ntels
Creative Convergence

ENERGY IoT PLATFORM

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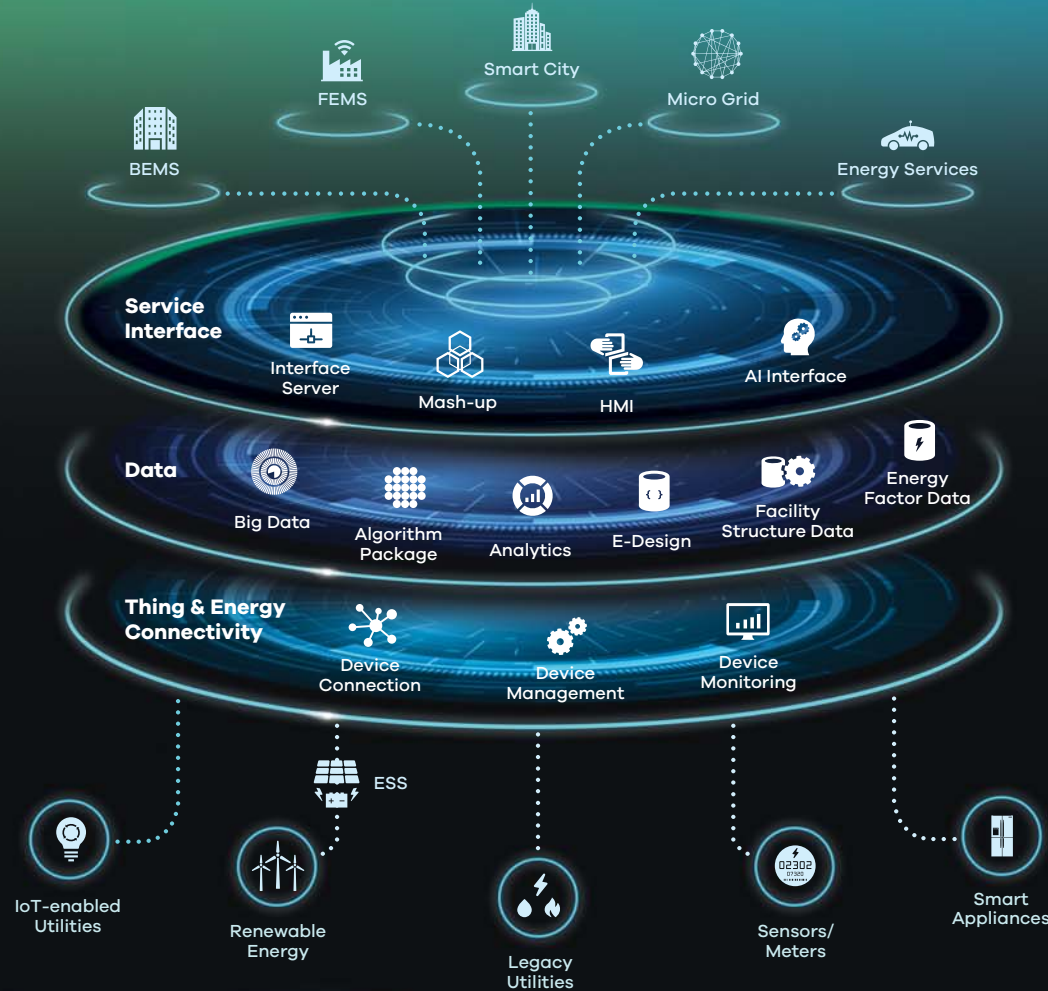partners@ntels.com
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NTELS ENERGY IoT PLATFORM

Accelerate your Industry 4.0 transformation and improve the energy performance of your business

A new energy paradigm is gaining traction due to deployment of ICT technologies that drive Industry 4.0 and growing pervasiveness of digitalization in the energy sector. To ride on this trend that offers new business opportunities, you need to embrace advanced energy technologies and solutions for digital reforming.

We provide energy infrastructure technologies that help you effectively manage energy resources for balanced energy consumption and to analyze energy data for stable energy supply. With our solutions adaptable to new energy business models, you can achieve efficient energy management and utilize energy data in innovative ways.

Among our offerings, NTELS Energy IoT Platform plays a pivotal role in enabling you to bring IoT-based energy services to the market faster, drive productivity higher and advance energy business models further.

Diagram

BEMS · FEMS · Smart City · Micro Grid · Energy Services

Service Interface
- Interface Server
- Mash-up
- HMI
- AI Interface

Data
- Big Data
- Algorithm Package
- Analytics
- E-Design
- Facility Structure Data
- Energy Factor Data

Thing & Energy Connectivity
- Device Connection
- Device Management
- Device Monitoring

IoT-enabled Utilities · Renewable Energy · ESS · Legacy Utilities · Sensors/Meters · Smart Appliances

Highly Flexible with Modular Structure

As needed, this modular platform can be applied as a whole or modularly, which makes it flexible to respond to ever-changing customer and market requirements.
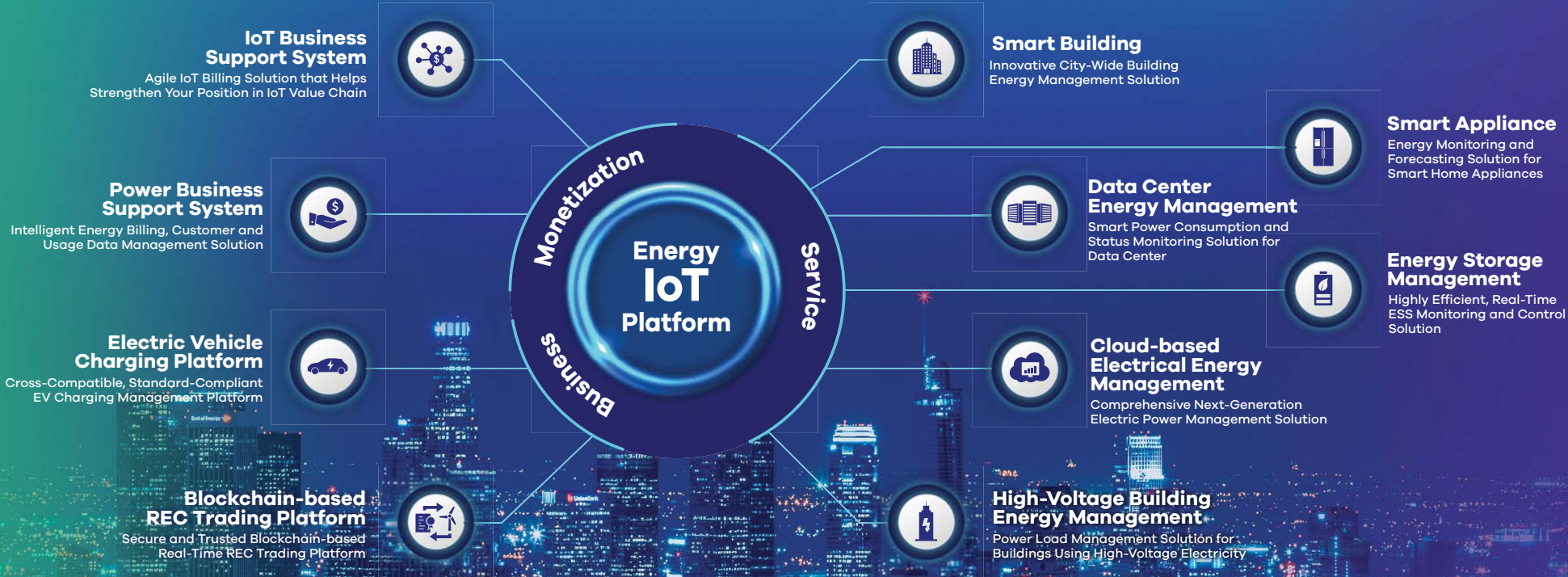
Guaranteed Interoperability

Easy to make the platform interoperable with different devices and services and to expand it as business requirements grow.

Resource Savings and Fast Time-to-Market

No overlapping development and fast time-to-market while securing the service quality by providing functions commonly applied to any vertical.

Explore our variety of IoT-based energy services and solutions that can be enabled or work with the Energy IoT Platform

Energy IoT Platform

Monetization · Service · Business

IoT Business Support System
Agile IoT Billing Solution that Helps Strengthen Your Position in IoT Value Chain

Power Business Support System
Intelligent Energy Billing, Customer and Usage Data Management Solution

Electric Vehicle Charging Platform
Cross-Compatible, Standard-Compliant EV Charging Management Platform

Blockchain-based REC Trading Platform
Secure and Trusted Blockchain-based Real-Time REC Trading Platform

Smart Building
Innovative City-Wide Building Energy Management Solution

Smart Appliance
Energy Monitoring and Forecasting Solution for Smart Home Appliances

Data Center Energy Management
Smart Power Consumption and Status Monitoring Solution for Data Center

Energy Storage Management
Highly Efficient, Real-Time ESS Monitoring and Control Solution

Cloud-based Electrical Energy Management
Comprehensive Next-Generation Electric Power Management Solution

High-Voltage Building Energy Management
Power Load Management Solution for Buildings Using High-Voltage Electricity

SMART BUILDING

Innovative City-Wide Building Energy Management Solution

NTELS Smart Building is an integrated building management solution that facilitates advanced automation and optimizes building operations and maintenance by integrating individual building systems. With the solution, it is possible for a city to have a complete overview of the energy consumption of all the buildings in the entire city, improve quality of power supply and achieve energy performance goals.

SMART APPLIANCE

Energy Monitoring and Forecasting Solution for Smart Home Appliances

NTELS Smart Appliance is an energy management solution for smart electric home appliances that are compatible with the OCF (Open Connectivity Foundation) protocols. The solution monitors and predicts power consumption of smart, connected home appliances using big data analytics for energy savings and peak load management.

DATA CENTER ENERGY MANAGEMENT

Smart Power Consumption and Status Monitoring Solution for Data Centers

NTELS Data Center Energy Management is a solution that collects and analyzes condition data (temperature, humidity, etc.) and energy consumption pattern of each system in the data center. The solution also suggests how to optimize the operations of the data center's systems based on demand forecasts and performs constant monitoring of operation results.

ENERGY STORAGE MANAGEMENT

Highly Efficient, Real-Time ESS Monitoring and Control Solution

NTELS Energy Storage Management is an ESS (Energy Storage System) management solution. Using rechargeable battery, ESS stores energy during periods of low energy consumption for flexible use later. The solution monitors and controls the ESS battery temperature and the rates of the battery charge / discharge currents. Based on the data collected, it analyzes how much electricity is saved by ESS.

CLOUD-BASED ELECTRICAL ENERGY MANAGEMENT

Comprehensive Next-Generation Electric Power Management Solution

NTELS Electrical Energy Management is a cloud-based electric power management solution. It is essential for power companies to adopt new business models that require cutting-edge energy and ICT technologies.
The solution enables them to operate their power plants efficiently, manage energy usage, monitor power quality and respond to power quality problems.

HIGH-VOLTAGE BUILDING ENERGY MANAGEMENT

Power Load Management Solution for Buildings Using High-Voltage Electricity

NTELS High-Voltage Building Energy Management is a solution that monitors power load for a unit of buildings using high-voltage electricity. It collects condition and usage data of electrical power equipments used in buildings through sensors and analyzes it using energy data algorithms.
The solution shares monitoring and analysis results with building manager and power company for power outage prevention and response.

ELECTRIC VEHICLE CHARGING PLATFORM

Cross-Compatible, Standard-Compliant EV Charging Management Platform

NTELS EV Charging Platform is an electric vehicle charging management platform compliant to Open Charge Point Protocol (OCPP), which is an application protocol for communication between EV charging stations and a central management system.
The platform can interface with any charging station operating system that supports OCPP, so EV charging service providers can implement centralized management with ease.

BLOCKCHAIN-BASED REC TRADING PLATFORM

Secure and Trusted Blockchain-based Real-Time REC Trading Platform

NTELS REC Trading Platform is a blockchain-based marketplace for trading REC (Renewable Energy Certificate). With blockchain technology, it ensures accountability and security for the data being exchanged.
Through the platform, buyers can purchase RECs from sellers, make use of renewable energy that is generated by other parties and ultimately achieve their clean energy goals.

IoT BUSINESS SUPPORT SYSTEM

Agile IoT Billing Solution that Helps Strengthen Your Position in IoT Value Chain

NTELS IoT BSS is a best-of-breed billing and customer care solution that enables you to create new revenue sources from IoT services. It consists of Self-Care Portal, Admin Portal, Billing System, IoT Application Server and Provisioning Gateway. With this integrated solution accommodating various charging models, you can create pricing plans for value-added services that generate value for customers.

- Customer-Oriented Self-Care Services
- Fast Pricing Plan Creation & Accurate Billing
- Shortened Billing Cycles

IoT Pricing Plan Management

IoT Device

IoT Service Self-Care Portal

Product / Contract / Billing Information

Contract Management

Billing

IoT Service Customer

Customer Management

POWER BUSINESS SUPPORT SYSTEM

Intelligent Energy Billing, Customer and Usage Data Management Solution

NTELS Power BSS is an innovative billing and revenue management solution specialized in the power industry. The solution enables demand-response by providing demand forecasts so that power companies can adjust their power supply strategy. It also helps prevent revenue loss caused by overdue payment by interfacing with AMI (Advanced Metering Infrastructure) that can cut off power supply based on the remaining balance.

- Business Support Tailored to Power Business
- Energy Demand Forecasts
- Energy Data Monetization

Data for Meter Disconnection & DR

Meter Disconnection & DR

Meter Readings

Smart Meter

AMI Server

Power Data Management

Energy Usage

Consumer

Subscription

Payment

Customer Management

Customer Information

Billing Data

Billing

Billing Data & Energy Usage
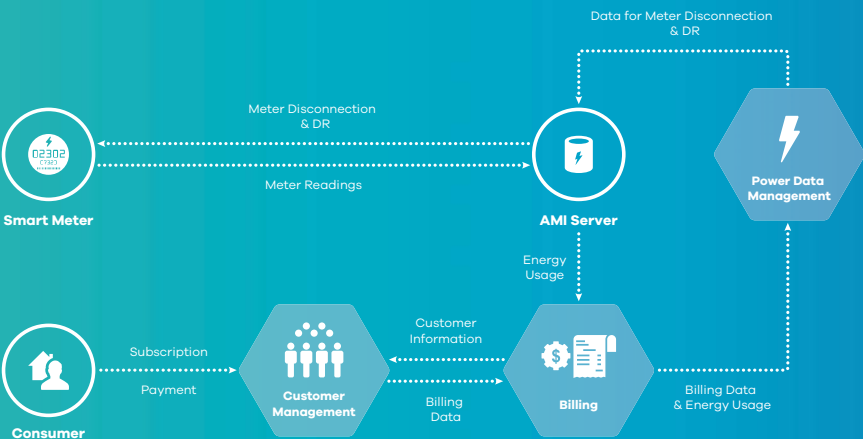
IoT Business Support System_Celcom (Malaysia)

We signed a strategic teaming agreement with Celcom, a renowned mobile network operator in Malaysia. Since then, we have been developing and providing M2M/IoT solutions for the company. With our IoT billing platform, Celcom was awarded for the five years in a row at the 2018 Frost & Sullivan Malaysia Excellence Awards.

Smart City

IoT Smart City Platform_ Busan, Daegu & Goyang Cities

We have been providing cities in Korea with Smart City Platform to help them build a smart city as engines of sustainable growth. Busan was selected as a test bed for the global smart city project by the Ministry of Science, ICT & Future Planning. With our platform, Busan was able to lay the groundwork to build an innovative smart city.
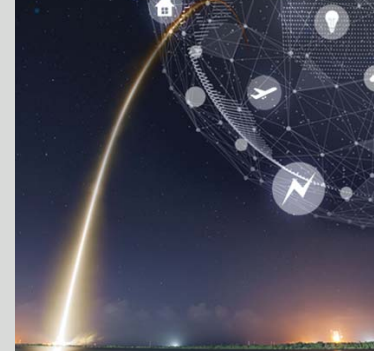
Converged Platform for Electrical Infrastructures_KEPCO

We implemented a common platform for Korea Electric Power Corporation (KEPCO), called e-IoT Platform that monitors various devices (including gateway), controls sensors, and detect and respond to errors. With e-IoT, regional headquarters of KEPCO have undertaken various IoT projects, including aircraft warning light system for power-line towers.

IoT Business Support System_M1 (Singapore)

We have been in a strategic partnership with M1, Singapore's most vibrant and dynamic communications company since it launched its advanced M2M platform in 2015. The advanced M2M platform enabled its corporate customers to access, track and manage all their connected devices conveniently.
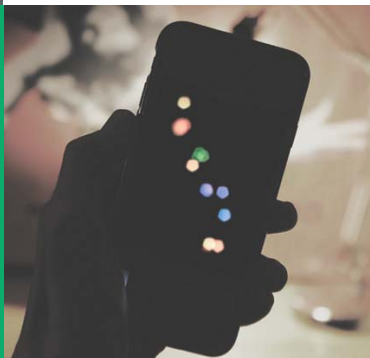
IoT Smart Building Platform_Suwon City

For local municipalities, including Suwon City, we have provided an IoT smart building management platform. Using various protocols, the platform interfaces with building systems and facilities and collects facility and energy data in real time to optimize building operations and ultimately achieve energy performance goals.

Rotating Machine Failure Monitoring System_Hyundai Electric

We have developed a rotating machine failure monitoring system for Hyundai Electric. It consists of our IoT platform and smart sensors. Based on the data collected, the system predicts the status and life of rotating machines using the algorithm developed for the diagnosis of rotating machines.

BEMS
SMART CONNECTION TO THE FUTURE

Building Energy Management System (BEMS)

For various leading companies, we implemented a building energy management system with advanced energy saving technologies. The system allows building managers to monitor energy consumption of facilities and forecast energy demands. Tenants also can participate in energy savings based on energy usage data.

Open Standard-based Electric e Charging Platform_KEPRI

To boost electric vehicles (EV) adoption in the domestic market, by collaborating with Korea Electric Power Research Institute (KEPRI), we have developed EV charging platform compliant to Open Charge Point Protocol, which is an application protocol for communication between EV charging stations and a central management system.

Independent Power Producer Monitoring System_LSIS

We have developed a monitoring system for IPP (Independent Power Producer) that consists of solar power generation system and ESS (Energy Storage System), developed by LSIS, an electric power solution provider. The system collects and standardizes data from the entire process of power production to perform remote monitoring, fault diagnosis, performance check and comprehensive maintenance.

Shipbuilding & Marine Equipment Monitoring System _Hyundai Heavy Industries

As part of building integrated IoT infrastructures for the shipbuilding and marine industry, we have carried out a PoC (Proof of Concept) project for Hyudai Heavy Industries. The project employed our IoT platform to perform a Web-based monitoring for shipyard machinery equipment (welders and cranes).
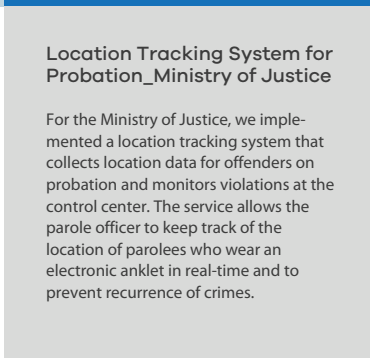
Location Tracking System for Probation_Ministry of Justice

For the Ministry of Justice, we implemented a location tracking system that collects location data for offenders on probation and monitors violations at the control center. The service allows the parole officer to keep track of the location of parolees who wear an electronic anklet in real-time and to prevent recurrence of crimes.

Crime Prevention System_Ministry of Justice

We developed an IoT-based crime prevention system. The system enabled the Ministry of Justice to establish crime prediction models based on the information for criminals wearing an electronic anklet, including the real-time location and criminal profiling.

Smart Tag Service_SK Hynix

For SK Hynix, we implemented an IoT-based industrial safety system that enables quick response to emergency to increase personnel and asset safety within a premise. With BLE (Bluetooth Low Energy)-enabled smart tags and smart APs, the system monitors the evacuation process by locating and counting smart tags during an emergency.
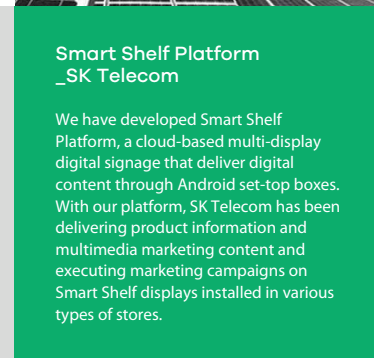
Smart Shelf Platform _SK Telecom

We have developed Smart Shelf Platform, a cloud-based multi-display digital signage that deliver digital content through Android set-top boxes. With our platform, SK Telecom has been delivering product information and multimedia marketing content and executing marketing campaigns on Smart Shelf displays installed in various types of stores.
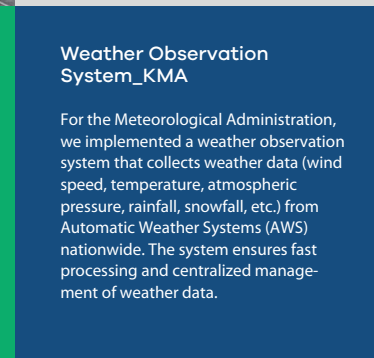
Weather Observation System_KMA

For the Meteorological Administration, we implemented a weather observation system that collects weather data (wind speed, temperature, atmospheric pressure, rainfall, snowfall, etc.) from Automatic Weather Systems (AWS) nationwide. The system ensures fast processing and centralized management of weather data.

TOMORROW'S ENERGY ECONOMY

WE HELP CREATE AN ECOSYSTEM FOR CONVERGENCE OF ICT AND ENERGY

| IoT Business Support System **Celcom** (Malaysia)
| IoT Business Support System **M1** (Singapore)
| Power Business Support System **Uzbekenergo**'s AEM Project
| Building Energy Management System (BEMS)
| Factory Energy Management System **Hyundai Heavy Industries**
| IoT Smart Building Platform **Suwon City**
| IoT Smart City Platform **Busan, Daegu** & **Goyang Cities**
| Open Standard-based Electric Vehicle Charging Platform **KEPRI**
| Converged Platform for Electrical Infrastructures **KEPCO**
| Shipbuilding & Marine Equipment Monitoring System **Hyundai Heavy Industries**
| Rotating Machine Failure Monitoring System **Hyundai Electric**
| Independent Power Producer (IPP) Monitoring System **LSIS**
| Location Tracking System for Probation **Ministry of Justice**
| Crime Prevention System **Ministry of Justice**
| Smart Tag Service **SK Hynix**
| Smart Shelf Platform **SK Telecom**
| Weather Observation System **KMA**
| Home Surveillance System **SK Telecom**
| U-Care System for Seniors Living Alone **Ministry of Health and Welfare**
| AMI-based Home Care Service **Jeju Test Bed**

CUSTOMERS & PARTNERS

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SAMSUNG
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SK telink
SK broadband
CJ HELLOVISION
Ministry of Justice
Korea Meteorological Administration
Korea Hydrographic and Oceanographic Agency
Ministry of Health and Welfare

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