2022 Korea Government Innovation Contents

Building Better Governance

Central Government

**Ministry of
the Interior and Safety**

Re

2022 Korea Government Innovation Contents

Building Better Governance

Central Government

CONTENTS

PART 1
Digital Platforms

PART 2
Public Communication(Services for Public)

PART 3
Advancement of Industry and the Economy

PART 4
Disaster Management

Improving Work Efficiency and Advancing Public Convenience, through Digital Administration

Digital platform government, an evolution one step further from e-government, means the provision of prompt, transparent and efficient administrative services through having all government departments interconnected as one. The "Government Integrated Data Center" of the Nation Information Resources Service, the "Government Certification Management Authority (GCMA)" and the "Public Information Sharing System" of the Ministry of the Interior and Safety, the "Human Resources Development (HRD) Platform" of the Ministry of Personnel Management, the "Digital Budget Accounting System (dBrain)" of the Ministry of Economy and Finance, the "Korea Law Information Center (KLIC)" of the Ministry of Government Legislation, and "Korea Information System of Criminal Justice Services (KICS)" of the Ministry of Justice are best practices in digital platforms built by government ministries, whose stories make the possibilities of digital platform government more clear.

PART 1

- Government Integrated Data Center - National Information Resources Service
- Government Certification Management Authority (GCMA) - Ministry of the Interior and Safety
- Public Information Sharing System - Ministry of the Interior and Safety
- Human Resources Development (HRD) Platform - Ministry of Personnel Management
- Digital Budget Accounting System (dBrain⁺) - Ministry of Economy and Finance
- Korea Law Information Center (KLIC) - Ministry of Government Legislation
- Korea Information System of Criminal Justice Services (KICS) - Ministry of Justice

Digital
Platforms

World's First Government-wide Integrated Data Center, Leading Realization of Intelligent ICT Government and Advancement of National IT Industry

Korea's National Information Resources Service, the world's first government-wide integrated data center, was established in 2005 to facilitate the efficient and smooth implementation of digital government. In the early 2000s, with the quantitative growth in digital government in Korea, redundant investments in ICT infrastructure, poor computing environments, shortages of specialized professionals, and security vulnerabilities became problematic, and to resolve these issues the Government Integrated Data Center was founded.

Since then the center has served as a control tower for the integration and operation of information resources, introduction of the latest technology, and implementation of cyber security, so as to provide safe and convenient digital government services, at anytime and anywhere. As an extension of this, in 2020 the NIRS set a vision of achieving the status of a "professional agency providing intelligent cloud services" for the upgrading of its services, and began expanding its cloud construction and transition to an intelligent cloud computing center. The NIRS, as the professional agency providing intelligent cloud services in this era of the fourth industrial revolution, is committed to providing high-quality ICT services that lead digital government operations.

MISSION	To Provide Quality ICT Services Leading the Digital Government

VISION	Professional Agency Providing Intelligent Cloud Services

Service Innovation **Service Stability** **Inclusive Development**	Leading Future Technologies	Operational Services Innovation	Improving Customer Satisfaction	Strengthening Organizational Capabilities

Core Value	F	I	R	S	T
	Future	Integrity	Relationship	Service	Technology

SLOGAN	First Mover of Korean ICT

Progress

2005	Established first GIDC (Daejeon Center)
2007	Established second GIDC (Gwangju Center)
2008	Built National Information Network
2013	Started transition to government cloud computing center
2016	Launched Daegu Center Project Office
2017	Changed corporate title from NCIS (National Computing & Information Service) to NIRS (National Information Resources Service)
2021	Designated as specialized agency for combining pseudonymized information

Main Business Details

Intelligent Cloud
- Expanded "SDDC-based intelligent cloud infrastructure" built in 2020 to cover 13 institutions and 33 businesses, and established GPU server infrastructure enabling all departments to accommodate information systems based on new technologies such as artificial intelligence and big data
- Continuously switching expensive Unix servers to general-purpose x86 servers, to reduce equipment construction and operating costs and create flexible and scalable cloud operating environment
- Promote development of IT industry as well as improvements in e-government services quality, by attracting participation of competitive and professional IT companies

Artificial Intelligence-based Cybersecurity
- Develop large-scale, real-time data processing (machine learning and detection) and learning models, and build artificial intelligence platform for automatic responses to cyberattacks
- Develop learning models for learning related to cyberattack responses as well as normal behaviors
- Collect latest information on external threats, and establish artificial intelligence security management system

National Integrated Network
- Operate dual communication networks by selecting two different operators, for communication network security
- Switch national information and communication networks and existing communication lines of 48 government ministries to national integrated network, in phases

Information Resource Integration
- Batch introduction of information resources including server, storage, network and security equipment required by government ministries, through securing of relevant budget
- Order worth KRW 237.3 billion in 2022; in view of times when individual ministries need information resources, first round of project implemented from around March to April and second round from around May to June each year

Key Outcomes

Switch to Intelligent Cloud Computing Center
Switched work systems of government ministries to G-Cloud, a government-dedicated cloud, enabling the joint use of departmental information systems and flexible provision of information resources, leading in turn to reduced budgets and improved resource utilization rates

Stable and Efficient Operation of e-Government System
Operate e-government services more reliably, through replacement of outdated equipment and conduct of exercises simulating failure responses, as well as utilization of integrated operation automation system (nTOPS) and big data log analysis system (nSIMS) developed with own technology
- Achieved improvements in system operational and management efficiency, and reduction in construction costs of 30%
- Automated manual security vulnerability diagnosis method via "vulnerability diagnosis management system," leading to dramatic decline in time required for security vulnerability inspection of entire system - from 70 to 7 days

Strengthening of Cyber Threat Response Capabilities
Building an "artificial intelligence-based intelligent security system," involving core technologies of 4th industrial revolution related to artificial intelligence, big data, security, etc.
- To safely protect national information system from varied cyber threats that are becoming ever more sophisticated, intelligent and diversified

Support for Fostering IT Companies and Expanding International Cooperation
Strengthen public-private partnerships to support overseas expansions of small and medium-sized IT companies of Korea, and operate GIDC study tours and benchmarking programs for public officials from overseas

Achievements in International Cooperation
Awards
- Special Recognition, Global mobileGov Awards 2017 (May 9, 2017)
- Operational Transformation, IDC DX Awards 2017 (May 23, 2017)
- Digital Transformation and Automation, 2020 Red Hat Innovation Awards (October 23, 2020)
- Best in Future of Trust, IDC Future Enterprise Awards 2022 (winner of Korea in October 13, winner of AP in October 26, 2022)

Operating study tour program to provide benchmarks for non-Koreans
Totals of 468 visits and 5,035 visitors, from 158 countries (as of June 30, 2022)
Constructed data center, and provided consultation services on its operations (during 2020~2021)
- Participated in Global Cybersecurity Forum
- Participated in Cambodia Policy and Technical Advisory Webinar
- Participated in FIRST (Forum of Incident Response and Security Team) Annual Conference online
- Participated in Ethiopia Digital Government Webinar
- MOU agreement with the National Center of Informatics in Tunisia

Government Certification Management Authority (GCMA) - Ministry of the Interior and Safety

Improving Work Efficiency and Data Protection, through Securing Safety of Digital Documents

For the electronic processing of administrative tasks and safe provision of administrative information, the establishment of a reliable security system is essential. In this regard, the Korean government built and has been operating the Government Certification Management Authority (GCMA) since April 2004, with the aims of improving the efficiency of e-government administrative work and strengthening data protection.

The Government Certification Management Authority (GCMA) is focused on strengthening the reliability and security of e-government in Korea, by establishing a government-level information protection system for verifying the identities of public officials and administrative agencies and ensuring the stable distribution of digital documents. It is thus dedicated to providing services to for example prevent forgeries and falsifications of digital documents circulated between institutions, and to issue and verify certificates for the transmission and reception of encrypted data, in addition to its identification of public officials.

Fingerprint Authentication
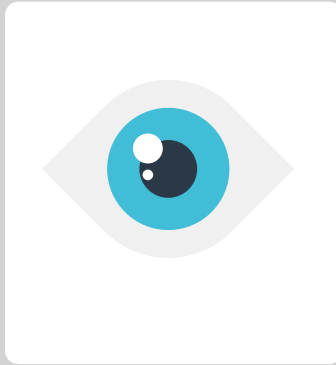
Iris Authentication
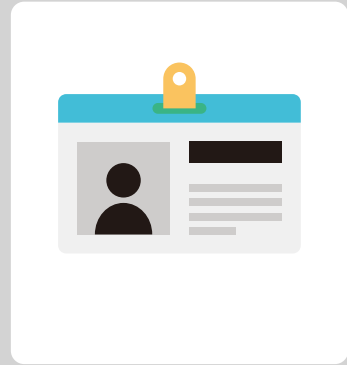
ID Card
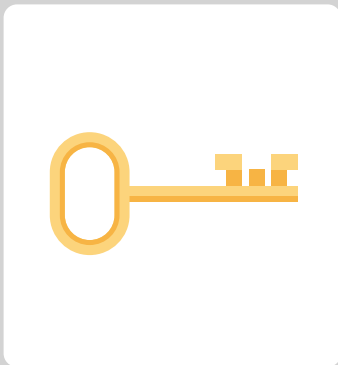
Key
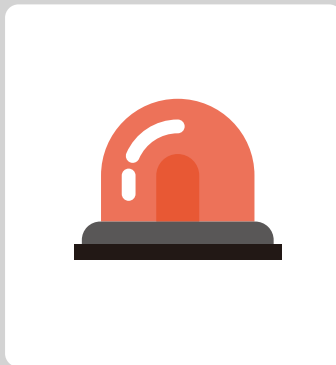
Alert
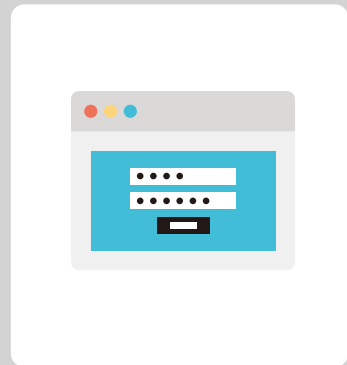
Account

Police
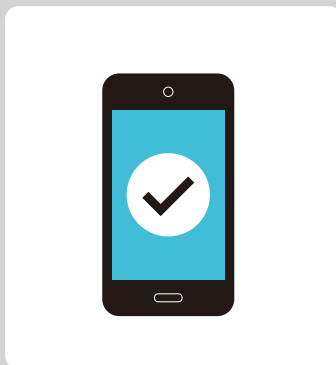
Smartphone Protection

CCTV

Face-to-face Identity Verification

Contact-free Identity Verification

Securing safety of digital documents

Efficient operation of administrative work

?
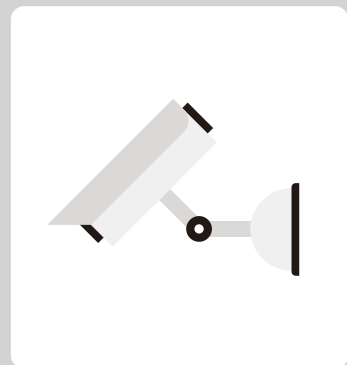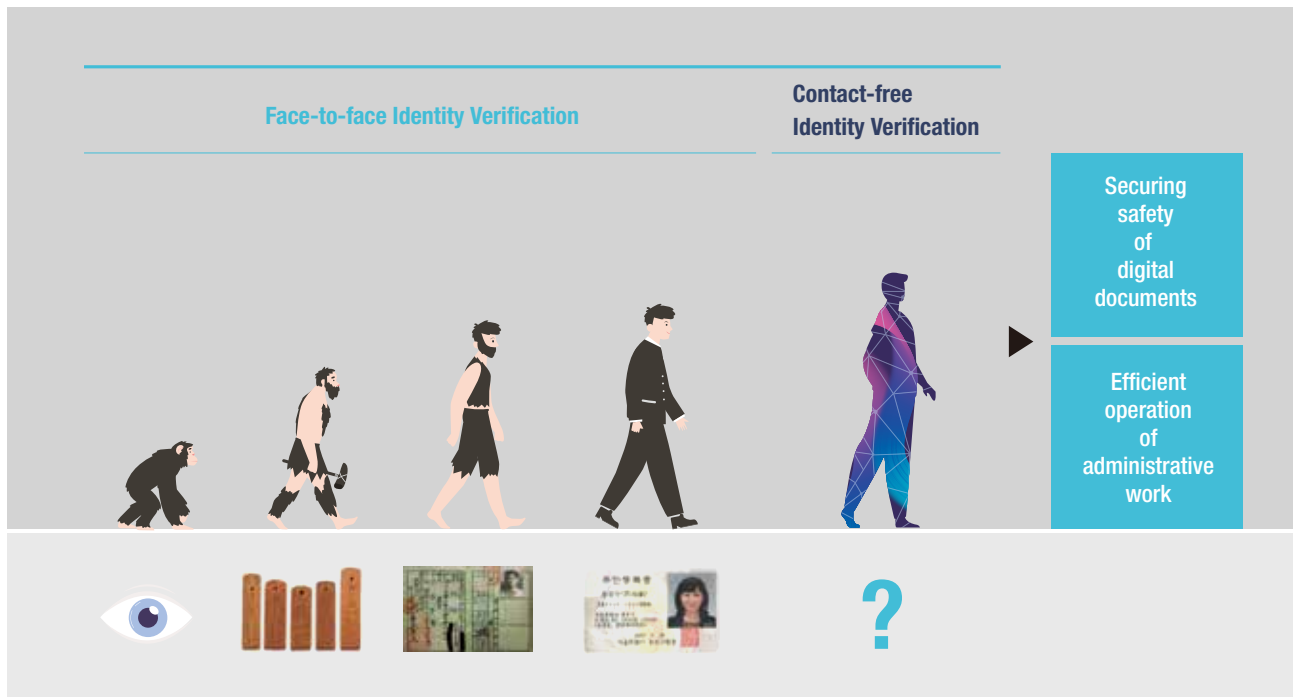
Progress

2000 Established GPKI (Government Public Key Infrastructure) certification system

2002 Distributed e-government web service certificate (G-SSL)

2005 Expanded propagation of GPKI, and stabilized services

2009 Established GTSA (Government Time Stamp Authority) system

2010 Established government OTP system
Began operation of integrated certification center in line with expanded authentication methods

2011 Enhanced GPKI encryption system

2012 Established multi-factor authentication system

2015 Awarded Webtrust international accreditation for first time

2020 Deployed browser certificate (HTML5) service

2021 Distributed browser certificate module, and switched service to Non-ActiveX method

Key Services

Establishment of GPKI Certification System

The system comprises the Root Certificate Authority (Root CA) (Ministry of the Interior and Safety), five certificate authorities (Ministry of the Interior and Safety, Supreme Prosecutors' Office of the Republic of Korea, Military Manpower Administration, Supreme Court of Korea, and Ministry of Education), and 974 registration authorities designated by the certificate authorities.

GPKI Management System

GPKI	Accredited Certificate Authority

Cross Certification

- Ministry of the Interior and Safety(Root CA)
- Root CA
- Ministry of the Interior and Safety(CA)
- Certificate Authority 1(CA)
- Certificate Authority 2(CA)
- Registration Authority(RA)
- Registration Authority(RA)
- Registration Authority(RA)
- Registration Authority(RA)
- Registration Authority(RA)
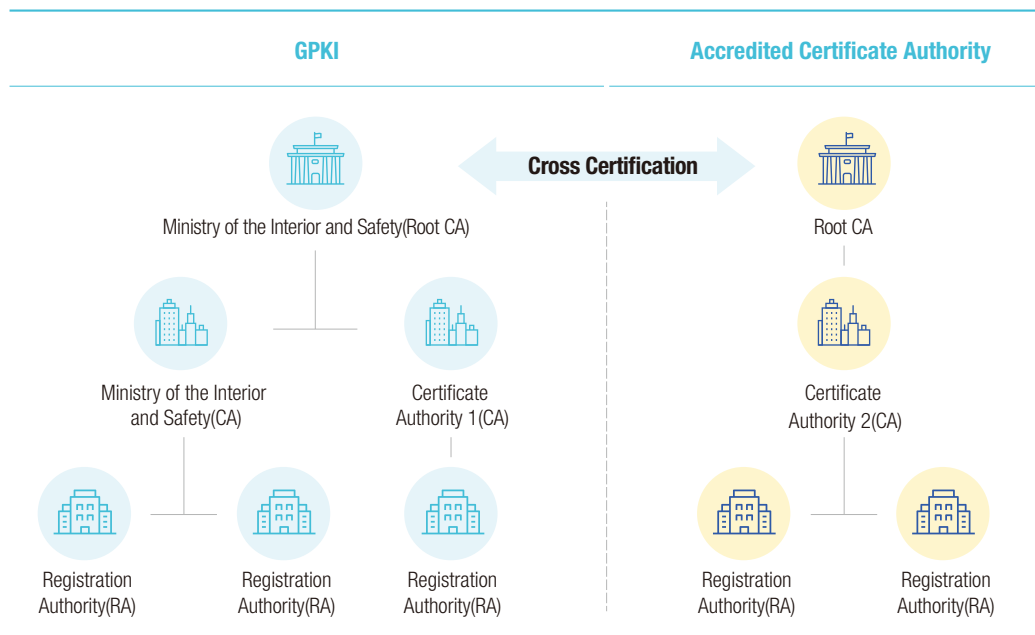
Configuration of GPKI Certification System

Administrator	GPKI Certification System	Main Systems
Certification Management Center	**Certification Administrator Website**	정부24 Government 24
(Remote)Registration Authority Administrator	Certification System Management / Certificate Issuance /Management / User Information Management	Government Document Distribution Center (GDOC)
	System Management	Certificate Verification
Users	**Certificate Website** (www.gpki.go.kr)	
Administrative Agencies	Certificate Issuance	Public Information Sharing System
Public/Financial Institutions	Certificate Revocation	GVPN
	Certificate Renewal	
	Certificate Management	
	Encryption Key Storage	
	Encryption Key Recovery	

RootCA/CA	CRL
Certificate Issuance /Renewal/Revocation	Certificate Revocation List Verification
RA	**OCSP**
User Information Management	Real-time Validation
Key Management(KMI)	**SCVP**
Key Storage and Recovery	Server-based Certificate Verification
Standard API	**TSA**
Standard Security Modules	Time Stamping

Time Stamping Service

Standard API Distribution Management System

Certificates

Issuance of Certificates for Identity Verification and Conduct of Administrative Tasks
- (Personal use) For administrative tasks such as user authentications and business mail
- (Digital signature use) For business tasks such as distribution of digital documents
- (Server use) For security of system that electronically processes administrative tasks
- (G-SSL use) For encryption of data transferred between user's PC and website

Issuance of API Module for Login

Provide API module and UI for certificate selection, for server use in user authentication and data encryption and decryption

Information Linkages

Provide basic services to ensure safe implementation of administrative and public services of e-government

GPKI Certification System
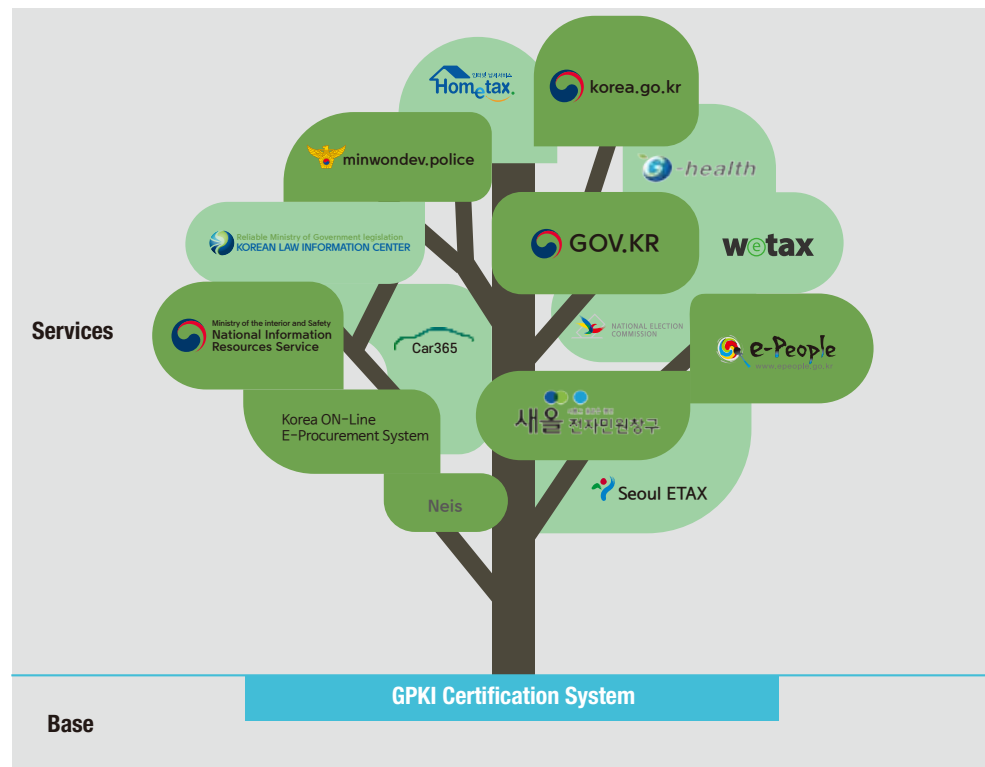
Key Outcomes

Current Status of GPKI-valid Certificates (as of May 2022)

Certificate Authorities	Total	Personal Use	Institutional Use	
			Digital Signature Use	Server Use
Total	1,575,858	1,528,160	23,217	24,481
Ministry of the Interior and Safety	693,334	679,556	1,838	11,940
Ministry of Education	847,258	813,472	21,281	12,505
Supreme Prosecutors' Office of the Republic of Korea	11,896	11,837	59	0
Supreme Court of Korea	23,369	23,294	39	36
Military Manpower Administration	1	1	0	0

Current Status of GPKI Standard API Distribution (as of May 2022)

Category	Total	Central Administrative Agencies	Local Governments	Public Institutions
Number of Systems (Cases)	11,739	3,610	5,470	2,659

Securing of International Credibility

Acquired international standard certification through Webtrust accreditation process, ensuring safety of GPKI Certification Service and registering GPKI Certificate (RootCA) as "Trusted Root Certificate Authority" in major web browsers

"Webtrust Accreditation" certificate posted at Government Certification Management Authority (GCMA)
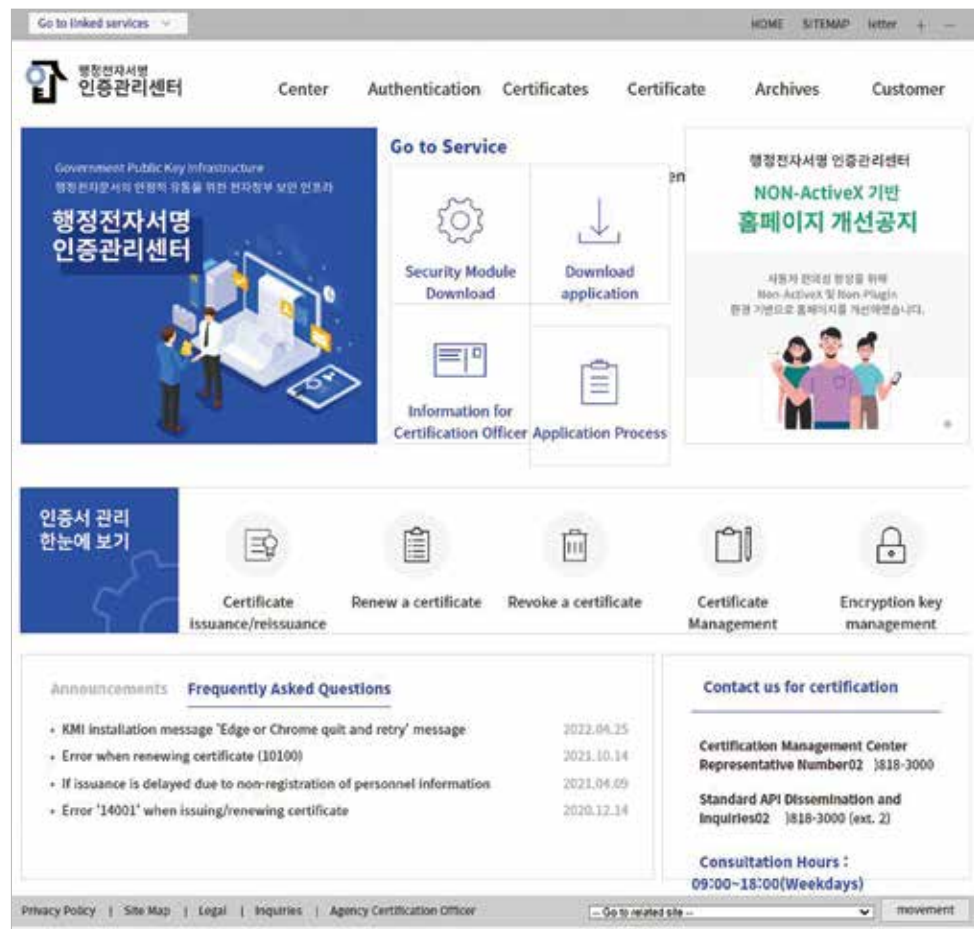
Major Websites

- Government Certification Management Authority: https://www.gpki.go.kr *GPKI, G-SSL
- Government Time Stamp Authority (GTSA): https://www.gtsa.go.kr
- Government OTP Certification Center: https://www.gotp.go.kr
  *As an internal service provided for public officials, multi-factor authentication cannot be accessed from an Internet network.

Reducing Costs and Eliminating Inconvenience, through Sharing of Public Information Held by Administrative Agencies

The public information sharing system, introduced in 2004, is a system that makes possible the sharing of public information held by individual administrative institutions through linking of the information systems of multiple administrative institutions. More specifically, it is a service, based on Chapter 4 of the Electronic Government Act, that enables public and administrative institutions to retrieve public information held by other public and administrative institutions through the system to conduct civil affairs, internal affairs, etc. without requiring citizens to submit the required documents themselves.

The public information sharing system, established to prevent wastes of budget and manpower stemming from the redundant collection of administrative information and duplication of relevant systems, and to mitigate people's inconvenience in needing to have issued and submit various documents required for civil affairs, consists of an information inquiry service, to reduce the number of documents citizens are required to prepare, and an information distribution service that supports large-scale, real-time information sharing between organizations.

Legal Grounds for Public Information Sharing
 - Chapter 4 of the Electronic Government Act (§36 ～ §44),
    Chapter 4 of the Enforcement Decree of the Electronic Government Act (§39 ～ §52)
 - Public Information Sharing Guidelines (regulations of Ministry of the Interior and Safety),
    Status of Public Information Subject to Sharing (public notification of Ministry of the Interior and Safety)

Configuration of Public Information Sharing System

PISS Public Information Sharing System

Integrated Public Information Sharing Service

Information Inquiry Services		Information Distribution Services	
Single Required Document	Multiple Documents on One Screen	Mass Information Distribution	Real-time with verification (Y/N)
User/Organization's Department Management	Access Management Administrative Affairs Management	Contact-free Qualification Verification	Customized Information Distribution

Information Inquiry Portal (e-hanaro)

Dedicated Browser (linked with business tasks)

Information Distribution Hub Portal (Hub)

Services

Virtual Experience Learning	Integrated Monitoring	Complaint Consultation Management	Operations Management	Security Control Management

Organizations Using Information

- Central Administrative Agency
- Educational Institutions
- Cities, Counties and Districts
- Public Institutions
- Educational Institutions
- Financial Institutions

Organizations Providing Information

- Ministry of the Interior and Safety
- Ministry of Land, Infrastructure, and Transport
- Supreme Court of Korea
- National Tax Service
- Ministry of Health and Welfare

Progress

December 2005~May 2006	Established Information Strategy Planning (ISP), to expand public information sharing
August 2009~November 2011	Implemented customized public information sharing system establishment project (Phases 1～3)
April 2014~March 2020	Executed government-wide information distribution hub (HUB) establishment project (Phases 1～6)
July 2018~January 2019	Carried out BPR/ISP projects, to establish future public information sharing system
2021~July 2022	Implementation of future public information sharing system foundation setup project (Phase 2 of 3)

Key Services

Information Inquiry Services

A service through which an organization wishing to use public information held by another organization can only retrieve and read that data, without its being directly transmitted

-The person in charge of administrative affairs can directly retrieve and check the public information necessary for handling the civil or internal affairs concerned, thus eliminating the need for citizens to visit government offices and obtain the required documents directly.

Information Distribution Services

A service in which an organization wishing to use public information held by another organization receives that data for its own use, via direct transmission from the other organization holding the information

-Administrative agencies can exchange public information securely, through encryption of information transmitted between the organization holding the needed data and the one using it in order to process its affairs in accordance with the relevant laws and regulations.

Key Outcomes

Reductions in Budget and Manpower, and Enhancement of People's Convenience
- Information Inquiries: 788 administrative and financial institutions using 163 types of information held by 34 institutions
- Information Distribution: 527 organizations using 5,989 types of information held by 522 institutions

*As of June 2022

Achievements in International Cooperation
- Seminar on Best Practices in Public Information Sharing of Korea (Rwanda, 2007)
- Cooperation Forum on Public Administration (Serbia, 2018)
- Cooperation Forum on Public Administration (Panama, 2018)
- Electronic Government Experts Cooperation Forum (Vietnam, 2018)
- UN Public Service Forum (2020)
- Korea-Tunisia Digital Government Cooperation Forum (2022)

*Responsible Department : **Digital Resource Policy Division, Ministry of the Interior and Safety**   *Contact : **+82-44-205-2835/yeon048@korea.kr**

21
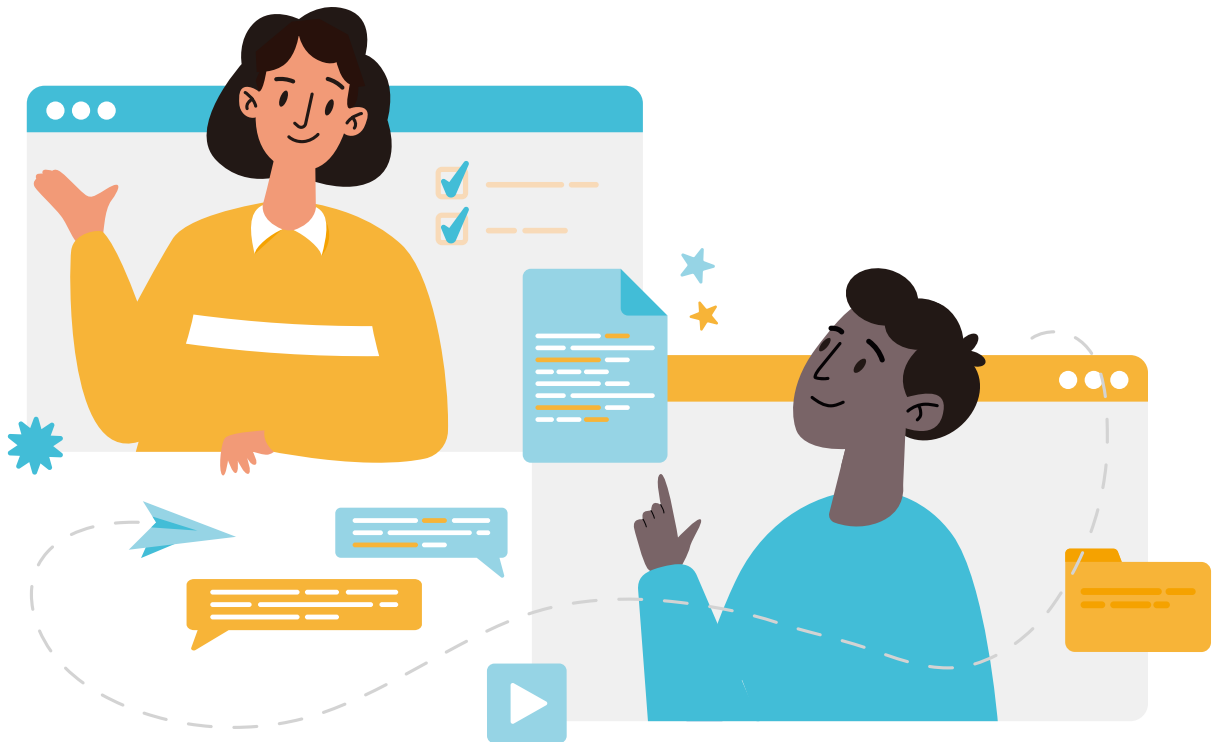
Human Resources Development (HRD) Platform - Ministry of Personnel Management

AI and Big Data-based Open Learning Hub, and Intelligent Open Platform for National Human Resource Development

In 2020 the Ministry of Personnel Management launched a three-year project to build a learning platform for public officials. This move was made in response to changes in the social and technological environments such as the accelerating digital transformation triggered by the fourth industrial revolution, the rapidly-growing trend of contact-free lifestyles following the pandemic, the increasing demand for personalized learning with the rise of the Millenial Generation and Generation Z who value self-development and growth, and the growing public demand for enhancement of civil servants' capabilities.

The "Human Resources Development (HRD) Platform" is an open learning hub that provides various online learning contents, from both inside and outside the government, at one site. It is an intelligent learning platform that applies AI and big data technologies in the field of Public personnel management for the first time, and recommends customized content relevant to the jobs or interests of individual learners. The Real-time video lecture system makes learning possible at anytime and anywhere, and promotes self-initiated learning through a social learning service through which learners can share their daily learning routines and experiences with their colleagues. Data-based HRD innovation is pursued via the collection and analysis of vast amounts of data on the learning taking place within the platform.

HRD Platform Diagram

Intelligent Open Platform for Pulbic HRD

LMS
(Learning Management System)

LXP
(Learning eXperience Platform)

Before the platform…

'With the platform'

- Mainly off line
- Limited private sector participation
- Burden of learning on top of daily tasks
- Mainly content for general training
- Mainly manual work

Open and connected
Government HRD Innovation Ecosystem

- Online, real-time connection
- Work-learning integration
- Customized recommendation from AI
- Data-driven HRD
- Training ecosystem harmonizing public-private sectors

Evolved into a Virtuous cycle of HRD

Personalized Services

Real-time video lecture system

HRD Paradigm shift

Self-initiated learning that combines work and learning

'Hybrid HRD in new normal

Learner

Institution

Intelligent Open HRD Platform

Private

Admin

Promote the market by sharing learning resources

HRD policy and operation insight

Education resources distribution and matching

Data-based analysis system

Learning Experience Platform (LXP)

main features of the
HRD platform

Significant expansion of learning resources	AI & Big data based customized recommendation	HRD Digital transformation	Non face-to-face online learning environment	Promotion informal collaborative learning

OPENNESS	CUSTOMIZED	BIG DATA BASED	REAL-TIME

To set up more efficient learning environment based on online platform

Progress

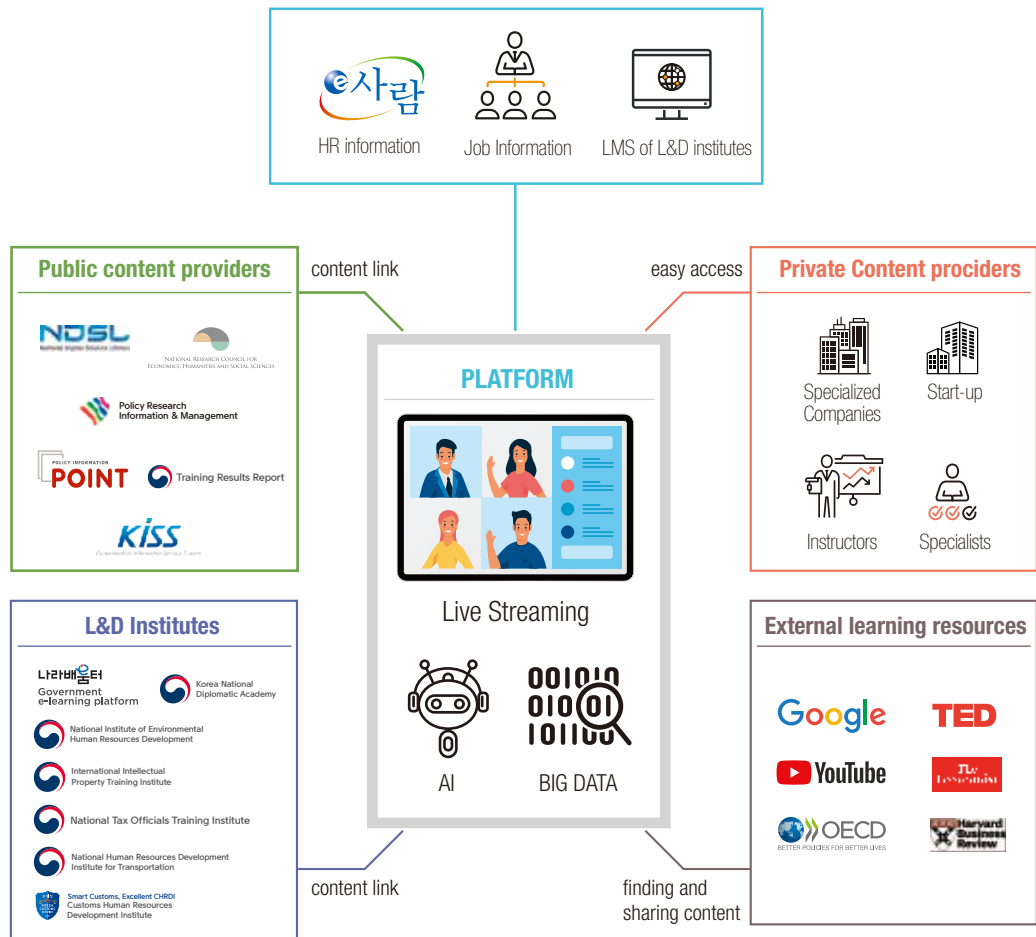|	
December 2019	Selected as one of "National Digital Transformation Projects," in public project proposal competition of Ministry of Science and ICT and NIA
June~December 2020	Phase 1 project implemented
February 2021	Three Ministries (Ministry of Personnel Management, Ministry of Science and ICT, and Korean Intellectual Property Office) launched pilot operation
May~December 2021	Phase 2 project executed
July 2021	Nine Ministries (including Ministry of Economy and Finance, Ministry of the Interior and Safety, Ministry of Culture, Sports and Tourism, and Ministry of Employment and Labor) launched pilot operation
May~December 2022	Phase 3 project carried out
2022	All Ministries began pilot operation

Key Services

Connection and Provision of Various Contents of Government and Private Sectors

Link and provide various contents from both inside and outside the government via open content distribution system that private content providers can easily access

Main features of the HRD Platform

Public content providers — content link — easy access — **Private Content prociders**

HR information | Job Information | LMS of L&D institutes

Public content providers: NDSL, NATIONAL RESEARCH COUNCIL FOR ECONOMICS, HUMANITIES AND SOCIAL SCIENCES, Policy Research Information & Management, POINT (POLICY INFORMATION), Training Results Report, KISS

PLATFORM — Live Streaming — AI — BIG DATA

Private Content prociders: Specialized Companies, Start-up, Instructors, Specialists

L&D Institutes
Government e-learning platform, Korea National Diplomatic Academy, National Institute of Environmental Human Resources Development, International Intellectual Property Training Institute, National Tax Officials Training Institute, National Human Resources Development Institute for Transportation, Smart Customs, Excellent CHRDI Customs Human Resources Development Institute

content link — finding and sharing content

External learning resources
Google, TED, YouTube, The Economist, OECD BETTER POLICIES FOR BETTER LIVES, Harvard Business Review

Designed as an open architecture
→ Various public and private content providers can participate freely and offer content directly

700,000+ pieces of various government and private learning content
(e-learning, micro-learning, academic materials and paper, etc.)
→ Civil servants can learn easily and conveniently

AI-Based Personalized Learning Curation

Recommend personalized contents in accordance with individual's personnel and job information and learning interests, based on use of new technologies such as AI and big data for first time in field of civil service HRD

Realization of Data-Based Scientific Human Resource Development

Provide (via dashboards, etc.) insights by platform users such as department heads, education operation managers, policy managers, and content providers, through accumulation and analysis of varied learning data

Social Learning Where Learners Can Learn, Share and Grow Together
Support various forms of social learning such as sharing of daily learning routines through feeds, following learners of interest, sharing of learning experiences via comments, learning group activities, etc.

Real-time Online Learning, at Anytime and Anywhere
Strengthen real-time interactive communication through secure, stable real-time online video education system and diverse communication and collaboration tools

Key Outcomes

Phases of Establishment

Phase 1 (in 2020)	Phase 2 (in 2021)	Phase 3 (in 2022)
Platform Infrastructure Establishment	Implementation of Core Functionality, and Pilot Operation	Integration and Completion of Services, Expansion of Pilot Operation to All Ministries

Status of Platform-Linked Learning
Linked about 700,000 cases of learning contents from inside and outside the government, such as e-learning, videos, theses and academic materials (as of end-2021)

High Satisfaction of Platform Users During Pilot Operations
Achieved 81.07-point satisfaction rating — 124.7% of 2021 target of 65 points

International Cooperation Achievements
- Presented best practices in webinar with Kyrgyzstan, and international conference of Astana Civil Service Hub (ACSH)
- Selected as topic of joint research with Public Employment and Management (PEM) Working Party of OECD, and case included in PEM's annual report the "PEM Spotlight"

Future Plans

- Execute Phase 3 of HRD platform establishment project by end-2022, and provide completed services to all central administrative agencies from 2023
- Develop services continually, by facilitating digital transformation of HRD

*Responsible Department : HRD Platform Development Division, Ministry of Personnel Management   *Contact : +82-44-201-8551/enhee12@korea.kr

27

Contributing to Development of National Fiscal Operations, by Strengthening Efficiency through Informatization of Finance
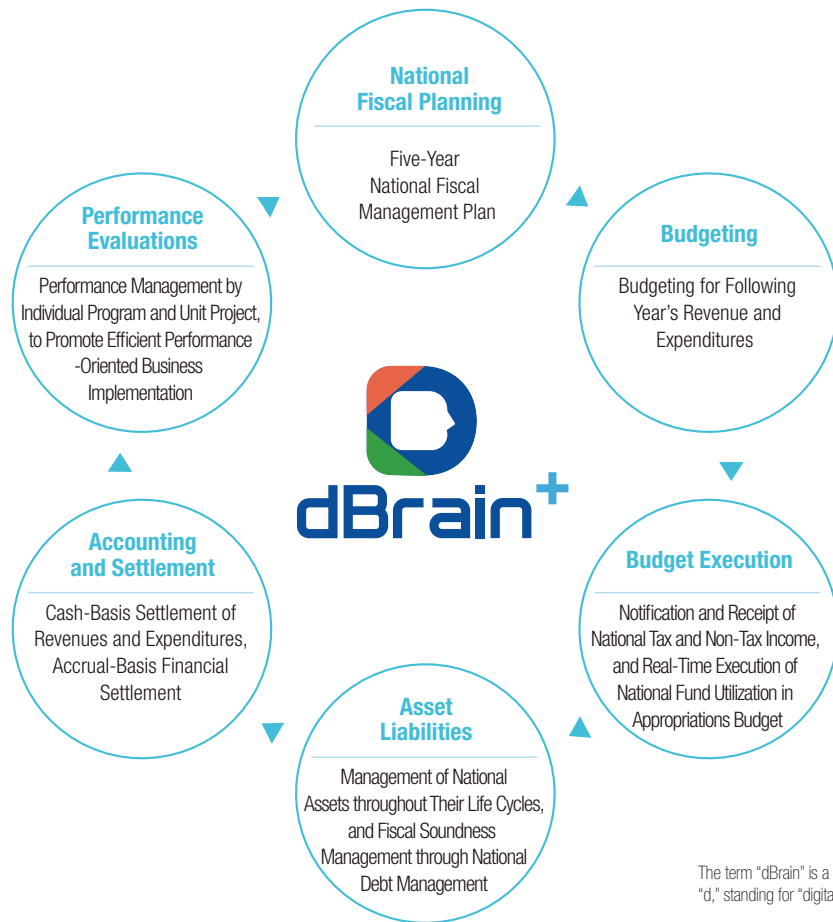
While suffering economic crises in 1997 and 2008, Korea experienced declines in fiscal revenue and increased demands for expenditures to stimulate the economy. Falling fertility rates and an aging population have meanwhile led to weakening of the engines of economic growth and an expansion in social welfare spending, giving rise to growing demand for the provision of financial assistance as well. With its implementation of four major fiscal system reforms - "National Fiscal Management Planning," a "Double-Entry Bookkeeping, Accrual-Based Accounting System," a "Performance Management System," and a "Top-Down Budgeting System" - the "Digital Budget and Accounting System (dBrain)" was built and introduced to meet the need for a new fiscal system capable of supporting these reforms.

The Digital Budget and Accounting System, in operation since 2007, is an integrated fiscal information management system that manages the entire national fiscal operations life cycle. It supports all areas of fiscal operations, from budgeting and budget allocation, to the execution of government fund utilization and management of state-owned property, to government accounting settlement. In 2022 the next-generation budget and accounting system (dBrain⁺), fully redeveloped with the latest IT technology in response to system aging, has come into operation.

National Fiscal Operations Life Cycle

National Fiscal Planning

Five-Year National Fiscal Management Plan

Performance Evaluations

Performance Management by Individual Program and Unit Project, to Promote Efficient Performance-Oriented Business Implementation

Budgeting

Budgeting for Following Year's Revenue and Expenditures

Accounting and Settlement

Cash-Basis Settlement of Revenues and Expenditures, Accrual-Basis Financial Settlement

Budget Execution

Notification and Receipt of National Tax and Non-Tax Income, and Real-Time Execution of National Fund Utilization in Appropriations Budget

Asset Liabilities

Management of National Assets throughout Their Life Cycles, and Fiscal Soundness Management through National Debt Management

dBrain⁺

The term "dBrain" is a combination of "d," standing for "digital," and "Brain."

Expected Effects of dBrain+

Transparent fiscal management for the public	Intelligent policy making, for fiscal policymakers	Efficient handling of fiscal task, for financial practitioners	Stable financial operating infrastructure, for operators
- Statistical information on national budget that people can easily understand - Enhancement of communication for active public participation in national finance	- Support for prompt and efficient decision-making via AI-based analytics and forecasting - Integrated dashboard service enabling better understanding of national finance at a glance	- Development of more efficient, automated process, to eliminate blind spots in handling fiscal tasks - Provision of user-friendly work environment reflecting latest IT technologies	- Provision of operational infrastructure ensuring high levels of availability, scalability and safety

Progress

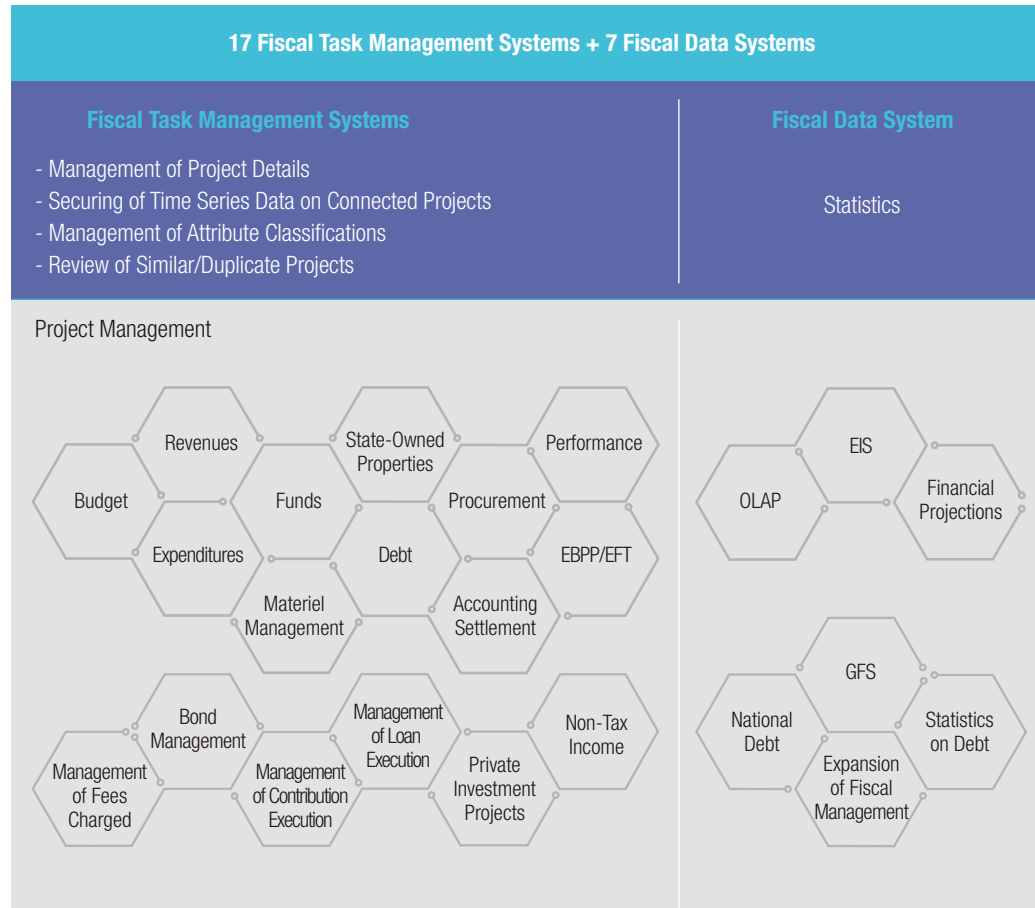|	
March 2004	Decided to establish Integrated Fiscal Information System, in meeting of Presidential Advisory Council
August~December 2004	Prepared Business Strategy Planning (BSP) for construction of Digital Budget Accounting System
February~September 2005	Prepared Business Process Re-engineering (BPR) and Information Strategy Planning (ISP)
January 2005~February 2007	Developed Digital Budget Accounting System
January 2007~	Operated Digital Budget Accounting System
May 2013	Digital Budget Accounting System won 1st Place in UN Public Service Awards
July 2015	Signed Korea-Russia MOU related to Budget Accounting System
March 2016	Enacted Korea Public Finance Information Service Act (on March 22)
July 2016	Established Korea Fiscal Information Service, and began consignment operation of Digital Budget Accounting System
November 2016	Signed Korea Fiscal Information Service-Inter-American Development Bank MOU on fiscal information systems
2019~2021	Established next-generation dBrain
January 2022	Launched next-generation Budget Accounting System (dBrain+)

Key Services

dBrain⁺ System Configuration

17 Fiscal Task Management Systems + 7 Fiscal Data Systems	
Fiscal Task Management Systems	**Fiscal Data System**
- Management of Project Details - Securing of Time Series Data on Connected Projects - Management of Attribute Classifications - Review of Similar/Duplicate Projects	Statistics

Project Management

Budget Management System

Support for departments in reducing the times spent writing reports, minimizing the report review times, and improving report accuracy

Revenue Management System

Support for departments in reducing the times spent writing reports, minimizing the report review times, and improving report accuracy

State Property Management System

Support for conduct of on-site investigations and the effective management of state property

Expenditure Management System

Support to reinforce phased internal control of expenditure processing and transparency in national funds execution

Accounting Settlement Management System

Automated calculation of national integrated fiscal statistics (GFS, Government Finance Statistics), and improvements in automated generation of financial accounting slips and single/double bookkeeping accounting reports

Fiscal Data System

Support for data- and new technology-based policy decision-making, and provision of data analysis services

Fiscal Information Disclosure System

Operation of "Open Fiscal Data," a public portal website set up to satisfy public's right to know and enhance fiscal transparency

Key Outcomes

Support for Stable Implementation of Fiscal Activities and Enhancement of Fiscal Data Utilization
- Use of dBrain$^+$ by a daily average 18,000 civil servants responsible for fiscal operations, and processing of daily average national fund expenditures of KRW 12 trillion and receipts of KRW 7 trillion (as of 2021)
- Links with 76 institutions and 135 systems, integrated management of national fiscal statistics, and real-time processing of national funds transfers and receipts (as of 2022)

Awards
- dBrain won "1st Place at UN Public Service Awards," in Category of "Promoting Whole-of-Government Approaches in the Information Age" (in 2013)
- dBrain$^+$ received "IT Service Technology Innovation Award" at "Korea IT Service Innovation Awards" (in 2022)

Achievements in International Cooperation
- In recognition of dBrain$^+$ excellence, Capacity Building Program has been carried out to share experience on FMIS establishment and operations.
- 56 occasions of dBrain$^+$ establishment and operation experience transfers since 2016
- 7 occasions of invitational training sessions held for foreign senior public officials in finance

Korea Law Information Center (KLIC) -
Ministry of Government Legislation

Prompt and Convenient Intelligent Legal Information Service Platform

As society grows ever more complex and diverse, the number of laws promulgated to solve problems at hand continually increases. In Korea the number of laws and regulations has risen from 3,929 in 2012 to 5,220 as of August 2022. As the number of laws and regulations increases, the difficulty of finding and referring to necessary laws and regulations will inevitably grow as well. In line with this, the Ministry of Government Legislation has been providing a variety of legal information on the Internet through the Korea Law Information Center since 1998, so that people can more conveniently locate and refer to any laws they need to know.

The Korea Law Information Center, with its continuously updated information, not only makes possible, in one place, integrated searches for diverse legal information such as laws, administrative rules, municipal ordinances, public institution regulations and precedents, but also provides services such as open APIs for delegation between laws and regulations and for shared use. In these ways, the Korea Law Information Center allows people to easily find approximately 4.75 million pieces of information on laws and regulations on the Internet, at anytime and from anywhere, without any need for looking through paper statute books or official gazettes one by one.

Vision	To ensure citizens have free access to and can easily use legal information without help from legal experts

▲

Driving Strategies	Integrated Search Service with Easy Search Functionality	Utilization-Focused Supplementary Services	User-Oriented Intelligent Services
Detailed Strategies	- Integrated service for searching for laws, administrative rules, and precedents - Support for various search methods - Mobile services for use via smartphones, etc. - Improvements in speed of access to and accuracy of legal information	- Linkages of legal information, and comparisons of laws and regulations - Legal information editing services, such as electronic statue book and printing functionality - Provision of structural diagrams of laws and precedents - Personalized services, including transmission of laws via e-mail	- Establishment of big data analysis-grounded knowledge base of legal information - Development of intelligent legal information search service, using machine learning - Support for private use through opening of legal information knowledge base

Building an intelligent legal information service platform, to overcome limitations of search services focused on legal terms and to allow easy access to legal information through use of everyday terms, sentences and questions

Progress

1992~1998 — Construction Phase: Established and began provision of information on current laws and legal history through PC communication network services

1999~2009 — Introductory Phase: Started provision of information on current laws, treaties, and administrative appeals via Internet web services

2010~2012 — Expansionary Phase: Began provision of services with integrated search functionality and hyperlinks to related laws and regulations, as well as smartphone application services

2013~2021 — Development Phase: Expanded legal information, including that on municipal ordinances and laws, and launched law comparison service

2022~ — Enhancement Phase: Establishing intelligent legal information search service using AI technologies

Key Services

Main Services of Korea Legal Information Center
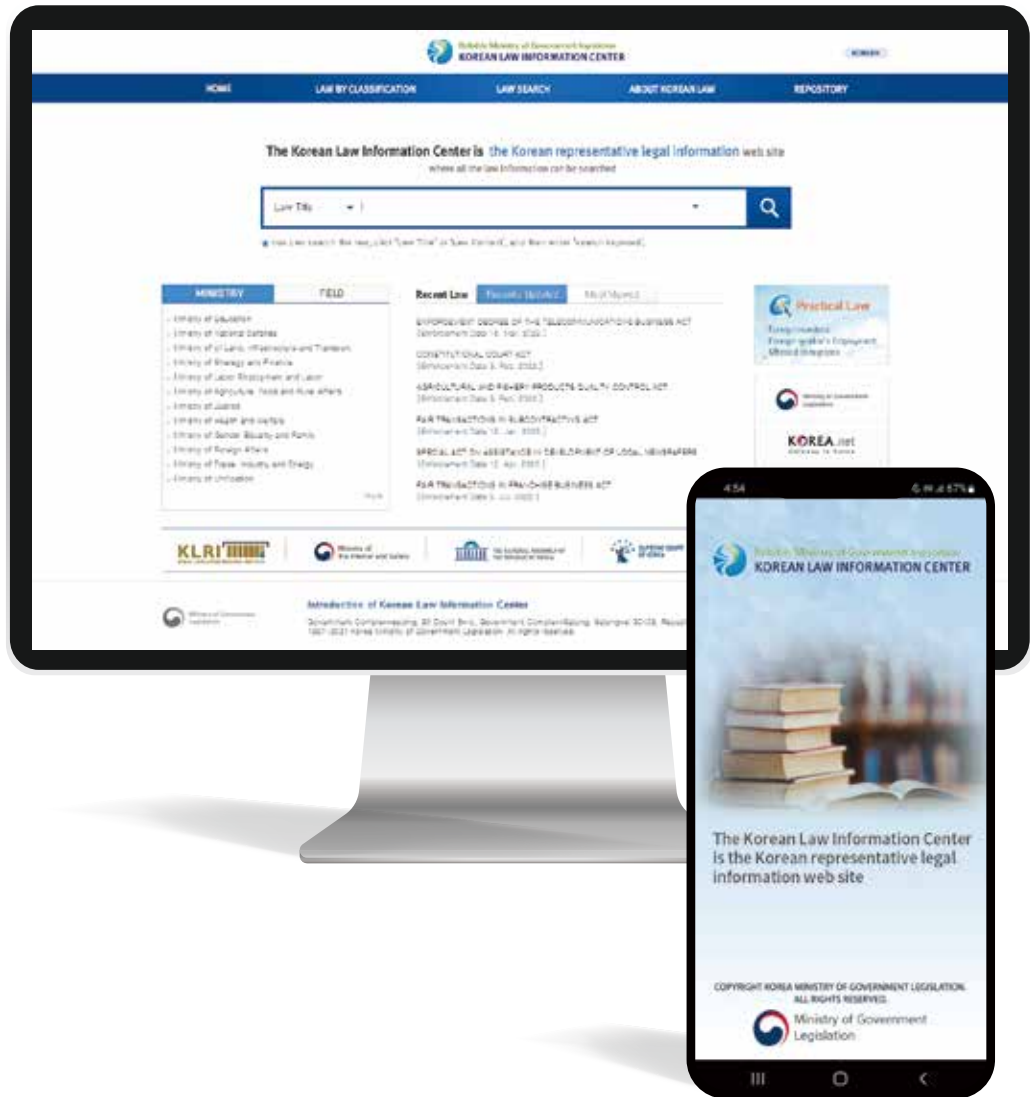
Integrated Search for Legal Information
Legal Information Search through Clicking of Button

Hyperlinks to Relevant Laws and Regulations
Checking of Other Relevant Legal Information Referenced in Laws

Shared Usage of Legal Information
Open API Service Providing Legal Information

Mobile Application Service
Legal Information Search via Smartphone

Easy Searches for Various Legal Information

Provide legal information search service, with basic search and detailed search functionalities

Hyperlinks to Laws and Regulations

Establish linkages of information between "Laws and Laws", "Laws and –Administrative Rules," and "Laws and Municipal Ordinances"

Comparison of Laws and Regulations

Provide legal information services with functionalities including comparisons of laws and regulations, electronic statute book access, and storage and printing

Mobile Application Services

Provide Android and IOS version services at same levels as services using PC web browsers

Open Legal Information Services

Support shared use, through provision of open API, such as names of and web addresses to laws

Key Outcomes

Statuses of Legal Information Provision and Use

Provision of legal information: 4.75 million cases

Daily average visitors: 770,000 visitors

User satisfaction level: 88.6%

Daily average page views: 1.74 million

Institutions involved in shared use: 1,100

Mobile app downloads (cumulative figure): 3.5 million

Achievements in International Cooperation

Completed establishment of Myanmar Legal Information System(2016~2018)

Future Plans

- Provide intelligent (AI) legal information search service
- Improve access of underprivileged to legal information, through linkages with artificial intelligence platforms (such as AI speakers) in private sector

Prompt Provision of Accurate Criminal Justice Information, via Digital Administration
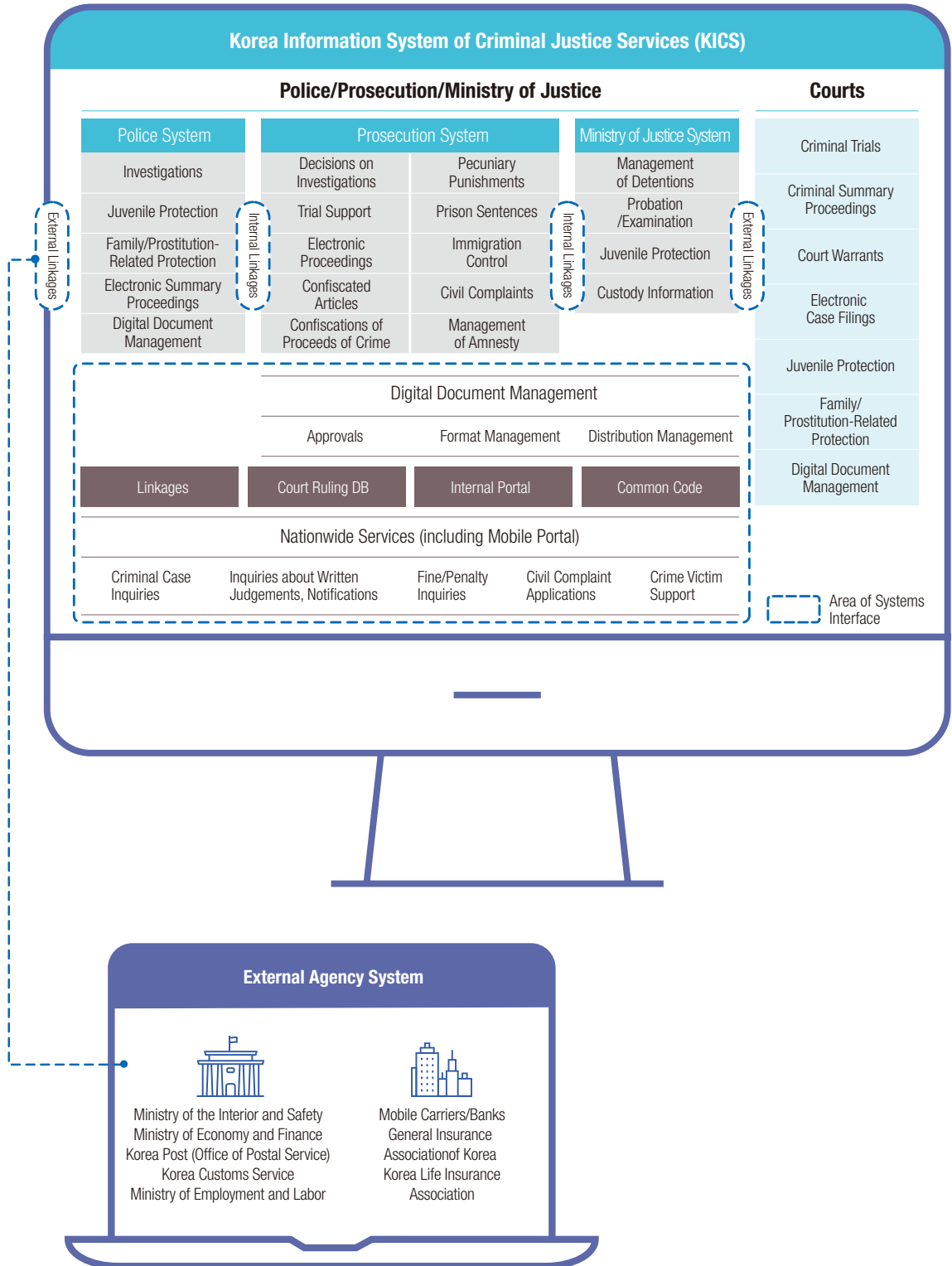
The full-scale introduction of e-government has brought changes to the work processing systems of criminal justice institutions as well. Specifically, in addition to the discussions among agencies begun from 2005, concerning the efficient use of information and effective cooperative investigations using information systems, the Office of Criminal Justice Information System was established in 2010 within the Ministry of Justice, and Korea Information System of Criminal Justice Services (KICS) and the Criminal Justice Portal began operations. KICS makes possible the real-time sharing of case information among institutions, and the Criminal Justice Portal allows citizens to quickly and safely retrieve information concerning criminal cases that they are involved in.

KICS is an electronic work management system through which criminal justice agencies (the courts, the Ministry of Justice, prosecutors, and police, the maritime police, and the Corruption Investigation Office for High-ranking Officials) conduct investigations, indictments, trials and sentence enforcement through use of a standardized information system, with the resulting information and other documents made available for shared use to provide services to citizens. With the aim of further promoting the people's convenience through expediting criminal justice procedures using digital IT systems, protecting human rights, and establishing digital administration integrated among criminal justice agencies, a more advanced next-generation KICS is now, as of 2022, being built.

Judge

JURY
SUMMONS

Judge

Courthouse

Honesty

Justice

Legality

JURY
SUMMONS

Justice

Honesty

Jury Panel

Call to Serve

JURY

Gavel

24
HOURS

START NOW

Korea Information System of
Criminal Justice Services (KICS)
Organizational Diagram

Korea Information System of Criminal Justice Services (KICS)

Police/Prosecution/Ministry of Justice

Courts

Police System	Prosecution System		Ministry of Justice System	Courts
Investigations	Decisions on Investigations	Pecuniary Punishments	Management of Detentions	Criminal Trials
Juvenile Protection	Trial Support	Prison Sentences	Probation /Examination	Criminal Summary Proceedings
Family/Prostitution-Related Protection	Electronic Proceedings	Immigration Control	Juvenile Protection	Court Warrants
Electronic Summary Proceedings	Confiscated Articles	Civil Complaints	Custody Information	Electronic Case Filings
Digital Document Management	Confiscations of Proceeds of Crime	Management of Amnesty		Juvenile Protection

External Linkages

Internal Linkages

Internal Linkages

External Linkages

Courts:
- Criminal Trials
- Criminal Summary Proceedings
- Court Warrants
- Electronic Case Filings
- Juvenile Protection
- Family/ Prostitution-Related Protection
- Digital Document Management

Digital Document Management

Approvals	Format Management	Distribution Management

Linkages	Court Ruling DB	Internal Portal	Common Code

Nationwide Services (including Mobile Portal)

Criminal Case Inquiries	Inquiries about Written Judgements, Notifications	Fine/Penalty Inquiries	Civil Complaint Applications	Crime Victim Support

Area of Systems Interface

External Agency System

Ministry of the Interior and Safety
Ministry of Economy and Finance
Korea Post (Office of Postal Service)
Korea Customs Service
Ministry of Employment and Labor

Mobile Carriers/Banks
General Insurance
Associationof Korea
Korea Life Insurance
Association

Progress

January 2005	Founded Integrated Criminal Justice System Establishing Group
July 2005	Set up BPR/ISP for establishment of integrated criminal justice information system
March 2007	Constructed systems for police, prosecution and courts (Phase 1 and 2 projects)
October 2009	Enhanced existing projects, and built system for Ministry of Justice (Phase 3 and 4 projects)
December 2009	Relevant laws (2 cases), including "Act on Promotion of the Digitalization of the Criminal Justice Process," approved by National Assembly
July 2010	Began enforcement of laws, launched Korea Information System of Criminal Justice Services (KICS), and launched operating group
July 2010	Began operation of Korea Information System of Criminal Justice Services (KICS)
May~December 2018	Prepared BPR/ISP for establishment of next-generation Korea Information System of Criminal Justice Services (KICS)
July 2020	Passed preliminary feasibility study for establishment of next-generation KICS
August 2020	Formed TF for preparation of next-generation KICS establishment
September 2020	Prepared legislative proposal for "(Draft) Act on the Use of Electronic Documents in the Criminal Justice Process"
January~October 2021	"(Draft) Act on the Use of Electronic Documents in the Criminal Justice Process" submitted to, approved by, and promulgated by National Assembly
2022	Implementing project, with aim of complete next-generation KICS establishment in 2024

Key Services

Information Sharing and Joint Use Among Organizations

Each criminal justice-related organization creates documents and/or inputs information through KICS, where it is distributed quickly and accurately among institutions for joint use.

- This leads to reductions in time and budget expenditures for criminal justice procedures, while facilitating the prompt and accurate calculation of criminal justice statistics.

Prompt Closures of Minor Cases

Some minor cases can be closed quickly, thanks to fully electronic summary proceedings carried out in KICS.

- Minor cases, involving offenses such as DUI and unlicensed driving, can be handled electronically with the consents of the suspects.

Online Services for the Public

The Criminal Justice Portal connected to KICS provides information on criminal cases to the public, via convenient methods such as mobile access.

Main Civil Affairs Services(total of 79 types)

Civil Affairs Filings (38 types): Petition filings, issuances of detention/release certificates, etc.

Written Judgements and Notifications (27 types): Notifications of accused case disposition results, deliveries of penalty payment notifications, etc.

Certificate Issuances (14 types): Requests for notification of reasons for non-indictment decisions, case disposition result certificates, etc.

		Searches for Crime Victim Support Systems and Institutions	Victim Case Inquiries	Coping Guides for Victims
Dec. 2012 ~ May 2021	Total	774,801	26,103	167,868
	Daily Average	257	9	55

Data Sharing with External Agencies and Government Ministries

Plan for future sharing of data with the National Intelligence Service, the Ministry of Land, Infrastructure and Transport, the Korea Railway Police, and the Defense Security Support Command, in addition to the existing 19 external agencies already involved in data sharing including the Korea Customs Service, Korea Post (Office of Postal Service), the General Insurance Association of Korea, the Korea Life Insurance Association, and the Ministry of Employment and Labor

Key Outcomes

Statuses of Criminal Justice Portal and Mobile App Use

Criminal Justice Portal		Total Number of Accesses	Case Inquiries	Penalty Inquiries	Notice Inquiries, Civil Complaint Filings
Jul. 2010 ~ May 2021	Total (cases)	273,378,039	66,530,118	14,241,164	700,065
	Daily Average (cases)	68,740	16,729	3,581	176

Mobile Applications		Total Number of Accesses	Case Inquiries	Penalty Inquiries	Notice Inquiries, Civil Complaint Filings
Jun. 2013 ~ May 2021	Total (cases)	45,988,241	14,923,548	4,499,463	81,272
	Daily Average (cases)	15,836	5,138	1,549	27

Improvement of Accuracy and Efficiency in Criminal Proceedings

Enhance accuracy and efficiency through digitalization of documents based on cutting-edge IT technology and sharing of use among criminal justice agencies

Increase in Citizens' Convenience

Citizens are able to conveniently monitor progress of cases in real-time.

Achievements in International Cooperation

- Implemented collaborative projects for the establishment of criminal justice information systems, involving mutual visits, invitational training sessions, etc., with Peru (2015) and Uzbekistan (2016)
- Hosted visit by Singapore delegation of Ministry of Law to Ministry of Justice (operating group) of Korea (2018)
- Visited Peru and Guatemala (through dispatch of delegation specialized in digital cooperation to Latin America, supervised by Ministry of Foreign Affairs) (2021)
- Visited Honduras and Costa Rica (through dispatch of delegation specialized in digital cooperation to Latin America, supervised by Ministry of Foreign Affairs) (2022)
- Hosted visit by Thailand Institute of Criminal Justice to Ministry of Justice (operating group) of Korea (hosted by International Legal Affairs Division) (2022)

Promoting Smoother Public Communication, through Administrative Work Integration and One-Stop Public Services

The digital platform government can perform its functions through improving its platform-centered business processes and integrating its administrative services, rather than through administration implemented offline. In more detail, it involves a process of integrating public services that have been dispersed throughout various ministries and public institutions into one channel, and in the process personalizing and customizing them so as to provide services desired by the people. This has proven successful in excellent programs such as "Government 24, One-Stop Service and Subsidy 24," the "Issuance and Distribution of Mobile Electronic Certificates," and the "Virtual Assistant Service for the Public, "GoodPy" of the Ministry of the Interior and Safety, the "Online Communication System, e-People" and the "Clean Portal_Corruption & Public Interest Violation Report System" of the Anti-Corruption & Civil Rights Commission, and the "Integrated Food Safety Information Network" of the Ministry of Food and Drug Safety.

- Government 24, One-Stop Service and Subsidy 24 - Ministry of the Interior and Safety
- Issuance and Distribution of Mobile Electronic Certificates - Ministry of the Interior and Safety
- Virtual Assistant Service for the Public, "GoodPy" - Ministry of the Interior and Safety
- Online Communication System, e-People - Anti-Corruption & Civil Rights Commission
- Clean Portal_Corruption & Public Interest Violation Report System - Anti-Corruption & Civil Rights Commission
- Integrated Food Safety Information Network - Ministry of Food and Drug Safety

Public
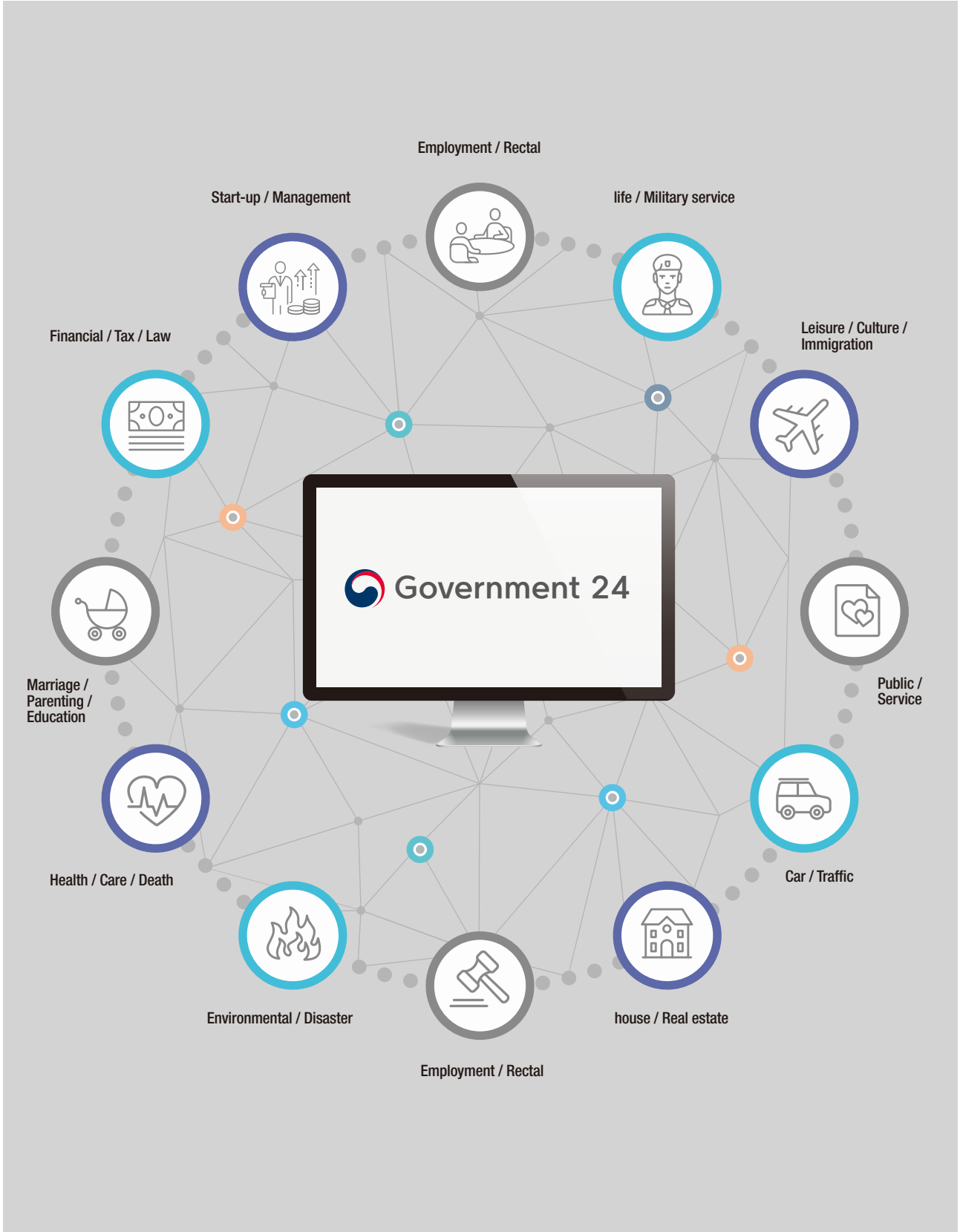# Communication
(Services for Public)

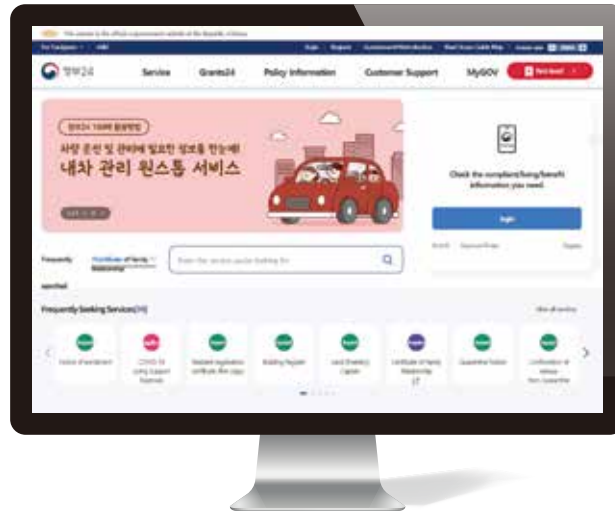# Smart Administrative Services, Easy and Convenient to Use Online All at Once

"Government 24," which opened in 2017 to enable citizens to utilize, all in one place, the administrative services and policy information dispersed throughout the nation's administrative agencies, has, through the strengthening of digital government functions and responding to the COVID-19 pandemic, evolved into a system that provides more specific services covering a broader range. In 2020, for example, there were four types of "one-stop service" programs launched - "One-stop Pregnancy Support," "Daylong Care," "Moving-in Report," and "Dream Teen Support" - to provide services such as care for pregnant women and pre-school and school-age children, provision of documents related to moving, and counseling for teenagers outside of school.

This trend continued in 2021 with the launch of "Subsidy 24," a program centered around benefits provided by the central and local governments. "Subsidy 24" is a customized service through which about 7,500 government benefits are gathered in one place, to enable individual service subscribers to easily and conveniently check on the benefits that they are eligible to receive by simply logging in to and consenting to the conditions for use of "Government 24." In 2022 the Ministry of the Interior and Safety plans to launch another four types of one-stop service (financial support for low-income earners, My Vehicle Management, Easy Business Report, and batch submission of employment documents), as well as to further upgrade the services of "Subsidy 24" to include services for the public offered by public institutions and offices of education.

Employment / Rectal

Start-up / Management

life / Military service

Financial / Tax / Law

Leisure / Culture / Immigration

Government 24

Marriage / Parenting / Education

Public / Service

Health / Care / Death

Car / Traffic

Environmental / Disaster
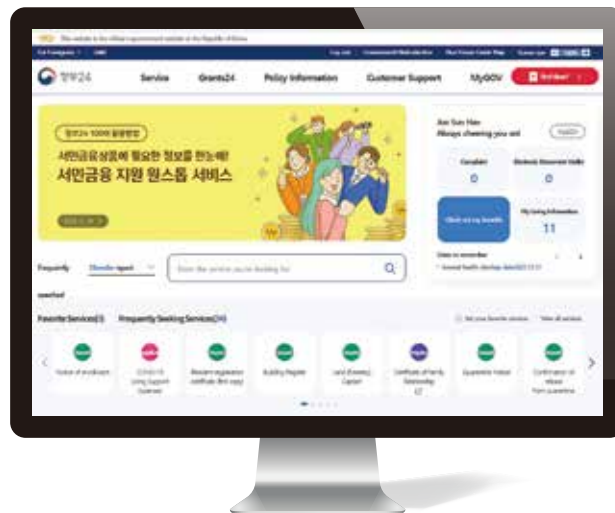
house / Real estate

Employment / Rectal

Procedure for Use of
"Subsidy 24"

1. Log-in to "Government 24"

2. Consent to Conditions of "Subsidy 24" Use

3. Check Benefits

Progress

July 2017	●	Opened "Government 24"
April~June 2020	○	Launched four types of "one-stop service" (One-stop Pregnancy Support, Daylong Care, Moving-in Report, and Dream Teen Support)
2021	○	Improved two types of "one-stop service" (Happy Childbirth, Safe Inheritance)
April 2021	○	Launched "Subsidy 24," providing 1,072 benefit services
December 2021	○	"Subsidy 24" began providing 6,774 benefit services of local governments
July 2022~	○	Launched additional four types of "one-stop service" (financial support for low-income earners, My Vehicle Management, Easy Business Report, and batch submission of employment documents)
December 2022	○	"Subsidy 24" expanded services by adding further 2,200 benefit services of public institutions and offices of education

Key Services

Government 24
Anyone can easily and conveniently obtain guidance on, inquire about, and apply for government services, document issuance and policy information - all in one place.

One-Stop Service
Citizens can process various administrative services via just one application, without having to visit each individual agency's website, and can thus save time and money.

Subsidy 24
People can check their and their families' eligibilities for various government services and benefits, and also apply for them based on their eligibility with a single click of a button.

Annual Roadmap of "Subsidy 24"

Phase 1
(launched on April 28, 2021)

1,075 Central Government Agencies

(Ministry of Trade, Industry and Energy) Energy Vouchers
(Ministry of Employment and Labor) Youth Tomorrow Chaeum Deduction
(provision of tax benefits for youth, to encourage employment at SMEs and induce long-term employment)

Applicant and Dependent Children Under Age 14

Including Children Under Age 14 on Resident Register

Phase 2
(launched on December 16, 2021)

6,500 Local Governments

(Daedeok-gu, Daejeon City) Additional Subsidy for Children with Disabilities
(Gangwon Province) Support for Children's Allergy Testing

Applicant, Spouse and Children

Including Family Members on Resident Register

Phase 3
(to be launched in December 2022)

2,200 Public Institutions and Offices of Education

(Korea Data Agency) Data Youth Campus
(KOGAS) KOGAS Online Scholarships
(KT&G Social Welfare Foundation) Support for the Hearing Impaired

Applicant, Spouse, Children and Grandparents

Including Family Members on Family Relations Register

Key Outcomes

(Government 24) Growth into Representative Government Portal, through Expansions of Customized Services and Linkages

- 18.69 million members, and 1.16 million daily visitors (as of June 2022)
- Ranked 2nd in e-government service usage rate between 2020 and 2021 (as of December 2021; Hometax ranked 1st)
- Link with 51 systems of 37 central government agencies including Ministry of Health and Welfare, 14 systems related to local governments, and 40 systems of 33 public institutions, to provide an integrated government service window centering on Government 24

(One-Stop Service) Further Discovery and Development of Additional Services, and Improvement of Existing Ones

- Plan to add 4 more types of one-stop service in 2022 (financial support for low-income earners, My Vehicle Management, Disability Support, Retirement Support), in addition to existing 6 types of "one-stop services" (One-stop Pregnancy Support, Happy Childbirth, Daylong Care, Dream Teen Support, Moving-in Report+, and Safe Inheritance), while also improving existing services

(Subsidy 24) Checking of and Application for Various Government Benefits, All at Once

- Enable applicants to check and apply for benefits for themselves and their families, from among 7,500 services provided by central government ministries and local governments
- Won President's Award in 2021 Government Innovation Best Practices Competition

Achievements in International Cooperation

Special Invitational Lecture on Best Practices

Invited by 5th Ministerial Meeting of e-Government Network in Latin America (RED GEALC), and delivered presentation on "Government 24" as representative case of government innovation (Panama City, November 15, 2018)

Selected as Best Practice in 1st Online Public Administration Forum

Korea's public administration development experience shared with more than 60 countries, in Southeast Asia, the Middle East, etc., and selected as best practice (September 24, 2020)

*Responsible Department : **Bureau of Government Service Integration, Ministry of the Interior and Safety**   *Contact : **+82-44-205-6444/hansujin@korea.kr**

53

Implementation of Contact-Free, Completely Paperless Online Services

The use of mobile electronic certificate has been adopted to eliminate the inconveniences of administrative services in which people have to print certificates or licenses issued by the nation on paper, and then visit the institutions concerned to submit their documents. In order to mitigate the inconveniences of Korean citizens due to paper document issuance, reduce the related social costs, and provide services for distribution of original certificates free from worries about forgery or falsification, through establishment of an electronic certificate issuance and distribution system, the Ministry of the Interior and Safety provides a mobile electronic certificate service that enables faster and more convenient issuance and submission of electronic certificates using smartphones, at anytime and anywhere.

To this end, the Ministry of the Interior and Safety established the basic infrastructure for this system in 2019, and began issuance of 13 types of electronic certificates including certified copies or abstracts of resident registers, and certificates of military service, before then expanding it in 2020 to handle 100 types of certificates such as certifications of tax payments and of disabilities, to thus further strengthen the distribution system's foundation. In 2021, for the purpose of providing a completely online service, without any involvement of paper documents, it began issuance of an additional 300 types of electronic certificates related to people's daily lives, such as family relations registers and various qualifications and licenses related to daily living, while also further increasing the number of private institutions cooperating in this service. Additionally, with the application of block chain, the latest security technology, safety has been secured throughout the entire process of distribution among administrative, public and private institutions - ranging from the issuance of e-certificates, to their viewing and submission.

Electronic Certificate Issuance and Distribution System

Loan application service

Customer, Please submit a certificate of employment, a health insurance payment certificate, and abstracts of resident registers.

I visited OO bank to apply for a loan with certificate of employment, the bank additionally requested a health insurance payment certificate and abstracts of resident registers.

Paper Certificate

1. Visit public offices or print paper certificates online

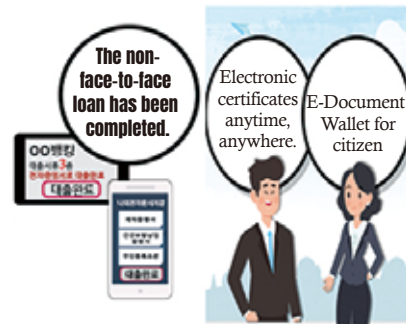Print out the documents and go back to the bank...

2. Visit OO bank with a paper certificate and submit

Electronic Certificate

1. Application for issuance of electronic certificate on smartphone OO app

The non-face-to-face loan has been completed.

Electronic certificates anytime, anywhere.

E-Document Wallet for citizen

2. Submit an electronic certificate from OO app to OO bank

Progress

2019
Implemented phase 1 establishment of e-certificate issuance and distribution system (total of 13 types including certified copies or abstracts of resident registers)

March 13, 2020~
Started service to confirm family members via electronic certificates (certified copies of resident registers), for applicants buying publicly-provided facial masks on behalf of family members living with them

March 20, 2020~
Started service to check identities via electronic certificates (driving experience certificates) in domestic flight boarding process

November 13, 2020~
Started service to check identities via electronic certificates, for people with disabilities and persons of national merit receiving reductions in fees for national and public facilities use

December 2020
Implemented phase 2 establishment of e-certificate issuance and distribution system (total of 87 types including disability certificates and certifications of payment of taxes)

February 26, 2021~
Started service to issue electronic COVID-19 vaccine certificates (English language certificates available from December 17, 2021)

November 24, 2021~
Started service for submission of supporting documents via electronic certificates in process of applying for national scholarship of Korea Student Aid Foundation (KOSAF)

December 2021
Implemented phase 3 establishment of e-certificate issuance and distribution system (total of 200 types including certificates of family relations, qualifications and licenses related to daily living, etc.)

February 16, 2022~
Started service to issue various types of electronic certificates and documents of 367 universities (total of 20 types including certificates of graduation)

April 2022
Expanded scope of use of digital document wallets, through linkages with public and private platforms including Naver and Kakao

Key Services

Overview and Progress of E-Certificate and Government Digital Document Wallet Services

Established services essential in contact-free society due to COVID-19 pandemic, as digital public and private platforms
  - Including COVID-19 vaccine certificates, notifications of COVID-19 quarantine, and certificates of release from quarantine

Started e-certificate issuance service for 300 types of documents related to people's daily lives and to contact-free civil administrative services (December 2021)
  - Including certified copies or abstracts of resident registers, family relations certificates, qualifications and licenses (for care givers, housing managers, etc.)

Opening of Government Digital Service Platform through Collaboration with Public and Private Institutions

Constructed platform enabling easy and safe development of e-certificates using latest security technology
  - Issue and apply for e-certificates, and then submit them directly to banks, administrative and public institutions using e-certificate distribution platforms in private mobile apps used by majority of people, such as Naver App, Kakao Talk, and Toss

Method of Mobile E-Certificate Use

Issue digital document wallet → Issue e-certificate (via Government 24, Kakao Talk, etc.) → Open and check e-certificate → Submit e-certificate → Receipt by agency concerned → View submitted original copy of certificate

Cases of E-Certificate Use
  - When purchasing publicly-provided facial masks, citizens can buy masks on behalf of family members using e-certificates of their certified copies of resident registers.
  - When boarding domestic flights, citizens can prove their identities using their electronic driving experience certificates instead of ID cards (approximately 10,000 people per year).
  - Citizens can enjoy contact-free financial services, such as receiving unsecured loans or loans for youth, opening financial accounts, etc., without having to visit banks.
  - When subscribing to mobile phone services or changing to discounted mobile phone billing plans, citizens can submit supporting documents using e-certificates.
  - People with disabilities, and persons of national merit can verify their identities using electronic certificates when receiving reductions in fees for using national and public facilities.
  - Issuance of electronic COVID-19 vaccine certificates was launched on the date when vaccinations were begun (February 26, 2021).
  - E-certificates of passport information are used to prove the identities of passport holders.

Key Outcomes

Volume of Mobile E-Certificate Use
Cumulative number of e-certificates issued surpassed 6 million, with users totaling more than 5.1 million
(as of August 1, 2022)

Number of
E-Certificates Issued
(December 2019~July 2022)
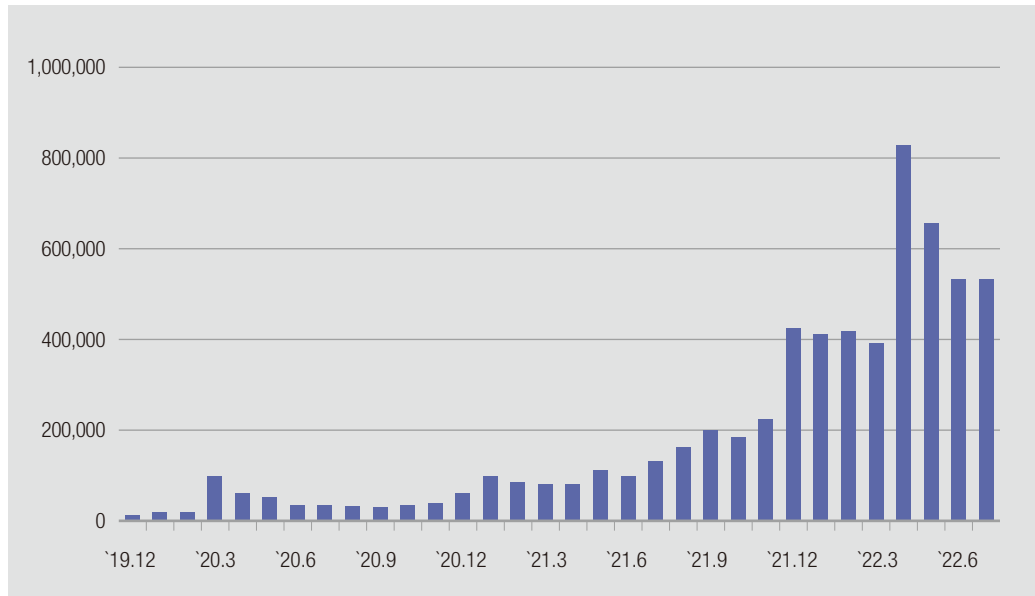
Reduction in Processing Time for Administrative Affairs, and Costs for Paper Document Issuance
Approximately KRW 11.4 billion per year
  - Government Agencies (Issuing Authorities): KRW 1 billion (costs of issuance of paper documents and
    related labor)
  - Citizens (Users): KRW 9.7 billion (costs of paper document issuance. transportation to visit agencies,
    time required)
  - Public/Private Institutions (Receiving Authorities): KRW 0.7 billion (costs for document storage and data processing)

Issuance and Submission of E-Certificates via Smartphones
300 types of e-certificates that can be issued and submitted to administrative/public/financial institutions

Complete Paperless
Online Service

Complete Paperless Online Service

	Introduction Stage Establishment of Foundation (2019)	**Expansion Stage** Construction of System (2020)	**Enhancement Stage** Expansion of System (2021~)

Expansion of Certificate Types	- 13 Types,
	  Including Resident Registers and Drafts of Resident Registers
		- 87 Types,
		  Including Receipts of Earned Income Tax Withholding
			- 218 Types,
			  Including Family Relations
			- **Certificates Cumulative Number of Types: 318**

Issuing Organizations	- Government 24	- National Tax Service,
		  Ministry of Personnel Management,
		  National Pension Service,
		  Ministry of Foreign Affairs
		  (4 Institutions)
		- Universities (5 National/Public Universities, and 3 Private Universities)
			- Supreme Court of Korea,
			  Korean National Police Agency,
			  Ministry of SMEs and Startups,
			  National Institute for Lifelong Education
			- National/Public Universities
			- **Cumulative Number of Types: 43**

Receiving Organizations	- Central, Administrative, Public Institutions (754 Institutions) - Certain Financial Institutions (6 Institutions) and Individuals	- Banks, Non-Bank Financial Institutions (3 Institutions Including Credit Card and Insurance Companies) - Mobile Carriers (3 Companies)	- Financial Sector (Banks, Insurance Companies, etc.) and General Corporations (for ERP, Portals, etc.) - **Cumulative Number of Administrative and Public Institutions: 769** - **Cumulative Number of General and Financial Corporations: 90**
Expansion of Services	- Digital Document Wallet Service (in Government 24) - Digital Document Wallet Standard API, SDK - Blockchain-Based Document Management System	- API Construction for Application Certificate (30 Types) Issuances via Private Applications - Package Service, and Attachment Service	- Expansion of Application Certificate Issuance via Private Applications (20 Types) - Expansion of MY Package Service - Linkages with Private Authentication Systems

Achievements in International Cooperation

Participated in 2021 Black Sea Economic Cooperation (BSEC) online seminar on digital government
(November 23, 2021)
- Introduced mobile e-certificates as example of government service innovation using latest technology

Virtual Assistant Service "GoodPy," Providing Timely, Personalized Public Service Information via Digital Platforms

The virtual assistant service for the public known as "GoodPy," an e-government service launched by the Ministry of the Interior and Safety in March 2021, is an online personal assistant that informs citizens of necessary administrative information in advance and responds to their questions. "GoodPy" has been praised for simultaneously improving both people's convenience and the efficiency of administrative work, by eliminating service blind spots through preemptive notification services supplied via diverse channels.

First of all, from the public perspective, citizens are able to receive various types of notification services by simply selecting the services in "GoodPy" that they want. GoodPy also sends notifications regarding applications and deadlines for applications for beneficiary services, and the status of the application progress, all in advance, to minimize disadvantages due to applications being submitted after the related deadlines. The government has also heightened its credibility, by maximizing service utilization through enabling access by a variety of applications, and enhancing convenience through offering services achieving complete outcomes. In terms of administrative and public institutions, "GoodPy" has helped to enhance efficiency in their work as well as efficiency in system development and operation, through integrating the services of the various institutions involved.

"GoodPy," Mascot of Virtual Assistant Service
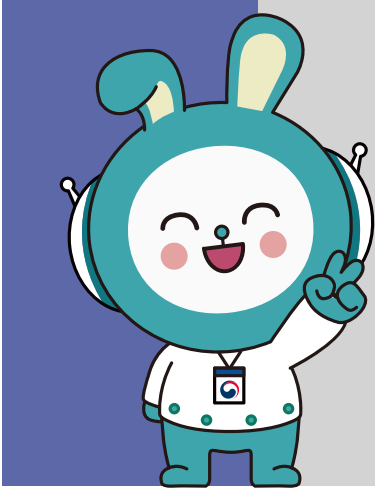
- Made decision to create service, after public participation contest and consultation with experts, in consideration of purpose of providing a virtual assistant service for the public

- Changed name from "Gukbi" (a combination of "Guk" and "Bi" from the Korean word "Guk-min Bi-seo,"to "GoodPy" (meaning "Good Secretary") for ease in pronunciation

- Expressed idea of very fast and intelligent secretary for the citizens, through image of rabbit AI robot living in totally interconnected network world

Progress

Date	Event
July 28, 2020~December 25, 2020	Implemented Phase 1 establishment of virtual assistant service
March 10, 2021	Signing of business agreement between Ministry of the Interior and Safety, Naver, Kakao and Viva Republica, for provision of "GoodPy" service
March 26, 2021~May 25, 2021	Implemented Phase 2-1 establishment of virtual assistant service
March 29, 2021	Launched "GoodPy" service, and its notification service
May 31, 2021	Started pilot operation of "GoodPy" consulting service
June 10, 2021	Started simple login authentication for "GoodPy"
September 1, 2021~April 29, 2022	Implemented Phase 2-2 establishment of virtual assistant service
September 6, 2021	Number of notification service users exceeded 10 million
September 6, 2021	Received "Hot Star Award" at 4th Our Neighborhood Character Awards (2021 Korea Local and Public Character Awards)
May 20~December 26, 2022	Implementing Phase 3 establishment of virtual assistant service

Key Services

Notification Service

Service that provides advance notifications of information closely related to people's individual daily lives, and enables them to make payments when necessary, via applications frequently used by public

- Naver App, Kakao Talk, Toss, KB Star Banking, KB Pay, Shinhan SOL, Shinhan pLay
- Deposits in dormant accounts, electricity bills, health check-up dates, driver's license renewals, traffic fine payments, etc.

Key "GoodPy" Notification Services

Services	Descriptions
Health Check-Up Dates	Send twice-yearly notifications of whether persons are subject to national health check-ups and cancer screenings, based on their years of birth
Driver's License Renewals	Inform those subject to driver's license aptitude tests for license renewals of this twice during renewal year, in June and November
Notifications of National Tax Bills	Notifications that bills for various national taxes, such as value-added taxes, income taxes, comprehensive real estate holding taxes, have been sent, in forms of electronic or postal bills
Notifications of Personal Information Inquiries	Inform people of dates, purposes and information retrieved, when their administrative information is inquired about through Public Information Sharing System (PISS)
Deposits in Dormant Account	Inform people of whether they have deposits or insurance money in dormant accounts managed by Korea Inclusive Finance Agency, and how to reclaim them
Electricity Bills	Inform applicants for mobile electricity bills of billing charges and payment deadlines
Kindergarten Admissions	Inform parents of children gaining kindergarten admission through admission lottery, of their registration in kindergarten admission management system "go-firstschool"

Consulting Service

Provide service in which chatbots respond to questions with guidance regarding administrative services

- Consular Services 24, Integrated Government Call Center, Subsidy 24, police affairs, cyber crimes, public employee pension plan, electronic customs clearance, private information protection, military affairs, natural recreational forests, opening and sharing of public resources, contracts of local governments, civil services information

Key "GoodPy" Consulting Services

Services	Descriptions
Integrated Government Call Center (110)	Provide consulting service, involving automatic consultation on frequently asked about, simple civil affairs related to central and local governments and public institutions
Subsidy 24	Provide consultation on various subsidies offered by central and local governments

Key Outcomes

Notification Service (www.ips.go.kr)

Promotes citizens' convenience through provision of notifications on daily life-related information, such as health check-ups and deposits in dormant accounts, selected at time of subscribing to "GoodPy"

Number of subscribers 14.8 million, and total number of notifications sent 65.18 million   (as of June 7, 2022)

Contributes to smooth execution of vaccinations, through notifications confirming COVID-19 vaccination appointments and information before, after, and on day of vaccination

Number of applicants 45.29 million, and total number of notifications sent 470.81 million   (as of June 7, 2022)

- Number of Notification Types: 10 Types (as of 2021) → 23 Types (as of June 2022)
   (*including legal notices from National Police Agency)
- Number of (Private) Channels: 3 Channels (as of 2021) → 7 Channels (as of June 2022)
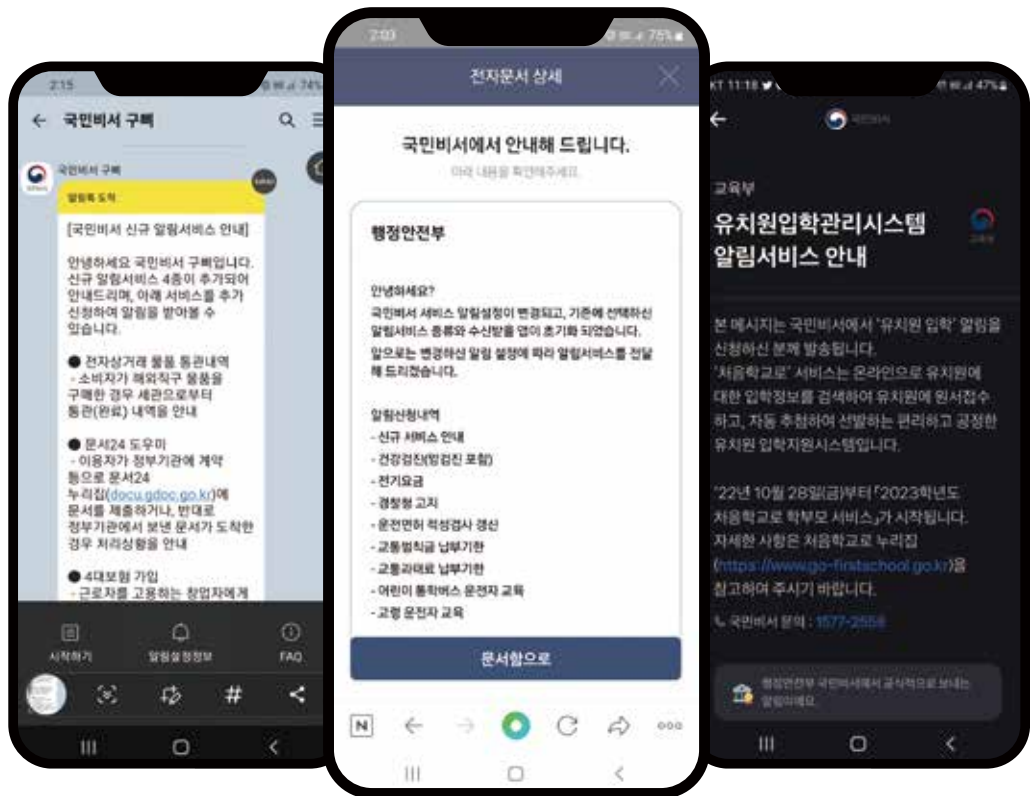
Kakao Talk Screen

Naver App Screen

Toss Screen

Consulting Service (chatbot.ips.go.kr)

Provide spoken consultation service regarding civil affairs,* through AI speakers**

  * Basic information on civil affairs services such as issuance of certified copies of resident registers and moving-in reports, service fees, and issuing authorities
  ** KT's GiGA Genie, Naver's Clova, Kakao's Hey Kakao, SKT's NUGU (4 types)

- Number of Consultation Types: 11 Types (as of 2021) → 22 Types (as of June 2022)
- Total Number of Conversations: 2,156,000 / Number of AI Speaker Conversations: 40,000

Best Policy, Chosen by Public

Ranked first in 2021 poll on "Ministry of the Interior and Safety's Policy of the Year"

Easy and Quick Processing of Civil Petitions,with Online "One-Stop" Communication System

"e-People" is an online one-stop communication system for the public, which facilitates the convenient filing and processing of all civil complaints and proposals and participating in discussions of government policy. "e-People" was introduced in 2005, to allow collaboration among ministries for the purposes of improving the rights and interests of the people by eliminating their inconveniences in having to visit various agencies due to uncertainties about where to file their complaints, and enabling the prompt resolution of complaints that had previously been handled individually by the agencies concerned.

Citizens can fill out civil complaint application forms, after verification of their identities, and submit them to the proper administrative agencies, if necessary utilizing the automatic function to recommend the administrative agencies responsible for the types of civil complaint concerned. Administrative agencies designate their own persons in charge of handling complaints received, who notify the complainants of the results of complaint processing. Civil complaints under the jurisdictions of other institutions are transferred to them for processing. If the identity of the competent authority is unclear, the Anti-Corruption & Civil Rights Commission will coordinate designation of an appropriate agency to handle the complaint. The complainant is informed in real time of the progress made throughout, from application to completion of processing, via text message, e-mail, or website. "e-People" is currently linked with more than 1,116 administrative agencies (central government ministries, local governments, overseas missions, offices of education, etc.), including not only the judiciary and major public institutions, but other government portals related to regulatory reform, safety and welfare.

"e-People" Conceptual Map

- **Provision of one-stop communication services in connection with administrative agencies, the judiciary and public institutions**

- **Operations linked with government's pan-governmental portal system**

Used by **1,116 institutions** including central administrative agencies, local governments, and public institutions

Continually
Increasing

60 — 2007
···
934 — 2017
1,008 — 2019
1,116 — 2022.10
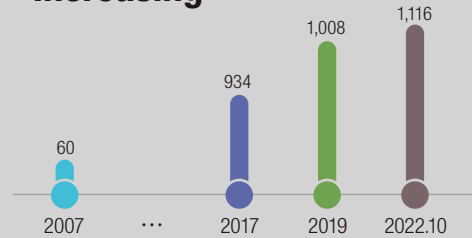
Pan-Governmental Portals

e-Regulation Reform
(Office of Government
Policy Coordination)

규제정보포털

Safety e-Reports
(Ministry of the Interior and Safety

안전신문고

Bokjiro
(Ministry of Health and Welfare)

함께 만드는 복지
복지로

Civil Complaints

Proposals

Policy Participation

Budget Waste

e-People
www.epeople.go.kr

Organizations Involved

1,089 Institutions (at present)

- Central Administrative Agencies
- Local Governments
- Educational Institutions
- National Universities
- Public Institutions
- Overseas Missions

In Future

- Central Administration-affiliated
  Organizations
- Private Universities
- Public Institutions

Applications

Applications

Applications
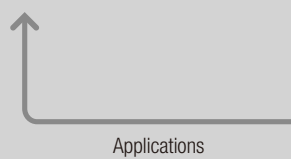
Citizens
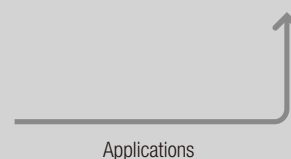
Progress

Year	Description
2005	Established system, and executed pilot operation for 7 central administrative agencies
2006	Integrated all civil complaint windows of central administrative agencies
2008	Integrated civil complaint windows of local governments and public institutions
2009	Integrated civil complaint windows of judiciary
2011	Integrated civil complaint windows of offices of education
2018~2019	Re-established "e-People" system with enhanced participation functionality and AI technology for use in civil complaint analysis
2020	Launched next-generation "e-People" system
2021	Expanded institutions involved to include private universities and public institutions

Key Services

One-Stop Processing of Civil Complaints

When citizens file complaints about difficulties or inconveniences experienced at administrative agencies to "e-People," the complaints are assigned to the appropriate agencies for one-stop processing. (*Relevant law: Civil Petitions Treatment Act)

- Civil complaint services in foreign languages: 14languages services provided, to protect rights and interests of overseas citizens or foreigners residing in Korea
- Q&A on civil complaints and policy: Contributes to public communication on policy, by organizing example cases of processing of civil complaints occurring frequently at the various ministries, as well as cases related to major policies, in the form of a Q&A section; by presenting information on similar cases during the civil complaint filing stage, to preclude unnecessary filings; and by making this data available as answers for people searching for related knowledge through private search engines such as Naver and Daum
- Civil complaint policy notification Service: providing efficacy of policy particpation by providing policy news such as press releases and briefing materials on practicals including follow-up system or policy changes, etc.

Collection of Ideas on Policy through Proposals

- Citizen's Proposals: Gathers citizens' creative ideas on government policy and system improvement, reflects excellent proposals in policy, and presents awards to those proposing good policies (*Relevant laws: Civil Petitions Treatment Act and Citizen's Proposal Regulation)
- Civil Servants' Proposals: Gathers creative or excellent ideas from civil servants, to promote streamlining and economic efficiency in administrative operations, and presents awards to those proposing good policies (*Relevant laws: State Public Officials Act and Civil Servants' Proposal Regulation)

Policy Participation through People's Idea Box

As new platform for public participation to improve government policies, administration and systems, conducts online open discussions with and surveys of citizens, civic groups and experts, in process of forming and executing various policies (*Relevant laws: Administrative Procedures Act and Citizen's Proposal Regulation)

Reports of Budget Waste

Receives reports on cases of budget waste, and systematically analyzes them to preemptively block factors causing waste (*Relevant laws: National Finance Act and Local Finance Act)

Civil Complaint Information Analysis System

Comprehensively analyzes civil complaints and proposals, and provides analysis results to relevant institutions to facilitate preemptive responding to expected civil complaints and support improvements in related policies and systems

Key Outcomes

Continuous Expansion in Usage
- Improved quality of government's civil administrative services and efficiency in administration, through realization of real-time online cooperation among government agencies
- Public's awareness of and satisfaction with system has grown every year, and "e-People" usage has increased

e-People amount of use

Civil Complaints (unit: 10,000 cases)

65.9%
Increase compared to 2019

230	799	957	1,326
2016	2019	2020	2021
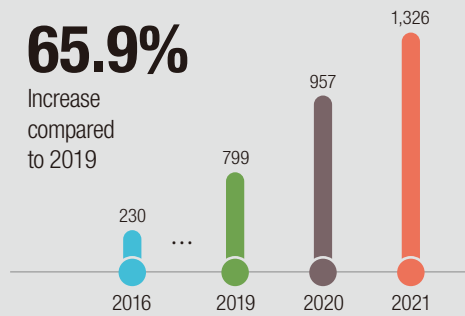
Proposals (unit: 1,000 cases)

15.6%
Increase compared to 2019

8.4	11.1	13.7	17.3
2016	2019	2020	2021
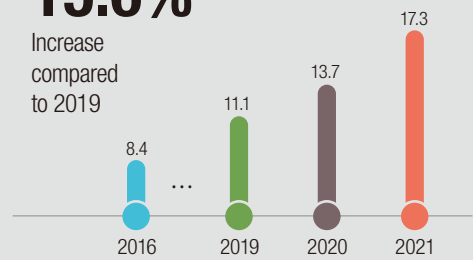
People's Idea Box (unit: single case)

92.6%
Increase compared to 2019

1.6	23.1	35.8	44.5
2016	2019	2020	2021
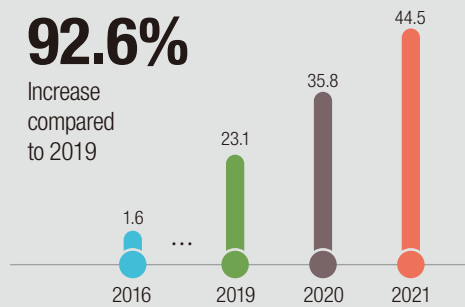
e-People recognition and satisfaction

Awareness

84.3%
of citizens aware of "e-People"

59.6%	65.2%	84.3%
2012	2016	2021
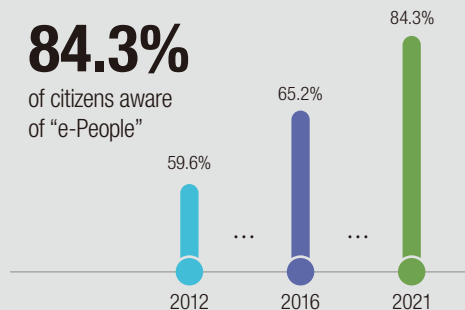
Satisfaction

77.7%
of users satisfied with "e-People"

68.6%	77.4%	77.7%
2012	2016	2021
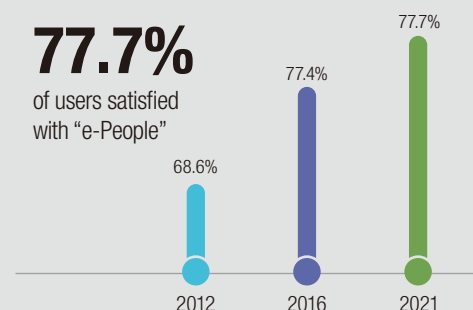
Strengthening Presence in International Community

- Chosen as Top 10 e-government at World e-Government Forum in France (2006)
- Won "Best Demonstration Stand Award" at E-Challenge 2008 Conference (2008)
- Ranked first in UN E-Participation Index for three years (December 14, 2010)
- Provided support for Tunisia's building of its own e-People system (KOICA ODA project, 2015～2017)

e-People in Tunisia
(www.e-people.gov.tn)
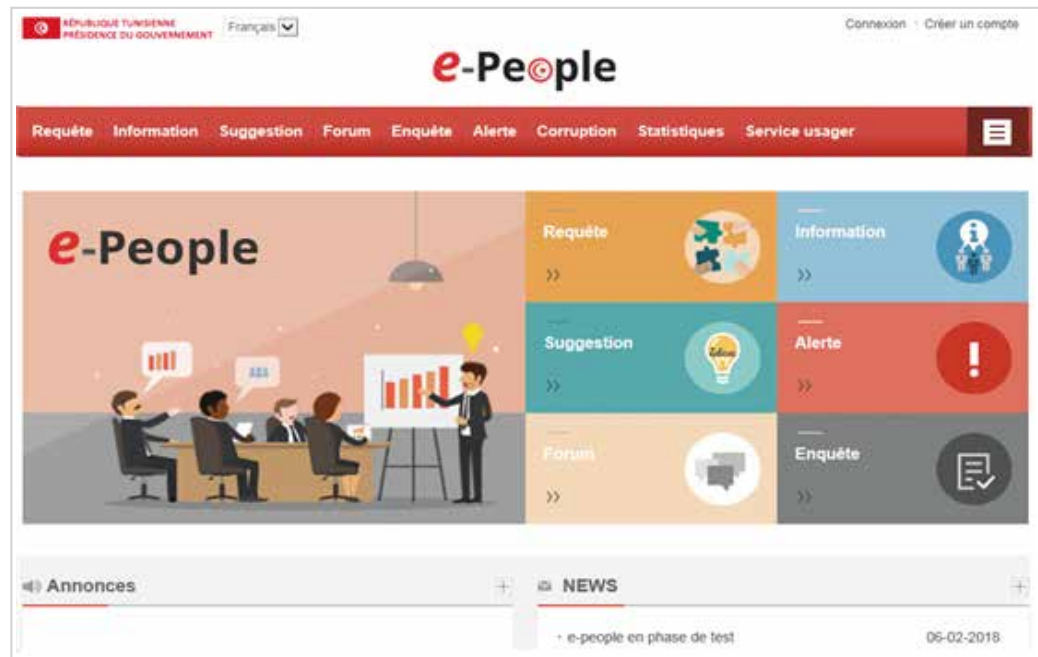
Main Websites

- Anti-Corruption & Civil Rights Commission (www.acrc.go.kr)
- e-People (www.epeople.go.kr)
- People's Idea Box (www.epeople.go.kr/idea)

*Responsible Department : **e-People Division, Anti-Corruption & Civil Rights Commission** *Contact : **+82-44-200-7275/loonie@korea.kr**

71

Clean Portal_Corruption & Public Interest Violation Reporting System -
Anti-Corruption & Civil Rights Commission

Comprehensive Anti-Corruption Information System, for a Corruption-Free, Clean Society

In 2019 the Anti-Corruption and Civil Rights Commission opened its "Clean Portal," to enable citizens to more easily and conveniently report acts of corruption and violations of the public interest, and take advantage of the whistleblower protection and reward service. From the following year the portal's name was changed to "Clean Portal_Corruption & Public Interest Violation Reporting," to present the identity of the Corruption & Public Interest Violation Reporting Window more clearly.

The Clean Portal_Corruption & Public Interest Violation Reporting system is a comprehensive anti-corruption information system through which citizens can report any corruption or public interest violations they may witness, such as illegal receipts of welfare subsidies, violations of the Improper Solicitation and Graft Act, violations of the Act on the Prevention of Conflicts of Interest, and violations of the Code of Conduct. In this one-stop system, people submitting reports are able to follow and view the entire process, from their initial reporting to the assignment of investigators, the investigation, and the notification and management of the investigation results, as well as the implementation of whistleblower protection and rewards.

Clean Portal Structure

Clean Portal
(Citizens: Violation Reports)

Disclosure, Sharing, Statistics, Data
(Clean Forum)

Reports to Commission

Public Institution (Legislative, Judicial, Administrative) Reports (Anti-Corruption Standard Reporting System)

Anti-Corruption and Civil Rights Commission (Clean Portal)

Violation Reports (Citizens)	Mandatory Reporting (Public Officials)
1. Integrity 2. Policy Evaluation 3. Impact of Corruption 4. Fact-Finding Investigation 5. Case Referral and Transfer	

Referral, Transfer, Investigation

Public Institutions (Clean Portal)

Violation Reports (Citizens)	Mandatory Reporting (Public Officials)	
Legislative	National Assembly	n
Judicial	Courts	n
Administrative	Ministry of the Interior and Safety	n
Public	Korea Expressway Corporation	n

Progress

2019 ● (Phase 1) Constructed standard system for each part required in an anti-corruption organizations's activities, including receipt of reports, and provision of whistleblower protection and rewards

2020 ● (Phase 2) Disseminated expanded standard reporting system, through which institutions can link to individual anti-corruption agencies' work and share corruption management policies

2021 ● (Phase 3) Disseminated intelligent prediction-based analysis system, based on data accumulated among anti-corruption agencies

2022 ● (Conflicts of Interest) Established and disseminated system of the Act on the Prevention of Conflicts of Interest, to support public officials in performing their duties with fairness and integrity

Key Services

Introduction to Laws and Institutions, Consultation, and Reporting

Provide information on laws and systems related to reporting of violations, such as corruption, Code of Conduct violations, acts harmful to the public interest, violations of the Act on the Prevention of Conflicts of Interest, violations of the Improper Solicitation and Graft Act, corruption in recruitment, welfare benefit and subsidy fraud, and false claims for public funds, as well as details concerning whistleblower protection and rewards, consultation services, and reporting

Whistleblower Protection and Rewards

Whistleblowers can submit applications for protection and rewards

Archives

Offer information on the reporting of violations such as corruption, Code of Conduct violations, acts harmful to the public interest, violations of the Act on the Prevention of Conflicts of Interest, violations of the Improper Solicitation and Graft Act, corruption in recruitment, welfare benefit and subsidy fraud, and false claims for public funds, as well as details on applying for whistleblower protection and rewards

Notifications of and Inquiries about Results

Citizens able to safely and conveniently check the results of processing related to their consultations, reporting, compensation and applications for protection
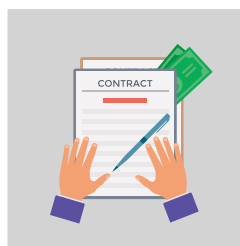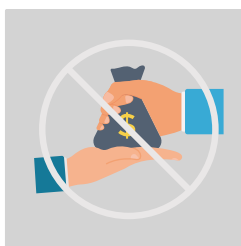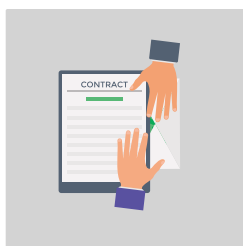
Key Outcomes

Increase in Online Reporting Rate Using Clean Portal
90.9% (2019) → 91.8% (2020) → 94.1% (2021)

Expansion in Organizations Using Standard Reporting System for Public Institutions
755 institutions operating "Clean Portal Forum," and 609 institutions using online reporting system (as of July 2022)

Increased Demand for Clean Portal Policy in International Community
- Introduced "Clean Portal" policies to Myanmar, Uzbekistan, etc., March 2019
- Compendium of Good Practices on Measurement of Corruption (annex of G20 Summit declaration) cited anti-corruption system of Korea, October 2021
- Delivered presentation on "Clean Portal" at high-level special session of OECD-IDB hosted meeting, November 2021
- Participated in briefing session on "Clean Portal" feasibility study held in Colombia, to present study results, November 2021
- Introduced Korea's digital government policies during visit by Minister of Fight against Corruption of Côte d'Ivoire, November 2021
- Introduced "Clean Portal" policies to Central Commission for Internal Affairs and Government Inspectorate of Vietnam, December 2021
- Delivered presentation on "Clean Portal" at event, hosted by Colombia, of 9th session of Conference of the State Parties to the United Nations Convention against Corruption (UNCAC), December 2021
- Introduced "Clean Portal" policies at Korea-Tunisia Digital Government Cooperation Forum, December 2021
- Held ACRC-UNDP working-level meeting on "Clean Portal" exports, January 2022
- Delivered presentation on "Best Practice of Digital Innovation in Anti-corruption," at 34th APEC Anti-Corruption and Transparency Working Group (ACTWG) meeting, February 2022
- Held workshop to disseminate Clean Portal to UNDP developing countries, June 2022
- Will implement ODA project for export of "Clear Portal" to Colombia

> "Much of the anti-corruption area in Korea's national system are good practices that meet global standards."
>
> - from Compendium of Good Practices on Measurement of Corruption, an annex of G20 Rome Leader's Declaration in 2021
>   * Compendium of Good Practices on Measurement of Corruption

*Responsible Department : Inspection Planning Division, Anti-Curruption & Civil Rights Commission   *Contact : +82-44-200-7689/nhkim45@korea.kr

75

Enhancement of Efficiency in Food-Related Civil Affairs and Administration, through Integrated System

The "Integrated Food Safety Information Network," which links and integrates all food safety information distributed among 30 related administrative agencies and local governments throughout the country, was launched in June 2015 by the Ministry of Food and Drug Safety to allow the sharing of information among ministries and public institutions, without barriers, and make it available to the public as well. The system was rennovated in November 2020 to eliminate inconvenience and expand the range of services provided, and now consists of three main parts, depending upon the user — Food Safety Korea, the Food Administration Integrated System, and the Food Information Utilization System.

Users can file a total of 178 types of civil administrative petitions in Food Safety Korea by accessing the Integrated Food Safety Information Network, in contrast to the previous system under which filing had to be done via direct visits or fax. Meanwhile, the Food Administration Integrated System, used by government ministries and local governments, provides a map service through which food product licensing and approval information is shown in visual form on a map, and includes a function that selects companies and products with high probabilities of unsuitability.

Progress

March 2013	"Establishment of Integrated Food Safety Information Network" selected as national task
January 2014	Founded "Integrated Food Safety Information Network Establishing Group"
April 2014	Began Integrated Food Safety Information Network establishment project
June 2015	Opened Integrated Food Safety Information Network
May 2016	Established dedicated organization for operation of Integrated Food Safety Information Network
December 2021	Number of users of Integrated Food Safety Information Network (Food Safety Korea) exceeded 27 million
May 2022	Selected by media as national representative brand for 4 consecutive years

Key Services

Food Safety Korea

Food safety representative portal site, which provides all information related to people's food safety in one place

Reduces time and budget spent on criminal justice proceedings, carries out prompt and accurate calculation of criminal justice statistics

- Provides 178 types of contents, including information on recalled and discarded foods, unsanitary food reports, and electronic civil complaint processing
- Provides daily information on food safety hazards collected from overseas regulatory agencies, and on illegal and harmful ingredients in directly purchased overseas products

Food Administration Integrated System (admin.foodsafetykorea.go.kr)

National food administrative information integrated management system, of the Ministry of Food and Drug Safety and local governments

- Manage and utilize administrative histories at national level, through consolidation and management of food administrative information from across the country, on issues including food product licensing and approval, follow-up management, and administrative measures conducted by the Ministry of Food and Drug Safety and local governments
- Provide data on food hazards in foreign countries, collected and analyzed by overseas regulatory agencies in 29 countries (201 sites) and reporters on global information (97 reporters for 38 countries), to support relevant departments in implementing safety management measures

Food Information Utilization System

Information utilization system for sharing of food safety information held by 30 organizations including the Korea Customs Service

- Consolidate 240 types of food safety information, held by 16 central government agencies and local governments, into database for sharing of information among central government ministries, local governments and affiliated organizations

Integrated Food Safety
Information Network
System Structure

Integrated Network System Configuration

01 admin

Food Safety Management by Civil Servants
- Food Administration Integrated System

02 info

Pan-Governmental Information Sharing
- Food Information Utilization System

Administrative Network

Ministry of Food and Drug Safety and Local Governments (cities, provinces, counties, districts)	Relevant Administrative Agencies and Local Governments (cities, provinces, counties, districts)
Real-Time Collaborative Safety Administration	Information Sharing and Inquiries

03 www

Public Portal Site
- Food Safety Korea

Internet Network

Citizens and Businesses

Food Safety Information, Electronic Civil Administrative
Affairs, and Public Data Opening (Open API)

Key Outcomes

Realization of Nation-wide Systematic Food Management Administration

Integrated food safety information of local governments across country into system for first time in 53 years since enactment of Food Sanitation Act in 1962, through standardization of 6 types of data — on food companies, food items, ingredients, etc.

System Improvements for Sharing Food Safety Information, and Strengthened Collaboration

- Improved systems, for example for policy cooperation among administrative agencies, and laws and regulations on integrated network operation (Framework Act on Food Safety, Integrated Network Operation Council Regulations, Food Safety Management Guidelines, etc.), in order to facilitate effective sharing and utilization of food safety information scattered in 17 ministries and 243 local governments, and to establish relevant policy directions
- Developed system to analyze, disseminate and perform post-management of collected information such as overseas food recall information, and provide this as public data through collaboration with ministries for sharing in real time (in Consumer 24)

Enhancement of Efficiency in and Provision of Services of Integrated Network Data-Based Food Administration

Analyzed food safety information (approximately 670 million cases) accumulated in integrated network DB, including that on licensing and approvals, individual items, inspection results and production records, and organized and integrated administrative information into database in order to promptly provide necessary information to users (citizens, business owners, and civil servants)

Opening of Public Data (Open API), and Expansion of Customized Contents for Citizens

- Opened food safety information (166 types) held by Integrated Food Safety Information Network, for use by anyone, and provide customized contents to public in accordance with policies such as "Act on Public Data"
- Produce and promote customized contents using food safety data and statistics, based on public demand survey results

Expanded Provision of Food Safety Information Services to Public through Channels

- Expanded services providing food safety information through private platforms including food delivery apps, in consideration of recent changes in consumption environment such as increase in food deliveries
- Provide and share useful information for consumers on nutrition and health functional food, through utilization of private portals (Kakao, Naver) and private apps and websites

Achievements in International Cooperation

Support for Establishment of Food Safety Information System in Vietnam

- Implemented system enhancement through international development cooperation ODA project involving establishment of GIS-based food safety information service, food safety information Open API service, food safety information mobile app service, etc. (2021)
- Executed several projects — Information linkages among central government, local governments and food administration-related organizations in Vietnam, food testing management system enhancement based on ICT technology, development of laboratory information management system (LIMS), upgrading of Vietnam's e-government, etc. — in order to establish unified food management system involved in all stages, from production to distribution to consumption

Enhancing Advancement and Efficiency, through Digital Integration Management of Decentralized Information

In order to respond preemptively to the fast-changing global environment and the rapidly progressing 4th Industrial Revolution, the Korean government has devoted efforts to support strengthening of the competitiveness and structure of each sector of Korean society. By consolidating and managing various dispersed information in a single digital system, for the purposes of advancing and improving efficiency in business, it is moving toward achievement of a hyper-connected intelligent information society. Examples of this include the "ITS-based Integrated National Traffic Information Operating System" and the "National Spatial Information Open Platform (K-Geo Platform)" of the Ministry of Land, Infrastructure and Transport, the "Korea ON-line E-Procurement System (KONEPS)" of the Public Procurement Service, the "Integrated SME Support Project Management System (sims.go.kr)" of the Ministry of SMEs and Startups, the "Electronic Customs Clearance System (UNI-PASS)" of the Korea Customs Service, the "National Statistical System (NARAStat)" of Statistics Korea, and the "Integrated Forest Management System" of the Korea Forest Service.

- ITS-based Integrated National Traffic Information Operating System - Ministry of Land, Infrastructure and Transport
- National Spatial Information Open Platform (K-Geo Platform) - Ministry of Land, Infrastructure and Transport
- Korea ON-line E-Procurement System (KONEPS) - Public Procurement Service
- Integrated SME Support Project Management System (sims.go.kr) - Ministry of SMEs and Startups
- Electronic Customs Clearance System (UNI-PASS) - Korea Customs Service
- National Statistical System (NARAStat) - Statistics Korea
- Integrated Forest Management System - Korea Forest Service

Advancement
of Industry
and the Economy

ITS-based Integrated National Traffic Information Operating System -
Ministry of Land, Infrastructure and Transport

Convenient Road Traffic and Improved Quality of Private Services, through Intelligent Transportation System

While traffic congestion is becoming ever more serious, due to the dense populations in the urban areas and the widespread use of passenger cars, the public's need for safe and convenient transportation is growing. In this environment, ITS (Intelligent Transport Systems) have been established to promote users' safety and convenience and to maximize transportation system operating and utilization efficiency through employment of cutting-edge technologies.

ITS is an advanced transportation system that manages traffic flows and improves safety by acquiring traffic information through sensors installed on roads, and making it publicly available. With ITS utilization it is possible to increase the efficiency of transportation and road facilities use, and to reduce congestion through the controlling of traffic and provision of traffic information. This has contributed moreover to improving the quality of private services, through its provision of map- and route-based information on the traffic statuses of roads across the country and unexpected situations (accidents and construction), as well as surveillance footage, and its sharing of Open API and standard node link information with private companies.

Intelligent Transportation System (ITS)

Vehicle Detection System (VDS)

DSRC(OBU)/LTE

Information Collection
Information Sharing

Traffic Information Center

- Traffic Information Collection and Processing
- On-site ITS Facilities Management
- Contingency Management
- Information Sharing
- Big Data Analysis/Processing

ITS

Traffic Information
Contingency Information
Information Sharing
Statistical Information

Advanced Signal Controls

Automatic Traffic Regulation

Electronic Payments

VMS (Variable Message Signs on Roads)

Car Navigation System (CNS)

BIS (Bus Information System)

KIOSK

Transportation Broadcasting

Mobile

WWW

Progress

Year	Event
1993	Blue House SOC planning group reviewed ITS introduction
1994	Implemented pilot project of national highway ITS establishment
1999	National Transport System Efficiency Act passed
2002	Established ITS Master Plan 21
2005	Established and operated integrated national traffic information system
2010	Established mobile web service system; began service providing footage of surveillance of national expressways and highways
2012	Established ITS Master Plan 2020
2017	Established national highway alternative route (15 routes) information service
2020	Enhanced operating system, and established integrated accident/disaster management system
2021	Established ITS Master Plan 2030

Key Services

Provision of Traffic Information

(provide real-time information to 42 organizations and 8 companies (based on data of National Transport Information Center), in accordance with Article 88 of "National Transport System Efficiency Act")
- Relevant Institutions: 42 institutions including Ministry of the Interior and Safety, Korean National Police Agency, and privately funded expressways
- Internet: Traffic management agencies' websites and portal sites (Naver, Daum, etc.)
- Broadcasting: Provide traffic situation information and surveillance footage to KBS,MBC,SBS,TBS, etc.

Traffic broadcasting correspondents stationed at Regional Offices of Construction and Management, Seoul City Hall, Korea Expressway Corporation Traffic Information Center, etc.
- GPS Navigation: Provided through DMB broadcasters (TPEG traffic information)
- Mobile Phones: Provided via smartphone applications, mobile telephones (non-smartphones), ARS, etc.
- Road Electronic Signage: Information on traffic conditions, detours, expected travel times, etc. (at 2,090 places)
- Open API: Provide private companies and individuals with traffic conditions information, surveillance footage, information on road construction and accidents, information displayed on electronic road signs, etc.

Traffic Management

Encourage traffic load dispersion, identify areas of congestion and unexpected problematic situations, and implement signal controls, based on real-time monitoring of traffic conditions at traffic information centers through-out country

Minimize adverse impacts on traffic conditions by identifying through surveillance cameras, disseminating information on and responding in real time to unexpected situations such as traffic accidents, vehicle breakdowns, road construction, protest demon-strations, etc.

Safety Management

Encourage risk avoidance and safe driving through real-time monitoring and warning of risk factors such as fog, icing, road collapses, sharp curves, and poor visibility, using roadside sensors

Minimize damage and prevents additional accidents through prompt control of road access, evacuation support and guidance on detour routes in cases of disasters and accidents such as road wash-aways or tunnel fires

Key Outcomes

Social Benefits such as Alleviation of Traffic Congestion
- Adoption of ITS to roads across country generates social benefits of more than KRW 11.8 trillion annually, including reductions in costs incurred due to traffic congestion and accidents, and logistics costs
- Improve economic efficiency, e.g. through 15~20% increase in average travel speed

Contribution to Sustainable Traffic System Establishment
- Reduce fuel consumption and CO_2 emissions during periods of traffic congestion and vehicle idling
- Number of cases of traffic information service use: 1.6 million per year / Number of cumulative downloads of National Transportation Information Center mobile app: 3 million (as of end-2021)

Expansion of Future Growth Potential as New Growth Engine Business

Able to preoccupy market for ITS (a promising future industry growing rapidly worldwide), based on outstanding IT capabilities

*Global ITS market growing 12.7% annually, expected to reach size of approximately KRW 65 trillion in 2024

Achievements in International Cooperation
- Advanced into overseas markets for ITS, beginning with automatic toll collection system establishment project in Beijing, China (2006)
- Achieved approximately 335 overseas business orders, worth USD 1.66 billion (as of February 2022)
- Hosted ITS World Congress twice, in Seoul (in 1998) and Busan (in 2010)

*Responsible Department : Digital Road Team, Road Bureau, Ministry of Land, Infrastructure and Transport   *Contact : +82-44-201-4131/bjkim96@molit.go.kr

85

National Spatial Information Integrated Platform (K-Geo Platform) -
Ministry of Land, Infrastructure and Transport

Maximizing Administrative Work Efficiencyand Citizens' Utilization, Based on Cloud

The National Spatial Information Center has served as a data hub that collects a variety of national spatial information produced by national and public institutions, and provides this to institutions requesting it. A need for overall improvement of the spatial information system has arisen, however, owing to difficulties in management caused by variations in system environments and the separated locations of operating equipment, and to lack of information consistency given the independent management of different spatial information.

Accordingly, with the administrative system being completely reorganized (into one that reflects the latest cloud and open source technologies and reduces maintenance costs through resolution of issues of duplicate functions among the different individual information systems), the national spatial information open platform (K-Geo Platform), specialized for the conduct of administrative tasks and provision of policy support, was established and came into operation.

National Spatial Information Open Platform's Vision and Goals

Vision Citizens, Businesses and Government Making the Best Use of Data

Establishment of Virtuous Cycle Ecosystem of Cloud-based Spatial Information

Goals

Improvement of Quality of Services for Public	**Realization of Spatial Information-Based Smart Government**	**Improvement of System Constitution, to Respond to Hyperconnectivity and New Technologies**
- Prepare convergence and complex data centered on national spatial information - Ensure data quality, to provide high-quality services - Increase citizens' convenience and benefits, by enhancing contact-free services	- Streamline administration, through integration of individual operating systems and DBs - Provide convergence and complex national spatial data, to support administrative tasks - Make transition to open, standardized system with high accessibility and usability	- Provide high-quality data required to promote new technologies such as AI and IoT, etc. - Foster development of proprietary technology and related industries, through introduction of domestic software and open sources - Lay foundations for shared use by shifting to cloud environment

Progress

2015~2016	Designed next-generation standard framework functionality for spatial information system's transition to cloud
2017~2018	Conducted research on data management system reform
2018~2019	Confirmed budget support (about KRW 28 billion) for Ministry of the Interior and Safety e-Government project
2020	Implemented Phase 1 establishment project (Integration of Spatial Information Dream)
2021	Executed Phase 2 establishment project (Integration of National Geographic Information System and National Spatial Data Infrastructure System)
2022	Carried out Phase 3 establishment project (Integration of Korea Land Information System)

Key Services

Integration of Dispersed Individual Information Systems
Have consolidated hardware and software infrastructures of individual information systems dispersed in National Information Resources Service's Daejeon and Gwangju Centers, into G-Cloud at Gwangju Center for integrated operation

Implementation of Data Quality Management
Have established integrated database of national spatial information, which complies with national standards and standards of Ministry of the Interior and Safety and Ministry of Land, Infrastructure and Transport, and perform quality control to ensure data consistency
Standardizing terminology, securing data consistency and operational management efficiency of individual information systems through database structure integration, and enhancing search and processing speed

Provision of Open Source-Based Framework
Provide open source-based spatial information development framework, enabling non-experts to configure services without need for expensive equipment and separate software
Spatial analysis, address refinement and geocoding, various map controls and map templates, etc.

Integrated Operation of National Spatial Data Infrastructure System
Have established National Spatial Information Service Platform, and consolidated Spatial Information Dream, National Geographic Information System and National Spatial Data Infrastructure System for integrated operation

Key Outcomes

Improved Efficiency of National Spatial Information Collection and Provision Services

Strengthening of two-way linkage system with latest cloud-based technologies, to replace existing outdated (EAI-based) linkage technologies

Strengthened Efficiency of Administrative Tasks and Policy Statistics Utilization

Strengthening existing National Geographic Information System's unique functions — for providing statuses of real estate holdings, analyzing policy statistics, and supplying policy information — and improving basic data quality

Strengthened Contact-Free Services for Public

Switched services for the public, such as the "Find Ancestral Land" and "Find My Land" services, to contact-free service system, while eliminating difficulties in finding additional information by providing diverse information channels and a broader range of information, and increasing citizens' convenience

Satisfying of Expectations for 3D Data Utilization

Established system in which 3D can be used for various contents, through platform expansion to utilize 3D along with 2D platform services

Variety of administrative support available in response to surge in user demand for use of 3D, the core technology and data involved in digital twin and smart city operations

Unification of Operating Environments into G-Cloud, at National Information Resources Service Gwangju Center

Reduce operating and maintenance budgets, and respond promptly to resource obsolescence and lack of capacity, through improvement of internal operating system for provision of enhanced services

Status of Retained Data

Phase 1 project : 732 pieces of data integrated

Phase 2 project : 3,025 pieces of data integrated

Target System Configuration

National Spatial Information Open Platform (K-Geo Platform)

Current (Single System)

National Geographic Information System

Public Compensation Information System

Smart National Geographic Information

National Geographic Information Monitoring

National Spatial Data Infrastructure System

Spatial Information Big Data

North Korean Original Cadastral Map Management (Spatial Information System Division)

Support for Ulchi Civil Defense Drills (Director General for Emergency Planning and Safety)

SOC Project Management (Planning and Coordination Office)

Development Charges, Permits for Land Transactions (Land Policy Division)

Real Estate Development Management (New City Building and Property Development Policy Division)

Licensed Real Estate Agents and Real Estate Brokerages (Real Estate Industry Division)

SaaS Service

| Common Services of GIS | National Geographic Information Inquiries | Mapping Support | Landscape Deliberation Support | Mobile Apps |
| Public Compensation Support | Real Estate Statistics | Find Ancestral Land | North Korean Spatial Information Service | Land Administration Support |

PaaS Platform

Development Framework

Platform Developer Support Center

Spatial Analysis	Spatial Operations	Spatial Upload	Development Guide	Map Samples
Geo-coding	Geo-coding	Geo-coding	API Development Documents	Map Development Documents
Open Source Framework	Spring Boot	Foundation Framework	E-Government Standard Framework	

Data Service PaaS

Information Collection

Ministry of Land, Infrastructure and Transport

Ministry of Economy and Finance

Ministry of the Interior and Safety

Public Institutions, etc.

82 Systems of 59 Institutions

Linked Channels

Quality Assessment

Utilized Databases

Data Services

Retained Data

Land	Real Transaction Prices
Buildings	Price Data, etc.
Zoning Areas	Reference Points
Building Integration	Boundary Maps, etc.

Hardware IaaS

| Servers | Networks | Storage | Databases |

90

Direct Establishment on K-Geo Platform, or Utilization of Services Provided

Potential Demand (2023~)

[Legends] Citizens + Tasks Citizens + Internal Employees Citizens

Low Costs

$

Short Term

Housing and Land Office

- Korea REITs Information System
- Korea Real Estate Administration Intelligence System
- Spatial Information Open Platform
- Cadastre Reexamination Administration System
- Housing Site Information System
- National Geotechnical Information Portal
- Declared Land Value Information System
- Urban Regeneration Information System

Territorial and Urban Development Office

- Industrial Land Information System
- River Information Management Geographic Information System (RIMGIS)
- Rivers Guide
- Urban Planning Information System (UPIS)
- Building Life Cycle Management System (BLCM)
- National Building Energy Integrated Management, "Green Together"

Construction Policy Bureau

- Knowledge Information System of Construction Industry, "KISCON"
- Rock Material Information Sharing System, "TO CYCLE"
- Facilities Management System
- Underground Safety Information System, "JIS"

Service Integration

Road Bureau

- Traffic Monitoring System (TMS)
- Road Sign Management System
- Traffic Information Sharing System
- Standard Node Link Management System
- Restricted Vehicle Operation Permit System
- Bridge and Tunnel Status Information System

High Efficiency

Work Innovation

Transport and Logistics Office

- Korea Transport Database
- Traffic Safety Information Management Complex System, "TMACS"
- Digital Tachograph Analysis System, "eTAS"
- Traffic Impact Assessment Database System
- Transport Advice on Going Anywhere, "TAGO"
- National Logistics Information Center

Support for Central Government Ministry and Public Institution Decision-Making
Security- and Disaster Prevention-related Systems
Management of National and Local Taxes, State Property, etc.

Platform Service Utilization

Support for Local Governments' Spatial Information Administration
Smart Cities, Digital Twins
Epidemic Management, Publicly Owned Land Management, etc.

*Responsible Department : **National Spatial Data Infrastructure Center**   *Contact : **+82-44-201-3490/kbr3130@korea.kr**

Transparent and Fair Online One-Stop Procurement Service, Korea ON-line E-Procurement System

The Korea ON-line E-Procurement System (KONEPS) was established in response to persistent concerns about inefficiency and transparency in the procurement sector. As one of the 11 major project tasks for e-Government, it was opened in 2002 in order to computerize the procurement work of all public institutions.

Equipped with an advanced electronic procurement system for handling the entire procurement process online, the Korea ON-line E-Procurement System (KONEPS) is a single public procurement window used by all public institutions and procurement companies. In this system all information on bidding for procurement by public institutions is disclosed, and companies can participate in any institution's bidding through a simple one-time registration with the Korea ON-line E-Procurement System (KONEPS). Since this one-stop procurement service is provided in connection with 226 individual procurement-related systems, it has significantly enhanced the transparency and fairness of procurement administration, while also achieving great improvements in terms of cost reduction, productivity and efficiency, through computerization of the procurement process.

Korea ON-line E-Procurement System (KONEPS) Flowchart

e-Bidding
- Tender Notice
- Price Assessment
- Evaluation / Analysis

e-Contracing
- Contract Registration
- Composition and Sealing of Contracts
- Contract Review

e-Payment
- E-payment
- Expenditure Mangement
- Fee management

Online Shopping Mall
- Product Registration
- E-catalogue   - Product Search

e-Ordering
- Online Order

Main Features of Korea ON-line E-Procurement System (KONEPS)

Participation in all public tenders after one-time registration

All tender information provided

RFID government goods management

Entire procurement tasks processed online

One-stop procurement service provided
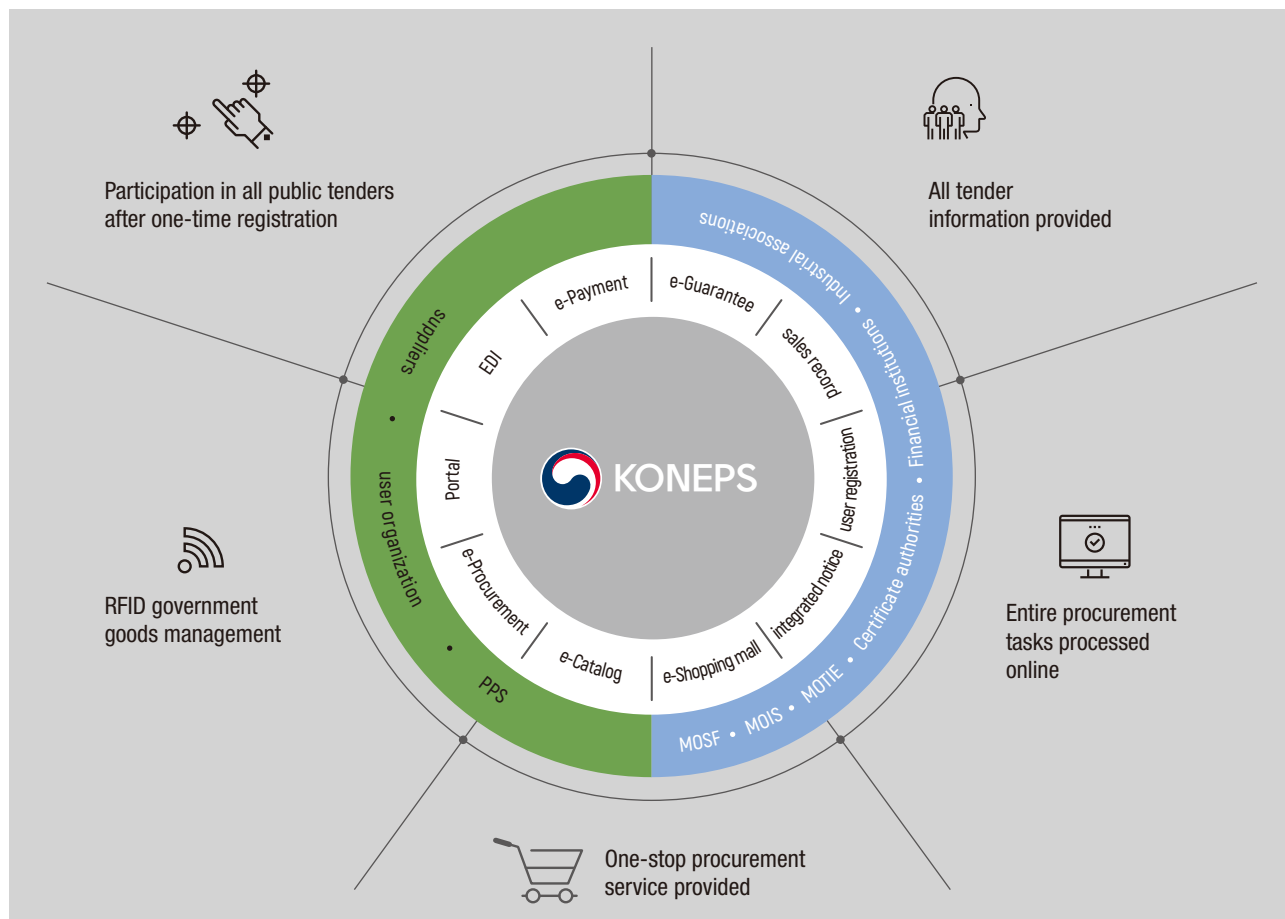
Progress

2002	●	Established "Korea ON-line E-Procurement System (KONEPS)," to expand Public Procurement Service's electronic procurement system to cover all public sectors
2004	○	Began provision of customer-tailored information services based on CRM
2006	○	Began provision of intelligent product information search service, and established comprehensive shopping mall
2008	○	Began provision of electronic bidding service via mobile phones
2010	○	Introduced electronic bidding service with fingerprint recognition
2011	○	Launched Smart Korea ON-line E-Procurement System (KONEPS) service
2013	○	Enhanced Korea ON-line E-Procurement System (KONEPS), launched "Subcontractor Keeper" program, and opened Korea ON-line E-Procurement System (KONEPS) to private sector
2014	○	Enhanced comprehensive shopping mall, and launched virtualized safe bidding service
2015	○	Opened Nuri Marketplace (electronic procurement system for private sector)
2016	○	Opened VENTURE-NARA, a dedicated online shopping mall for venture and start-up businesses
2017	○	Launched virtualized safe bidding service 2.0
2018	○	Established construction cost analysis and forecasting system
2019	○	Established Innovation Marketplace, a public procurement platform for innovative products (Inno-KONEPS)
2020	○	Established ready-mixed concrete and asphalt concrete-dedicated shopping mall, and enhanced Innovation Marketplace (Inno-KONEPS)
2021	○	Established defense commercial goods shopping mall, and shopping mall specialized in digital services

Key Services

Electronic Processing of All Procurement Tasks

Electronically handle entire procurement process, including registrations of procurement companies, bidding, contract signing, deposit receipts and payments

One-stop Service for Procurement Tasks

Provide one-stop service for procurement tasks via connections with a total of 226 external systems, such as credit information agencies, financial institutions and related industry associations

Single Window for Government Procurement

Function as single window for government procurement used by approximately 60,000 public institutions and 470,000 procurement companies, with total KONEPS transaction value of KRW 120 trillion in 2021

Key Outcomes

Dramatic Improvements in Transparency and Fairness of Procurement Administration
- Disclose all information concerning bidding, winning bids, contract results, etc., and conducts process procurement tasks online
- Block all sources of illegal electronic bidding and enhances transparency and integrity, through fingerprint recognition electronic bidding

Enhancement of Productivity and Efficiency through Electronic Procurement Process

Reduce annual procurement transaction costs by KRW 8 trillion, and related carbon emissions by 620,000 tons

World's Best Public Procurement Market (as of 2021)
- Used by approximately 60,000 public institutions and 470,000 procurement companies
- Annual procurement transactions worth KRW 120 trillion (about 290,000 electronic bids, and KONEPS shopping mall transactions worth KRW 22 trillion)

Awards and Selections for Best Practices

Won several awards and selections for best practices by international organizations, as world-renowned representative e-Government brand
- Awards: UN Public Service Award (2003), WITSA Global IT Excellence Award (2006), "2007 e-ASIA AWARD" at AFACT Conference (2007)
- Best Practices: Selected as Best Practice Model for e-Procurement by UN (2004), and recognized for requiring no further action by OECD (2004)

Achievements in International Cooperation
- Concluded 35 MOUs with 32 countries and 3 international organizations, and exported Korea ON-line E-Procurement System (KONEPS) to 7 countries* (as of June 2022)

*Vietnam (2008), Costa Rica (2009), Mongolia (2010), Tunisia (2011), Cameroon (2013), Jordan (2015), Rwanda (2015) / Implementing system enhancement projects (in Tunisia and Cameroon), and establishing systems (for local government of Kurdistan Region in Iraq, and in Egypt)

- Electronic procurement system of Costa Rica (Mer-link) received OAS (Organization of American States) Award in category of citizen centered-e-government (2012)

- Electronic procurement system of Tunisia (TUNEPS) received Open Government Award as Regional Champion in Africa (2015)
- Promoting and disseminating Korea ON-line E-Procurement System (KONEPS)'s achievements and successful know-how to overseas governments and international organizations

OECD Public Governance Review titled "The Korean Public Procurement Service - Innovating for effectiveness" published (December 2015)

Overseas Expansion of
Korea ON-line
E-Procurement System
(KONEPS)

Mongolia
Monglian e-GP System(2012)

Camerroon
e-GP Pilot System(2015)

Jordan
e-GP Development
(2017)

Costa Rica
Costa Rica e-GP System
(MER-LINK, 2010)

Tunisia
Tunisia e-GP System(2013)

Vietnam
Vietnam e-GP
Pilot System
(2010)

Rwanda
e-GP Development
(2016)
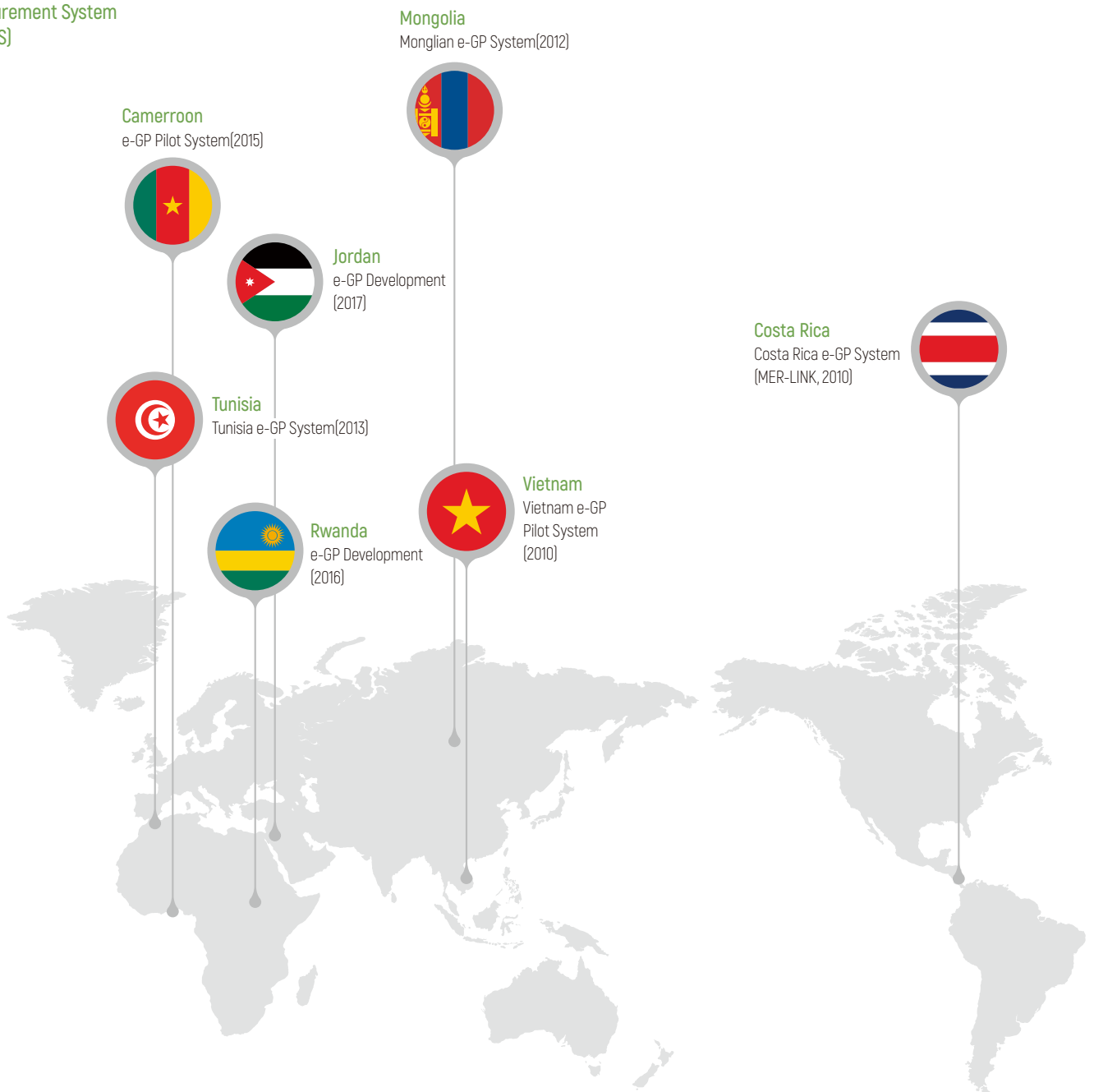
Future Plans

Implementation of Next-Generation KONEPS project (to be launched in 2024)

Next-Generation
KONEPS Project

To meet the changing digital environment and expanding functions,
PPS is planning to revamp KONEPS by 2024

국가종합전자조달 플랫폼을
쉽고 편하게
차세대 나라장터

2021 ~ 2024
System Developement

in Progress

2020.4 ~ 2020.12
System ISMP
(Information System Master Plan)

2018.10 ~ 2019. 10
Feasibility study and Approval

2018.4 ~12
ISP(information Strategy Planning)

Complete

Complete

Complete

New Technology

| CLOUD | Big Data | Ai | Block Chain |

*Responsible Department : **Director for International Cooperation, Public Procurement**   *Contact : **+82-70-4056-7200/epds@korea.kr**

Integrated SME Support Project Management System (sims.go.kr) - Ministry of SMEs and Startups

Integrated System for Managing SME Support Project Information and Support Histories

The Integrated SME Support Project Management System was established in order to consolidate and analyze the widely dispersed information on SME support provided by central government ministries and local governments. It collects information related to this support, such as the names of the companies eligible to receive support, the amounts of support provided and the dates of support, for the individual SME support projects, as well as information on the management statuses of companies that have received support such as their sales volumes and numbers of employees, while also providing services including reviews of the statuses of SME support projects and performance analyses of the companies supported.

Projects on which information is collected through the Integrated SME Support Project Management System are those executed to support SMEs as their primary purposes, or financial projects that allocate over 30% of their budgets for SME support. As of May 2022, information on 1,835 individual projects, 4.03 million companies, and 16.63 million instances of support provision have been collected.
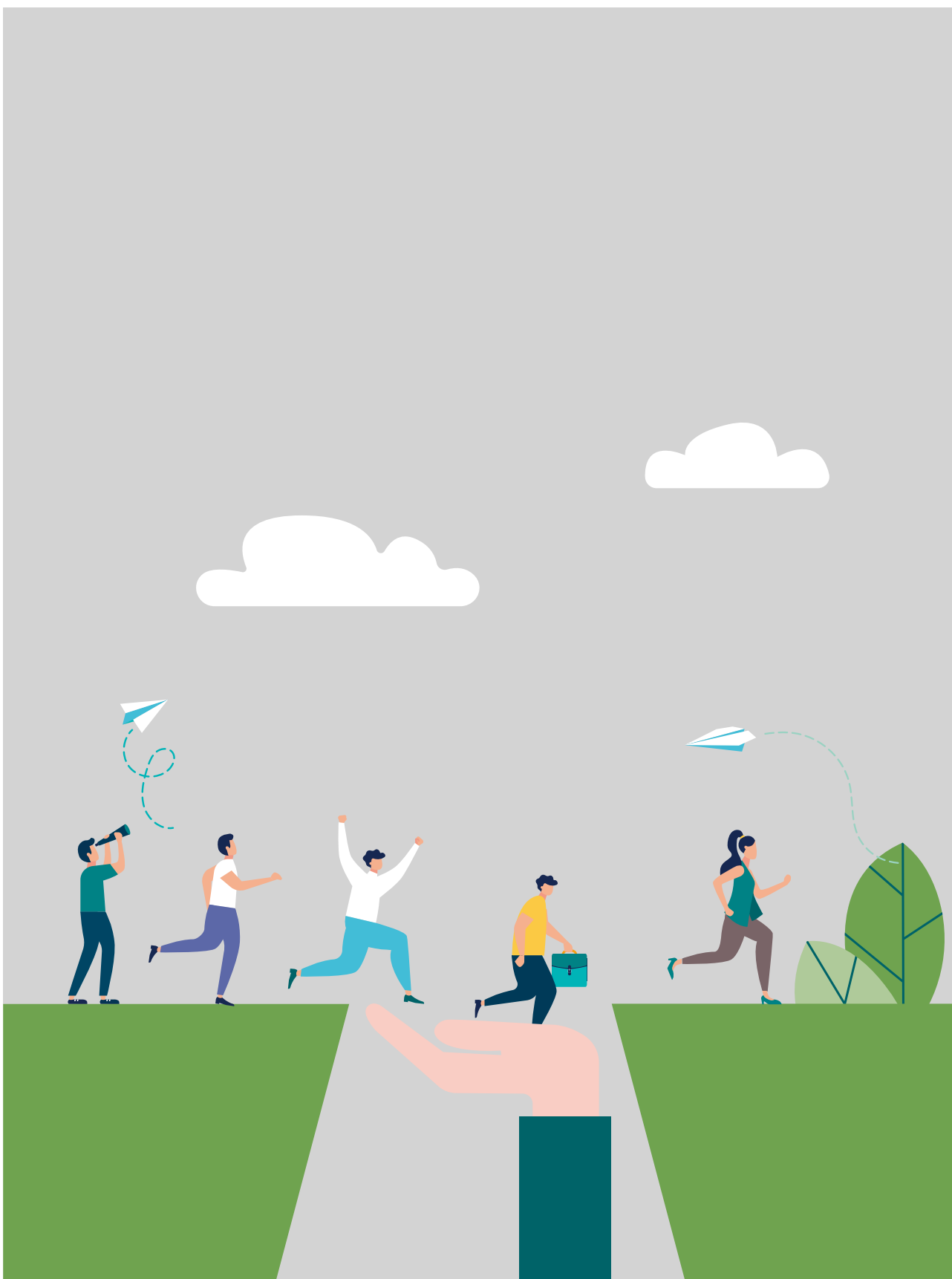
Purposes of Integrated SME Support Project Management System

Support for
Multi-dimensional
Analysis of Projects
and Support History
Information

Provision of
Easy and Convenient
Analysis Services
and Diverse Reports

Analysis of
Business Performances,
based on Characteristics
of Beneficiary Companies

Establishment of Criteria
for Limiting Concentrations
of Support Provision,
by Sector and Project Type,
and Varied Management
Performance Indicators

Provision of
Integrated Corporate
Information Card, Covering
Company's Current Status,
History, and Concentrations
of Support Provision

Analysis of Projects
and
Support Statuses

Analysis of Beneficiary
Companies'
Performances

Company Status
and
History Inquiries

Progress

July 2012

● Confirmed decision to establish "Integrated SME Support Project Management System," to improve efficiency of financial expenditures to support SMEs (Committee on Fiscal Management, Ministry of Economy and Finance)

April~October 2013

● Executed BPR/ISP through e-Government support project of Ministry of Security and Public Administration (present Ministry of the Interior and Safety)

September 2013~ December 2015

● Implemented phases 1 to 3 of "Integrated SME Support Project Management System" establishment

Key Services

Provision of Support Project Information

Provide information on SME support projects, by year, carried out by 21 central government departments and 17 metropolitan local governments

SME support projects' budgets, project overviews, companies supported, details of support, etc., by the project category (finance, technology, manpower, etc.) and ministry concerned

Project Information

Provision of Support History Information

Provide consolidated information on all support that each individual company has received through SME support projects Company name, support project name, date of support, amount of support, project executing organization

Support History

Provision of Company Information

Provide detailed information on companies, concerning their development histories, patents and certifications held, etc., after matching with company information collected by private enterprise evaluation agencies

Changes in sales and employment over recent 5 years, patent information (titles, registration numbers, etc.), certification information (titles, certification numbers, periods of certification validity, etc.)

Provision of Support Project Performance Information

Provides information on annual business performances of all companies that received support, based on the SME support projects concerned

Sales growth rates, employment growth rates, operating profit ratios, export growth rates, etc. over most recent 3 years, for all companies that received support

Business Performance

Key Outcomes

Status of Information Managed by Integrated Management System

(as of end-May 2022, individual project basis)

Project Information	Support History Information	Company Information
1,597 Projects	**1,835** Projects	**4.03** Million Companies
	Online: 273; Offline: 1,562	

- Central Government Ministries: 341
- Local Governments: 1,256
	- Beneficiary Companies: 4.03 million
	- Amount of Support: KRW 877 trillion
		Basic Information
		(National Tax Service and Private Credit Information Agencies)
		
		Business Registration Number,
		Company Representative,
		Date of Business Establishment,
		Location, Type of Business,
		Basic Financial Information, etc.
		
		Status Information
		(through cooperation with related ministries)
		
		- Sales Volume/Date of Temporary
		  Shutdown or Closure
		  (National Tax Service)
		- Number of Employees
		  (Ministry of Employment and Labor)
		- Export Volume (Korea Customs Service)
		- Intellectual Property
		  (Korean Intellectual Property Office)

*The 1,597 project information figure is the number of SME support projects carried out in 2022.

Support Project Performance and Statistical Information Management

Manage cumulative data on support histories and business performances of about 4.03 million companies benefiting from a total of 1,835 SME support projects (cumulative figure from 2010 through May 2022), to conduct performance assessments and satisfaction surveys for SME support projects and provide statistics on beneficiary companies' business performances

*Responsible Department : Statistics Analysis Division, Ministry of SMEs and Startups   *Contact : +82-44-204-7473/bcahn11@korea.kr

103

Propagation of Korean Customs Administration based on Integration and One-Stop Processing of Customs Services

The Electronic Customs Clearance System "UNI-PASS," a name combining "UNI" (as in Unified, Universal, Unique), referring to the "integration of various customs services," and "PASS" (Fast and Efficient Clearance Service), meaning "one-stop processing via an electronic system," is the Korea Customs Service's advanced electronic customs clearance system established for the efficient handling of the import and export customs clearance processes.

In addition, as an agency of a leading country in the field of e-Government, the Korea Customs Service aims to support economic development in developing countries, by sharing its experience in developing advanced customs administration, and to contribute to the creation of jobs by propagating Korea's customs administration system and pioneering new ICT markets. In fact, following the export of its system to the Dominican Republic in 2008, the Korea Customs Service has been conducting business process reengineering (BPR) consultation projects for the modernization of customs administration in developing countries since 2012.

Advancement of Industry and the Economy

UNI-PASS' Services

Customs Clearance Management

Import Clearance
Export Clearance
Customs Collections
Customs Refunds

Portals

Internet Customs Portal

Cargo Management

Imported Cargo
Exported Cargo
Transshipments
Cargo Tracking

Korea Customs e-Clearance System

UNI-PASS

Information Management

Risk Management
Data Warehouse
Knowledge Management
Investigation and Monitoring
Post-Clearance Audits
Traveler Information

Single Window for Customs Clearance

Business Information Management

Groupware
Customer Relations Management
Human Resource Management
System Monitoring

Progress

2008 ● Exported UNI-PASS system to Dominican Republic

2012 ● Launched consultation projects for modernization of customs administration in developing countries (BPR)

Key Services

100% Computerized Customs Administration Including Customs Management, Information Management and Use of Private Portals

- UNI-PASS system composed of various components and modules interacting with each other and operating like a single organism, for efficient customs administration
- Customs management consisting of individual modules for handling import clearance, export clearance, customs collections, customs refunds, etc.
- Cargo management structured for handling of imported cargos, exported cargos, transshipments, etc.
- Information management comprises risk management, data warehousing, investigation and monitoring, post-clearance auditing, traveler information management, etc.
- Through internet customs portal, citizens can handle reporting tasks such as import and export declarations and applications for refunds

Key Outcomes

Overseas Propagation of UNI-PASS System
- USD 264.58 million worth of system exports, to 16 countries   (as of June 2022)
  Kazakhstan (2005), Kyrgyzstan (2005), Dominican Republic (2008), Mongolia (2009), Guatemala (2009, 2022), Ecuador (2010, 2011, 2021), Nepal (2011), Tanzania (2011, 2012), Uzbekistan (2014), Cameroon (2015), Ethiopia (2017, 2019), Ghana (2018, 2021, 2022), Algeria (2018), Tajikistan (2019), Paraguay (2020), Madagascar (2022)
- Contribute to overseas market entries by small and medium-sized ICT companies in Korea
- Facilitate smoother trade and contributes to economic development in developing countries, thanks to more rapid customs clearance, improved transparency, and increased tax revenues
  *Since its system was launched in June 2020, Ghana has experienced a 24% increase in tax revenue and a reduction of 4 days in the average customs clearance time. In Cameroon, meanwhile, since its own system was opened in April 2020, there has been a more than tenfold expansion in container throughput and a 19% rise in tax revenues.

Execution of Customs Administration Modernization Consulting Projects in Developing Countries
- In 37 countries   (as of December 2021)
  Tanzania, Cambodia and Myanmar (2012), Columbia, Bolivia, Peru and Uzbekistan (2013), Cameroon, Ethiopia, Nicaragua and Guatemala (2014), Ghana, Honduras and Paraguay (2015), Sri Lanka, Laos and Kyrgyzstan (2016), Tajikistan, Kazakhstan, El Salvador and Costa Rica (2017), Algeria, Jordan and Fiji (2018), Nigeria, Mongolia, Serbia, Mauritius and Sudan (2019), Gabon, North Macedonia, Jamaica and Tunisia (2020), Guyana, Bosnia, Sierra Leone and Uganda (2021)
- Heightening international awareness of Korean electronic customs clearance system
- Create effects of foreign currency earnings and favorable customs environments in developing countries for Korean export companies

Achievements in International Cooperation
Strengthening cooperation between customs authorities of Korea and its partner countries, through memorandum of understanding (MOU) signings, etc.
  MOUs signed with 8 countries: Ecuador (2010), Cameroon (2014), Peru (2015), Ethiopia (2014), Tanzania (2016), Algeria (2018), Ghana (2019), Tajikistan (2019, Record of Discussions)
  MOUs signed with 6 organizations: KOTRA (2006), ADB (2006), KOICA (2009), IDB (2018), AfDB (2019, Aide Memoire), Export-Import Bank of Korea (2022)

Awards
- Ranked 1st in implementation of digital trade facilitation, by UN (UN Global Survey on Digital and Sustainable Trade Facilitation 2019) (2019)
- Ranked 1st for 3 consecutive years (2012-2014), and 3rd (2018) in UN e-Government Survey
- Ranked 1st in World Bank's customs administration category, for 6 consecutive years
- Ranked 1st in customs service satisfaction assessment by Airports Council International, for 11 consecutive years
- UNI-PASS acquired International Organization for Standardization Certification (ISO 20000) for 16 consecutive years (2021)

*Responsible Department : **ICT and Data Planning Division, Korea Customs Service**   *Contact : **+82-42-481-7771/unipass@korea.kr**

National Statistical System (NARAStat) - Statistics Korea

General-Purpose Statistical Information System, which Standardizes and Systematizes Entire Statistics Compilation Process

In order to respond quickly to demands for statistics at the time of official statistics production, Korea has introduced a decentralized compilation system. In greater detail, not only Statistics Korea but also many other designated institutions design and produce statistics using their own accumulated knowledge and experience, which they publish as official statistics. In this regard, given the shortages of statistical experts, the unstructured processes and the differences in capabilities among the different institutions, related to their budgets for example, and the resulting deterioration in statistical quality, a need has arisen for the building of a government-wide integrated system that supports the entire statistical compilation process, from planning to data storage.

The National Statistical System (NARAStat) is a statistical information system that can be used jointly by all statistics compiling agencies, thanks to its standardization and systematization of the entire process of statistics preparation — ranging from the initial statistical planning to the statistics production, the provision of related services, the reporting, and data storage. The National Statistical System (NARAStat), a hub system supporting the statistical work and statistics production of statistics compiling agencies, is leading the improvement of national statistical quality and development of the nation's statistics through its establishment of a low-cost, high-efficiency production system, while earning trust for its production of statistics characterized by accuracy, timeliness and usefulness.

NARAStat Statistics Production Process

Statistics Policy

Statistics Producing Institutions	User Information Database	Statistics Demand Database	Approval Database	Quality Check Database	Review Database	Standards Database	Users
	NARAStat Operational Website	Statistics Demand	Statistics Approval	Quality Management	Statistics Review	Statistics Standards	

Statistics Producing Institutions

- Statistics Compiling Institutions
- Central Administrative Agencies
- Local Governments
- Designated Private Institutions
- Policymakers
- Laboratories

NARA-PC

Offline Systems

Users

- Statistics Korea
- Statistics Compiling Agencies
- General Users
- Policymakers
- Laboratories

Population Database
Population List Database
Archives Database

Statistics Production System

Sample Extraction System	Data Collection	Data Processing Analysis System		Data Management System	Connected Systems Database
Statistics Design System	Population List Management				
Questionnaire Design	Surveyor Task Assignment			Micro Data	MDIS DB
Population List Design	Interview Surveys	Raw Data	Micro Data	Macro Data	
Survey Method Setting	Internet Surveys			Data for Public Announcement	National Integrated Database (KOSIS)
Internal Editing Design	Telephone Surveys	Internal Inspection of Data Processing	Internal Editing of Aggregation Analysis	Management of Publicly Announced Information	
Aggregation Table Design	Mobile Surveys	Missing Data Handling	Weighting	Preparation of Publicly Announced Data	
System Configuration Management	Input Editing	Aggregation	Data Processing Closure		
	Data Collection Closure				

Statistics Meta Management System

Recruitment Management	Post Evaluation	Report(Basic) Statistics	Statistics Explanation Materials	Statistical Item Meta	Statistical Production Meta

Progress

2010 — Established "Information Strategy Planning (ISP)," for enhancement of national statistics production and management system

2011~2015 — Developed system and established national statistics for building NARA Stat foundation

2016~2021 — Expanded and distributed national statistics production system

2020 — Established "Information Strategy Planning (ISP)" for building next-generation NARAStat system

2021~2023 — Building next-generation NARAStat system

Key Services

Statistics Planning
Registration of statistical surveys (statistical survey registration, schedule management, design status, etc.), and management of opinions for system improvement

Statistics Design
Population list design (population list design, screen design, population list input format design, survey target location inquiry, etc.), survey plot management design (survey plot management setting, survey plot screen design), question-naire design (questionnaire item design, classification design, questionnaire design, etc.), data collection tool design (survey method design and data collection design), editing design (editing rule design), aggregation table design (aggregated item classification design and aggregation table design), screen design, by statistics type (inquiry screen design, inquiry analysis design)

Data Collection
Population list (list creation) and survey plot (survey plot creation) management, surveyor task management (manager assignment, assignment of workload for each survey plot, etc.), collected data editing (management of collected data editing work and aggregation of editing statuses), aggregation of collected data (inquiries about and reservations for creation of aggregation tables, statuses of aggregation tables)

Data Handling
Editing of data handling (handled data editing work management, aggregation of editing statuses), handled data processing (stratified weights application, total weights application, etc.), aggregation of handled data (inquiries about and creation of aggregation tables, generation of structured and unstructured aggregation tables, etc.), editing for confirmation

Data Transfers
History of changes in publicly announced statistics (history of changes in figures of publicly announced statistics), and data extraction

Data Management
Design of data for public announcement (selection and mapping management, creation, results, etc. of aggregate table for public announcement), MD transfer information management, data transfer scheduling (scheduling for transfer of aggregate table for public announcement)

Data Inquiries

Inquiries concerning statuses of samples, by aggregate table and administrative region; analytical data on input statuses and comparisons to first half of previous year; and questionnaires and population lists

Key Services of Statistics Production System

Statistics Production System

Statistics Design
- Questionnaire Design
- Population List Design
- Survey Method Setting
- Internal Editing Design
- Aggregation Table Design
- System Configuration Management

Data Collection
- Population List Management
- Enumerator Task Assignment
- Interview Surveys
- Internet Surveys
- Telephone Surveys
- Mobile Surveys
- Input Editing
- Data Collection Closure

Data Processing Analysis System

Raw Data
- Internal Inspection of Data Processing
- Missing Data Handling
- Aggregation

Micro Data
- Internal Editing of Aggregation Analysis
- Weighting
- Data Processing Closure

Data Management System

Micro Data   **Macro Data**   **Data for Public Announcement**
- Management of Publicly Announced Information
- Preparation of Publicly Announced Data

Connected Systems

Micro Data Integration System (MDIS)   **National Statistics Integration Database (KOSIS)**

Key Outcomes

Status of National Statistics System Use by Institutions

Operation of 471 Types of Statistics, from 249 Institutions

Category	Number of Institutions	Number of Statistics Types
Total	249	471
Statistics Korea	1	43
Central Administrative Agencies	17	60
Local Governments	220	354
Other Designated Organizations	11	14

Reductions of Survey Periods and Development Costs

Create effect of shortening survey development periods by 1 to 3 months, and reducing development costs by approximately KRW 20 million

*Generally, statistical system development takes from 6 to 12 months and costs a minimum of KRW 100 million.

Establishment of low-cost, high-efficiency national statistics governance

Support statistics production process to solve problems owing to statistical survey system absence, budget waste stemming from duplicate development, and deteriorations in quality due to service outsourcing

Productivity Improvement through Standardization and Automation of Tasks

Guarantee equal statistical quality above a certain level, regardless of differences in capacity among statistics producing institutions involved

Quality Improvement through Consolidation and Streamlining of Management

Embrace both nationally approved statistical policy and production work, from stage of approval to stages of public announcement and storage, and can be utilized in accordance with statistical characteristics of the statistics compiling agencies involved

Efficient Management and Sharing of National Assets

Provide high-quality statistical analysis and statistical information and create synergy effects, through shared usage
of national assets (micro and macro data)

Achievements in International Cooperation

NARAStat's ODA Projects

    - Project for establishment and operational support of Sri Lanka CAPI system (2016)

    - Project for establishment of Laos statistical data collection system (2020)

International Partnership Projects

    - Mongolia national statistical system improvement project, led by World Bank (2010~2012)

    - Kazakhstan national statistical capacity improvement project, led by World Bank (2012~2016)

*Responsible Department : **Statistics Korea**   *Contact : **+82-42-481-3877/daeyong@korea.kr**

Implementation of Integrated Digital Forest Management Activity Service

Amid the increasing frequency and severity of instances of abnormal climate, there is increasing demand for digital forest management systems to secure the reliability of and objectivity in national forest administration, one of the key actors involved in implementing climate change policies domestically and abroad. In consequence, voices calling for completion of a comprehensive system for the management of national forestry work, in line with the role and importance of forests as key carbon sinks, have also gained strength.

Korea's Integrated Forest Management System is an information system that implements the establishment of management plans for forests, and facilitates the forest resource management activities ranging from seed and seedling cultivation, to afforestation and reforestation, to logging, as well as carrying out digital-based integrated management of spatial information (GIS)-based forest management activities related for example to forest income and to forest infrastructure including roads. Through this, the Korea Forest Service has established an ICT-based system for integrated management of the national forest status and forest management activities, and is utilizing information on national forest management activities to reduce greenhouse gas emissions in the forest sector, while also carrying out big data collection and analysis for forest policy decision-making.

Responding to Climate Change through Forest Resource Management:

Systematic management of entire cycle of forest resource creation, from seed cultivation to logging
Systematic management of and verification of forest carbon sinks, to respond to global issue of climate change

01 Seeds and Seedlings Creating foundation for planting of proper trees, in proper soil, through systematic management of seeds and seedlings

Providing seedlings suitable for planting of proper trees in proper soil, through establishment of origin management system covering processes from seed collection to seedling production

Seed collection — Seed inspection — Seed supply — Seedling production

02 Afforestation Creating optimal forest carbon sinks, through planting of proper trees in proper soil

Creating optimal forest carbon sinks, through afforestation with seedlings grown from seeds of optimal origin through system for planting proper trees in proper soil

Making decisions on planting of proper trees in proper soil, through analysis of afforestation target sites

Seeds of optimal origins

03 Reforestation Maximizing forest carbon uptake, through efficient forest management

Maximizing growth of forest trees, by carrying out proper activities at appropriate times based on information on afforestation and reforestation history management

Mowing → Fertilization → Thinning
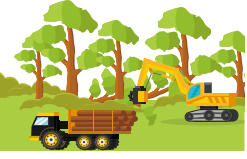
04 Logging and Sales Optimizing carbon sink source circulation cycle and resource utilization, through ensuring conduct of logging at optimal times
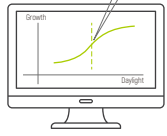
Circulating carbon sink sources in afforestation, through process of conducting logging at optimal times and supplying high-quality timber, based on analysis of forest status and management history information

Determining optimal cycle of salinity (for logging)

Growth / Daylight

*Carbon sinks: Trees which naturally or artificially store atmospheric carbon dioxide in their trunks, branches, roots, etc.

Location Information-based Forest Management History Management:

With forest management being a very long-term activity carried out over a 30- to 50-year cycle, location information-based history management is essential to its continuous and systematic implementation.

Forest Seeds / Forest Genetic Resources

Achieving distribution of seeds and conservation of forest genetic resources for sake of creating healthy forests, through location-based management of origins of superior forest seeds

Management of Changes in Mountain Areas

Real-time monitoring of forest-related activities and changes in use of various mountain areas, such as public development and reforestation

Creation and Management of Forests

Establishment of comprehensive management system that manages and stores histories of forest management activities ranging from afforestation, reforestation, to logging, based on location information, for mutual sharing among various utilization systems

Progress

2010~2013 ● Established Integrated Forest Resource Management System

2012~2017 ● Established Forest Geospatial Information System (FGIS)

2013~2016 ● Established National Forest Management Information System

2015~2017 ● Established Forest Civil Engineering Management System, and Forestry Contract Service Management System

Key Services

Provision of National Forest Management Information Service
Provision of information on forest statuses, forest management plans, forest management performances, forest management analyses and evaluations

Management of Forest-related Task Execution and Project Histories
Management of forest resources such as seeds and seedlings, processes such as afforestation, reforestation, logging, etc., execution of work for example on forest infrastructure including roads and erosion control, and project histories

Registration and Management of Project Performance Documents and Outcomes
Registration and management of project performance documents and outcomes of forestry service contractors

History Management, through Spatial Information Registration
Forest management zones, forest project execution zones, etc.

nformation Provision through Linkages among Systems
Provision of information through linkages among systems concerned with forest management, forest resources, forest civil engineering, and forestry services

Key Outcomes

Improved Usability and Early Settlement into Place, through Establishment of On-site Work-based System
Standardization of work and verification of usability, through meetings with on-site workers and working-level council meetings

Improved Work Efficiency
Reduction in work and provision of systematic project management through system-based management of project planning, execution, completion and history, in contrast to past system centered on registering of results

Achievements in International Cooperation
Dispatch of delegation specialized in e-government to Latin America (May 26~June 4, 2018)
Introduction of ICT-based forest resource management and forest disaster management systems for Peru and Paraguay

Building Disaster-resistant System Equipped with Advanced Technology for Disaster Safety Management

Unexpected occurrences in the disaster environment, such as the global COVID-19 crisis and abnormal climate events including heat waves and heavy rains, are becoming more prominent recently. In this rapidly changing disaster environment, disaster safety management systems different from those of the past are required, to protect the natural environment as well as the lives and safety of the people. The "National Disaster Management System (NDMS)" of the Ministry of the Interior and Safety, and the "Integrated Forest Disaster Management System" of the Korea Forest Service, are examples of such systems that will serve as solid foundations for creation of a country resistant to climate change and disasters.

PART 4

- National Disaster Management System (NDMS) - Ministry of the Interior and Safety
- Integrated Forest Disaster Management System - Korea Forest Service

Disaster
Management

National Disaster Management System (NDMS) -
Ministry of the Interior and Safety

Nationwide Disaster
Safety Service for the Public

The National Disaster Management System (NDMS) is a comprehensive nation-wide information system that supports all stages of disaster management including prevention, preparation, response, and recovery. Of its total of 25 sub-systems, 22, including the situation propagation system, are used by disaster management personnel of the central and local governments and related organizations, while three are service systems for the public: the National Disaster and Safety Portal, Emergency Ready App, and the Integrated Disaster Text Alert System.

The purpose of system establishment is to provide scientific, comprehensive and systematic support at each stage of disaster management, and to lay the foundation for systematic integrated management of public and private disaster safety data collection, linkages, sharing, and utilization. Most importantly, it has supported the creation of a cooperative system making possible the real-time sharing of information on disaster site conditions among and joint responses by disaster response agencies, including the central and local governments and public institutions, while also putting a focus on prompt provision of accurate disaster information to the public, through means such as sending out disaster text alerts.

Earthquake

Forest Fres

Drought

Landslide

Volcano

Tornado

Severe cold

Avalanche

Tsunami

Typhoon

Flood

Gale

Overview of Major System Establishments

[National Emergency Management Agency]
NDMS Foundation Establishment (2005~2013)

- Establishment of Government - wide Disaster Management Network (Phases 1, 2 and 3)

  * Situation Propagation System, Shared Use of Disaster Information, National Disaster Information Center

- Establishment of Integrated/Linked System for Disaster Video Data (Surveillance Footage) Utilization

- Establishment of Earthquake Disaster Response System

- Establishment of Emergency Ready App

[Ministry of Public Safety and Security]
NDMS Enhancement (2014~2016)

- Establishment of Integrated Disaster and Safety Information System

  * Integration of 28 Individual Systems into 3 Portals (National Disaster Management, Mobile Disaster Management, and National Disaster and Safety), based on e-Government Framework Standards and G-Cloud

- Enhancement of Integrated Disaster and Safety Information System

  * Enhancements of Safety Report Information Analysis System, National Safety Inspection System, and Linkage System for Shared Use of Disaster Information

[Ministry of the Interior and Safety]
NDMS Expansion (2017~Present)

- NDMS Improvement

  * Improvements of Surveillance Footage Integrated/Linked System, Integrated Database Server Performance, and Situation Propagation Messenger Functionality

- Establishment of Integrated Disaster Text Alert System

  * Integration and Unification of Emergency Alert Systems - CBS, DMB, and DITS

- Establishment of GIS-based Integrated Situation Management System

- Establishment and Enhancement of Self-Quarantine Situation Management System

Progress

1995	Selected as task of Globalization Committee to Prepare for 21st Century Information Society
February 1996	Established and executed basic plan for national safety management information system (Phase 1 BPR/ISP)
March 2005	Established and executed basic plan for national disaster management information system (Phase 2 BPR/ISP)
December 2013	Established and executed plan for disaster and safety management system enhancement (Phase 3 BPR/ISP)
March 2016	Established foundation for integrated disaster and safety system
March 2017	Expanded foundation for integrated disaster and safety system
August 2017	Established BPR/ISP for improvement of NDMS

Key Services

Situation Propagation System

Support responses to disaster situations, through for example ensuring prompt communication and cooperation among organizations related to issuing of instructions for responding and situation reporting, in order to facilitate disaster situation management

- Used by approximately 15,000 staff responsible for disaster management, of central and local governments and related organizations
- Automatically disseminate information on situations of disaster and safety of 10 critical types (special weather reports on typhoons, heavy rain, heavy snow, etc.; earthquake and forest fire information; flood forecasts from the four Flood Control Centers of the four major rivers; National Fire Agency reports on rescues, fire severity, etc.)
- Facilitate quick responses to actual situations through prior disaster situation reporting drills

Disaster Management System

Provide support for disaster management and prevention activities, and for recovery of private facilities and other facilities to be restored

- Used by approximately 39,000 staff responsible for disaster management, of central and local governments and related organizations
- Site inspections, shelter management, disaster relief, recovery plans, etc.

Integrated Disaster Text Alert System

Disseminate information regarding conditions all together, through unified channel for sending disaster text alerts and broadcasting disaster information in cases of natural disasters and emergencies or large-scale social disasters

- Disseminate information through mobile phones, vehicle GPS navigation, crawling messages on TV screens, radio, etc.

National Disaster and Safety Portal

Post disaster and safety information necessary for citizens' lives, on National Disaster and Safety Portal website

- Provide behavioral guidelines for citizens, information on various evacuation shelters, and window for reporting private property damage

Emergency Ready App

Provide mobile "application" service for use by public to receive disaster text alerts and disaster safety information content services via smartphones

- Disaster situation information, behavioral guidelines for citizens, inquiries concerning locations of nearby facilities, etc.

Key Outcomes

Status of NDMS (as of June 2022)

157,000 Users (12,000 users from central government, 72,000 users from city and provincial local governments, 70,000 users from local governments of towns, counties and districts, 6,000 users from related organizations)
Daily 37,000 users accessing and 452 organizations using NDMS

Improvement of Services for Public

- Operate website exclusively for "emergency service" in events of large-scale disasters, by providing only minimum essential features as a precaution against possible server overload
- Provide disaster and safety services to public, through mutual information sharing between Ministry of the Interior and Safety and private portal service (Naver)
- Provide disaster text alert service in foreign languages (English and Chinese), through "Emergency Ready App"

Contribution to Prevention of COVID-19 Spread

Contributed to combating COIVD-19 and preventing its spread, by promptly providing information on confirmed cases' contacts for tracing and quarantine, via stable disaster text alert service operation

*According to user survey on provision of COVID-19 disaster information, disaster text alert service was the "most used means for obtaining information," and the "most satisfactory means of information provision" (consumer-centered disaster information analysis study of Korea Institute of Public Administration, October 27, 2020)

Support for Quickly Finding Missing Children

Provide support for disaster text alert service to quickly find missing children, as well as people with intellectual disabilities, autism, mental disabilities, and dementia; following service launch, 60 missing persons found within 24 hours each, over 100-day period (June 9~September 19, 2021) --> Ten-fold reduction in time spent finding missing people

Awards

- Awarded "Grand Prize" at "Briefing Session on e-Government" (Presidential Citation, 2007)
- Won "Award for Excellence" at "2011 Public Sector Informatization Evaluation" (Prime Minister's Citation, 2011)
- Received "The Best mGov" Award (UAE, 2015)

Future Plans

Establishment of Integrated Digital Disaster Management System with AI and Data

- Collect, link and share disaster and safety data dispersed throughout organizations, and develop services using data analytics
- Establish "Disaster and Safety Data Sharing Platform," based on public-private collaboration, and provide information on disaster preparedness as well as customized information, based on big data analysis

	As-Is	To-Be
Common	- Obtain information through individual site visits	- Obtain all information through "Sharing Platform"
Civil Servants	- Disaster management based on on-site situation information - Disaster management based on civil servants' experience	- Disaster management based on near-term future predictions - Disaster and safety management based on data (evidence)
Citizens	- Simple disaster and safety information verification - Verification of necessary disaster and safety information on individual bases	- Information verification tailored to needs of citizens and companies - One-stop verification of all information wanted

Integrated Forest Disaster Management System -
Korea Forest Service

Realizing Happy Lives for Citizens, Safe From Forest Disasters

While the average share of forest area globally is 20%, in Korea 64% of the land is surrounded by forests. Accordingly, forests are involved in a large part of the nation's resources, ecology, culture and recreation. However, occurrences of forest disasters such as forest fires, landslides, and sudden pest infestations are increasing nowadays, owing to effects of climate change such as more frequent days of dryness or strong winds and localized torrential rainfalls. A need has thus arisen for preparation of a system for joint responses by and cooperation among all ministries concerned, to protect the people's lives and property from damage due to forest disasters.

During the period from June 2013 to December 2017 the Korea Forest Service established an integrated forest disaster management system, and prepared a system for preemptive responses to prevent forest disasters so as to protect people's lives and property from various forest disasters. Through this system the Korea Forest Service is focused on preserving forest ecology and minimizing damage to forest resources, in addition to its pursuit of public safety, national joint disaster response system operation, disaster prediction and preemptive response, and two-way communication with the public.

Recent Forest Disaster Situation

Types of Forest Disasters	Period	Amounts of Damage
Forest Fires	Last 10 Years	481 wildfire incidents per year, causing damage to total area of 1,087 ha
Landslides	2005~2014	Damages to total area of 439 ha, restoration costs of KRW 70.4 billion, 6 casualties
Forest Pests	2015	1.27 million dead trees due to severe pine wilt disease

Integrated Forest Disaster Management System Conceptual Map

National Point Numbers (Ministry of the Interior and Safety)

Cadastral/Aerial Footage (Ministry of Land, Infrastructure and Transport)

Weather Information (Korea Meteorological Administration)

Cultural Heritage Information (Cultural Heritage Administration)

Cross-Ministerial Linkages

Korea Forest Service Disaster Situation Room

Prevention/Preparation (Forecasting)

Forest Fire Risk Forecasting

Landslide Analysis

Pest Alerts

Response (Pest Control)

Forest Fire Extinguishing

Landslide Forecasting/Alerts

Pest Sample Analysis

Restoration

Wildfire Damage Investigation

Landslide Damage Analysis

Pest Calculation

Situation Update Dissemination (National Fire Agency)

Citizens

Forest Disaster Responders

Central Disaster Response Headquarters (Related Organizations, etc.):

Spatial Information-based Forest Disaster Information Service:

Cloud / IoT

Support for Prediction-based Preemptive Responses to Forest Disasters

Mobile 911 Reports

Forest Fire CCTV Surveillance

Landslide Sensors

Mountain Weather Network

Pest Surveillance Drones

DMZ Wildfire Satellite Surveillance

Progress

June 2~December 10, 2014	Established common operation base for forest disaster response
May 29~December 15, 2015	Expanded services to related organizations and local governments
June 24~December 30, 2016	Expanded services to public
June 9~December 29, 2017	Strengthened on-site response services

Key Services

Forest Fire Situation Control System

Forest fire detection, situation update dissemination, information collection and analysis, damage reporting, etc.

Landslide Information System

Risk prediction, situation update dissemination, vulnerable area management, landslide risk mapping, etc.

Forest Pest Control Information System

Microscopic examination management, exhaustive enumeration surveys, pest control management, restoration management, etc.

Smart Forest Disaster App

Forest disaster forecasting and reporting, sharing of on-site situation details, etc.

Key Outcomes

Strengthened Public Safety

Support provided for rapid joint national disaster response system, mobile-based forest disaster reporting, and disaster situation update dissemination

Cost Saving Effects

Reductions in establishment and operating costs, through shared use among local governments and related organizations

System Promotion and Awards

- Introduced "Integrated Forest Disaster Management System" to diplomatic missions to Korea (May 2016)
- Selected for award for excellence at "Korea e-Government Awards" (November 2017, Ministry of the Interior and Safety)

Achievements in International Cooperation

- Dispatch of delegation specialized in e-government to Latin America (May 26~June 4, 2018)
  Introduction of ICT-based forest resource management and forest disaster management systems for Peru and Paraguay
- 15th World Forestry Congress (May 2~6, 2022)
  Display of forest fire system and firefighting equipment, and presentation on forest fire disaster management system

"Realization of a Safe Land without Concerns about Forest Disasters,"
through Establishment of Integrated Forest Disaster Management System

Prevention/Preparation

Implementation of prevention based on scientific predictions
- Patrols using four types of maps including forest fire damage risk maps
- Implementation of erosion control work using landslide risk maps

Implementation of location-based systematic patrols
- Forest fire watchers' GPS-based forest fire monitoring
- Pest monitor's management of electronic patrol box using NFC-based equipment

Enhancement of disaster preparedness guidance for public
- Forecasting of landslide and forest fire risks (previously landslide forecasting only)
- Diversification through web, SMS and smart apps

Responses

Expansion of channels for forest fire detection
- 1 type -> 4 types (forest rangers, 911 calls, smart apps, satellites):

Accelerating disaster update dissemination
- Wildfire update dissemination: 10 minutes -> 2 minutes
- Pest update dissemination: Unavailable -> 5 minutes

Integrated identification of disaster areas including surrounding sites
- Comprehensive identification of owners, forest floors, ecology, urban planning, shelters, evacuation facilities, facility equipment, etc.

Sharing of helicopter dispatch information
- Verifying helicopter dispatch information, at dispatch office and on-site

Strengthening disaster evacuation notifications to and guidance for public
- Diversification to disaster information broadcasting, CBS, SMS, and smart apps

Restoration

Systematic calculation of disaster-affected areas
- Calculation of disaster-affected areas based on national point numbers and maps

Disaster damage estimate standardization
- Estimation subjects, Base price standardization

Reduced costs and improved work efficiency

Shared use by local governments
- Annual savings of KRW 113 billion

Streamlining of manual tasks, such as situation reporting
- Annual savings of KRW 2.2 billion

Forest disaster system integration
- Utilization of integrated portal access from individual systems

Forest disaster responses in consideration of ecology
- Consideration of vulnerable species, rare species, and genetic resources in events of forest disasters

Spatial information-based forest disaster management
- Use of precision maps (e.g. 25 cm - level video maps)
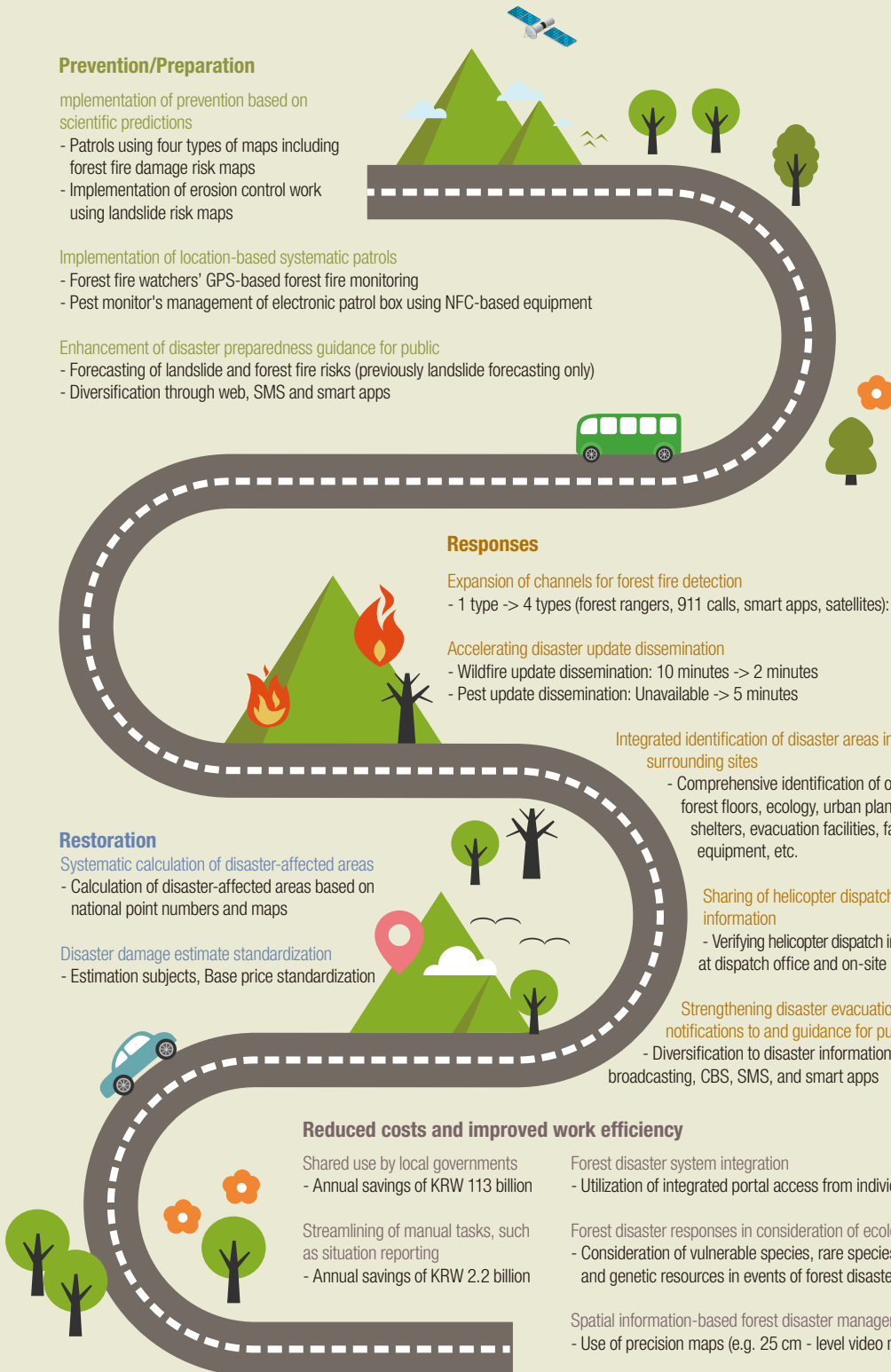
Future Plans

- Prepare smart forest disaster response system using latest ICT technology, to protect people's lives as well as forest resources

External Linkages

Ministry of the Interior and Safety

Korea Meteorological Administration

Ministry of Land, Infrastructure and Transport

Ministry of Agriculture, Food and Rural Affairs

Transmission of Forest Fire Forecasts/ Occurrence Information

Information on People Vulnerable to Disasters, Mountain AWS, Numerical Topographic Maps, Continuous Cadastral Maps, Smart Farms, etc.

Internal Linkages

Forest Fire Location Information System

National Forest Management Information System

Forest Spatial Information Services

Wildfire Location Information

Sub-compartment Maps

Related Thematic Maps

ICT-based Smart Forest Disaster Response System

Prevention/Preparation

Smart Forest Fire Disaster Monitoring/ Forecasting System
- Integrated Forest Fire Risk Forecasting
- In-depth Monitoring of Forest Fires

Smart Landslide Monitoring/ Forecasting System
- Integrated Landslide Risk Forecasting

Smart Pest Monitoring/ Forecasting System
- Forecasting of Eclosion Periods for 4 Major Pests
- Pine Wilt Disease Occurrence Risk Forecasting

Forest Disaster Response Service
- On-site-focused Services
- On-site Monitoring of Situational Information

Forest Big Data Platform
- Forest Disaster Big Data Collection
- Establishment of Spatial Information on Forest Disasters
  - Forest Fire Surveillance CCTV Footage
  - Drone Video Footage
  - Forest Safety Management Database
  - Landslide IoT Sensors
  - Satellite Video Footage
  - Forest Disaster-Damaged Area Database
  - Closed Sections of Hiking Trails, etc.

Forest Disaster Infrastructure
- Forest Disaster G-Cloud Service

User Groups

Response

Restoration

Advanced Prediction of (Large-scale) Forest Fire Spread

Forest Disaster-Damaged Area Management

Customized Landslide Damage Reduction

Forest Restoration Virtuous Cycle Services

CT-based Smart Forest Pest Detection

| Restoration Plans | | Forest Restoration Monitoring | |
| Forest Carbon Emissions Storage Statistical Information | Reforestation | Forest Change Monitoring | Evaluation |

Forest Disaster Information Service

- Enhancement of Site-focused Integrated Forest Disaster Management System

- Establishment of Smart Forest Safety Services for Public

- Establishment of Service Providing Information on Closed Sections of Hiking Trails, Using Big Data Analysis

Forest Disaster Big Data Analysis/Utilization Service

Services

Forest Fire Detection

Landslide Detection

Forest Fire Propagation detection

Pest Detection

Smart Video Analysis Using Drone Video Footage

Forest Fire Detection and Response Using Satellite Video Footage Information

Forest Disaster-Damaged Area Management

Forest Disaster Education and Training Service

Forest Disaster Education Contents Using AR and VR

Regular Forest Disaster Education Sessions

Disaster Response Information

National Forest Service

Regional Forest Services

National Forest Management Office

Forest Aviation Headquarters

Local Governments

Public Institutions

Press Agencies

Building
Better
Governance