Tailored Support Programs – A SaaS platform was established to enable companies to view customized support program information at a glance. It provides features such as managing support programs by deadline, keyword filtering, and automated program recommendations, helping startups utilize support programs more efficiently.

EXPECTED OUTCOMES

This system improves information accessibility for startups and increases startup survival rates by providing tailored data. It is also expected to maximize the value of public data utilization, thereby fostering a more efficient startup ecosystem.

Figure 25.1. Before and after implementation (AS-IS vs TO-BE)

Before (AS-IS)	After (TO-BE)
 Over 159 Number of sites updating startup-related information, including support program investments Approximately 23,000+ government-supported projects in Korea	 Funding information with an upcoming deadline Trend of views and replies for questions within the existing community Views: 38.1 times / Replies: 0.21 times Primarily through Naver Cafe, Googling, etc. to resolve questions
Lack of information tailored to my company, difficulty allocating resources, exponentially increasing startup budgets, and persistent high business failure rates.	Enables corporate survival management by identifying future risk factors through information collection, processing, analysis, and prediction

SOCIAL ISSUE 26

Food Service Statistics Inquiry Service

 KEY TECHNOLOGICAL FEATURES

- ✓ Implementing DevOps and CI/CD following Agile and Scrum principles by integrating GitHub, Jenkins, and OpenProject
- ✓ Source Code Management (SCM) using GitHub and CI/CD Pipeline Automation using Jenkins

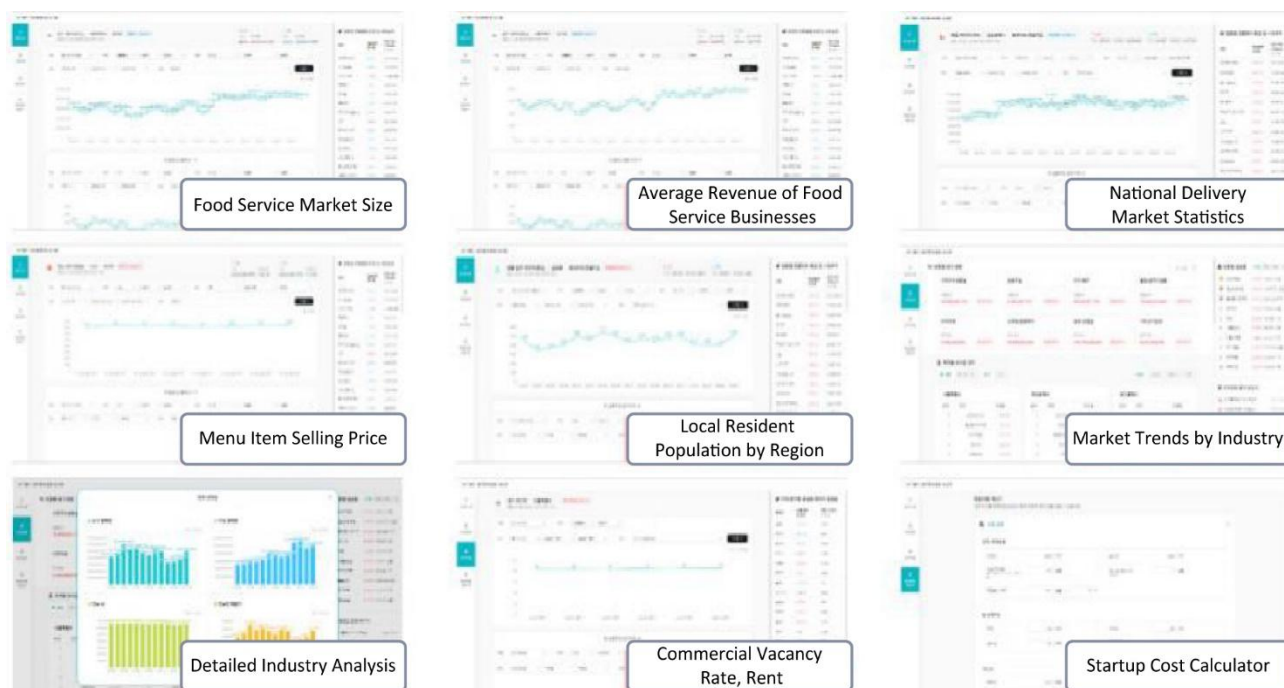
 OVERVIEW

This service supports decision-making for startup and operation by providing data such as commercial districts and sales volume needed by small-scale food service businesses and prospective entrepreneurs. While large food service companies can easily formulate strategies using internal and external information through their proprietary systems, small-scale businesses struggle with interpreting and utilizing information. Therefore, an AI-based food service statistics service was developed to learn time-series data changes and customer consumption patterns.

Table 26. Project Detail

Project Category: Digital Government Infrastructure (2023)
Implementing Agency/Partner Organization: Korea Agro-Fisheries & Food Trade Corporation, NICE ZINIDATA Co., Ltd.
Project Description The service integrated data essential for restaurant entrepreneurship and operations to provide a one-stop visualization service. Utilizing POS data, the system offered menu-specific pricing and sales volume information. Based on delivery service data, the service provided store and delivery sales performance by commercial district. Additionally, using telecom data, the system delivered residential population data by commercial district. The startup cost calculator supported analysis of local foot traffic and sales performance of similar businesses.

Figure 26.1. Service overview and key development status



EXPECTED OUTCOMES

It is expected to support the selection of startup items, business type changes, and menu development for food service entrepreneurs, thereby aiding the startup ecosystem and food service operations.

SOCIAL ISSUE 27

Establishment of an Integrated Mall Management Platform for Small Businesses

KEY TECHNOLOGICAL FEATURES

- ✓ CI/CD Pipeline Operation for DevOps Implementation

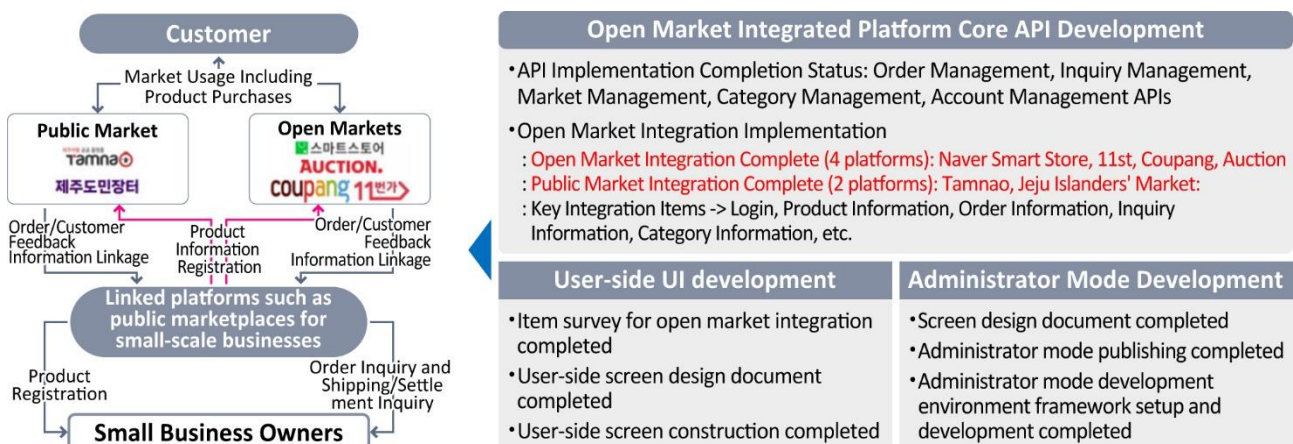
OVERVIEW

Approximately 120,000 small business owners in Jeju Island face difficulties individually registering and managing their products on online shopping platforms (Coupang, 11st, etc.). Consequently, an integrated platform was planned to link these online shopping platforms and manage them from a single location.

Table 27. Project Detail

Project Category: Digital Government Infrastructure (2023)
Implementing Agency/Partner Organization: Jeju Special Self-Governing Province, etc.
Project Description The system was built to enable centralized logistics inventory and customer management by linking public shopping malls like Jeju Island Residents' Market with private shopping malls like Coupang. This project developed core APIs for the open market integrated platform, including order management, market management, and account management. This project established store integration and a first-phase pilot service through item surveys for open market linkage. This project also provided product registration support for up to five products to small business owners who find it difficult to utilize online shopping malls.

Figure 27.1. Service overview and key development status



EXPECTED OUTCOMES

This is expected to help small business owners more easily enter multiple online marketplaces, thereby saving time and costs while boosting sales.

SOCIAL ISSUE 28

Boosting Exports for Provincial SMEs Using AI Chatbots

KEY TECHNOLOGICAL FEATURES

- ✓ Introduction of AI Chatbot Technology for Export Consultation Automation
- ✓ Configuring CLARIO, a RAG solution based on the HyperCLOVA X (LLM) model, and applying GBC data to provide customized information

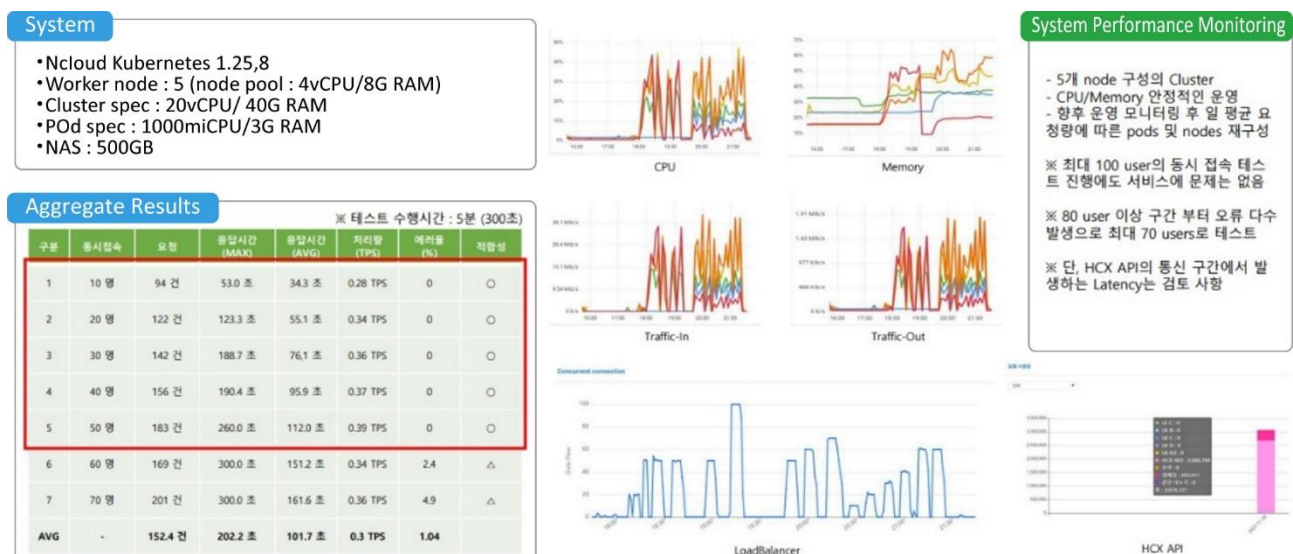
OVERVIEW

Aiming to provide step-by-step customized information for companies through generative AI chatbot services, this initiative offers AI-powered one-stop, full-cycle support to encourage domestic companies to transition into exporters. By integrating AI into the GBC export support platform 'gbcprime', it presents optimal solutions enabling novice exporters to enter overseas markets stably.

Table 28. Project Detail

Project Category: Hyper-scale AI Service (2024)
Implementing Agency/Partner Organization: Gyeonggi Economic & Science Promotion Agency
Project Description The GBC export support platform 'gbcprime' was implemented to provide export consultation chatbots, overseas market information, customized buyer recommendations, best practice guidance, and information on related GBC programs and support initiatives. Considering its Proof of Concept (PoC) status, a representative test utilizing the GBC Prime LA Office database (2022–2024) demonstrated suitability with a 0% error rate across 183 cases involving 50 concurrent users.

Figure 28.1. Summary of 1st and 2nd test results



Furthermore, to enhance the performance of the GBC LA database, data cleansing (format standardization, duplicate removal, OCR application) and data indexing and structuring were performed.

Figure 28.2. Full-cycle activity support and PoC test screens



EXPECTED OUTCOMES

This project plans to expand information acquisition and corporate support through the automation of tasks on the GBC export support platform 'gbcprime'. By collecting all data from Gyeonggi Province's export support projects, this project will leap forward as the province's representative export support platform.

SOCIAL ISSUE 29

Chatbot Service for Searching Precedents Related to Customs Disputes

KEY TECHNOLOGICAL FEATURES

- ✓ **Configuring RAG with Rerank Functionality:** Vector Similarity-Based Search Capability and Accuracy Enhancement
- ✓ Develop an API that calls customs-related laws and regulations for use in responses

OVERVIEW

Previously, searching for precedents and regulations related to customs disputes was keyword-centric, consuming significant time for tasks. To perform swift customs administration, there was a need to quickly and accurately verify the legal basis for judgments, leading to the development of an AI chatbot service capable of natural language-based search.

Table 29. Project Detail

Project Category: Hyper-scale AI Service (2024)
Implementing Agency/Partner Organization: Korea Customs Service
Project Description To train the AI model, data corresponding to Articles 31 to 35 of the Customs Act, necessary for customs investigations, was secured. This included case law and related legal statutes. Additional data was collected and utilized from external legal sites such as the National Law Information Center and Casenote. The training data was vectorized, loaded into a database for preprocessing, and then trained using RAG. Key services include accurately searching for relevant statutes and precedents through natural language queries, automatically organizing and providing factual circumstances, grounds for disposition, and legal reasoning bases, and responding with precedents and relevant statutory content appropriate to the query's intent.

Figure 29.1. Service response demonstration 1

Related Laws

Article 30 (Principles for Determining Taxable Price) of the Old Customs Act (before being amended by Act No. 10424 of December 30, 2010)

Article 31 of the Old Customs Act (before the amendment by Act No. 10424 of December 30, 2010) (Determination of taxable value based on the transaction price of similar and identical goods)

Article 32 of the Customs Act (before the amendment by Act No. 10424 of December 30, 2010) (Determination of taxable value based on the transaction price of similar goods)

Article 33 of the Customs Act (before the amendment by Act No. 10424 of December 30, 2010) (Determination of Taxation Rate Based on Domestic Sales Price)

Article 34 of the Customs Act (before the amendment by Act No. 10424 of December 30, 2010) (Determination of taxable value based on assessed value)

Article 35 of the Customs Act (before the amendment by Act No. 10424 of December 30, 2010) (Determination of taxable value according to reasonable standards)

 Hello. Please tell me about the case you'd like to search for.

 Please find case law similar to the criteria below, and extract and organize the data according to the instructions.

- The manuscript imported garlic from China, but there was a significant difference in price compared to the price reported in the producing region.
- Requesting data to review the appropriateness of the reported price

 **Case law search results**

competent court	case number	result
Incheon District Court	2012 Guhap 359	national victory

Incheon District Court_2012 Guhap 359 Cancellation of Customs Duty Correction Disposition

1. Claims of the disposition office

- The necessity of denying the reported price: The import price of fresh garlic differs significantly from the transaction price of similar products. The reported price of USD 900 per ton is significantly lower than the transaction price of other similar products (USD 1,800 per ton), and is also lower than the purchase price at the production site surveyed by the Korea Agro-Fisheries & Food Trade Corporation.
- Recalculation of taxable price: Denying the reported price, the taxable price of the garlic in question was recalculated to USD 1,416 per ton by referring to the data of the Korea Agro-Fisheries & Food Trade Corporation, and customs duties and surcharges were imposed.

[Ask your questions](#)

Figure 29.2. Service response demonstration 2

Related Laws

Article 24 of the Enforcement Decree of the Customs Act (Scope of Non-Recognition of Taxable Price, etc.)

Article 30 (Principles for Determining Taxable Price) of the Old Customs Act (before being amended by Act No. 11121 of December 31, 2011)

Article 32 of the Old Customs Act (before the amendment by Act No. 11121 of December 31, 2011) (Determination of Taxable Price Based on the Transaction Price of Similar Goods)

Article 33 of the Customs Act (before the amendment by Act No. 11121 of December 31, 2011) (Determination of Taxation Value Based on Domestic Sales Price)

Article 33 of the Old Customs Act (before the amendment by Act No. 11602 of January 1, 2013) (Determination of taxable price based on domestic sales price)

Article 34 of the Customs Act (before the amendment by Act No. 11602 of January 1, 2013) (Determination of taxable price based on assessed price)

 An importer imported agricultural products from China in 2009 at a declared transaction price. However, customs determined that the declared price significantly differed from the transaction price of similar goods, so they rejected the declaration and recalculated the taxable value to collect the additional tax. Please summarize the arguments of the administrative agency, the plaintiff, the court's decision, and relevant laws regarding this matter.

 **Jurisdiction, case number, result**

division	competent court	case number	result
Supreme Court 2015du2758	Supreme Court of Korea	Cancellation of customs duty imposition	national victory
Seoul High Court 2014nu5998	Seoul High Court, Republic of Korea	Cancellation of imposition of tariffs, etc.	national victory

Case-by-case disposition agency claims, plaintiff claims, court decisions, and reasons for judgment

[Case Number: Supreme Court_2015du2758 Cancellation of Customs Duty Imposition]

1. Claims of the disposition office

The defendant, the Incheon Customs Director, determined that the declared price of agricultural products (soybean sprouts, red beans, mung beans, etc.) imported by the plaintiff was insufficient in truth and accuracy, and accordingly denied the taxable price and declared the price of similar products.

[Ask your questions](#)



EXPECTED OUTCOMES

The introduction of natural language-based search reduced the time required to search existing precedents and statutes. The repetitive, manual task of selecting precedents was automated, enhancing operational efficiency. Starting with this internal innovation in customs administration, it is expected to enable reliable and prompt administrative support for citizens.

The project was planned to continuously strive to secure internal IT budgets and actively participate in external support projects, such as government ministry support project competitions, to pursue the formal development of AI models. Through this, the project aims to achieve digital innovation.

SOCIAL ISSUE 30

Demonstration of Service for Determining Compliance/Non-Compliance with Employment Rules

KEY TECHNOLOGICAL FEATURES

- ✓ **Training Data Construction:** Built training data through data augmentation using 120 employment rule classification sample datasets
- ✓ **Fine-tuning Process:** Developed an employment rule judgment model and added API functionality through model fine-tuning

OVERVIEW

Labor inspectors faced difficulties in determining the compliance or non-compliance of employment rules, as the process involved significant time spent searching internal documents and utilizing existing knowledge, and sometimes led to confusion due to the provision of incorrect information. Therefore, the Ministry of Employment and Labor sought to develop a hyper-scale AI model to demonstrate a service that would enable labor inspectors to enhance the speed and accuracy of their employment rule judgment tasks.

Table 30. Project Detail

Project Category: Hyper-scale AI Service (2023)
Implementing Agency/Partner Organization: Ministry of Employment and Labor
Project Description The training of the service model utilized 120 employment rule classification sample data points. Data augmentation was performed based on the sample data to increase the training volume, followed by model training. The implementation procedure involved constructing training data through data augmentation based on the employment rule classification sample data. The trained model was then fine-tuned to enhance accuracy while adding API functionality. Subsequently, the model was applied to a separately developed demo page, implementing the service after model training. This service was implemented to draft employment rules that workplaces are legally required to prepare, ensuring compliance with current laws and regulations. It then assesses the drafted rules against legal standards to determine their suitability (whether they are compliant or non-compliant).

Figure 30.1. Employment rule-based eligibility determination

ACC	0.733333	Actual	Suitable		Unsuitable	ACC	0.60
Suitable(perc)	0.741935		Suitable	46		적합(perc)	0.60
Unsuitable(perc)	0.724138		Unsuitable	16	42	부적합(perc)	0.592

legal provisions	TASK	Violation (correct answer)	Violation (prediction)
[산업재해보상보험법] 제40조(요양급여) ① 요양급여는 근로자가 업무상의 사유로 부상을 당하거나 질병에 걸린 경우에 그 근로자에게 지급한다. ② 제40조의 요양급여는 제43조제1항에 따른 산재보험 적용기간에서 요양을 하게 한다. 다만, 부득이한 경우에는 요양을 중단하여 요양비를 지급할 수 있다. ③ 제40조의 경우에 부상 또는 질병이 있을 때의 요양으로 지급할 수 있는 요양급여를 지급하지 아니한다. ④ 제40조의 요양급여에 해당하는 다음 각 호의 같다. 1. 전정 또는 검사 2. 약제 또는 진료재료의 액액(藥液) 그 밖의 보조기의 지급 3. 치료 수습, 그 밖의 치료 4. 재원치료	[재해보상] ① 직원이 업무상 부상 또는 질병에 걸린 경우와 사망하였을 때의 부상은 산업재해보상보험법 또는 사업장교직원연금법에 의한다. ② 직원은 산업안전보건법에서 정하는 사항과 그 외에 업무에 관관하는 안전보건에 관하여 산사로부터 지사받은 사항을 정확하게 이행하여야 한다.	적합	부적합

EXPECTED OUTCOMES

In this proof-of-concept, to develop a super-large AI model, this project conducted data augmentation of approximately 10,000 samples based on 120 employment rule classification samples. After training the model, the model was fine-tuned model fine-tuning, enabling the development of an effective employment rule judgment model. Furthermore, during the demonstration period, to develop an effective natural language processing model, the performance of representative NLP models such as 'Polyglot' and 'LLaMA-2' was compared and analyzed. This demonstration confirmed that the Polyglot model outperformed LLaMA-2. It is anticipated that applying the demonstrated model to the actual work of labor inspectors will enable swift response to public inquiries and accurate information provision.

SOCIAL ISSUE 31

Demonstration of Public Inquiry Response Utilizing Public Inquiry Data, Customs

KEY TECHNOLOGICAL FEATURES

- ✓ Service Development Utilizing Customs Administration Information and Historical Public Complaint Response Data (SearchGPT + SmartChat)
- ✓ Building an environment where users can easily search by consolidating scattered information (SearchGPT)
- ✓ Reducing the burden on civil petition handlers and improving the quality of customs administration services

OVERVIEW

As overseas direct purchases and personal trade transactions increase, the need for individual consumers to understand customs administration and legal information is growing. Existing customer service methods have primarily relied on phone or in-person consultations, which struggle to effectively handle the rising demand for assistance. The project aims to develop an automated customer service system utilizing customs administration information and historical customer service data to reduce the workload on staff and improve service quality.

Table 31. Project Detail

Project Category: Hyper-scale AI Service (2023)
Implementing Agency/Partner Organization: Korea Customs Service
Project Description This project builds an AI-based automated response system using public inquiry data and customs administration information. During data collection, internal FAQ documents (8 documents) in JSON and PDF formats and webpage materials were utilized. This data was preprocessed to generate SmartChat-based Q&A responses. After registering 3,500 query data points, the data underwent training and indexing processes using SearchGPT and SmartChat. Subsequently, a demo page was developed for user testing to validate the effectiveness of the public inquiry response system.

EXPECTED OUTCOMES

Through this project, the Korea Customs Service and related agencies are expected to be able to respond to public inquiries more promptly and accurately. In particular, the AI chatbot based on SmartChat demonstrates response performance comparable to human-generated responses even for automatically generated queries, having learned from existing public inquiry data. The performance of such systems will enable customer service representatives to retrieve information more quickly and reduce their workload, while individual consumers can easily obtain desired customs administration and legal information through the search function. Ultimately, this project will enhance the quality of customer service and contribute to providing efficient administrative services.

SOCIAL ISSUE 32

HomeTax Comprehensive Income Tax Chatbot Demonstration

 KEY TECHNOLOGICAL FEATURES

- ✓ **End-to-End Integrated Implementation:** Implementing an end-to-end system that integrates callbots with LLM-RAG systems to handle legal-based consultations
- ✓ **Hybrid Search and Rerank Algorithm:** Optimizing search performance through hybrid search experiments based on VectorDB and text similarity, and applying a rerank algorithm
- ✓ **Graph DB-Based Reference Relationship Processing:** Systematically processing reference relationships between legal data using a Graph DB and utilizing these relationships to enhance the Retriever
- ✓ **Stream Processing:** Improve real-time output response speed with voice bots by introducing Streamed Server Events (SSE)

 OVERVIEW

The National Tax Service operates a 'User Consultation Chatbot' for the convenience of HomeTax users, but its flexibility and accuracy in handling queries are limited due to the constraints of a standard rule-based chatbot. Therefore, to overcome the limitations of the existing model, this project aimed to enhance it into a chatbot capable of responding to given scenarios by training and validating the model using legal information.

Table 32. Project Detail

Project Category: Hyper-scale AI Service (2023)
Implementing Agency/Partner Organization: National Tax Service
Project Description This model was trained on 16,471 comprehensive income tax scenarios in CSV format held by the National Tax Service and on income tax law data. A RAG-based training dataset was constructed and fine-tuned by linking it with the HyperClova X model. Using this model, a chatbot demo page based on comprehensive income tax scenarios was built.

Figure 32.1. Flow chart

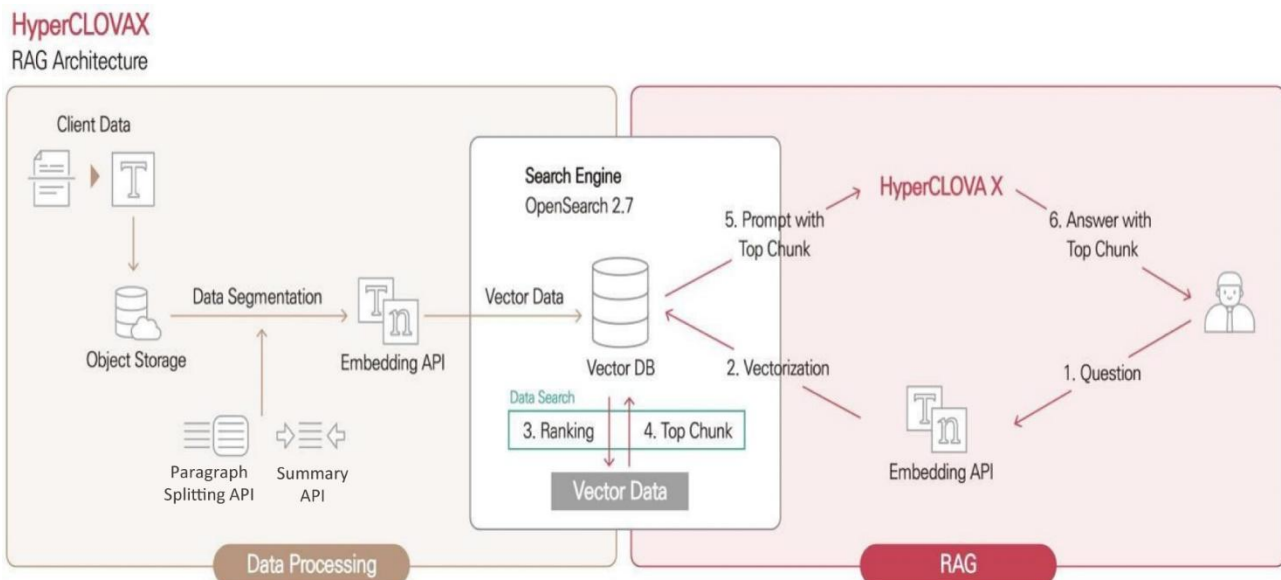


Figure 32.2. Service demonstration

National Tax Service Demo

> Chatbot <

Q: Tell me who is subject to comprehensive income tax

A: Comprehensive income tax is payable to residents who have comprehensive income (interest, dividends, business, employment, pension, and other income) between January 1 and December 31 of each year. Even if you haven't received a tax return, you are still required to file a final tax return if you have income that qualifies as comprehensive income.

Q: Do I have to pay comprehensive income tax every year?

A: Yes, comprehensive income tax must be paid by residents with comprehensive income from January 1 to December 31 each year.

Individual business owners subject to verification of honest reporting can report and pay until June 30th.

Please note that failure to report by the deadline may result in a surcharge. However, if you have no comprehensive income, you are not required to report or pay taxes.

Q: By when do I have to pay?

A: Residents with comprehensive income must file and pay their comprehensive income tax between May 1 and 31 each year. However, self-employed individuals subject to the verification of honest reporting may file and pay their taxes by June 30.

If the filing deadline falls on a public holiday or Labor Day, you can file by the following day. For example, if May 31, 2023, falls on a Sunday, you can file by Monday, June 2.

EXPECTED OUTCOMES

When using the service for multi-turn conversations, hallucinations occur. Inaccuracies were in some responses to application questions, mitigated this by preprocessing some data and performing paragraph-level chunking. This service learns from highly complex, unstructured data like original legal statutes, enabling broader and more diverse responses than existing chatbots. Consequently, it improved customer satisfaction and demonstrated enhanced operational efficiency for staff. Furthermore, the LLM approach used in the service demonstrated a lower response failure rate compared to rule-based systems and exhibited superior performance in scenarios involving two or more mixed scenarios.

6

Healthcare



SOCIAL ISSUE 33

Establishment of a Real-Time Medical Resource Information Platform

 KEY TECHNOLOGICAL FEATURES

- ✓ Real-time Medical Resource Information Collection and Integrated Dashboard Implementation
 - Implementation of an integrated dashboard through AI analysis of medical resource information, including: inpatient ward operational status, operating room/delivery room operational status, equipment (CT, MRI, ventilators, etc.) operational status, critical illness admission status, and medical personnel operational status
- ✓ Hospital Information System Enhancement and Data Integration with the Emergency Medical Comprehensive Situation Board

 OVERVIEW

Experiencing pandemics and other crises has heightened the need to secure the golden hour in emergencies and connect patients to hospitals capable of timely treatment. Consequently, there is a growing demand to improve hospital systems and enhance the real-time accuracy of information regarding healthcare institutions' emergency patient capacity.

In particular, commercialized AI machine learning solutions lack algorithms specialized for medical analysis. The need to develop an AI-based predictive model for initial emergency patient admission to prevent emergency room overcrowding has also been raised.

Table 33. Project Detail

Project Category: National Dream Project (2024)
Implementing Agency/Partner Organization: Korea University Medical Center, AIT Story
Project Description To manage detailed Hospital Information System (HIS) data for four critical conditions including cardiac arrest and transmit it in real time to the Central Emergency Medical Response System (EMRIS), a cloud-based real-time medical resource information platform has been established. This platform clearly displays essential information crucial for timely patient transport during emergencies—such as 'bed availability, essential medical equipment operational status, and capacity for major critical illnesses'—key information for timely patient transfer during emergencies—along with clearly indicating the actual availability of medical personnel and providing this information intuitively to hospital staff.
✓ Real-time Transmission of Medical Information – Improved the hospital system to transmit ward and equipment information to the Emergency Medical Integrated Situation Board in real-time within one minute. ✓ Detailed bed/equipment information – Managed detailed information critical for timely patient transfer during emergencies—such as bed availability, operational status of essential medical equipment, and capacity for major critical illnesses—alongside the actual availability of medical personnel. ✓ Enhanced Critical Condition Acceptance Capabilities – Advanced functionality to confirm and manage acceptance for four major critical conditions: cardiac arrest, subarachnoid hemorrhage, obstetric emergencies, and acute

aortic diseases

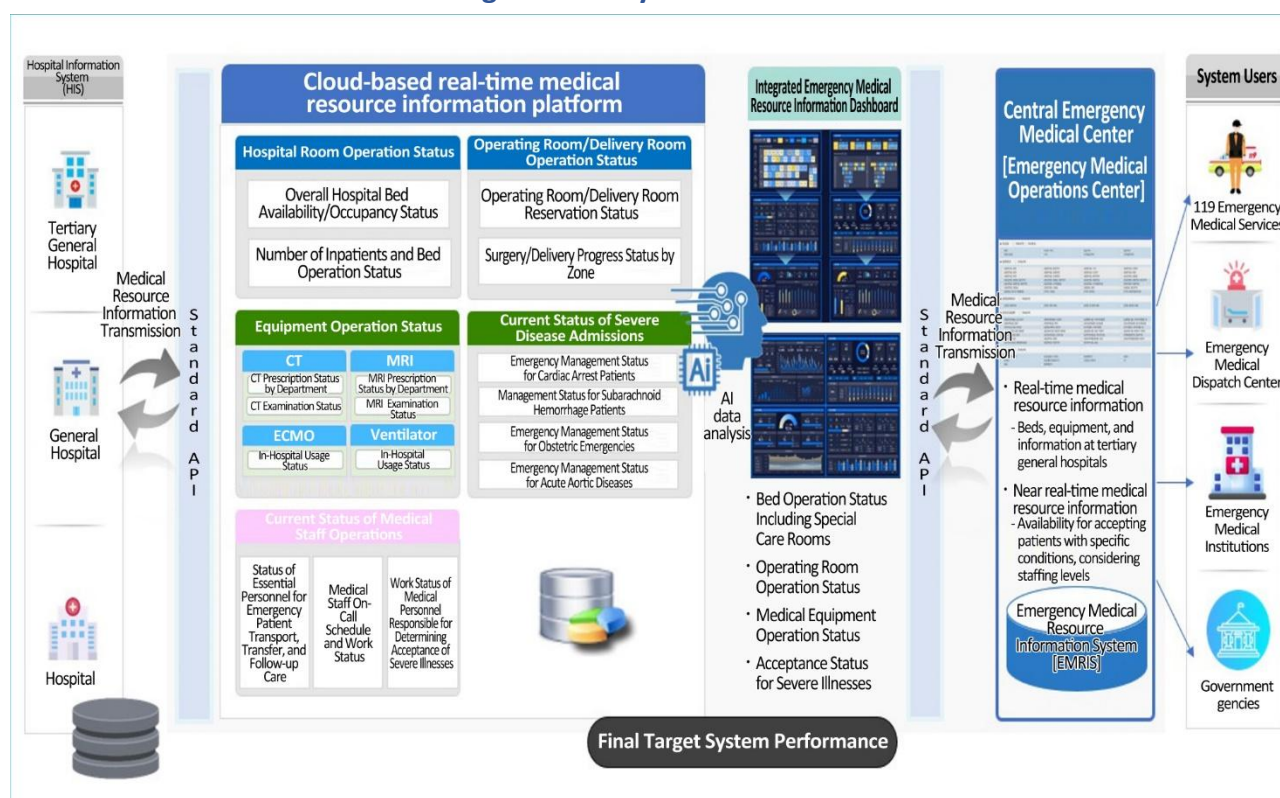
✓ Integrated Dashboard Development

- Provide stakeholders with an intuitive overview of the actual availability of beds, equipment, and medical personnel essential for treating emergency patients, including operating room vacancies and equipment malfunctions.

✓ Development of Initial Emergency Patient Admission Prediction Model

- Develop a prediction model for initial emergency patient admission by leveraging AI-integrated monitoring to learn normal patterns based on emergency room overcrowding, detect performance and service anomalies, identify overcrowding risk indices, and analyze root causes.

Figure 33.1. System overview



EXPECTED OUTCOMES

This service will integrate and manage scattered medical resource information within healthcare institutions, enabling timely patient transfer to facilities capable of providing treatment during disasters and emergencies. It will significantly contribute to securing the golden hour for patients through appropriate initial response.

It will also reduce unnecessary economic costs associated with 119 ambulance dispatch, patient transport, and comprehensive emergency medical situation assessment. Furthermore, the AI-based emergency patient admission prediction model is expected to be utilized for efficient emergency medical resource allocation during outbreaks of Class 1 statutory infectious diseases such as Ebola virus and SARS.

SOCIAL ISSUE 34

Establishment of a Personal Medical Information Sharing System and Regional

KEY TECHNOLOGICAL FEATURES

- ✓ Establishment of a Cloud-Based Public Repository for Personal Medical Information
 - Storing core personal medical data such as chronic diseases, pulse, and blood sugar for rapid diagnosis and treatment in emergencies
- ✓ Establishment of a data linkage system with medical institutions' Electronic Medical Record (EMR) systems

OVERVIEW

There has been a growing demand from the medical field to establish an efficient system for sharing personal medical information so that medical staff can verify a patient's medical history and provide prompt diagnosis and treatment during emergencies.

To establish a scientific emergency medical system capable of providing optimal, personalized treatment for citizens in the future, the need for data linkage—including personal medical information and real-time medical resource information—and AI analysis has been raised.

Table 34. Project Detail

Project Category: National Dream Project (2024)
Implementing Agency/Partner Organization: iTeyes Co., Ltd.
Project Description A system for sharing personal medical information will be established to link patients' core medical data with healthcare institutions' EMRs (Electronic Medical Records), enabling medical staff to access patient history during treatment decisions. This system will be piloted at healthcare institutions. ✓ Implementation of Public Personal Data Repository – Establish a system to store and share core personal medical information, such as chronic diseases, required for triage and treatment decisions in emergency rooms. ✓ Implementation of New Medical Information Features – Implement new features related to patient summary information on the Health Information Highway portal, including viewing, downloading, and sharing patient summary information. ✓ Improving Information Sharing Systems – Enhancing medical institutions' electronic medical record (EMR) systems to enable healthcare providers to access and utilize information stored in the public personal data repository for clinical care ✓ Medical Institution Demonstration – Select medical institutions, primarily regional emergency centers, to evaluate the practical utilization and scalability of patient summary information.

Figure 34.1. Before and after implementation (AS-IS vs TO-BE)

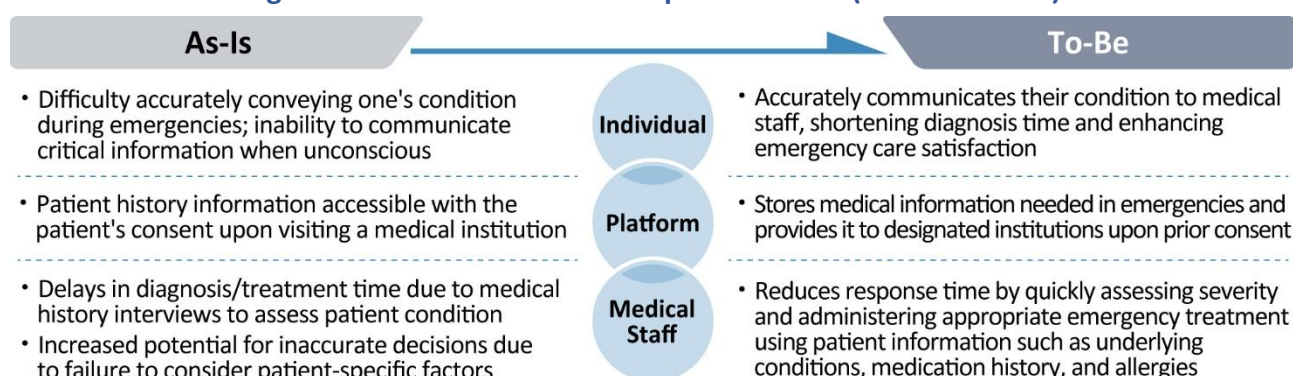
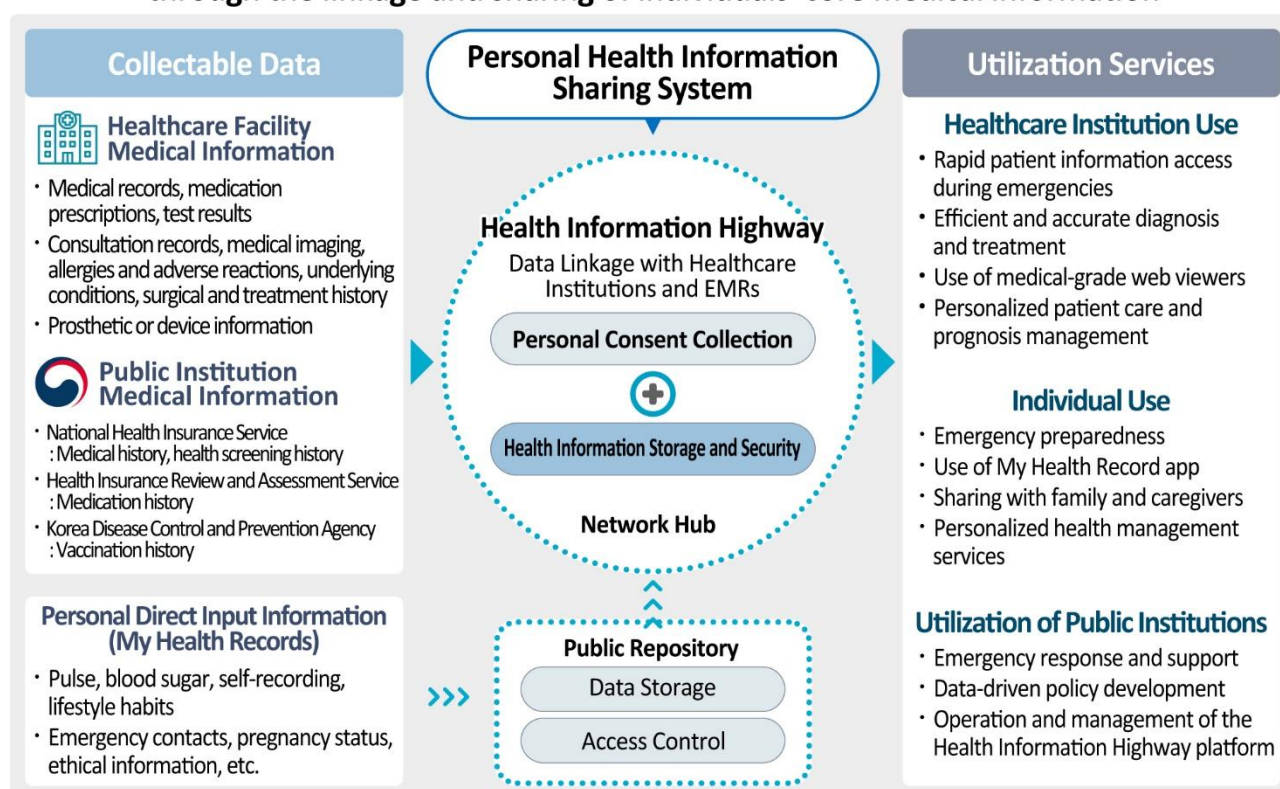


Figure 34.2. Structure of the system

 **A system enabling rapid diagnosis and treatment in emergencies through the linkage and sharing of individuals' core medical information** 



EXPECTED OUTCOMES

In emergency situations, medical staff can reference patient information such as underlying conditions, medication history, and allergies. This enables faster triage and appropriate emergency treatment, reducing response times. Consequently, patient safety is enhanced and healthcare quality is expected to improve.

It can contribute to enhancing user-centric data accessibility by enabling individuals to easily and securely manage their own sensitive medical data.

SOCIAL ISSUE 35

Viewing and Managing Medical Records, Even from Home

 KEY TECHNOLOGICAL FEATURES

- ✓ API (Application Programming Interface) for Service Integration
 - API provided as a standardized specification from the platform to application services: Ensures stability and reliability when transmitting and receiving medical information between the Health Information Highway platform and application services
 - Composed of data inquiry APIs, dynamic consent APIs, support APIs, etc., used by application services to link with the platform
- ✓ Establishment of a data linkage system with medical institutions' Electronic Medical Record (EMR) systems

 OVERVIEW

Until recently, citizens faced significant inconvenience, needing to visit medical institutions in person to gather health information scattered across various organizations. Without a means to integrate and utilize this information, individuals found it difficult to proactively access and manage their medical records.

The government established a system (Health Information Highway) in August 2022 to build a MyData digital platform environment in the healthcare sector. This system supports individuals in: ①consolidating their health information in one place, ②providing data to desired recipients (based on consent), and ③directly utilizing the data.

Table 35. Project Detail

Project Category: National Dream Project (2022)
Implementing Agency/Partner Organization: Ministry of Health and Welfare
Project Description The 'Health Information Highway' is an information system that enables individuals to easily access and manage their personal medical data (PHR, Personal Health Records) scattered across multiple locations, and to transmit and utilize it in a standardized format wherever desired. * Acts as a network hub, serving as a highway for health information to flow from data-holding institutions (primarily medical institutions) to the individual or data-utilizing institutions. Data transmission via the 'Health Information Highway' requires explicit consent from the individual. Currently, transmission follows the medical institution-individual-medical institution or medical institution-medical institution model → Third-party transmission will be enabled after legislation is enacted. ✓ Provided Data – In addition to information held by public institutions (e.g., health screenings, vaccinations), it integrates and provides information held by medical institutions (12 items), including past

medical treatment/medication history, diagnostic test/surgery records.

* (Public Institutions) National Health Insurance Service (treatment history, health screening history), Health Insurance Review and Assessment Service (medication history), Korea Disease Control and Prevention Agency (vaccination history)

(Medical Institutions) ① Patient Information, ② Medical Institution Information, ③ Physician Information, ④ Diagnosis Details, ⑤ Prescription Details, ⑥ Diagnostic Tests, ⑦ Imaging Tests, ⑧ Pathology Tests, ⑨ Other Tests, ⑩ Surgical History, ⑪ Allergies and Side Effects, ⑫ Medical Records

** (Participating Medical Institutions) As of the end of 2024, 26 tertiary general hospitals, 24 general hospitals, and 954 clinics/hospitals are connected. By 2025, connection to all tertiary hospitals (47 institutions) will be completed, and connection to general hospitals will be expanded.

✓ My Health Record App

– Utilizing the 'My Health Record App' linked to the Health Information Highway platform, all health information is comprehensively managed and provided—including viewing, storing, and transferring—with the individual's consent.

Figure 35.1. Progress of the Medical MyData project

1st Roadmap	Established and announced the 'Medical MyData Implementation Plan' (jointly by relevant ministries and the 4th Committee, February 2021)
IT Project Implementation	Commencement of MyHealthWay System Construction Project (August 2021–April 2023, approx. KRW 20 billion)
Public App Development	Citizens can view health information* held by major public institutions via smartphone ('My Health Record App', February 2021) * (National Health Insurance Service) medical history, health screening history, (Health Insurance Review and Assessment Service) medication history, (Korea Disease Control and Prevention Agency) vaccination history, etc.
National Policy Task No. 25	Formalization of the 'Health Information Highway' System * Establishing legal and institutional foundations for medical MyData and digital healthcare services



EXPECTED OUTCOMES

In emergency Citizens can easily access and manage their medical data through the Health Information Highway without having to individually search for past medical treatments, prescriptions, health screenings, and other personal medical information. Medical institutions can also view patient records with consent, improving healthcare services.

Citizens can actively participate in health management through daily health monitoring and wearable devices. The application of AI technology is expected to provide significant utility value to citizens in the future.

* (August 2023 survey results) Based on a practical usage test involving 966 general citizens and an online anonymous survey, respondents indicated it was helpful when transferring to other hospitals or clinics (91.7%) and for routine health management (84.5%), confirming it as a platform providing tangible benefits to the public.

SOCIAL ISSUE 36

LLM Chatbot-Based Clinical Trial Participation Information Query System

KEY TECHNOLOGICAL FEATURES

- ✓ **Large Language Model (LLM)-Based Question-Answering System:** Provides natural language responses to user queries using AI models specialized for the medical field
 - **Clinical Trial Database Integration:** Linked to the National Clinical Trial Information System to reflect the latest clinical trial information
 - **Personalized Recommendation System:** Provides optimal clinical trial information tailored to the patient's health status, location, and areas of interest

OVERVIEW

Patients seeking to participate in clinical trials currently struggle to understand complex medical terminology and vast amounts of information. Existing search systems rely on rigid keyword-based searches, making it difficult for users to quickly find the information they need. This project aims to provide clinical trial information in a more intuitive and user-friendly manner by leveraging an LLM-based chatbot.

Table 36. Project Detail

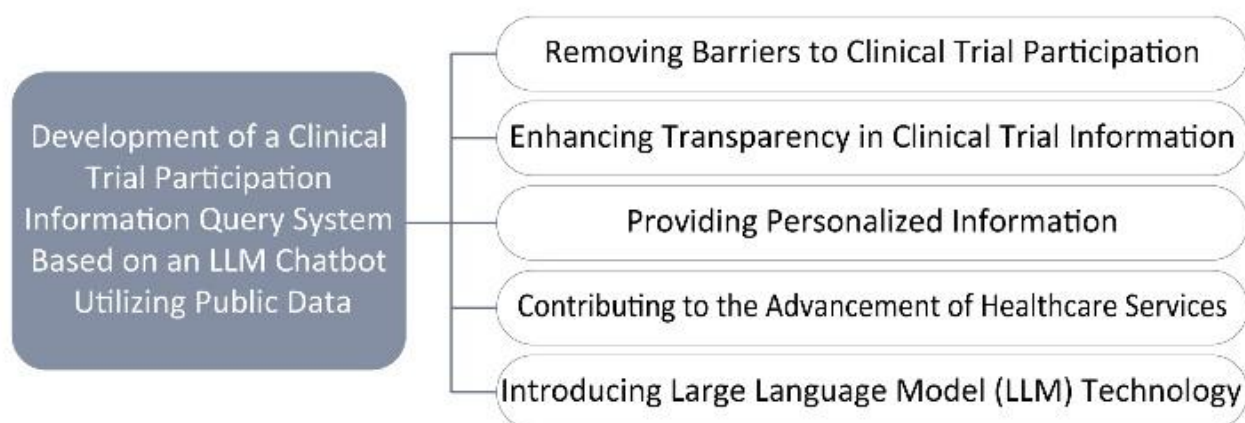
Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: MediAI Plus Co., Ltd.
Project Description This system analyzes patient questions using a large language model and provides personalized clinical trial information. Key features include: It provides an AI-based question-answering system that analyzes user queries using natural language processing technology to deliver the most appropriate clinical trial information. By linking with specialized medical data, it provides reliable answers and supports explanations tailored to patient comprehension. To provide clinical trial information, it updates the latest clinical trial data by linking with the National Clinical Trial Information System. It collaborates with major hospitals and research institutions to provide reliable information, helping patients easily find suitable clinical trials. It also provides personalized accessibility information, such as public transportation and convenience facilities. By analyzing patient health status, age, location, and other information, it recommends the optimal clinical trial. It continuously improves its recommendation algorithm based on user feedback, increasing the likelihood of patient participation.

EXPECTED OUTCOMES

Once this system is implemented, patients will be able to access complex medical information more easily and find clinical trials suited to their health status more efficiently.

It is also expected to provide researchers with a larger pool of potential participants, thereby accelerating the pace of clinical trial progress.

Figure 36.1. System overview



Enhance clinical trial success rates by removing barriers to participation, providing personalized accessibility information, and ensuring participation accessibility.

Disaster Response



SOCIAL ISSUE 37

Establishment and Operation of a Data-Based K-Infection Management Support System

KEY TECHNOLOGICAL FEATURES

- ✓ **Providing monitoring by analyzing density based on mobile carrier data**
 - Collect and analyze crowd density influencing factors such as mobile population data and public transportation information, displaying them as heatmaps on a GIS situation board
- ✓ **Providing advance early warning notifications for congestion levels**
 - When crowd density risk exceeds an appropriate level (Level 3 or higher out of 5 total levels), provide risk level alerts via situation dissemination messages (to local governments) or mobile messages (to users)

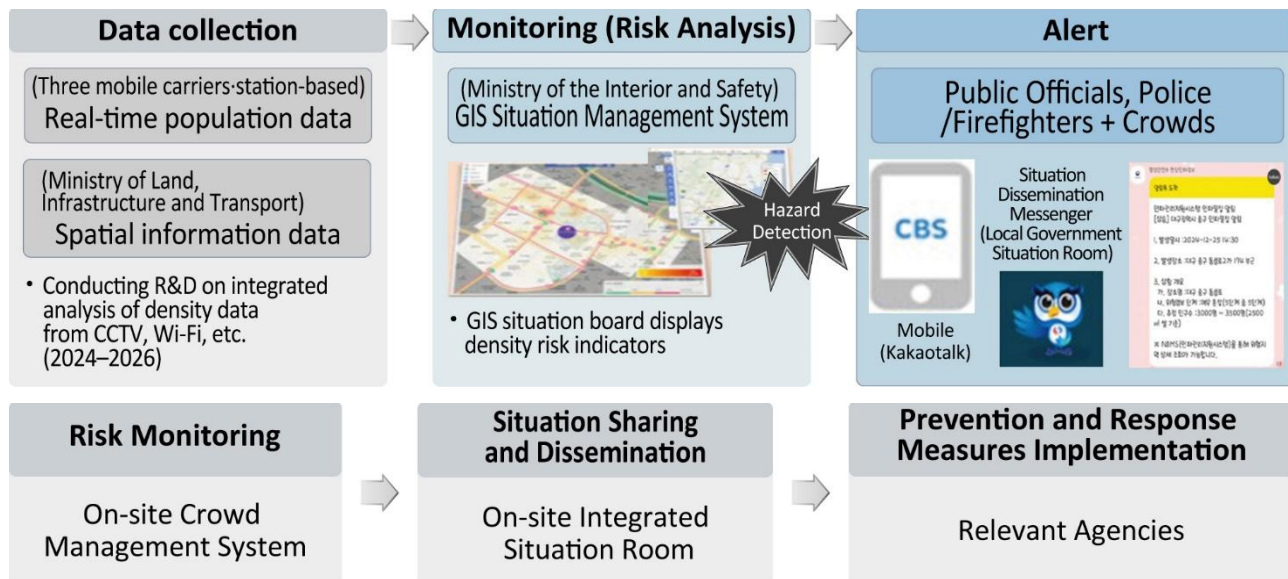
OVERVIEW

In response to the Itaewon tragedy, it became necessary to preemptively establish a data-driven alert system to prepare for situations involving large crowds. This system would enable local governments to recognize such situations early and support scientific decision-making. By leveraging mobile carrier base station access data and spatial information of the relevant area, it is possible to predict and analyze potential risks arising from crowd congestion in advance, thereby contributing to accident prevention.

Table 37. Project Detail

Project Category: National Dream Project (2023)
Implementing Agency/Partner Organization: Ministry of the Interior and Safety
Project Description This system analyzes patient questions using a large language model and provides personalized clinical trial information. Key features include: A Crowd Management Support System has been established to collect and analyze data from densely populated areas, monitor risk levels, and provide notification functions. This system collects and analyzes mobile population data* and spatial information such as roads to measure 'density', then displays this as a heatmap on a GIS situation board. * Data collected from mobile carriers at 5-minute intervals in 50×50m grid (Cell) units Furthermore, when monitoring detects density levels exceeding the appropriate threshold (Level 3 or higher out of 5 total levels), the risk level is communicated to local governments via situation dissemination messages and to users via mobile messages. When hosting regional festivals or events such as spring cherry blossom festivals or international fireworks festivals, the Crowd Management Support System can be utilized to deploy safety personnel at event sites, ensuring events proceed safely. Plans include enhancing local government usability by comprehensively considering their needs and operational outcomes while refining the managed areas.

Figure 37.1. Process flow



EXPECTED OUTCOMES

The Ministry of the Interior and Safety established a crowd management support system leveraging AI and digital technologies, which began operations at 100 locations nationwide in December 2023. This system monitors potential hazardous situations in dense crowds, enabling swift response and management to prevent disaster safety accidents.

During the Busan Fireworks Festival following the system's implementation, approximately 770,000 people gathered. The crowd management system facilitated the efficient management of this dense crowd by operating integrated on-site situation rooms at both the city and district levels, in coordination with the city's disaster safety situation room, establishing a comprehensive monitoring and response framework.

Figure 37.1. Before and after implementation (AS-IS vs TO-BE)

Before (AS-IS)	After (TO-BE)
- Lack of information necessary for assessing multiple crowd-related risk situations and reliance on visual judgment - Challenges in rapid inter-agency information sharing and post-incident response approaches by individual agencies following crowd accident reports	- System-based approach featuring systematic risk level monitoring based on scientific data and notification functions for relevant agencies - Establishment of a crowd accident response system enabling rapid information sharing and preemptive prevention among agencies such as local governments, police, and fire departments

SOCIAL ISSUE 38

AI-Based Forest Pest Control Support

KEY TECHNOLOGICAL FEATURES

- ✓ Implementation of functions such as pine wilt nematode detection and control history tracking management: Utilizing multi-year accumulated forest pest and disease data (forest imagery, dead tree imagery, etc.) and image processing AI technology
- ✓ Contributes to reducing forest pest identification time, improving accuracy, and enhancing control operation efficiency during pine wilt disease control

OVERVIEW

Current detection of forest pests and diseases (Pine Wilt Disease) relies on expert visual interpretation, leading to time delays and reduced accuracy during hyper-scale regional diagnostics. This limits the timely establishment of efficient control plans for the right locations. Therefore, this project aimed to build a system that shortens forest pest identification time and improves accuracy by integrating and utilizing Pine Wilt Disease Forest image data accumulated by the Korea Forest Service with AI technology.

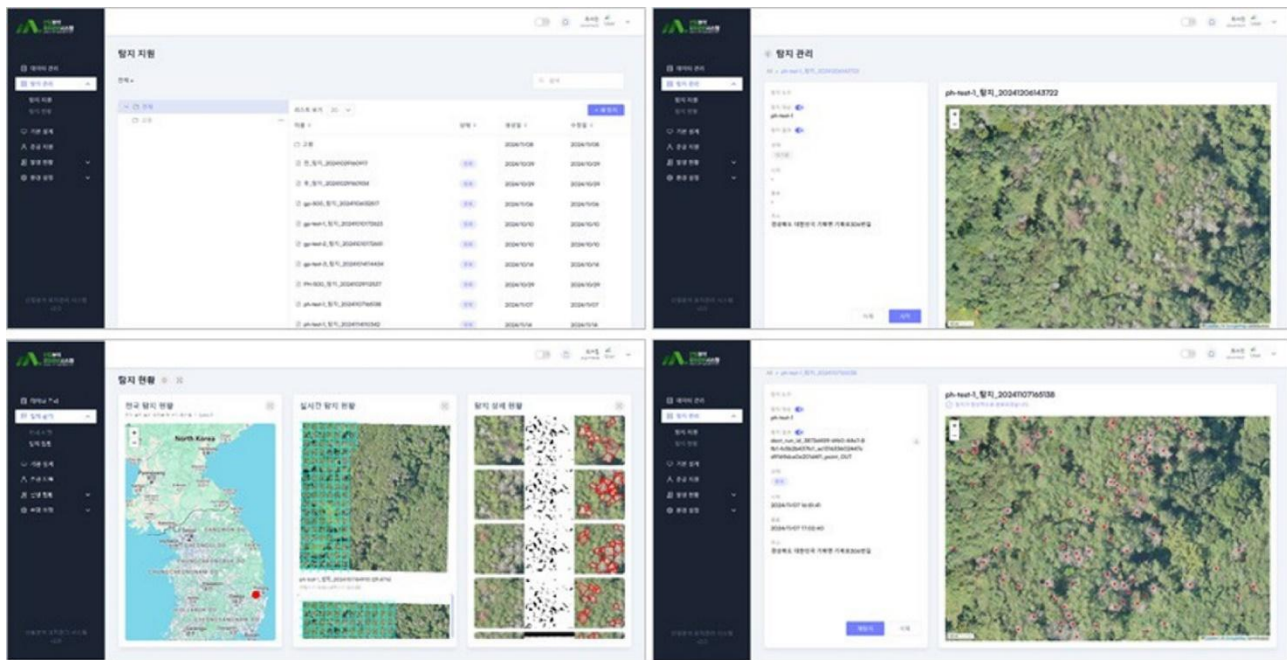
Table 38. Project Detail

Project Category: Ministry-Collaboration AI Diffusion (2022-2024)	
Implementing Agency/Partner Organization: Elcomtech Co., Ltd.	
Project Description To develop an AI solution, the project obtained and refined approximately 274.7 hectares of drone imagery captured between 2019 and 2023 from the Korea Forest Service (collaborating agency) and the Korean Forestry Promotion Institute's Pine Wilt Disease Center (demand agency). This yielded 125,000 pieces of suspected dead tree training data. Based on this, the system was trained by an AI model for detecting suspected pine wilt disease-affected dead trees and developed and validated the solution. The Forest Pest Control Support System is a platform that provides functions ranging from data management for pine wilt disease control to detection and basic design support, as well as comparing and displaying control results. Its primary function is forest pest detection management, using AI to detect suspected pine wilt disease-affected dead trees, manage their history, verify detection results, and provide result files (SHP).	

Figure 38.1. Quantity of data provided by demand agency

Category	Data Type	First Year	Second Year	Third Year	Total
Quantity Provided by Korea Forest Promotion Agency	Drone imagery (ha)	1,385,000	636,000	726,000	2,747,000
	Dead tree location coordinates (units)	146,938	171,593	223,899	542,430

Figure 38.2. Service demonstration



EXPECTED OUTCOMES

Over the past three years, through ministry-collaborative AI diffusion projects, the performance of the AI-based forest pest control support system for detecting suspected pine wilt disease-affected dead trees was enhanced through verification by an accredited testing agency (TTA).

Figure 38.3. Achievement status of performance goals

Indicator Name	2022		2023		2024	
	Target	Actual	Goal	Performance	Goal	Achievement
Pine Wilt Nematode Detection AI Model Accuracy	80	83	83	89.6	87	87.4

Furthermore, through on-site verification in the jurisdiction of the Southern Regional Forest Service, the project achieved a significant improvement in operational efficiency by reducing the design time from the previous 25 days to just 4 days, a reduction of approximately 80%.

Figure 38.4. Basic design content comparison table

Category	Design Subtotal	Design Time
AI Design	2,076 units	4 days
Exploration Design	2,110 copies	25 days

※ Survey Design Time: Survey Fieldwork Time + Design Time

※ AI Design Time: Drone filming time + Detection time + Design time

It is anticipated that applying this AI solution in the future by regional forest offices or nationwide local governments will reduce the costs associated with the hundreds of billions of won budget and manpower allocated annually for forest pest control. Furthermore, it is expected to contribute to the protection of our beautiful forests and natural ecosystems.

SOCIAL ISSUE 39

AI-Integrated Hazardous Chemical Substance Detection System

 KEY TECHNOLOGICAL FEATURES

- ✓ Developed an AI model based on analysis of the detection environment by training it on the types of hazardous chemicals and related data
- ✓ Captures disaster sites in real-time and identifies hazardous chemical types through image analysis technology
- ✓ Real-time delivery of information to fire scenes, including hazardous chemical substance details and response methods during accidents

 OVERVIEW

The rapid increase in chemical products due to technological advancements in precision organic chemistry and semiconductors within the country has led to a continuous occurrence of major chemical accidents. Accidents involving hazardous chemicals have faced limitations in rapid response, relying on the experience or communication of on-site personnel, and proving inefficient in emergency situations. To enable swift response to hazardous chemical accidents and effectively reduce emergency response times, the development of an AI-based hazardous chemical identification system was pursued.

Table 39. Project Detail

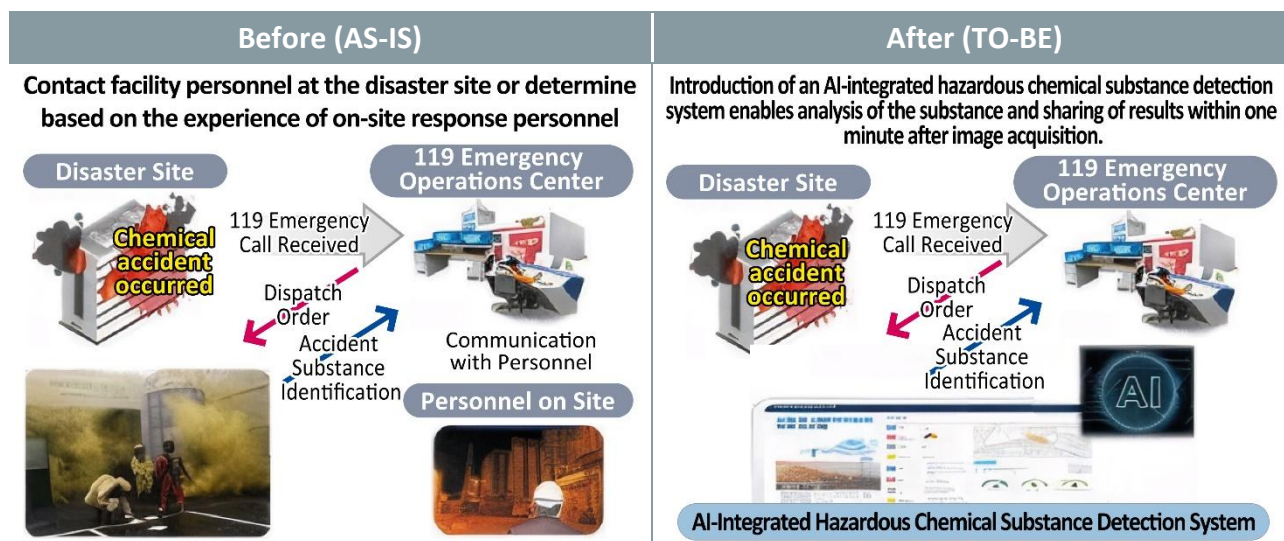
Project Category: Ministry-Collaboration AI Diffusion (2023)
Implementing Agency/Partner Organization: Vibe Co., Ltd.
Project Description The National Fire Agency processed and trained data on 23 types of hazardous chemicals it possesses, developing an AI model based on environmental analysis that can automatically detect various elements—such as flames, smoke, solutions, and flashes—during fire incidents involving hazardous chemicals. An AI-integrated hazardous chemical detection system was established by adding certain features for field deployment, and this system was demonstrated at National Fire Agency client sites (including the Gyeongnam Fire Headquarters). This AI solution automatically identifies hazardous chemicals during chemical disasters and includes the capability to visualize* the potential damage spread range. It provides a service that instantly shares the hazardous chemical identification results and response methods with the 119 Emergency Operations Center and field responders via the operations center screen and a mobile app. * Firefighting response strategies (water dousing, spray extinguishing, suppression of combustible vapors after fire containment, etc.), prediction of damage scope including fire spread, securing early evacuation distances, and support for protective action decisions

EXPECTED OUTCOMES

The AI-integrated hazardous chemical detection system achieved a 94% recognition rate after three years of development and refinement. The AI solution was pilot-linked to the target system at the Gyeongnam Fire Headquarters, a demand site of the National Fire Agency.

The AI system was applied to the field. According to the results of the AI system's field testing and application, the National Fire Agency's hazardous chemical identification time decreased by 80% from 5 minutes to 1 minute, and the accuracy of hazardous chemical identification significantly improved. Furthermore, by delivering hazardous chemical information and response methods within one minute, it enables rapid incident response at fire scenes during hazardous chemical accidents. It is expected to enhance the safety of field personnel and ensure public safety by facilitating the initial evacuation of responding units and securing protective distances.

Figure 39.1. Before and after implementation (AS-IS vs TO-BE)



SOCIAL ISSUE 40

E-Bio Reactivomics-Based AI Monitoring Service for Crop Stress Environments

KEY TECHNOLOGICAL FEATURES

- ✓ Data and biological information variation big data collected, analyzed, and generated through the integrated collection and analysis of internal biological responses exhibited by crops when exposed to various environmental factors (climate change, pests and diseases, soil conditions, etc.)
- ✓ Generating meaningful data dependencies and sets through big data analysis, and enabling early prediction of adverse environmental conditions for crops through AI learning and analysis

OVERVIEW

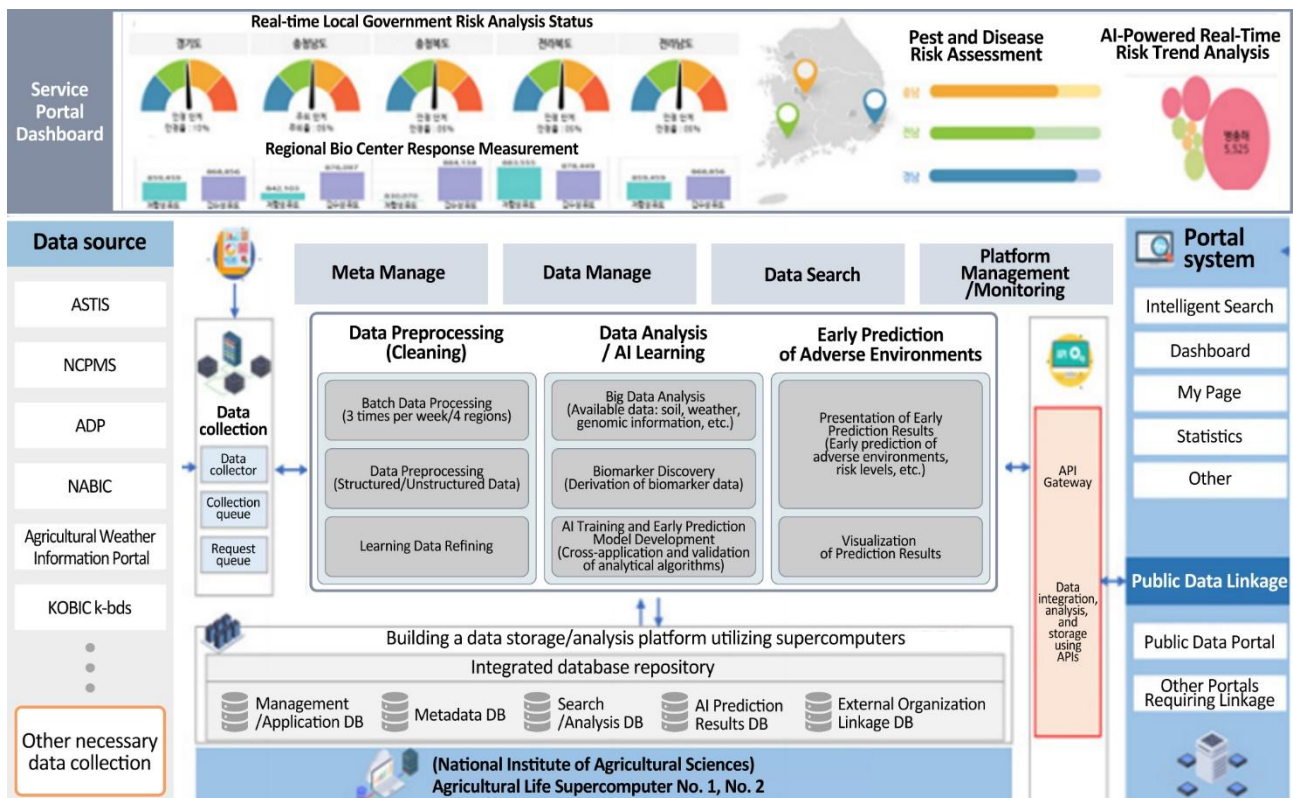
The frequency and intensity of weather disasters and adverse environmental conditions are increasing. However, due to inadequate proactive monitoring and response systems, crop damage is rising. The reality is that relying solely on simple external phenotypic analysis and response based on visual inspection makes early detection and timely intervention impossible. Furthermore, overcoming agricultural environmental changes caused by climate change and securing stable agricultural productivity urgently require the introduction of biotechnology and AI-based big data prediction technologies. Preemptive response technology development utilizing biosensing technology and artificial signals is necessary.

The project aims to develop an AI-based damage prediction system that enables more precise analysis of disease and pest damage, as well as drought damage, by analyzing biomarker (specific gene) expression data rather than relying solely on visible damage symptoms in crops. This system will detect damage within 1 to 3 days, compared to the current 1 week required for visual detection, and provide public services such as AI diagnosis and prescription for diseases and pests.

Table 40. Project Detail

Project Category: Digital Government Collaboration (2025)	
Implementing Agency/Partner Organization:	
Gyeonggi Provincial Agricultural Research & Extension Services	
Project Description	
Establish big data on crop growth-cycle biometric information, including biometric variation data from local agricultural institutions and universities, and AI training datasets for drought / heat / pest / disease responses.	
This project will collect and analyze biological information for rice and soybean crops according to their growth stages. It will develop an AI-integrated analysis-based environmental variation prediction and response system for analyzing crop biological regulation in response to environmental changes.	

Figure 40.1. Biomarker sensing-based AI diagnosis and prescription service portal/app



It will provide public services through a web portal, including crop damage prediction information and environmental variation data affecting crop growth by region. It will also promote the opening of public data via open APIs to share information on crop damage and predictions related to climate, drought, and other factors.



EXPECTED OUTCOMES

Contributes to mitigating food security crises by transitioning to an intelligent observation system based on crop environmental response biomarker big data and AI. Predictions, which previously took a week to detect external crop damage symptoms, can now be made within a minimum of 1 to 3 days through precise biomarker analysis.

Furthermore, it is expected to contribute to innovative development in agriculture and other industries by securing big data on biological information variations in environmentally responsive crops through continuous expansion of target crops and regions.

SOCIAL ISSUE 41

AI-Based Condensation Prevention Automation System

 KEY TECHNOLOGICAL FEATURES

- ✓ Predicts the likelihood of condensation occurring within utility tunnels and derives optimal ventilation control measures to implement a real-time automated system for condensation prevention
- ✓ **Core Algorithms:** Combination of Artificial Neural Network (ANN) and Computational Fluid Dynamics (CFD) Model
 - Learning temperature and humidity data to predict future conditions, and analyzing airflow through CFD analysis

 OVERVIEW

Utility tunnels are densely packed with critical infrastructure such as power, telecommunications, gas, and water systems. Condensation within these tunnels can cause structural corrosion and facility damage, potentially causing serious safety incidents. Previously, inspections relied primarily on manual methods, limiting real-time response and reducing efficiency.

Condensation also contributes to functional degradation of facilities and increased maintenance costs, threatening long-term infrastructure stability. Consequently, there is a demand for a system capable of proactive prevention through data-driven AI analysis, moving beyond the existing passive maintenance approach.

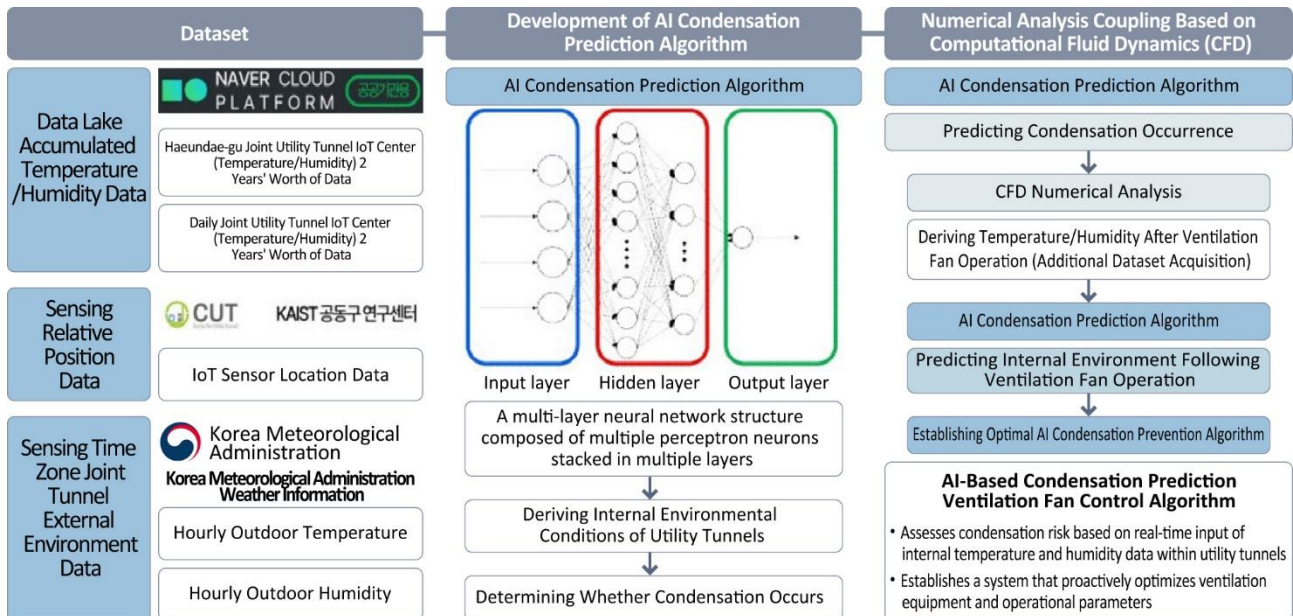
This project aims to develop an AI-based condensation prediction and ventilation control system. The goal is to establish an innovative condensation prevention service that integrates and manages temperature and humidity data within the utility tunnel, trains an AI model based on this data to predict condensation occurrence, and derives optimal ventilation solutions.

Table 41. Project Detail

Project Category: Digital Government Infrastructure (2024)
Implementing Agency/Partner Organization: Korea Advanced Institute of Science and Technology (KAIST), etc
Project Description The project established a system that collects temperature and humidity data within utility tunnels in real time, stores it in a data lake, and utilizes AI to predict the likelihood of condensation occurrence. External temperature and humidity data from the Korea Meteorological Administration were integrated with sensor data from inside the utility tunnel to build an advanced dataset. This data was refined and processed for AI model training, and being labeled whether condensation occurred to enhance the prediction model's accuracy. During AI model development process, an artificial neural network (ANN) was used to analyze temperature and humidity change patterns, enabling the prediction of condensation likelihood overtime Computational fluid dynamics (CFD) analysis was also employed to stimulate airflow within the tunnels and determine optimal operating conditions for ventilation fans.

Finally, an optimized ventilation control model was implemented by combining the AI condensation prediction algorithm with CFD analysis results. This enables the system to automatically control ventilation fans and adjust the internal environment when condensation is likely to occur under specific temperature and humidity conditions.

Figure 41.1. Conceptual diagram of service



EXPECTED OUTCOMES

Through this project, an AI-based condensation prevention system has been successfully developed and its effectiveness verified through field testing. By analyzing sensor data within the utility tunnel in real time and predicting the likelihood of condensation occurrence in advance, maintenance has become more efficient than with previous manual inspection method.

Furthermore, the introduction of an AI-based automated ventilation control system has improved the ability to maintain optimal conditions without requiring manual labor. This is expected to prevent structural damage to the utility tunnel, reduce maintenance costs, and extend the facility's lifespan.

In the future, this project plan to conduct additional data collection and analysis to further enhance the predictive accuracy of the AI model. Furthermore, this project intended to analyze condensation occurrence patterns under various environmental conditions to develop a more sophisticated model and supplement it with an automated solution capable of real-time response. To expand the service's reach, research will be conducted to enable application beyond utility tunnels to include power tunnels, underground conduits, road tunnels, and railway tunnels. This aims to enhance the maintenance efficiency of underground facilities and establish a smart safety management system for national infrastructure.

SOCIAL ISSUE 42

Development of ICT-Based Crowd-Dense Public Data Utilization Management

KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Crowd Density Analysis System:** Analyzes video and sensor data to monitor crowd movement patterns in real time
- ✓ **IoT-Based Real-Time Data Collection:** Collects and analyzes real-time data from CCTV, smart sensors, and mobile devices in public spaces
- ✓ **Risk Detection and Response System:** Provides automatic alerts and response plans when crowd density exceeds set thresholds or abnormal behavior is detected

OVERVIEW

Hyper-scale events in urban areas, stadiums, airports, and public transportation transfer hubs experience sudden crowd surges, significantly increasing the risk of accidents. Existing crowd management methods rely on CCTV monitoring and manual staffing, making real-time response difficult and limiting the ability to take swift action when accidents occur. Accordingly, this technology aims to develop a smart management system that analyzes crowd density using public data and AI technology, enabling rapid response when risks arise.

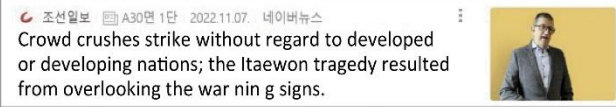
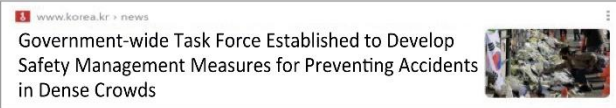
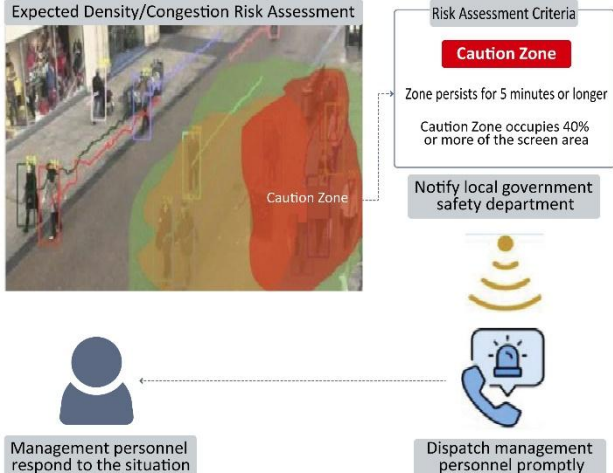
Table 42. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Anna Co., Ltd.
Project Description This system analyzes real-time data in crowded public spaces to prevent accidents and support efficient personnel deployment. Using AI algorithms, it monitors crowd movements in real time and predicts density levels in specific areas. By accessing large events or periods of high public transportation usage, the system helps identify potential danger zones in advance and enables the establishment of response plans. It gathers real-time data from a variety of IoT devices, including CCTV, smart sensors, drones, and mobile devices, enabling the evaluation of crowd speed, direction, and congestion to maintain smooth flow. When crowd density exceeds a certain threshold or abnormal behavior patterns are detected, immediate alerts are triggered, prompting rapid response through coordination with relevant agencies. It also supports real-time adjustment of crowd management strategies in collaboration with transportation and security authorities.

EXPECTED OUTCOMES

This technology enables accident prevention and rapid response in public spaces where large crowds gather, maximizing crowd management efficiency. Furthermore, integration with public safety management systems allows for the establishment of a more systematic crowd control system.

Figure 42.1. Before and after implementation (AS-IS vs TO-BE)

Before (AS-IS)	After (TO-BE)
 Cause of the Tragedy-Delayed Risk Recognition  Cause of the Tragedy-Delayed Risk Recognition  Problem-Insufficient On-Site Response Personnel	 Expected Density/Congestion Risk Assessment Risk Assessment Criteria Caution Zone - Zone persists for 5 minutes or longer - Caution Zone occupies 40% or more of the screen area - Notify local government safety department - Dispatch management personnel promptly Management personnel respond to the situation
Increased burden due to insufficient on-site response personnel, such as police deployment, for all large-scale events	Advanced disaster response technology, reduced social costs from accidents, revitalization of related upstream and downstream industries, and expansion of the disaster safety market

SOCIAL ISSUE 43

Development of an AI-Based Ground Subsidence Detection System for New Building

KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Ground Change Prediction Algorithm:** Application of an AI model that analyzes ground changes in real time and predicts the potential for subsidence
- ✓ **IoT Sensor Network Deployment:** Data collection utilizing underground sensors, accelerometers, moisture detectors, and other devices installed at construction sites
- ✓ **Real-time Monitoring and Alert System:** Provides immediate notifications upon detecting risk levels, enabling rapid response

OVERVIEW

Accidents caused by ground subsidence have been occurring frequently recently. Existing ground safety inspection methods primarily rely on expert experience or are limited to periodic inspections conducted at set intervals, making real-time response difficult. This system combines AI-based ground movement analysis with real-time data from IoT sensors, enabling more precise ground subsidence prediction and detection. This enhances safety during construction processes and strengthens the structural stability of buildings.

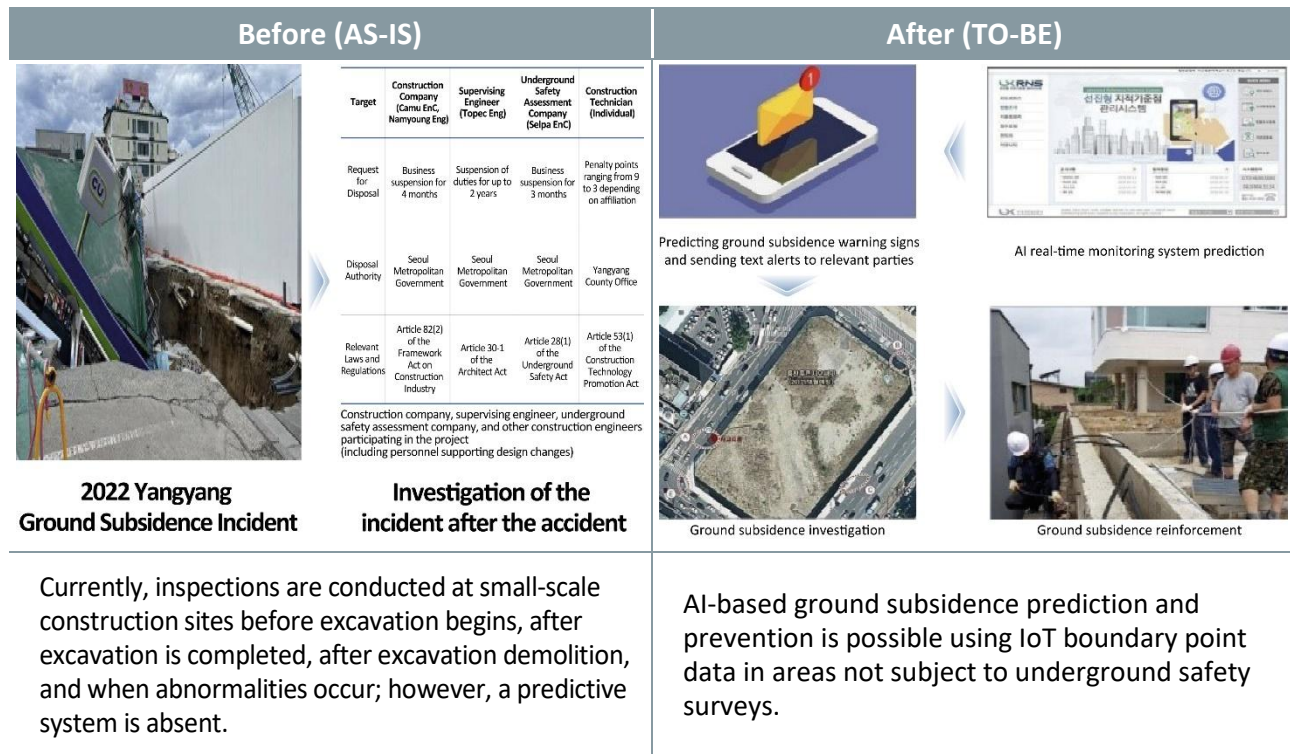
Table 43. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Korea Land and Geospatial Information Corporation, NewNop, etc.
Project Description This system is designed to detect ground subsidence early during building construction and preemptively eliminate risk factors. ✓ AI-Based Ground Subsidence Prediction and Analysis – AI analyzes ground data collected at construction sites and historical subsidence case data to predict the likelihood of subsidence. It learns ground deformation patterns to detect abnormal signs, thereby enhancing safety during the construction process. ✓ IoT-Based Real-Time Data Collection – Real-time data is collected and analyzed using various sensors installed in the ground (accelerometers, pressure sensors, moisture detectors, etc.). This enables immediate anomaly detection by measuring ground movement, foundation deformation, and changes in moisture content. ✓ Real-time Monitoring and Alert System Operation – Based on AI analysis results, immediate alerts are sent when ground subsidence risk increases, providing real-time notifications to construction personnel. This strengthens initial response capabilities and helps prevent large-scale damage.

EXPECTED OUTCOMES

Implementing this system prevents ground subsidence accidents during construction and ensures the long-term safety of structures. Furthermore, real-time monitoring enables construction personnel to respond more swiftly, minimizing economic and social damage.

Figure 43.1. Before and after implementation (AS-IS vs TO-BE)



SOCIAL ISSUE 44

Automated Analysis of Aviation Safety Issues: Hyper-Scale AI PoC

 KEY TECHNOLOGICAL FEATURES

- ✓ Performed technical verification for automating aviation safety issue analysis tasks
- ✓ Define Use Case, then optimize data preprocessing, embedding, RAG/LLM, and prompt engineering → Execute PoC

 OVERVIEW

Recently, there has been a global increase in unexpected major aviation accidents, such as mid-air collisions between aircraft, aircraft crashes due to bird strikes, and passenger fatalities caused by increased turbulence due to climate change.

The International Civil Aviation Organization (ICAO) has established international standards requiring countries to operate systems that collect, integrate, and analyze aviation data for systematic national aviation safety management, enabling its use in data-driven decision-making frameworks.

Accordingly, Korea is revising relevant laws and regulations to implement international standards and has entrusted the Aviation Safety Technology Institute, a specialized agency, with the task of supporting national aviation safety policies based on aviation safety data analysis.

However, the current practice of analysts at the specialized agency manually processing and analyzing diverse data and information directly results in significant time consumption and operational inefficiency.

Therefore, to enhance safety productivity, this project sought to promote the transition to automation for tasks such as AI-based aviation safety data processing, safety issue identification, and document generation.

To prevent aviation accidents and enhance public trust, it is now more crucial than ever to utilize AI to proactively identify, analyze, and eliminate potential risk factors threatening safety, thereby ensuring the safety of national air traffic.

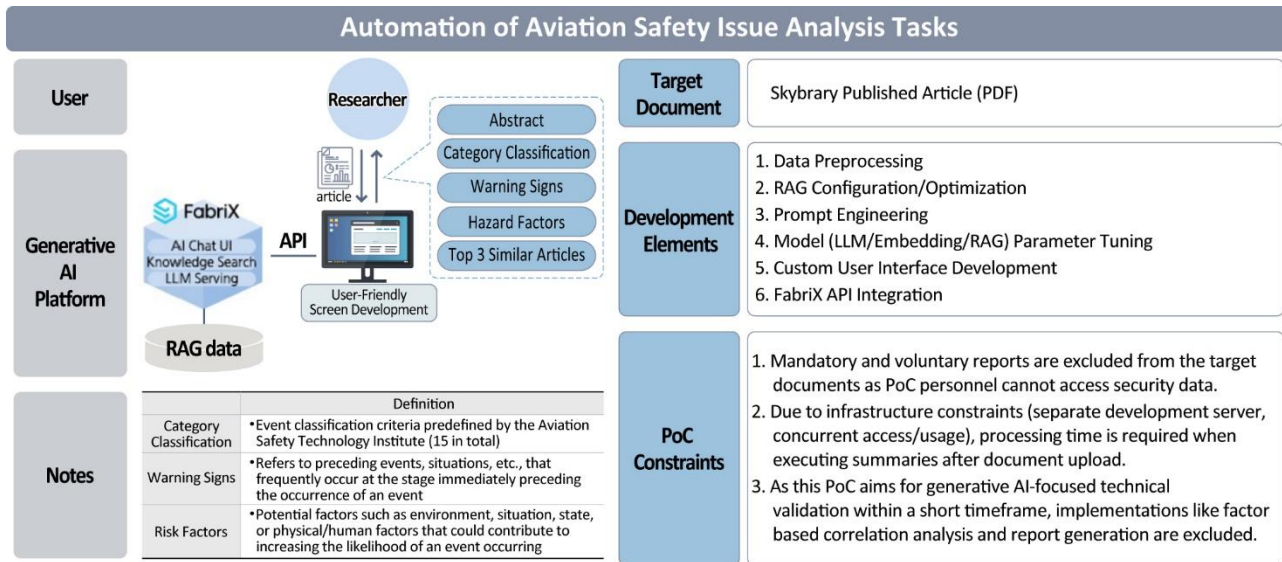
Table 44. Project Detail

Project Category: Hyper-scale AI Service (2024)
Implementing Agency/Partner Organization: Aviation Safety Technology Institute
Project Description For model training, numerous articles related to aviation accidents were collected from SKYbrary, an international aviation safety website. An aviation accident classification system and risk factor categories were established and compiled into a database. This project secured a large volume of high-quality Q&A sets to enable generative AI to rapidly analyze vast amounts of information and provide accurate answers, and preprocessed the data into a format understandable by LLM. Through continuous technical review and optimization, this project developed an automated aviation safety issue analysis app to validate its automation performance. Key services include: inputting documents related to aviation accidents into the app triggers

translation and summarization, automatically classifies the accident type, and provides associated risk factors.

Additionally, it provides risk factor information in Excel file format to enable secondary analysis by specialized analysts, and incorporates functionality to present airline accident articles similar to the input document.

Figure 44.1. Automation of aviation safety issue analysis tasks



EXPECTED OUTCOMES

Through this project, the feasibility of transitioning to an AI-based aviation safety management system was confirmed. Previously, data collected from multiple agencies was manually integrated and analyzed by specialized analysts. However, by validating the performance of generative AI-based automated aviation safety issue analysis, it is expected to reduce the data processing and analysis workload for safety managers and data analysts at airlines, airports, and national agencies, thereby enhancing productivity.

Furthermore, it is anticipated that the automatic analysis function based on big data will identify potential risk factors and establish proactive preventive measures, thereby enhancing the nation's aviation safety level and the public's trust in aviation safety.

SOCIAL ISSUE 45

Landslide Risk Prediction Program Using Precipitation Data

 KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Precipitation and Ground Change Prediction Model:** Evaluating Landslide Risk by Analyzing Precipitation Data
- ✓ **Soil and moisture condition monitoring using IoT sensors:** Real-time detection of landslide risk factors using soil moisture sensors, barometers, etc.
- ✓ **Risk visualization and alert system implementation:** Visualize risk areas on a map-based platform and provide immediate alerts when necessary

 OVERVIEW

Increased localized torrential rains and heavy downpours due to climate change are heightening the risk of landslides. Existing landslide prediction systems assess risk using precipitation and topography data, but struggle to incorporate real-time data, hindering rapid response. This system aims to predict risk more precisely by monitoring precipitation changes and soil conditions in real time, and prevent damage through early warnings.

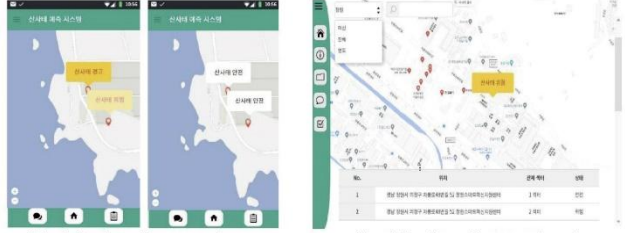
Table 45. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: RaonSoft Co., Ltd.
Project Description This program detects precipitation and ground changes and performs functions to assess the risk of landslide occurrence. ✓ AI-Based Precipitation and Ground Change Analysis – Utilizing an AI model trained on Korea Meteorological Administration data, topographical characteristics, and historical landslide records, it analyzes precipitation changes and ground deformation patterns in specific regions. This enables prediction of landslide potential and supports proactive response when necessary. ✓ IoT-Based Real-Time Soil and Moisture Condition Detection – It monitors environmental changes in landslide-prone areas using soil moisture sensors, ground deformation detectors, and barometers. When moisture content exceeds specific thresholds or ground instability occurs, it immediately sends alerts to facilitate early response. ✓ Risk visualization and automated alert system operation – Utilizing GIS (Geographic Information System)-based map data, it visualizes landslide-prone areas, predicts risk levels, and provides alerts to users. In collaboration with government agencies and local authorities, it sends immediate notifications to residents in hazardous areas and guides them through evacuation procedures.

EXPECTED OUTCOMES

This system enables more precise prediction of landslide risks caused by increased rainfall. The early warning system minimizes loss of life and property damage. Furthermore, continuously accumulating data on landslide-prone areas strengthens long-term prevention and response systems.

Figure 45.1. Before and after implementation (AS-IS vs TO-BE)

Before (AS-IS)	After (TO-BE)
 2021 Landslide Damage in Gyeongnam	 Final Budget Proposal app Final Project Proposal web
Existing landslide prediction information is only used to issue warnings and alerts to residents in areas at risk of landslides, considering local weather conditions, and as basic preventive data.	Regionally tailored monitoring of potential landslide risk areas, incorporating 9 landslide-triggering factors and regional precipitation data

SOCIAL ISSUE 46

Development of a Fire Access Route and Evacuation Route Guidance System based on the BDApp (Fire Remote Control Service)

KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Fire Risk Prediction and Optimal Path Analysis:** Analyzes smoke dispersion and temperature changes during a fire to provide safe evacuation routes
- ✓ **IoT Sensor Network Deployment:** Real-time data collection by linking with building fire detectors, temperature sensors, smoke detectors, etc.
- ✓ **Real-time Alert and Guidance System:** Visualizes evacuation routes for users and firefighters

OVERVIEW

During a fire, building occupants often struggle to find rapid evacuation routes, and firefighters frequently face difficulties securing access paths. Existing fire response systems focus primarily on alarm notifications, lacking real-time evacuation guidance and optimal access route provision. This system integrates AI and IoT technology to analyze optimal evacuation routes in real time and support rapid firefighter response.

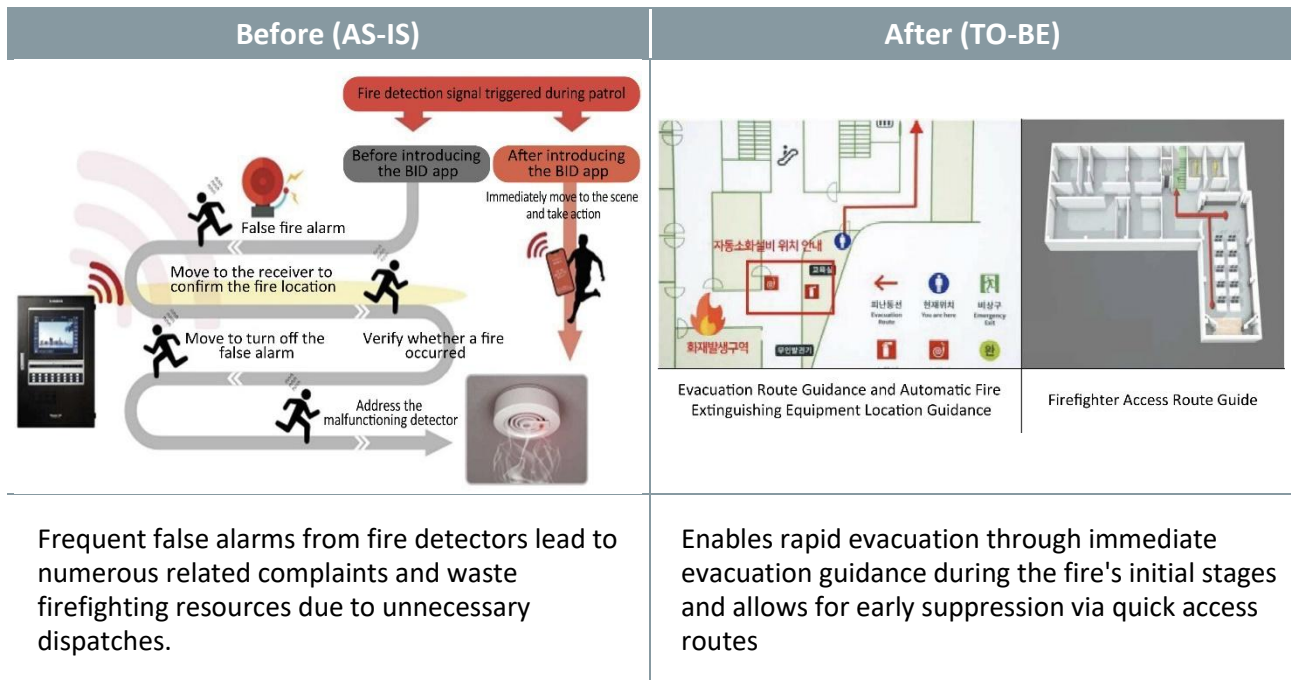
Table 46. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: EMC Co., Ltd.
Project Description This system analyzes real-time information and provides optimal routes to facilitate rapid entry and evacuation during fire incidents. ✓ AI-Based Optimal Evacuation Path Analysis – During a fire, it analyzes smoke dispersion, temperature rise, and the status of doors and passageways within the building to suggest the safest evacuation route. The AI can adjust and guide routes in real-time based on the building's structural data. ✓ IoT-Based Real-Time Fire Detection and Data Collection – Real-time data from smoke detectors, temperature sensors, and door opening/closing sensors installed within the building is collected to analyze fire spread conditions. This enables immediate guidance to new evacuation routes should existing paths become blocked. ✓ Operation of Evacuation Route and Firefighter Access Guidance System – For building occupants, it provides optimal evacuation routes using smartphone alerts, guidance screens, and emergency lights. For firefighters, it guides real-time fire access routes to support faster rescue operations.

EXPECTED OUTCOMES

This system minimizes casualties during fire incidents and reduces fire response times. By providing optimal response strategies based on real-time data analysis, it enables more efficient fire management.

Figure 46.1. Before and after implementation (AS-IS vs TO-BE)



SOCIAL ISSUE 47

Development of AI Prediction and Control Solution for Fine Dust Reduction in Multi-Use

KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Fine Dust Prediction Model:** Analyzes indoor and outdoor fine dust changes to predict pollution levels and derive optimal countermeasures
- ✓ **IoT Sensor Network Deployment:** Collects real-time data by integrating air quality sensors, temperature/humidity sensors, and HVAC systems
- ✓ **Automatic Air Quality Control System:** Provides smart control functions that automatically adjust ventilation, air purifier operation, etc., based on fine dust concentration

OVERVIEW

Multi-use facilities (subway stations, airports, shopping malls, hospitals, etc.) require critical indoor air quality management, yet systems capable of real-time fine dust concentration prediction and effective control remain insufficient. Existing air quality management relies on periodic filter replacement and manual ventilation adjustments, limiting real-time responsiveness.

This solution aims to build a smart environment that combines AI and IoT technology to predict real-time changes in fine dust and automatically regulate air quality.

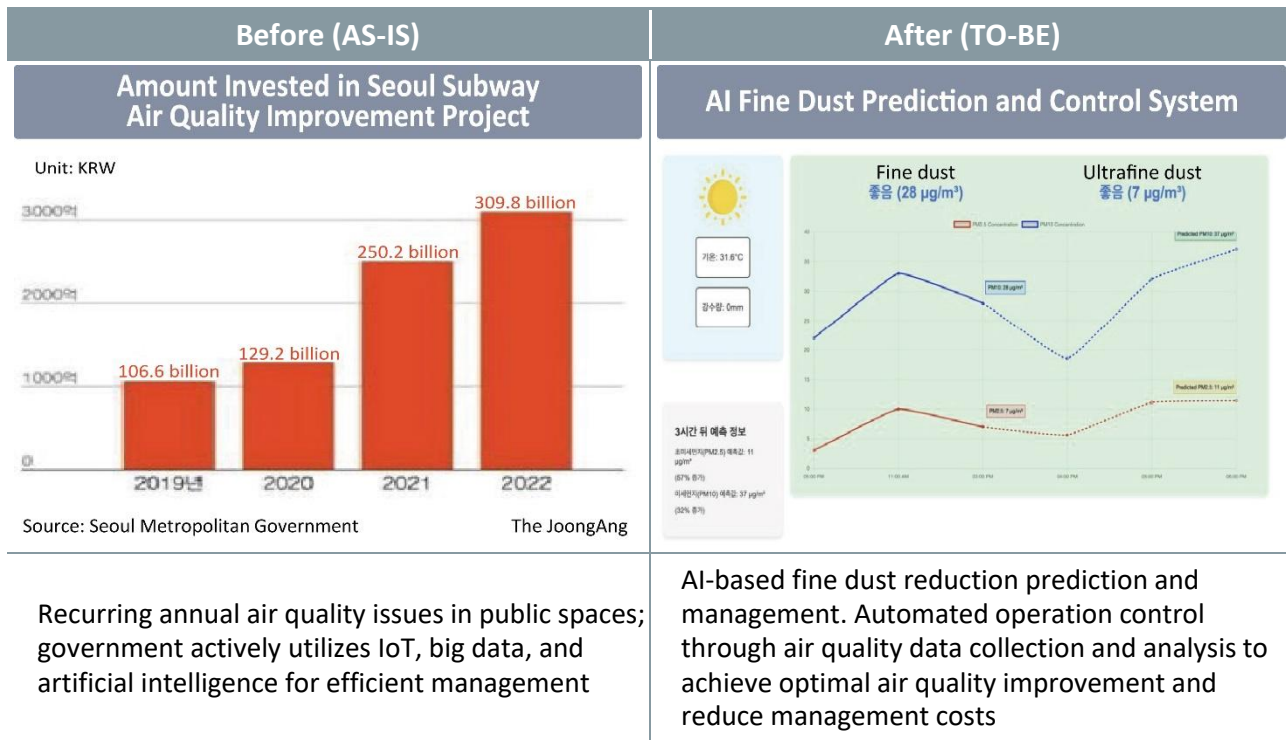
Table 47. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Apples Co., Ltd.
Project Description This system detects fine dust concentrations in real time and automatically executes optimal air quality maintenance measures. ✓ AI-Based Indoor Fine Dust Prediction and Analysis – Utilizes AI algorithms to analyze patterns in external air quality and internal air quality changes, predicting future fine dust concentrations to enable proactive responses. ✓ Real-time Air Quality Monitoring Using IoT Sensors – Air quality sensors, temperature and humidity sensors, and HVAC systems are integrated to collect real-time data. This enables immediate detection of air quality changes and automatic response when fine dust concentrations exceed a certain threshold. ✓ Smart Air Quality Control System Operation – Automatically regulates air quality by linking ventilation systems, air purifiers, humidifiers, and other devices. Designed using an AI-based optimization model to minimize energy consumption while effectively reducing fine dust.

EXPECTED OUTCOMES

This system enables more effective management of indoor air quality in multi-use facilities, protecting user health and creating a comfortable environment.

Figure 47.1. Before and after implementation (AS-IS vs TO-BE)



8

Traffic Safety



SOCIAL ISSUE 48

Hyper-scale AI-Based Urban Rail Transit Safety GPT Service

 KEY TECHNOLOGICAL FEATURES

- ✓ **Domain Specialization:** Development of a Semi-Automatic Domain Learning Data Generation Approach to Enable Reasoning in Expert Fields
- ✓ **Knowledge Retrieval:** Developing Context-Aware Chunking for Language Models to Understand

 OVERVIEW

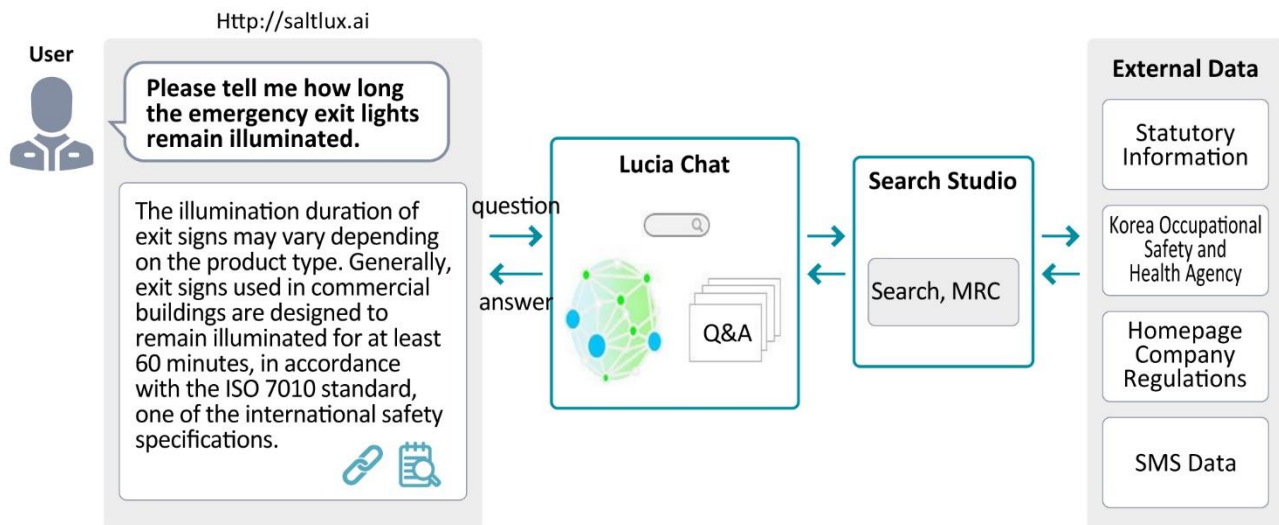
For urban rail transit safety, accident prevention and proactive response are crucial, but the scattered nature of specialized materials increases the burden on safety managers and highlights their importance.

Accordingly, Seoul Metro aims to enhance the safety expertise of personnel and reduce decision-making time by enabling them to learn safety-related data, including not only relevant laws such as the Railway Safety Act, Transportation Safety Act, and Fire Safety Act, but also internal regulations and train manuals.

Table 48. Project Detail

Project Category: Hyper-scale AI Service (2023)
Implementing Agency/Partner Organization: Seoul Metro
Project Description The system has been trained on industrial safety-related laws and regulations, Seoul Metro internal regulations, safety operation manuals, website materials, and other relevant sources. ①Data collection and preprocessing of training data, ②Creation and fine-tuning of learning models, ③Implementation of the Safety GPT service and integration/testing of learning models. Key service features include Q&A support for internal operational manuals and guidelines, providing the latest safety regulations and legal basis for inquiries. The service is accessible as a web service, available anytime and anywhere.

Figure 48.1. Service flow



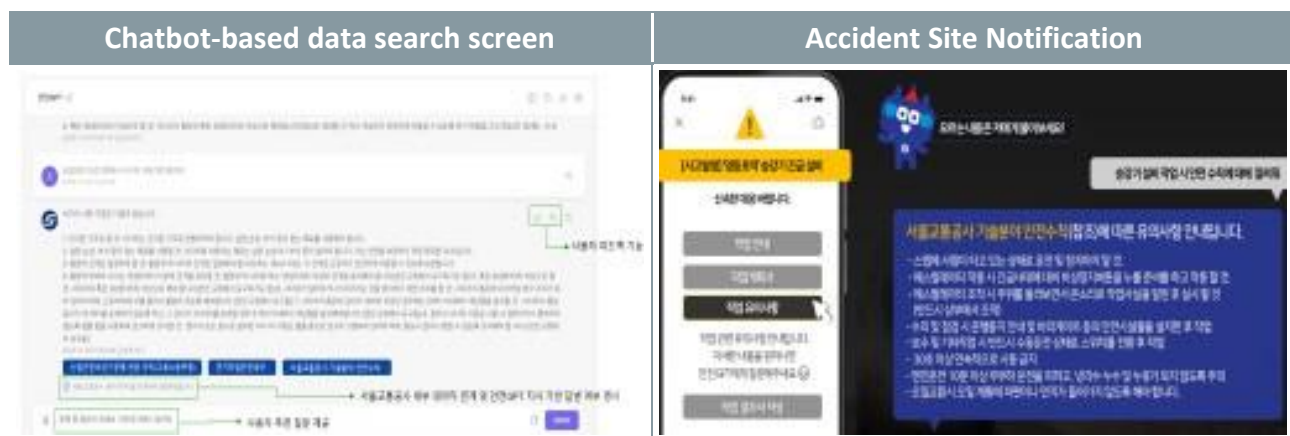
EXPECTED OUTCOMES

The Urban Rail Transit Safety GPT service enables field workers to receive accurate information related to inspection tasks, contributing to maintaining a safe rail environment and preventing safety accidents.

Furthermore, the ability to easily access diverse and mixed information enables effective work support, leading to anticipated reductions in social costs.

The project will be expanded to related agencies of the Transportation Corporation in the future.

Figure 48.2. Service demonstration



SOCIAL ISSUE 49

AI-Based Police Traffic Safety System

 KEY TECHNOLOGICAL FEATURES

- ✓ Development of Traffic Accident Risk Prediction Models Using Machine Learning and Data Mining Technologies
- ✓ **Core Algorithms:** Random Forest, LightGBM, AdaBoost
- ✓ **Leveraging Data Lake:** Automating Data Collection and Processing, and Establishing an MLOps Environment

 OVERVIEW

The goal of this project is to develop an innovative service that can predict and prevent traffic accident risks in advance through the systematic collection and analysis of traffic data. The core objective is to establish an AI-based traffic accident risk prediction model utilizing diverse public and private sector data, and to develop a nationally scalable traffic safety system by conducting field tests in collaboration with the Korean National Police Agency.

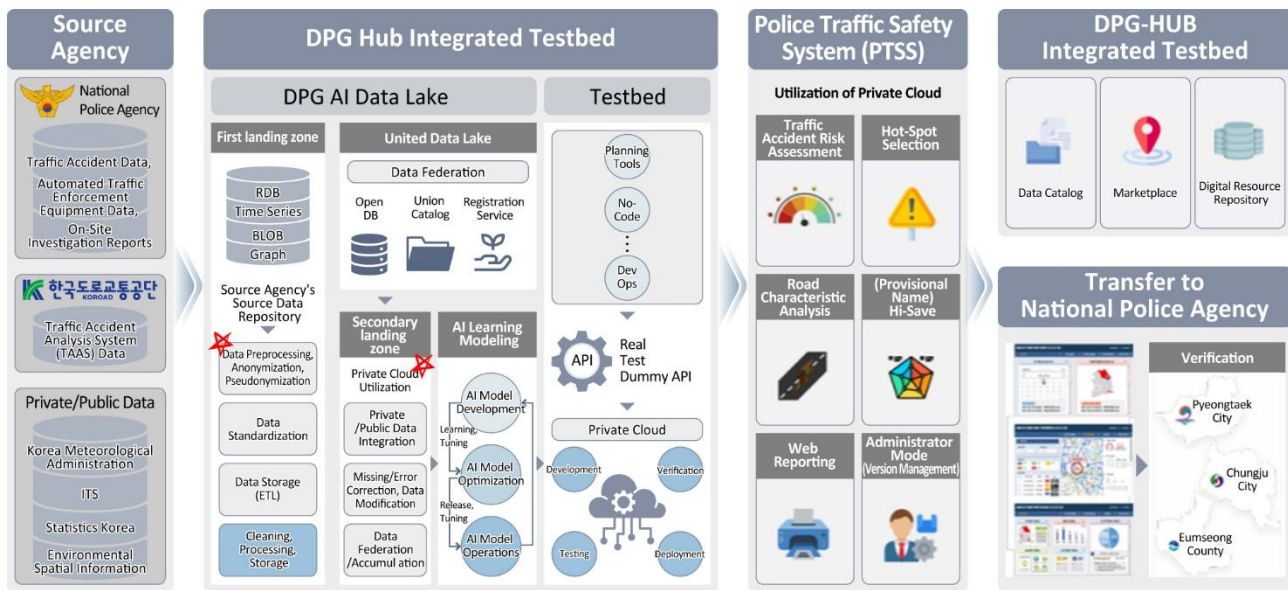
South Korea maintains a high level of traffic fatalities among OECD countries, and the social and economic losses from traffic accidents persist. Existing traffic safety systems focus primarily on responding after accidents occur, increasing the need for preventive traffic safety services.

Accordingly, there is a need to establish a proactive response system based on data and to develop services that predict the likelihood of traffic accidents using AI technology.

Table 49. Project Detail

Project Category: Digital Government Infrastructure (2024)
Implementing Agency/Partner Organization: Korean National Police Agency, MT Data Co., Ltd., etc.
Project Description This project trained an AI model using traffic accident data held by the National Police Agency and the Korea Road Traffic Authority, establishing a system to predict traffic accident risk levels. Specifically, it analyzed the causes of traffic accidents by utilizing 11 types of data, including traffic enforcement data, road facility information, weather data, and traffic volume data. The data lake-based infrastructure was used for data analysis and AI model development, establishing a data lake system operable within the Korean National Police Agency. Efficiency was increased by applying automated infrastructure (MLOps) from data collection through preprocessing, analysis, and model training. Additionally, a traffic accident risk prediction model was developed to assess accident risk in specific areas, followed by field validation in collaboration with the National Police Agency. The system was deployed in high-risk regions—Pyeongtaek, Chungju, and Yeongam—where its impact on reducing traffic accidents was evaluated.

Figure 49.1. PTSS (Police Traffic Safety System)



EXPECTED OUTCOMES

The key achievements of this project include the establishment of an AI-based traffic accident risk prediction system in collaboration with the National Police Agency and the validation of its effectiveness through real-world demonstrations. This has laid the groundwork for proactively managing high-risk areas with elevated accident likelihood. By integrating diverse traffic datasets and applying AI-driven analysis, the project introduced a predictive and preventive model that improves upon conventional, post-incident traffic safety approaches.

When linked with future traffic accident prevention policies, the system is expected to further reduce traffic-related fatalities, lower social costs, and enhance the overall safety of road users. Going forward, additional traffic data will be incorporated, and real-time data will be utilized to further improve model accuracy. To this end, the project plans to collaborate with private companies to integrate real-time traffic information. Continuous model updates and performance optimization will also be carried out to ensure stable and sustainable system operation within the National Police Agency.



SOCIAL ISSUE 50

Development and Demonstration of AI-Based Light Pollution Image Analysis Solution

KEY TECHNOLOGICAL FEATURES

- ✓ **Development of AI Base Models for:** Advertising Light Detection/Classification and Luminance Error Inference
- ✓ **AI solution development:** Added compatibility with luminance measurement equipment and luminance data analysis capabilities
- ✓ Demonstration in conjunction with a service platform equipped with map layers

OVERVIEW

To prevent the harm caused by excessive artificial lighting at night, 17 metropolitan governments nationwide conduct light pollution environmental impact assessments every three years. However, as most of these assessments rely heavily on manual processes, they are unable to respond to persistent public complaints. Consequently, starting in 2024, support is being provided to an AI specialist consortium to develop and demonstrate AI solutions aimed at resolving issues in light pollution measurement methods, data analysis, and management.

Table 50. Project Detail

Project Category: Ministry-Collaboration AI Diffusion (2024-2026)
Implementing Agency/Partner Organization: Ministry of Environment
Project Description To develop an AI solution, the project collected and processed target lighting data by applying light pollution measurement standards, thereby developing models for detecting target lighting in images, classifying lighting methods, and inferring luminance error ranges. Additionally, the system added compatibility with area luminance measurement equipment and luminance data analysis capabilities, developed it as an AI solution, and validated it by linking it to a service platform. Key services include automating the refinement and analysis of measured image data to detect target lighting through analysis of luminance and other characteristics. Furthermore, by establishing a light pollution environmental impact assessment database and linking data, it provides a service that derives relevant data and inference values during light pollution environmental impact assessments.

EXPECTED OUTCOMES

By applying AI solutions to measure and analyze the hazards of excessive lighting in areas lacking specialized personnel, this project is expected to reduce the time required to build an environmental impact assessment database. This will enable the establishment of a systematic light pollution management system, allowing for effective responses to light pollution-related public complaints. Furthermore, through future public service provision, the project will be able to build a favorable lighting environment.

SOCIAL ISSUE 51

Development and Demonstration of an AI-Based National Land Change Detection Solution

KEY TECHNOLOGICAL FEATURES

- ✓ Development and demonstration of an AI solution for detecting national land changes based on automated modules for generating high-precision GCP-registered imagery, utilizing refined and processed aerial/satellite/drone imagery data and high-precision GCP (Ground Control Point) training data. This includes tools for organizing time-series imagery data and managing AI change detection training data based on GIS (Geographic Information System) tools.

OVERVIEW

The system detects and manages the ever-changing landscape of our nation annually, but improvements were needed in work duration, accuracy, and cost due to the reliance on manual processes. Therefore, the project is currently advancing a project by supporting an AI expert consortium to develop and apply an AI solution. This solution utilizes AI technology with diverse, high-precision multi-sensor data to swiftly and accurately detect land change information and efficiently manage the national territory.

Table 51. Project Detail

Project Category: Ministry-Collaboration AI Diffusion (2024-2026)
Implementing Agency/Partner Organization: Ministry of Land, Infrastructure and Transport
Project Description To develop an AI solution, satellite, aerial, and drone imagery data along with high-precision location-aligned data are refined and processed to build training data. This data is then used to train an AI-based national land change detection solution that identifies the presence of changes, the nature of changes, and location alignment using a GIS (Geographic Information System) platform. This solution is developed and validated. This AI solution provides functionality to detect the presence and nature of changes by matching locations between imagery for land change detection. It also automatically generates high-precision, realistic orthoimages, enabling efficient production and utilization of national base maps.

EXPECTED OUTCOMES

The adoption of AI solutions is expected to enhance the accuracy of detecting land changes, thereby supporting the creation of more precise national base maps. It is also anticipated to reduce the administrative time required for regular national base map updates and lower associated costs. Furthermore, beyond land change management administration, it will contribute to various fields including urban planning, disaster response, and environmental protection.

SOCIAL ISSUE 52

Development of the 'AME' AI-Based Water Quality Analysis Support System

 KEY TECHNOLOGICAL FEATURES

- ✓ **AI-Based Water Quality Prediction Model:** Building AI learning models using public data and real-time sensor information for predicting water quality trends
- ✓ **Real-Time Water Quality Analysis and Monitoring:** IoT- based data collection and analysis
- ✓ **Big Data-Based Process Optimization:** Deriving optimal water quality management strategies by integrating historical and real-time data
- ✓ **Cloud-Based Analysis and Visualization Platform:** Real-time data visualization and automated alert system implementation

 OVERVIEW

At wastewater treatment facilities, it is crucial to analyze the characteristics of incoming sewage and detect pollutant inflows in advance to design efficient treatment processes. Conventional water quality management relies on manual analysis methods, making real-time response difficult and hindering swift action when pollutants enter the system.

This project aims to establish a real-time monitoring and automated response system utilizing AI-based predictive models and IoT sensors.

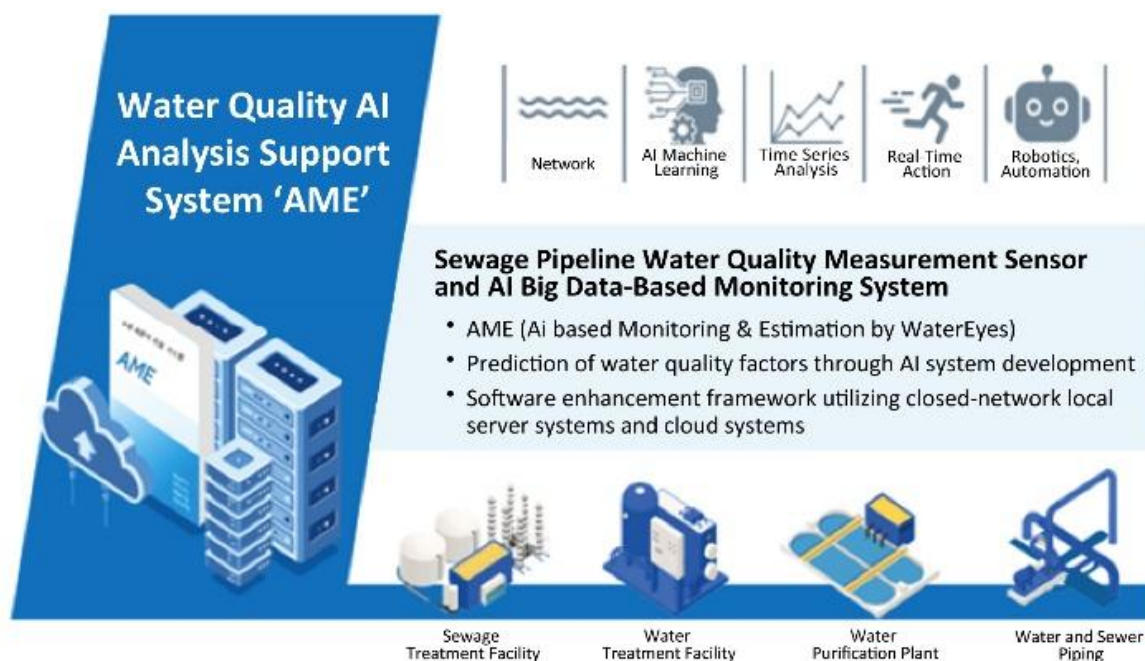
Table 52. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Water Eyes Co., Ltd.
Project Description This system analyzes water quality in real time at public sewage treatment facilities and detects pollutant inflows in advance through AI-based prediction. ✓ Development of AI-based Water Quality Prediction Model – Builds an AI model that predicts water quality changes using public data and real-time sensor data. Applies machine learning-based analysis technology to improve prediction accuracy for key water quality indicators (BOD, COD, SS, TN, TP). ✓ Real-time Water Quality Analysis and Monitoring – Utilizes IoT-based sensors to measure the quality of inflowing sewage in real time and immediately sends alerts to managers upon detecting abnormal signs. This enables early identification of factors causing water quality deterioration and allows for swift action. ✓ Big Data-Based Process Optimization – Integrates historical and real-time data to derive process operation optimization strategies. Automatically adjusts wastewater treatment processes based on AI analysis results to reduce energy consumption and enhance treatment efficiency. ✓ Cloud-Based Analysis and Visualization Platform Implementation – The system is designed to display AI analysis results in real time on a cloud-based visualization dashboard. This enables administrators and operators to instantly grasp water quality status through an intuitive UI and take immediate action.

EXPECTED OUTCOMES

This system will enhance the operational efficiency of wastewater treatment facilities and accelerate the digital transformation of public wastewater management. Furthermore, the AI-based automated water quality management system is expected to facilitate environmental pollution prevention and compliance with legal standards.

Figure 52.1. System information



Real-time response enabled through AI analysis predicting water quality factors when issues arise, such as through monitoring of water quality risk areas.

SOCIAL ISSUE 53

Establishment of an Integrated Environmental Information Platform for Public-Private Cooperation in Environmental Management of the Miho River Basin

KEY TECHNOLOGICAL FEATURES

- ✓ **Environmental Data Integration and Visualization:** Integrating public and private environmental data to provide environmental information
- ✓ **Public Data Linkage:** Utilizing public data related to rivers to provide information and support policy decisions
- ✓ **Mobile and Web-Based Platform Development:** Providing user-friendly environmental monitoring and participatory services

OVERVIEW

Previously, environmental management of the Miho River basin (the Geum River's largest tributary) was handled by individual agencies, resulting in fragmented data and issues with inconsistent public complaint handling and environmental monitoring.

This project aims to strengthen sustainable environmental governance by establishing a platform that integrates management of diverse environmental information within the Miho River basin and encourages private sector participation.

Table 53. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Chungcheongbuk-province, DataCentric Co., Ltd.
Project Description This system maximizes the effectiveness of river management through the integration of environmental data, environmental complaint management functions, and environmental monitoring. ✓ Environmental Data Integration and Visualization – It integrates and manages environmental data from national and local governments on a single platform. By utilizing GIS to visually present environmental information for the Miho River basin, it supports efficient decision-making. ✓ Establishing Environmental Governance for Public-Private Collaboration – Builds a public-private collaboration platform to resolve environmental issues, strengthening communication between local residents and administrative agencies and supporting joint environmental protection activities. Enhances accessibility to environmental administrative services, including online opinion sharing and complaint submission functions. ✓ Environmental Monitoring through Public Data Integration – Utilizes public data to establish a system for monitoring diverse environmental information in the Miho River basin, including water quality, weather, and precipitation. This enables sophisticated environmental analysis and prediction through the adoption of new AI technologies, thereby supporting environmental policy and administrative measures. ✓ Mobile App and Web-Based Platform Operation

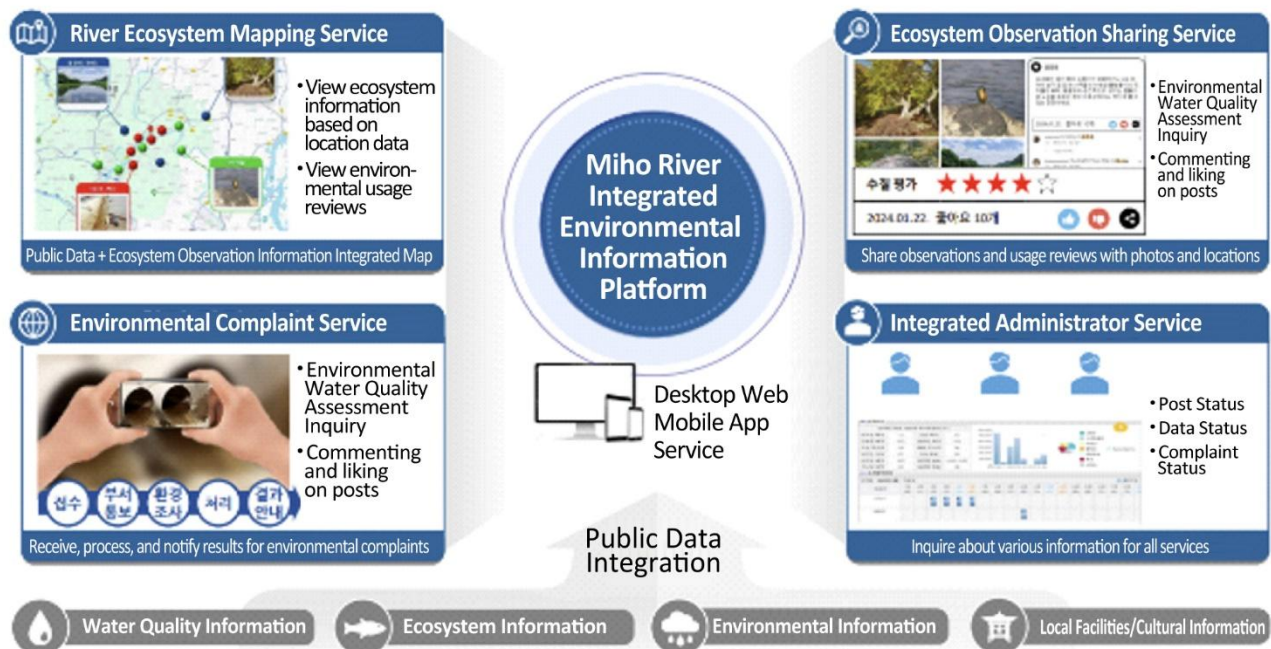
- Develop mobile apps and web-based platforms that are easy for both citizens and administrative agencies to use, providing functions such as receiving environmental complaints, monitoring river ecosystems, and sharing environmental protection activities.

EXPECTED OUTCOMES

This system enables systematic operation of river management and establishes sustainable environmental governance through public-private cooperation. Furthermore, it is expected to enhance environmental pollution response capabilities through data utilization and future AI model implementation.

Figure 53.1. Platform

River Environmental Data Platform: Consolidating public data and supporting public-private environmental initiatives



This project aims to establish an integrated public river data system through the revitalization of river data, foster river basin community governance, and support private environmental initiatives.

SOCIAL ISSUE 54

Development and Service Demonstration of AI-Based Illegal Banner Detection Technology

KEY TECHNOLOGICAL FEATURES

- ✓ **Banner dataset construction:** Collection, refinement, and processing of banner data for AI training
- ✓ **Development of AI-based banner detection and classification model:** Accurate banner detection utilizing object detection technology
- ✓ **Development of banner detection system:** Banner detection and monitoring using vehicle-mounted 4-channel CCTV
- ✓ **Mobile and web-based management platform:** Building an integrated platform for visualization and management of banner data

OVERVIEW

Illegal banners present social challenges, including the deterioration of urban aesthetics and risks to public safety. Existing passive management approaches have limited effectiveness and demand significant administrative resources.

This project seeks to harness AI technology to optimize banner management and rapidly resolve community concerns.

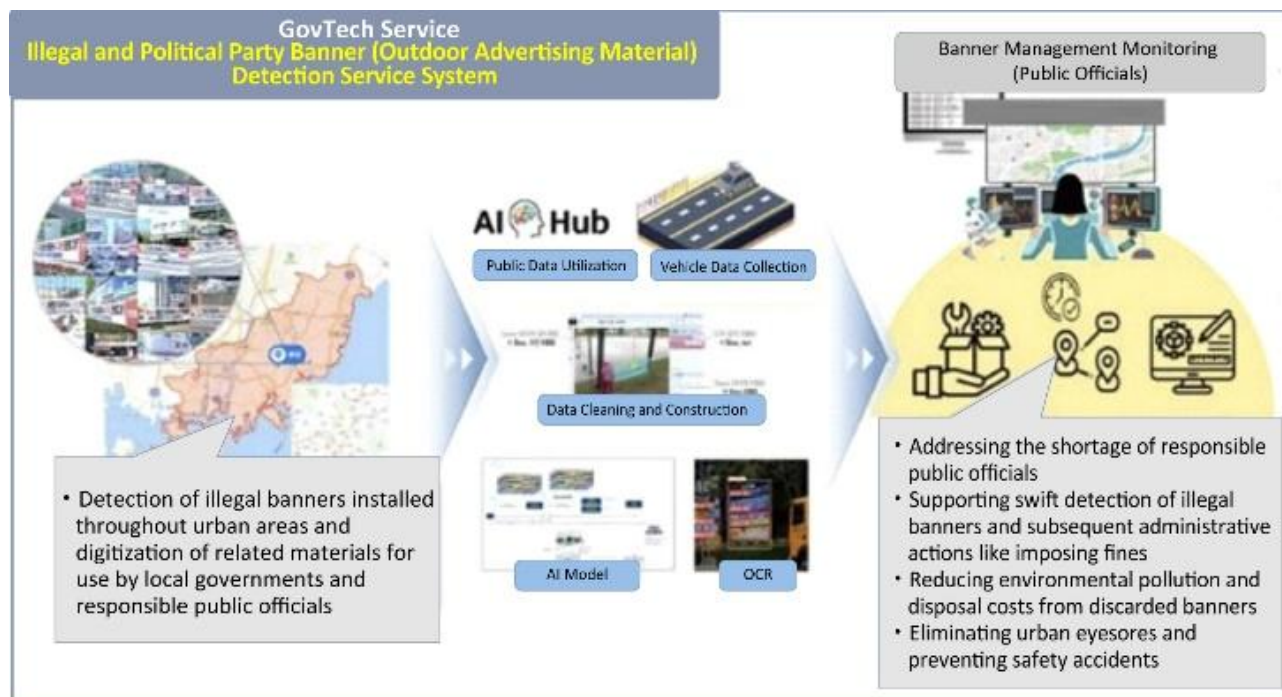
Table 54. Project Detail

Project Category: GovTech Startup Support (2024)
Implementing Agency/Partner Organization: Smart Bank Co., Ltd.
Project Description This project established an AI-based banner detection system and verified its efficiency through field validation. First, a banner dataset was constructed using public data and self-collected data for AI training. This secured high-quality data reflecting diverse environments and conditions. An AI-based banner detection model was then developed, and the model's performance in detecting and classifying banner locations was optimized. The system was developed to detect various banner types, including political party, private, and public banners, with high accuracy. For real-time banner detection system validation, field testing was conducted using a vehicle-mounted 4-channel CCTV system, verifying system performance in Busan's actual urban environment. Furthermore, a dashboard-based platform was built to manage banner detection results and statistical data. This supports efficient banner management and rapid administrative processing.

EXPECTED OUTCOMES

This system enables immediate response to illegal banner issues, which is expected to improve urban aesthetics and public safety. It will also reduce administrative resource consumption and enable efficient management, contributing to decreased social and economic costs.

Figure 54.1. GovTech service



Introduction of AI-based banner detection technology is expected to reduce urban maintenance personnel and costs, and to decrease illegal banner installations, etc.

National Information Society Agency Use Cases of Public AI Service (Vol.1)

Published by Jong-sung Hwang, President, National Information Society Agency (NIA)

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LLM (Large Language Model) technology was partially utilized in the translation process of this report.

