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DGCC in Serbia

Joint Cooperation Project of DGCC in Serbia

Although Korea-Serbia Digital Government Cooperation Center (DGCC) was launched later than planned because of the COVID-19 pandemic, the center has established a plan to introduce an electronic document system to the Serbian central government as a Korea-Serbia joint cooperation project in 2020 to make the Serbian government functions more efficient, provide high-quality public services, and make public services easily accessible.

The measures being taken by the Serbian government—introduction of an e-document system, digitization of (physical) documents, and distribution of e-documents— are also the conditions required for EU membership. The DGCC in Serbia began from the Serbian government's concerns about its civil complaint processing system, which is still largely paper-based, and the following questions: Can this system be improved in innovative ways? Can internal administrative processes be made more efficient? The DGCC in Serbia was established as a means of addressing these concerns of the Serbian government through the introduction (and appropriate use) of e-documents.

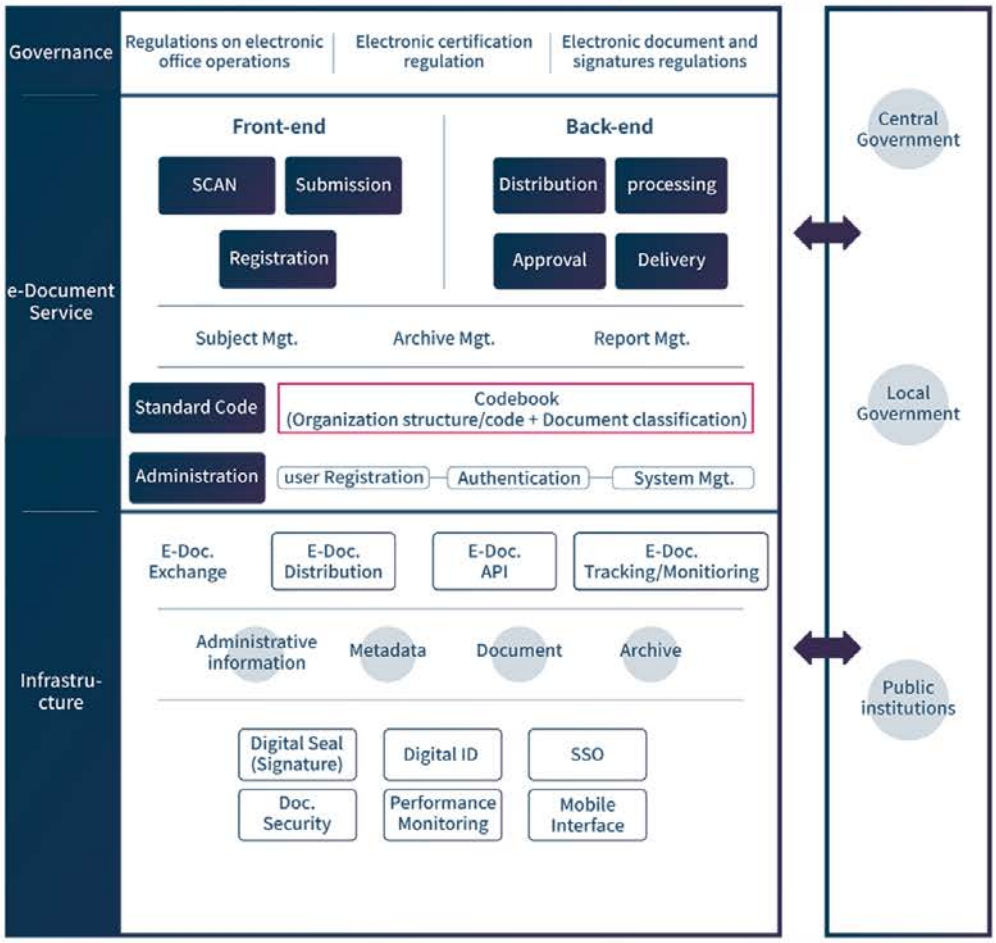
Serbia's e-document implementation strategy is comprised of three parts: 1) efficient document drafting, approval processes, and internal sharing, 2) establishment of a seamless system for sharing e-documents and official documents among public/administrative bodies, and 3) establishment of an effective document management system and connection of this system with a document-archiving system.

Figure 1. E-document implementation strategy for Serbia

and combination with document archives

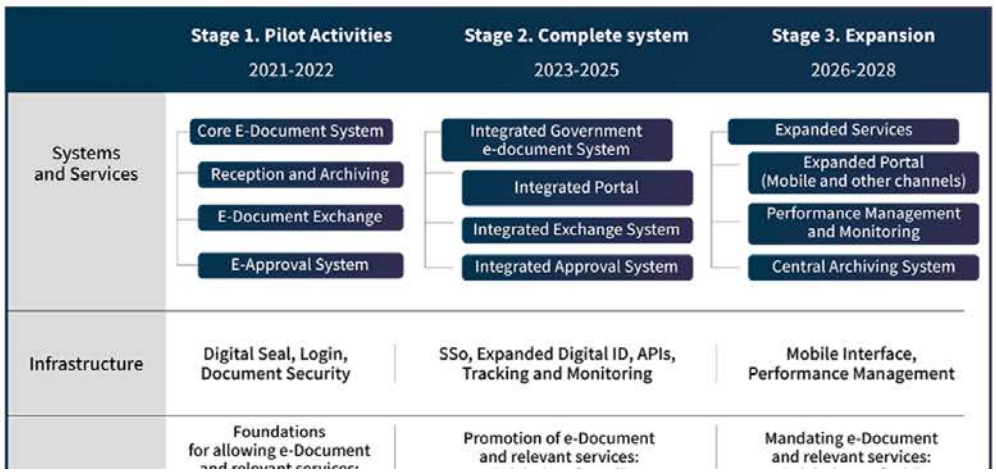
The e-document system's target model, which is based on the above strategy, was established as an infrastructure capable of effectively assisting with the provision of services based on legal systems/organizations proposed by the governance sector.

Figure 2. Target model for Serbia's e-document implementation strategy



The establishment of a target model (and implementation plan for such target model) was accompanied by the creation of a national e-document system roadmap for Serbia. The roadmap is made up of three stages: pilot project, e-document system establishment, and expansion, providing a roadmap for building e-documents on central government agencies, including IT&E, and spreading them to local governments in the future.

Figure 3. Stage-based roadmap for Serbia's e-document system



Governance	and relevant services. "Digital Possibilities" (Foundations for allowing digital services)	"Digital Preferred" (Guidelines and Manuals, Change management support)	"Digital as Default" (Quality Control, Exception Handling, etc.)
Capacity Development	Capacity Development Activities According to Implementation Components		
Regional Government	Pilot Activities	Partial integration and Additional Pilots	Pilot Activities
Nation-Wide Expansion	Consultations and Preparation	Additional Nation-wide Pilots	Integration Activities
Link with ongoing Projects	World Bank EDGE Project (until June 2024)		

The Korea-Serbia Digital Government Cooperation Center plans to carry out a pilot project for the e-document system in 2021 to implement a model for building the e-document system in Serbia.

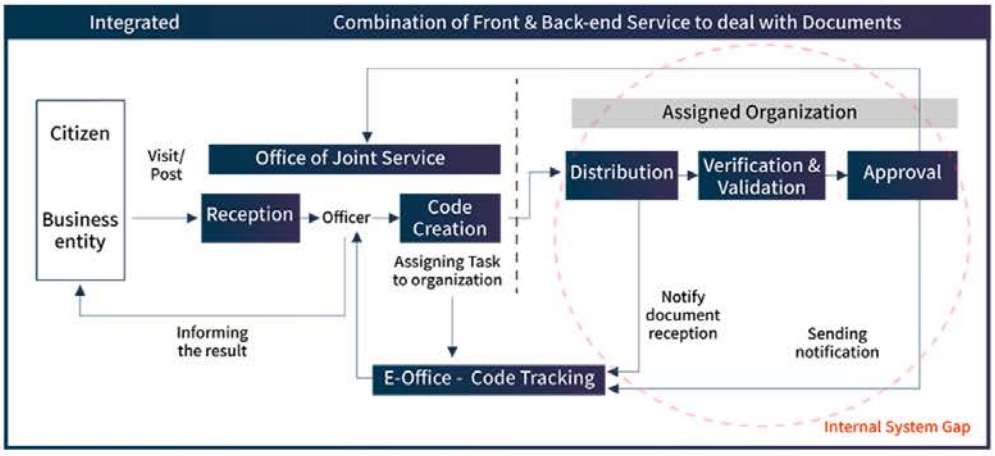
The e-document system that will be operated as a pilot project will include the functions of: document acceptance/storage, e-document distribution, and internal approval—which satisfies the basic requirements of individual institutions. Regarding common infrastructure features, both an authentication system and security system will be required in advance for the pilot project stage.

The Serbia Business Registry Agency (SBRA) and the Municipality of Surdulica (local government) were selected to conduct a trial run of the e-document system. The SBRA's internal approval system, which currently uses paper documents, will be digitized into an e-document system. Surdulica's administrative processes are based entirely on paper documents, but plans are underway to convert all processes to e-document-based ones.

Approximately 70 percent of local governments in Serbia use paper documents. Accordingly, a project is planned in 2021 to present a standardized e-document management system through a pilot project for e-document management and to expand it to all local governments.

The following figure shows the aspects of the SBRA's work processes that require an e-document management system and the scope of the pilot activities.

Figure 4. Scope of SBRA's pilot project



The concept on which Serbia's e-document system is based is the replacement of paper documents submitted by citizens in the event of a civil complaint with an electronic approval/e-document distribution system. The system is designed so that all processes, including the issuance of notifications, are done online.

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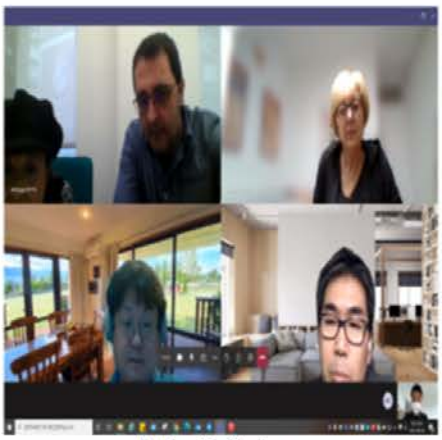
DGCC in Serbia

Cooperation Activities of Korea-Serbia DGCC in 2021

In 2021, the Korea-Serbia Digital Government Cooperation Center conducted seven consultations for central and local government bodies on the creation of an e-document management system roadmap for Serbia's central and local governments.

The SBRA, policy committee, MOIS, and Novi Pazar cooperated to analyze the work processing environments of local governments and drew up target models after the completion of an analysis of problems and environmental factors that may impede the introduction of an e-document system.

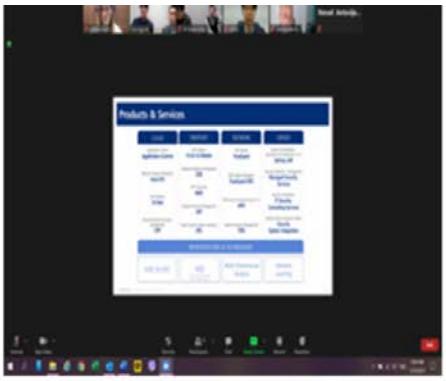
Public Policy Secretariat



Business Registry Agency

A director-level meeting was held to request the active participation of the directors of the SBRA and IT&E, the two selected institutions, in the pilot project—both individually and with one another. Both directors promised to fully cooperate with the pilot project of the Digital Government management system.

A cyber security technology seminar was also held, to help Korean security firms participate in the Serbian government's cyber security project, one of the Digital Government projects being conducted with support from the World Bank. The seminar included demonstrations of and PR on technologies of Korean security firms.



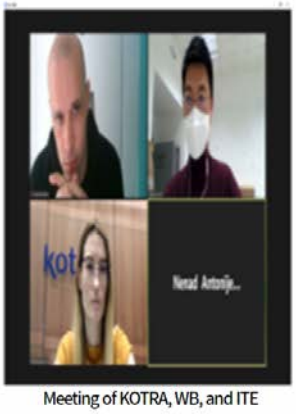
Demonstration by AhnLab

Demonstration by Igloo Security

Most of the Digital Government projects being conducted in Serbia are done with World Bank funding. By holding regular meetings with employees of World Bank Serbia, the DGCC in Serbia actively supports Korean companies' entry into and participation in such projects. Regular meetings are also held with KOTRA, the Korean Embassy in Serbia, and other institutions that help Korean companies enter the Serbian market (by providing either funding or information).

WB meeting

Meeting of KOTRA and Korean embassy



Meeting of KOTRA, WB, and ITE

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DGCC in Serbia

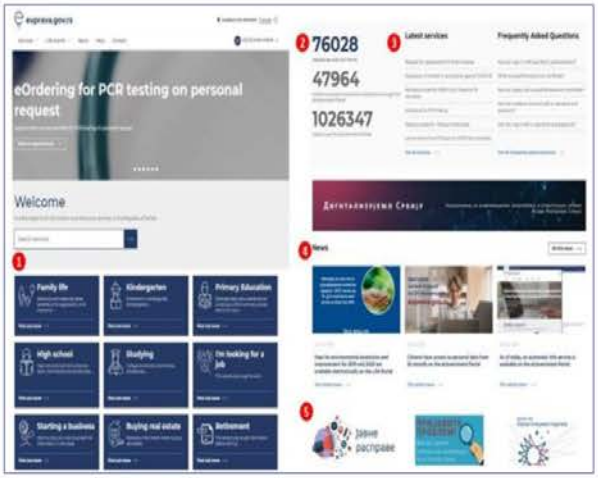
Best practices of Serbian Digital government

eUprava: Public administrative service portal

The IT&E operates eUprava, a comprehensive public administrative services portal. Through this portal, citizens and corporations are offered services that make it easy to file civil complaints or apply for/handle administrative tasks.

Currently, eUprava provides five types of information: 1) list of services by category; 2) number of services provided by eUprava per month to citizens (as of Jun. 2021: approx. 76,000), number of preschool-aged children registered via eUprava and number of portal users (as of Jun. 2021: approx. 1 million); 3) recently updated services and FAQ lists; 4) government-issued press releases; and 5) website URL per ministry.

Figure 5. eUprava website



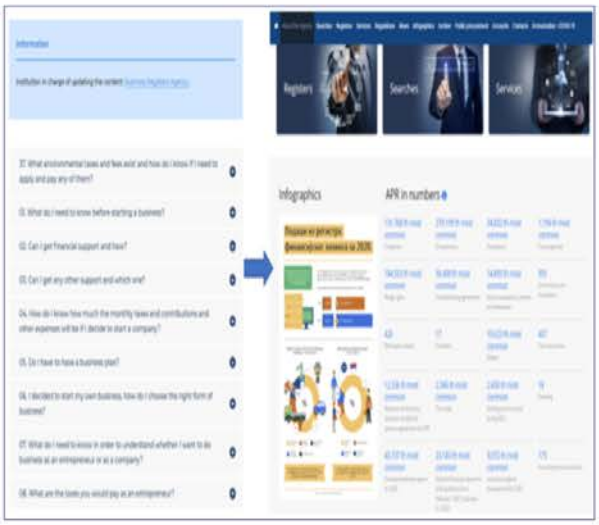
eUprava website : (https://euprava.gov.rs/)

eUprava offers diverse public services provided by the Serbian government through a single portal (e.g. applying for/receiving a family registration card, registering for kindergarten or elementary/middle/high school, applying for

university, job hunting, founding a company, purchasing real estate, and providing information on post-retirement support).

After selecting the desired service category on eUprava's website (https://euprava.gov.rs/), the user is immediately taken to a screen that directs him/her to further information about the service and provides links to the websites of the relevant ministries/divisions.

Figure 6. screenshot of eUprava registration procedure

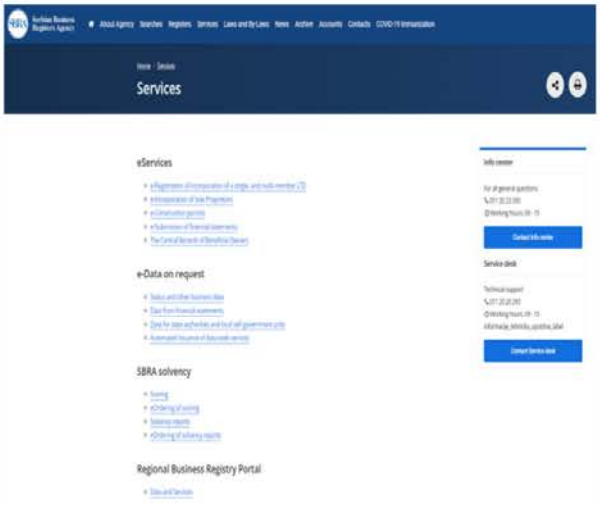


Serbia Business Registry Agency: online services

After it was founded in 2005, the SBRA was made responsible for business registration-related tasks in 2006 (through the management of key business-related registries). It operates, among others, an online construction permit-issuing system and an online business registration system.

The SBRA's central government registry is the first comprehensive service ever offered by the Serbian government.

Figure 7. SBRA's online portal



SBRA online portal : (https://www.apr.gov.rs/)

The SBRA's main portal provides basic services related to: business registration, merger of ownership titles, construction permits, submission of financial data, and corporate data searches. It also accepts online requests for additional information on companies. Currently, the main portal only provides basic information, but plans are underway for the gradual expansion of services.

Service-related fees are stipulated in laws and regulations on business registration. The system is currently operated and managed using fees collected for business registration and searches. A corporate authentication card is used when logging

into the SBRA, and there is a payment portal that links credit card information with such authentication data.

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DGCC in Uzbekistan

Joint Cooperation Project of DGCC in Uzbekistan

Uzbekistan is striving to open up public data and foster the digital industry. However, it is experiencing difficulties in digital diffusion due to the digital competency gap between public officials and citizens.

Accordingly, the government of Uzbekistan promoted establishing Digital Technology Education Centers in 85 regions and requested support for digital education infrastructure construction as a 2020 Joint Cooperation Cooperation Project. Accordingly, four candidate sites were selected. The DGCC in Uzbekistan supported the establishment of digital technology education centers.

Figure 1. Candidate sites for the Digital Technology Education Centers

At a Cooperation committee held in March 2021, the Korean and Uzbekistani governments agreed to conduct the following Joint Cooperation Projects.

This year, there are four Joint Cooperation Projects: 1) create a strategy to improve Uzbekistan's ranking in the UN's E-Government Development Index, 2) create a strategy to expand AI in Uzbekistan, 3) create an operational strategy for IT education centers and Information Network Village ISP, and 4) hold a Korea-Uzbekistan e-government/digital economy

forum.

The first project—Establishment of strategy to improve UN e-Government Index—aims to propose methods of improvement per indicator (through the conducting of e-government assessment simulations) and develop/create a target model for a comprehensive e-government service network in preparation for the UN's e-government assessment. The goal is to propose the direction that policies and technologies should take as well as projects to be conducted to prepare for the UN assessment.

In 2020, Uzbekistan ranked 87th out of the 193 countries that were assessed by the UN on e-government, putting the country six places below its ranking in the 2018 assessment. Accordingly, the Uzbekistani government is very interested in raising its ranking.

The purpose of the second project—create a strategy to expand AI in Uzbekistan—is to expedite the introduction and application of AI technologies in all areas of life. It also aims to prepare strategies for responding to the influence that the development of AI will have on e-government, society, and the economy.

The second project will also analyze the changes and key issues that will emerge in the country's major industries (public health, medical care, education, energy, transportation, etc.) because of the introduction of AI technologies, propose a comprehensive/macroscopic direction for responding to new AI-related issues, and identify policy-related implications.

It will, based on analyses of the current state of affairs, develop strategies to expedite the application of AI per industry and a plan for applying AI-based e-government services and analyze the subsequent socioeconomic ripple effects.

The third project—create an operational strategy for IT education centers and Information Network Village ISP—aims to draw up a strategy to narrow the digital divide using IT education centers (which were created to reduce the digital divide and contribute to local development) and an ISP that benchmarks Korea's "Information Network Village." These IT education centers are already being opened, with the Uzbekistani government planning to open a total of approximately 100 such centers nationwide by 2021.

In short, Uzbekistan has created an infrastructure (IT education centers) to decrease the digital divide. Uzbekistan needs to develop educational capabilities (personnel) and balanced regional development is needed to operate the centers.

Accordingly, strategies and/or a blueprint for operating the IT education centers must be designed carefully by taking into consideration the current situation in Uzbekistan. Korea's "Information Network Village," which has experienced both regional development and the digital divide, will be benchmarked to establish the ISP for Uzbekistan's own Information Network Village.

The final project—hold a Korea-Uzbekistan e-government/digital economy forum—aims to use project presentations and personnel networking to strengthen collaborative ties between Korea and Uzbekistan. Ideally, the forum will create opportunities for experts and companies to collaborate and network in ways that are aligned with the Uzbekistani government's interests.

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DGCC in Uzbekistan

Cooperation at Korea-Uzbekistan DGCC

Advisory meeting on Uzbekistan's regional digital divide

Uzbekistan is actively responding to the global digital transformation. Nevertheless, according to the outcomes of an assessment of digital development in regions and cities announced in January 2021, 57% of all regions were classified as red (alienated from the digital transformation). This suggests that, as in other countries, closing the digital divide is an urgent task for Uzbekistan. DGCC Director Ko Taek-jin said in a UZBEKISTAN 24 interview that, according to Digital Uzbekistan 2030, if the systematic and effective training provided by the IT education centers (which are currently being established throughout Uzbekistan) and benchmarking of the Korean government's INVIL (Information Network Village) result in state support for an easily accessible education system and an e-commerce system/capabilities for local goods (agricultural produce, etc.), this should make Uzbekistan's regions/districts more competitive and improve citizens' quality of life.

Televised interview of Director Ko Taek-jin about regional digital divide advisory meeting (O'zbekiston 24) (January 15, 2021)

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DGCC in Uzbekistan

Cooperation at Korea-Uzbekistan DGCC

Introduction of Korea's digital government cooperation through special follow-up news broadcast of Korea-Uzbekistan Summit

On January 28, 2021, the presidents of Korea and Uzbekistan held a summit via video conferencing. Both countries declared the beginning of negotiations for a bilateral trade agreement, which they agreed to call "STEP" (Agreement for Sustainable Trade and Economic Partnership). The presidents also signed an MOU on digital industry-related cooperation to expand bilateral cooperation in the digital and green sectors. Based on this MOU, Korea and Uzbekistan will work to expand the scope of their industrial collaborations based on the Korean New Deal (digital healthcare, smart meters, smart factories, eco-friendly farming equipment, etc.).

Korea-Uzbekistan Summit

O'zbekiston 24, a major broadcasting network in Uzbekistan, aired a special broadcast on the Korea-Uzbekistan Summit. It included an interview with Ko Taek-Jin, Director of the DGCC in Uzbekistan, on joint cooperation project and how the two countries will be cooperating on digital government in the future. Director Ko Taek-jin stated his hopes that the DGCC will spearhead the efforts of both countries to strengthen cooperation in digital government and the economy and that this will lead to the development of a stronger digital foundation for Uzbekistan.

Interview for special follow-up broadcast of Korea-Uzbekistan Summit (O'zbekiston 24)

Advisory Meeting on sector for the youth of Uzbekistan

On February 13, 2021, Shurat M. Sadikov, Minister of the Ministry for Development of Information Technologies and Communications of the Republic of Uzbekistan, and Director Ko Taek-jin of the DGCC had a meeting at IT Park Showroom with Uzbekistani youth who are currently employed in the ICT sector. Minister Sadikov stressed the importance of cultivating ICT personnel as well as the necessity of young people to be willing to take on challenges and pioneer this sector based on global digital conversion and technological development. Minister Sadikov also explained the programs being carried out by the government of Uzbekistan to improve the digital skills of the country's youth (e.g. establishment of 100 IT education centers and operation of program to train "one million programming experts"). Ko said that young people in the digital age, contrary to those in the industrial age, will be able to start businesses without large amounts of funds, armed only with technology and creativity. He explained that countries such as Korea and the United States are consistently producing new industries that are based on the creativity of their youth (AI, cloud, e-commerce, etc.) and stressed that, because Uzbekistan has a high proportion of young citizens, it will be able to develop a strong digital industry if it starts training the necessary personnel now.

Meeting with Uzbekistani youth

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DGCC in Uzbekistan

Cooperation at Korea-Uzbekistan DGCC

International e-government seminar

On April 15, 2021, an international seminar was held at Inha University in Tashkent on the advancement of e-government in Uzbekistan. The attendees include Oliy Majlis, Vice-chair of the Senate, Executive director of the e-Governance Academy (Estonia), executive CEO of the UNDP in Uzbekistan, First Deputy Minister O. Pekos of Development of IT and Communications, and Director Ko Taek-jin of the DGCC in Uzbekistan.

At the seminar, Director Ko gave a presentation on Korea's Digital New Deal and explained that the purpose of this policy is to enable Korea to overcome the economic hardships caused by the COVID-19 pandemic and become a leader of the digital conversion era. Ko also explained the Korean government's policies in related fields, including: strengthening of the environments for data, networks, and AI, which are key areas of digital policy; creation of learning environments at educational institutions that blend offline and online formats; full-scale cultivation of contactless industries, and expediting of SOC digitization.

International e-government seminar

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DGCC in Uzbekistan

Cooperation at Korea-Uzbekistan DGCC

Meeting on PPP cooperation in Uzbekistan's ICT sector

On April 15, 2021, Minister of the Ministry for Development of Information Technologies and Communications of the Republic of Uzbekistan, the Uzbekistan office of the Korea Overseas Infrastructure & Urban Development Corporation (KIND), and the DGCC in Uzbekistan held a meeting via video conferencing on PPP (public-private partnership) cooperation in ICT. KIND's Uzbekistan office, which was established to fund PPP projects and personnel exchanges on urban infrastructure development, introduced Korea's PPP project model. As of 2021, KIND has invested in 11 overseas projects (total: USD 2.36 million). The discussion focused on the potential of Uzbekistan's ICT sector to pursue PPP projects. The representative of Uzbekistan's government explained that, according to Digital Uzbekistan 2030, foreign companies can be housed in special economic zones (IT PARK, etc.), and that they can receive tax and other financial benefits if they do so. Director Kim Hee-bong of KIND's Uzbekistan office said that he hopes for active exchanges of information on diverse ICT projects to encourage Korean companies to invest in Uzbekistan's ICT sector.

KIND's Committed Investments: 11 Projects

Project	Date	Commitment	Status
Kazakh Almaty Ring road PPP	'18. 4Q	$ 15.0M	Financial Closing Completed
Chile Talca Solar Power	'18. 4Q	$ 6.5M	Operation
Poland Polimery Police PDH/PP plant	'19. 2Q	$ 57.0M	Construction
Chile Maria Pinto Solar Power	'19. 4Q	$ 3.5M	Working for financial closing
Nepal UT-1 Hydropower	'20. 2Q	$ 55.1M	Working for financial closing
Chile Guadalupe Solar Power	'20. 2Q	$ 3.8M	Construction
Vietnam Hung Yen Industrial Park	'20. 4Q	$ 4.6M	Working for financial closing
Vietnam Ecopark Township	'20. 4Q	$ 48.3M	Working for financial closing
Indonesia Probolingo Port	'20. 4Q	$ 1.2M	Working for financial closing
Two power tenders - Central Asia	'21. 1Q	$ 40.6M	Under bidding process
Total		**$ 235.6M**	

Video conference on PPP projects to be pursued by Uzbekistan's ICT sector

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DGCC in Uzbekistan

Cooperation at Korea-Uzbekistan DGCC

Advisory meeting on amendment (tentative) of e-government law and cooperation on measurement/assessment of data system outcomes

Uzbekistan is amending its e-government law according to the content of Digital Uzbekistan 2030. To assist with the amendment process, Korea provided a review of the law's key areas (opening of public data, e-signature, role of public service center, etc.) and professional advice on the need to reduce the digital divide and properly manage data sources. Korea also referenced its own legal precedents to share the scope and procedure of its public opening of data with Uzbekistan.

At the moment, Uzbekistan does not have a "life cycle-based" management procedure for its data systems. Several Korean administrative bodies objectively analyzed the operational outcomes of Uzbekistan's data systems and gave advice to the country, based on these outcomes, on how to make decisions regarding data system management (maintenance, redevelopment, decommissioning, etc.).

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DGCC in Uzbekistan

Digital Government trends of Uzbekistan

Measures to accelerate the introduction of AI technologies to Uzbekistan

In February 2021, Uzbekistan enacted an executive order on measures to accelerate the introduction of AI technologies. AI technology research and technology introduction programs for 2021-2022 were approved, according to Digital Uzbekistan 2030, for the purpose of achieving the conditions necessary to accelerate the nationwide introduction of AI technologies, improving access to and securing high-quality digital data, and cultivating personnel in relevant fields.

The content of the executive order is: designation of the direction and utilization principles for AI, creation of AI advancement strategies in order to design policies for cultivating relevant industries, development of laws/regulations to oversee the development and use of AI technologies in economic/social fields and by national operational systems, provision of high-quality public services for citizens, development of methods for AI technology utilization to increase the efficiency of data processing by public institutions, creation of an AI development system to expedite the development/application/research of AI solutions, cultivation of developers skilled in AI technologies, sharing and digitization of data among public institutions, increased investments in AI-related research/development to improve the competitiveness of products/services in domestic and international markets, guarantee of access to AI data resources by domestic companies/experts and creation of an education-conducive environment for them, conducting of joint international research, cultivation and retraining of personnel, and engagement in international cooperation on AI.

According to the executive order, trial projects will be conducted on the application of AI technologies in government endeavors for 2021-2022 in agriculture, banking, finance, transportation, public health, pharmaceuticals, energy, taxation, and e-government.

Uzbekistan's Ministry of Development of IT and Communications has founded the Digital Technology & AI Development Research Center to give developers and corporations opportunities to implement their ideas and programs in economic and social settings. Plans are also underway for the creation of a separate office for the introduction of AI.

O. Pekos, first deputy minister for Development of IT and Communications, stated that the ministry will be making every effort to cooperate with relevant departments to create an environment that is conducive to the development of AI technology-based software. Pekos also stressed that the government is developing a digital data platform through which developers, researchers, and universities can access the data they need to develop AI-based software.

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DGCC in Uzbekistan

Digital Government trends of Uzbekistan

Status of regional digital development per region

In January 2021, the Uzbekistani government announced the results of its assessment of digital development per region. The assessment was comprised of four areas (digital infrastructure (35 points), digital services (25 points), digitization of social areas/sectors (20 points), and digital education (20 points)) and categorized regions according to three color grades: green (excellent, 71-100 points), yellow (average, 55-71 points), and red (lacking, under 51 points). The results showed that there were 28 green regions (14%), 59 yellow regions (29%), and 116 red regions (57%).

Outcomes per assessment area were: for digital infrastructure, 86 green regions (42%), 72 yellow regions (36%), and 45 red regions (22%); for digital services, 22 green regions (11%), 26 yellow regions (13%), and 155 red regions (76%); for digitization of social areas/sectors, 61 green regions (30%), 43 yellow regions (21%), and 99 red regions (49%); and for digital education, 13 green regions (6%), 23 yellow regions (12%), and 167 red regions (82%).

The assessment revealed that the digital divide is especially large among urban and rural regions. The final scores for Uzbekistan's top cities (Navoi, Djizak, and Namangan) were more than triple those of the districts that earned the lowest scores (Dehkanabad, Koshrabat, and Chirakchi). Regarding digital education, the vast majority of regions (82%), excluding Tashkent, were lacking.

	No. of green regions (%)	No. of yellow regions (%)	No. of red regions (%)
General	28(14%)	59(29%)	116(57%)
Digital infrastructure	86(42%)	72(36%)	45(22%)
Digitization of social areas/sectors	61(30%)	43(21%)	99(49%)
Digital education	13(6%)	23(12%)	167(82%)

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DGCC in Uzbekistan

Digital Government trends of Uzbekistan

Status of Uzbekistan's opening of public data

In accordance with the executive order, the State Committee of the Republic of Uzbekistan on Statistics is overseeing the activities of ministries and public institutions responsible for creating public data lists, managing and updating such data, and uploading such data to portals.

In 2019, the public data portal that had been created in 2015 was significantly modified, involving: partial technical improvements, establishment of the concept of the portal, addition of languages, expansion of database, incorporation of more ministries/institutions, and making of lists. Between 2019 and 2020, foreign experts were invited to conduct training for 385 employees of over 100 ministries and institutions.

One outcome of such reforms is that Uzbekistan ranked 44th (global) in a recent Open Data Inventory (ODIN) ranking, making it a leading figure in Central Asia.

Currently, Uzbekistan's public data portal is offered in three languages (Uzbek, Russian, and English) and has approximately 11,000 items of uploaded data.

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DGCC in Tunisia

Joint Cooperation Project of DGCC in Tunisia

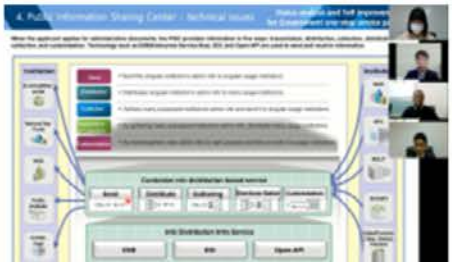
The Korea-Tunisia Digital Government Cooperation Center, since having signed an operational contract in November 2020 and started regular operation in February 2021, designated four themes (at the request of the Tunisian government) for joint cooperation projects to be conducted in its first year, and started implementing projects under these themes. Regarding the joint cooperation project for the second year, the DGCC in Tunisia is planning two trial projects (management system for public data inventory and online service assessment automation system) that are linked with two consulting projects from the first year. The outcomes and future plans per project are outlined below.

① Creation of To-be model for one-stop portal

To make it easier for citizens to use public services and increase the frequency of such use by establishing a unified online service window, the Tunisian government designated the "creation of a one-stop portal" as the first priority of its Smart Gov 2020 strategy. The public service portal currently operated in Tunisia offers a limited range of services, with most offered by linking users to other websites. This will most likely make it difficult to expand the functions of the one-stop portal and improve the portal's performance after it is converted to cloud format.

To improve this state of affairs, the DGCC in Tunisia created a future model for Tunisia's one-stop portal—a process that involved analyzing and deriving implications from examples of advanced countries (France, Korea, UK, etc.), ascertaining the latest ICT trends with the potential for application to the one-stop portal, and surveying government employees' understanding of and expectations for the one-stop portal by conducting a questionnaire of e-Government Unit at the Presidency of the Government of Tunisia and other relevant ministries/departments.

During Korea's presentation of its one-stop portal, Gov24, listeners were visibly interested in the portal's ability to provide services that are specific to the user's stage of life. The presentation showed, in detail, the current status of Korea's portal, which is a blend of diverse authentication technologies, including: the online issuing of evidential documents (vaccination record, immigration record, resident registration certificate, etc.) and demonstration of log-in via Digital One-Pass.



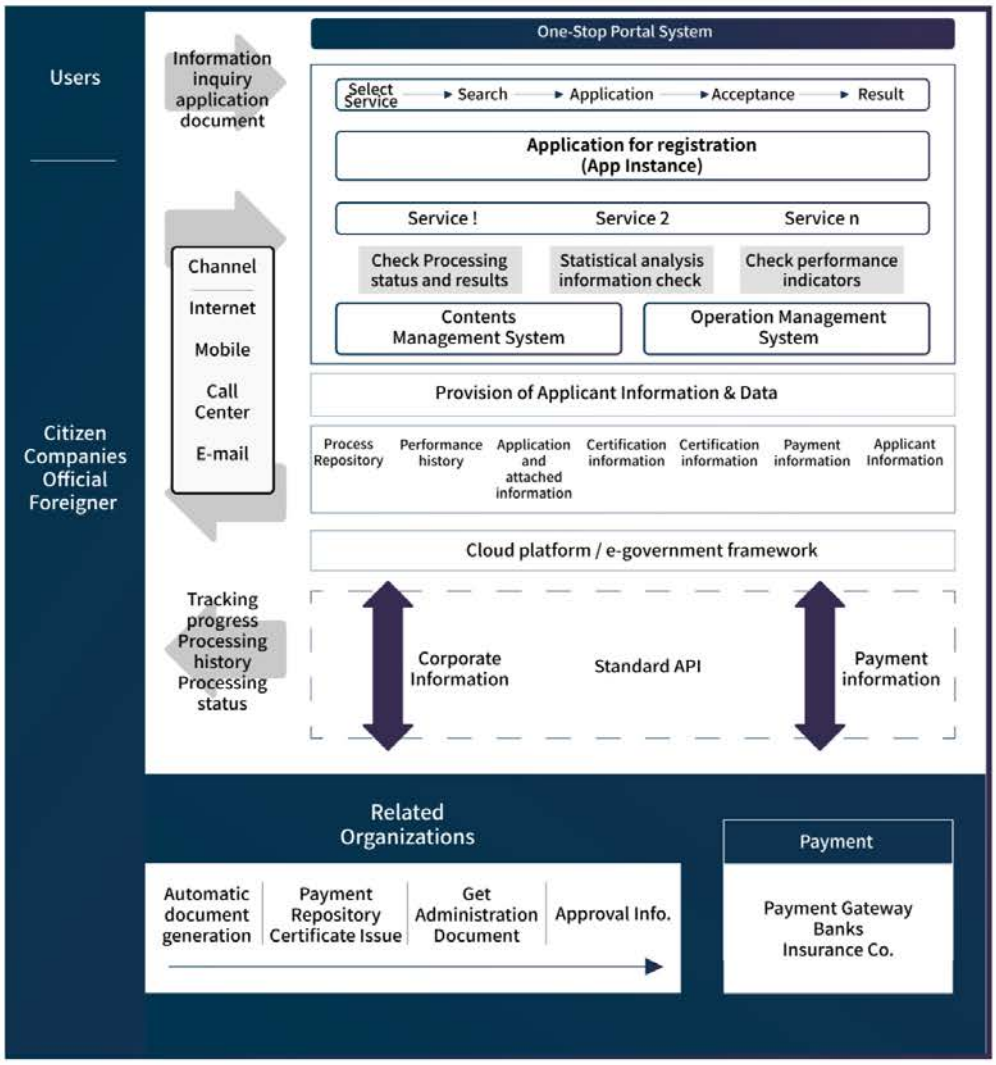
Presentation of example of a one-stop portal (UK)

Presentation on a one-stop portal that is based on the sharing of administrative data (Korea)

The DGCC in Tunisia established three implementation strategies for the Tunisian portal (as its first-year task), and came up with a total of six projects for these strategies, as outlined in the following table.

Implementation strategies	Projects
Creation of cloud-based, one-stop service system that is responsive to change	1. Creation of a hybrid, cloud-based portal system that can be expanded
	2. Establishment of a SaaS system to which a development framework that is compatible with Dev/Ops is applied
Realization of administrative services that respond proactively to citizens' demands	3. Creation of a stage-by-stage expansion plan for administrative civil services
	4. Creation of analytical technologies and a foundation for standardization that are able to respond to changes in demand
Creation of credible digital government and an environment conducive to its operation	5. Improvement of laws/systems that enable digital government to respond to changes in environment
	6. Strengthening of operational organization and capabilities for service revitalization

The following figure is a schematization of the first strategic task (cloud-based portal system model).



② Creation of guideline for online service development

② Creation of guideline for online service development

The guideline used by the government to develop e-government services, in the long term, enables the development and operation of e-government services according to a set of standardized rules, ultimately contributing to the consistent improvement of citizens' experiences with e-government and the sophistication of e-government itself.

The Tunisian government understood the importance of having an online service development guideline and included it as a task of Smart Gov 2020. The purpose of this year's task was to modify the initial draft: the DGCC in Tunisia is currently creating a revised version based on analyses of and implications derived from advanced countries' examples and the directions for improvement suggested by them.

This project was conducted jointly by a consultant from Korea, the MCD, and employees of relevant ministries/departments. Rather than the consultant unilaterally creating and providing the revision, the guideline was revised through discussion between government employees and the consultant. The consultant provided advice on feedback from employees and is currently drawing up a guideline that reflects Tunisia's service development environment. The frequent discussions were also valuable to employees as educational opportunities, resulting in an overall improvement in Tunisia's e-government employees' understanding of system development.

One-on-one meeting on write-up of web service development section

One-on-one meeting on write-up of development procedure section

In accordance with the executive order, the State Committee of the Republic of Uzbekistan on Statistics is overseeing the activities of ministries and public institutions responsible for creating public data lists, managing and updating such data, and uploading such data to portals.

③ Creation of revised version of Open Data Inventory

The MCD is the institution responsible for the OGP's Tunisia tasks: in other words, the creation of policies for and management of Tunisia's public data policy. The problems of Tunisia's public data environment, as understood by the MCD, can be divided into two parts: supply and demand of public data. The main problem of the supply side (data suppliers, such as government and public institutions) is the lack of standards and governance for public data. The problem of the supply side (data users, such as citizens and companies) is the lack of awareness and ability to use public data.

To address these problems, the Tunisian government created an action plan in 2017 for a national public data program, one of the tasks of which was the creation of the Open Data Inventory (ODI).

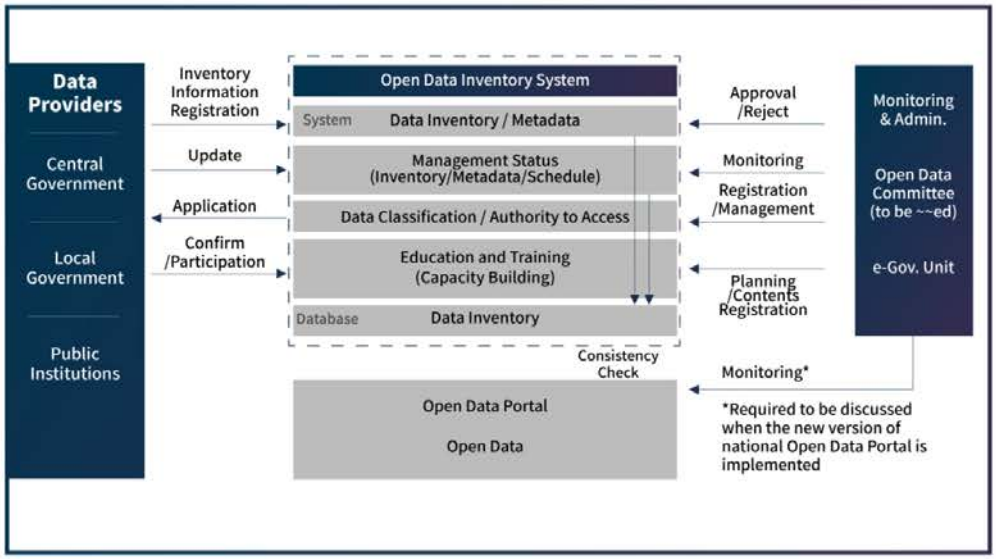
The ODI is a system that manages the list of public data to be disclosed to the public through the national data portal and the meta-data that is derived from such data. By managing the list of public data (discovery of public data sets for ministries and creation of catalogue-style lists of such data for provision via portal, etc.), the ODI aims to expedite the opening and use of public data.

In the past, this was done by the MCD sending requests (in Excel file format) to the ministry that owns the required public data. This was not only inefficient but very unpopular.

Presentation of a strategy to improve the ODI

Review of a future model for the ODI

To improve this state of affairs, the DGCC in Tunisia had many discussions with the MCD, through which it created a model for a systemized inventory management system (shown in the following figure).



The project for the second year is to put into place a public data inventory management system for Tunisia's seven ministries. The system will be made up of three functions: inventory registration, management, and monitoring. After it is linked to the national public data portal, which will be established by 2021 with funding from the World Bank, the system is expected to increase the openness and utility of public data.

④ Automation of online service assessment system

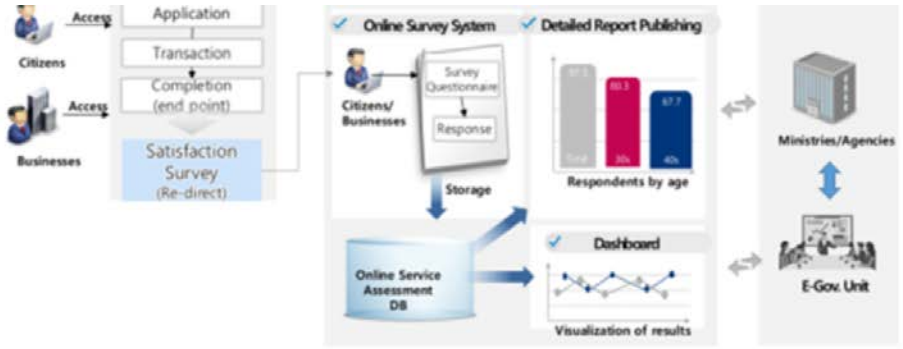
Securing people's satisfaction with and quality of a country's e-government services initially increases citizens' rate of use of e-government services. Ultimately, this plays a key role in increasing the efficiency of government and improving services for citizens and companies. Accordingly, the UN's e-government assessment includes a survey of satisfaction with online services.

The Tunisian government included the online service satisfaction survey as a key task of Smart Gov 2020 and conducted the first round of satisfaction surveys in 2019 (in conjunction with the World Bank). No regular or follow-up surveys were conducted afterward, however, due to a lack of funding and personnel.


Meeting with online service assessment officer


Discussion on how to automate online service assessment

To address this situation, a plan was made for an automated online service assessment system. In the project's second year, this will be used as the basis for building a pilot system. The following figure is a concept map of the automated online service assessment system. Once established, this system will enable the MCD and departments involved in online services to monitor and address—in a timely manner—service-related problems and identify areas requiring improvement.


Access
Application
Citizens
Transaction
Access
Completion
(end point)
Businesses
Satisfaction
Survey
(Re-direct)
Online Survey System
Detailed Report Publishing
Citizens/
Businesses
Survey
Questionnaire
Response
Storage
Respondents by age
Ministries/Agencies
Online Service
Assessment
DB
Dashboard
Visualization of results
E-Gov. Unit

DGCC Newsletter #02

Content

DGCC in Tunisia

Activities of Korea-Tunisia Digital Government Cooperation Center for January to June 2021

Identification of demand for collaboration on Tunisia's e-government

The DGCC in Tunisia meets with various stakeholders to identify the current demand for collaborative endeavors.

It first met with advisors of the Minister of Transport to discuss the problems of and demand for collaboration related to Tunisia's transportation system. Currently, Tunisia's transportation system does not integrate the systems of individual bus companies, meaning that customers cannot be provided with route-related updates. There is also no comprehensive transportation fee system, and customers cannot transfer from one bus to another. To address these issues, the areas in which Tunisia wishes to collaborate with Korea in terms of transportation are: 1) e-ticketing system, 2) customer data system, and 3) transfer system for public transportation. Because Korea's metropolitan cities, including Seoul, have advanced public transportation systems (bus, subway, etc.), collaboration with Tunisia in related areas is expected to go smoothly.

Other areas in demand for consultation discussed through an advisory meeting with the Ministry of Public Service and Governance include: 1) national HR management system, 2) national health management system, and 3) success stories of public data use.

Meeting with advisor of the Minister of Transport of Tunisia

Meeting with advisor of the Minister of Public Service and Governance of Tunisia

DGCC Newsletter #02

Content

DGCC in Tunisia

Activities of Korea-Tunisia Digital Government Cooperation Center for January to June 2021

Support for transferring Korean e-government system to Tunisia

Currently, Tunisia has developed a version (TUNEPS) of the Korea ON-line E-Procurement System (KONEPS), one of Korea's most outstanding examples of e-government, that reflects its local circumstances. This project, which was carried out in 2012 as a KOICA project, was so successful that, today, one must use TUNEPS in order to carry out any public procurement process in Tunisia. However, as the system has aged over the years, it has become necessary to streamline it, which is the purpose of the current project (for which UNOPS placed orders and a Korean company is providing consultation (virtualization, authentication, and mobile app/web development)). Recently, Khaled Sellami, director-general of the e-Government Unit at the Presidency of the Government of Tunisia, visited the DGCC in Tunisia for a discussion on the project's status and relevant issues.

Meeting with Director General of the e-Government Unit and consultation firm on sophistication of TUNEPS

DGCC Newsletter #02

Content

DGCC in Tunisia

Activities of Korea-Tunisia Digital Government Cooperation Center for January to June 2021

Development of new e-government projects

Based on the current list of joint cooperation project, the DGCC in Tunisia hopes to develop projects that can be done in conjunction with Korean grant/credit aid organizations (KOICA, EXIM, etc.) and international bodies (e.g. World Bank). For one such project, the DGCC in Tunisia had a meeting with KOICA and participated in a demand survey of new development/collaboration projects. At the meeting, the Ministry of Communication Technologies and Digital Transformation of Tunisia informed KOICA that there is demand for the expedited use (by private citizens) of public data. To increase the use of public data, improvements must first be made to both the supply side of public data (revision of public data standards/governance, etc.) and the demand side (improvement of understanding of public data among citizens and companies, etc.). Accordingly, the Tunisian government wishes to create an education/startup support center to expand public data usage. The DGCC in Tunisia will be monitoring the outcomes and itinerary of relevant KOICA projects to explore the feasibility of this project.

Meeting on demands of Ministry of Communication Technologies and Digital Transformation of Tunisia

Meeting with KOICA on new project

DGCC Newsletter #02

Content

DGCC in Tunisia

Activities of Korea-Tunisia Digital Government Cooperation Center for January to June 2021

Finding Tunisian partner companies for joint cooperation project

The DGCC in Tunisia's second-year joint cooperation project is the creation of two trial systems. The DGCC in Tunisia is designing a model under which a Korean company (which will be implementing the project) creates a system with Tunisian companies. This model, which also happens to coincide with recent ODA trends, aims to guarantee the maintenance and sustainability of the two systems.

DGCC Newsletter #02

Content

DGCC in Tunisia

E-Government Trends of Tunisia

Tunisia's e-government strategy: Smart Gov

Tunisia selected "Smart Gov" as its national digitization strategy, based on which the government is working to modernize its practices.

Smart Gov's vision is to provide easy-to-use, high-quality services that are easily accessible to citizens and companies through efficient and open administrative practices.

Eight strategies were established to achieve this vision: 1) development of multi-channel online services based on the demands of citizens, companies, and government; 2) improvement of internal processes via digital technologies; 3) management that both protects personal information and enables joint operation (which expedites data exchange); 4) modernization of information system to provide higher quality user guideline; 5) rationalization or creation of resources and infrastructure available for common use; 6) creation of an open data framework that expedites the transparency and reusability of public data; 7) creation of a citizen-participatory framework that is conducive to participatory democracy; and 8) strengthening of the digital credibility of online administrative services.

The strategies and their initiatives are outlined in the following table

Key strategies (8)	Initiatives per strategy
① Development of multi-channel online services based on demands of citizens, companies, and government	Establish a single portal for online public services that is primarily comprised of events that match the user's stage of life (Provision of multi-channel services) Prioritize mobile channels for citizens
② Improvement of internal processes via digital technologies	(Simplification of procedure) Request from users only data that is actually useful and that other administrative bodies do not already have (based on "only once" principle of user data provision)
③ Management that both protects personal information and enables joint operation (which expedites data exchange)	Framework that manages mutual operability Data exchange layer that expedites data exchange in a stable and non-restrictive manner Data storage that can be linked to all data systems
④ Modernization of information system	Common architecture framework

to provide higher quality user guideline	Modernization of sector information systems
⑤ Rationalization or creation of resources and infrastructure available for common use	Common use of (national cloud-based) infrastructure Upgrade of common information system
⑥ Creation of an open data framework that expedites the transparency and reusability of public data	Establish disclosure of public data as a common practice Create procedures for registering data in inventory, collecting/posting data, and ensuring quality control Choose the best method of approach per sector to expedite the use and development of public data
⑦ Creation of a citizen-participatory framework that is conducive to participatory democracy	Citizens who use digital technology are to gain better-quality data, be more active in public life, and communicate more easily with government
⑧ Strengthening of the digital credibility of online administrative services	Improve quality and security of national data system Protect personal data Fight cyber crime

DGCC Newsletter #02

Content

DGCC in Tunisia

E-Government Trends of Tunisia

Amendment of public data law

On January 6, 2021, the Tunisian government enacted and announced the Government Decree on Open Data. This legal foundation for the use of public data by citizens and companies is expected to clearly define the process by which public data is disclosed and posted.

The decree contains guidelines for opening government data to realize the following goals:
. Improve government's transparency and credibility;
. Help citizens participate in the development of public policy, policy implementation, and assessment/monitoring;
. Modernize administrative practices and increase quality and efficiency of public services; and
. Contribute to the creation of a framework that expedites economic development and creates plenty of employment opportunities (in particular, use public data to expedite the growth of new, innovative companies).

Of note, a joint advisory committee was established. Key information on the advisory committee and public data inventory is provided below.

Type	Content
Chapter 2: Governance of open public data programs	(Article 5) The joint advisory committee (hereafter, "committee") will, with the minister responsible for administrative modernization, monitor the execution of open data programs. This includes representatives of related institutions (public and private), civil society, and the private sector. The composition and way in which the committee works shall be decided by the minister responsible for administrative modernization. Committee members shall be newly appointed every three years. The committee shall take on the following responsibilities: - Give advice on the tasks carried out by the department mentioned in Article 4. - Promote public data to all administrative bodies and civil society. (Article 6) Representatives of public institutions shall designate officers to be in charge of public data programs and consign to them the following responsibilities: - Supervise the preparation/update of data inventories and post approved

	data to the public data portal while making it possible for users to give feedback.
Chapter 3: Data posting	(Article 10) If a data set is created, each institution must satisfy the following conditions. - Adhere to the update frequency included in the data inventory. - Make personal data anonymous (while keeping all other data the same) (omit). (Article 12) The committee is responsible for making recommendations on how to improve the national open data portal regarding: formats of data and meta-data that receive special funding, groups of data sets, and functions/sections provided to the user.
Chapter 5: Quality of data sets	(Article 19) The organization shall use common categories that are adopted by the national research center (which is responsible for the organization's statistics) to make it easy to cross-reference data sets. The committee is responsible for designating common naming rules and creating a list of naming rules that all organizations are recommended to use.

DGCC Newsletter #02

Content

Cases of Korea

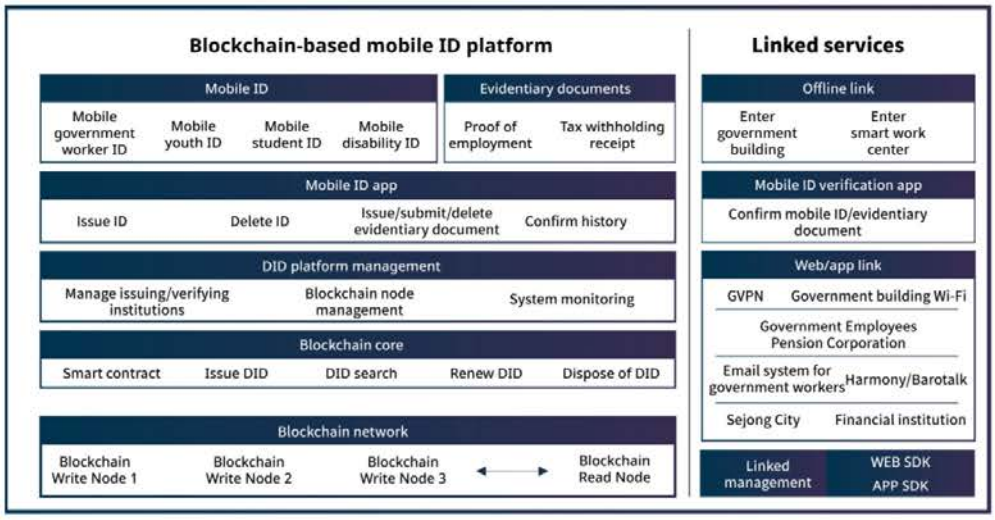
Establishment of blockchain-based mobile ID service (2020)

Project content

Development of blockchain-based mobile ID platform through model that is conducive to identity confirmation and by designing a verification process for data in mobile ID

Development of mobile ID app/standard library

Development of government worker ID issuing service and issue management system that utilize a blockchain-based identity confirmation platform

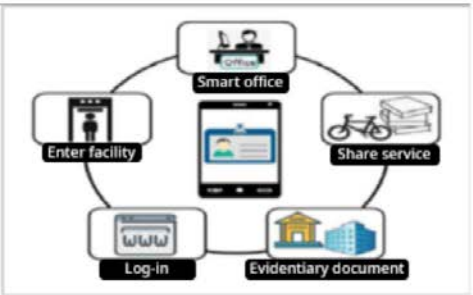


Key outcomes

Cost reduction: KRW 58 million saved per year in ID issuing fees due to the issuing/use of paperless ID, KRW 3 billion saved per year by preventing overlapping investment in mobile ID technologies, and KRW 12.49 billion saved per year in issuing

per year by preventing overlapping investment in mobile ID technologies, and KRW 12.48 billion saved per year in issuing of temporary government worker ID

Service innovation: established conditions for credibility-based services (smart contract, etc.) and acceleration of shared economy/industries (transportation, facilities, etc.) through introduction of credible, blockchain-based digital ID verification system



DGCC Newsletter #02

Content

Cases of Korea

Established AI-based e-supervision service (2020)

Project content

Creation of infrastructure that can regularly analyze big data/AI, taking into consideration the scale of accumulated crime data (public/private) on sex offenders

Application of analyses of extent of impact/characteristics per risk factor to analyses of AI supervision services for characteristic analyses of re-offense risk factors

Provision of timeframe-based grouping function that takes into consideration re-offense rates (per unit of time), distributive analysis technique, and analysis outcomes

Provision of AI automatic control service

Current: Electronic supervision service	Anticipated: AI-based electronic supervision service
1. Supervising staff: 331 cases per employee in 2017, resulted in delayed processing and excessive work stress (100 cases per employee)	1. Supervising staff can work efficiently through application of automatic AI control service
2. Supervising staff for electronic ankle bracelets: excessive, at 18 cases per employee (ideally, 10 cases per employee)	2. Supervising staff for electronic ankle bracelets can, through application of AI probation service, provide individually tailored probation services thanks to increase in available time
3. Follow-up-management-centric social cost occurs due to the follow-up processing done after a crime occurs	3. Preemptive crime prevention through systematic, efficient management

AI- and big data-based probation services

Background

Conversion to policy that focuses on prevention of	Fourth Industrial Revolution and the evolution of IT	Securing of safety of communities/society
- Realized that it is increasingly	- Build big data/AI-based platform to	- Provides "crime-free zone" services

difficult to decrease the massive social cost incurred by follow-up processing after a crime has already occurred

- Realized need to predict and prevent crime before it occurs (through big data analyses of violent crime occurrence patterns, individuals with criminal records, and crime-conducive environments) through the use of AI technologies

create crime prevention policies tailored to the characteristics of a particular region or type of criminal

- Accommodate Fourth Industrial Revolution trends (evolving technologies; e.g. AI, IoT)
- Crime map created using big data-based GIS technology

for crime victims and general public

- Need to provide police and related institutions of local governments with data on potentially violent criminals to realize a social safety network that keeps citizens safe

Key outcomes

Addressing of social issue: helps prevent violent crimes in advance by predicting re-offense risk and alleviating the excessive workload of having to manually sound alarms for each suspicious action

Service use: operated by location-tracking control center, with services provided to electronic anklet supervising staff and probation subjects of 57 probation offices

Service expansion: linked with two other systems (determination of potential violent offenders and prevention of intelligent crime)

Cost/resource reduction: introduction of automatic AI control system improved work efficiency to a degree equivalent to increasing the number of probation officers by 10% (152 people), with the expectation of a personnel cost-saving effect of KRW 91.2 billion (KRW 46.5 billion) over two years

Content

Cases of Korea

e-Government Standard Framework

Introduction

"eGovFrame, a standardized framework for e-Government information system!"
eGovFrame is the cornerstone upon which e-Government information systems are developed.

Vision & Objectives

Vision Improve service quality of e-Government and efficiency of ICT investment

Objectives

Reuse common functions	Increase interoperability	Accommodate latest ICT trends	Eliminate vendor dependency	Enhance SME competitiveness

Strategies

Standardization	Open Development	Community Engagement
• Establish software framework standard	• Adoption of eGovFrame Open standardized source	• Provide regular eGovFrame training
• Provide reliable software infrastructure	• Code to the public & encourage participation	• Policy support to promote eGovFrame

What is eGovFrame?

eGovFrame is comprised of pre-built core functions that can be used in the development and operation of e-Government information systems. Entire information systems can be developed by integrating additional functions using common components.

※ Reduce development time and cost via a module-based approach similar to a construction project approach

Before

- Duplicate development of similar functions in each project
- High- dependency on vendors owning a particular technology
- Disadvantageous to SMEs who cannot afford a SW framework
- Significant time & manpower needed to ensure interoperability between information systems
- High degree of maintenance difficulty due to the lack of standardized development

After

- Reduce duplicate development cost and time by reusing common components
- Eliminate dependency by open source-based standardized development
- Improve SMEs competitiveness by sharing the Open SW framework free of charge
- Enhance information system interoperability by utilizing the standardized modules
- Easy maintenance through standardized component-based development

Open Innovation

eGovFrame, the ultimate standardized software framework for creating new values!

Open innovation of eGovFrame

01. Open Sourcing (2008~)

- Developed with 11 large and SMEs and shared knowledge
- Utilized 48 Open Source Software(OSS)

02. Open Process (2008~)

- Collected extensive opinions from over 500 stakeholders
- Ran over 20 public-private meeting
- Open Conference and Discussion per year

03. Open Outputs (2009.6~)

- Applied to 606 projects per year
- Free training to 1,175 developers per year
- Open Source Codes and IPRs
- About 67 thousand downloads per year

04. Open Ecosystem (2010~)

- Founded eGovFrame open community with large and SMEs
- Established public-private cooperation center

05. Continuous development (~ current)

- Reflecting on the latest technology and trends every year
- Stablilization of public and private services
- Sharing success cases of eGovFrame

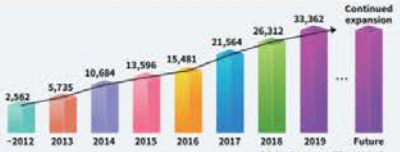
Domestic Applied Cases

Used in over 60 percent of public information service projects and adoption by the private sector continues to rise

Applied Sector

Resident	Audit	Security	National Infrastructure	General Administration
Law	Data Management	Knowledge Activity	Business Management	Information Provision
System Operation	Medical	Informatization	User Support	Environment
Economic Activity	Human Resources	Collaboration	Cultural Life	Social Welfare
Interoperability	Public Relations	Spatial Information	Fiscal	

Cumulative Sum of Public Sector Project Size Using eGovframe



2014 Financial Intelligence Unit (FIU) Information System, Financial Services Commission

2015 Forest Disaster Integration Management System, Forest Service
Korea On-Line E-Procurement System, Public Procurement Service
SMEs Integrated Management System(SIMS), Ministry of SMEs and Startups(MSS)
National Total Operating Platform System(nTOPS), Ministry of the Interior and Safety(MOIS)

2016 Customs Data Warehouse(CDW), Korea Customs Service

2017 Social Welfare Facility Information System, Ministry of Health and Welfare
National Statistical System, Statistics Korea

2018 Public Ethics Integrated Information System, Ministry of Personnel Management(MPM)
Disease and Health Integrated Management System, Korea Centers for Disease Control and Prevention(KCDC)

2019 Local Taxes Information System, Korea Local Information Research & Development institute
Social Security System, Ministry of Health and Welfare(MOHW)

International Applied Cases

eGovFrame has been applied to 33 projects in 17 countries totaling USD 154.9 million with 8 MOUs signed (as of Oct. 2020)

State Administration	6 Projects, including the completion of the national system (Mongolia)
e-Customs	3 Projects, including the Electronic Customs System (Ecuador)
Procurement	3 Projects, including the Electronic Procurement System (Ecuador)
Medical	Medical Information System (Mexico)
Land	Architecture guidelines for future developments (Mexico)
Local Government	5 Projects, including the Municipal Administrative Information System (Vietnam)
Education	Administration System of the University of Sofia (Bulgaria) and 3 other Projects.
Fair Trade	Competition Authority Integrated Information System (Vietnam)
Environment	Integrated Management System for Hazardous Waste (Vietnam)

International Recognition

- eGovFrame swept 3 Awards in 2010 by FutureGov, the biggest community in the Asia-pacific area for information-oriented public sectors projects.
  - Government Organization of the Year
  - Technology Leadership Award
  - The award for Government Transformation of the Year
- Furthermore, eGovFrame has obtained the CMMI certificate

Open Source Seletion Process of eGovFrame

Function Design	Policy setting	Logical test	Physical test
Define Functions & Architecture	Define Oss Selection policy	Logical test (175 OSS candidates)	Physical test (85 OSS candidates)
Analyze framework functional requirements Design common components	Oss evaluation process(ISO14598 and SEI PECA) Select the license with no restriction on distribution and use	Funtional and non-funtion requirements Restriction on integration and interface	Basic funtion test Non-funtion requirements(SW quality)

Major open sources

- Biz, transaction (Spring, etc.)
- Data (MyBatis, Hibernate, etc.)
- Development tool (Eclipse, etc.)
- Test tool (JUnit, etc.)
- Distribution tool (Maven, etc.)
- Configuration Management tool (Subversion, etc.)
- Mobile UX (JQueryMobile, etc.)

Composition of eGovFrame

Feature of eGovFrame

Adoption of open standard	Eliminate technology dependencies on providers by leveraging Open Source Software(OSS)

Sustainable development & evolution	Provide up-to-date standards to timely reflect new technologies such as mobile, etc.
Integration with commercial solutions	Ensure interoperability by providing standard interfaces for commercial solutions
National standards	Define national standars through the Advisory Council composed of private, government, and academia
Flexibility for ICT requirements	Minimize the impact of module changes through interface connectivity and service modularization
Easy-to-use environment	Provide Eclipse-based UML, ERD, editing, compiling, debugging, etc

Development Environment

Development environment provides 4 major tools consisting of 12 services such as editing, debugging, etc in order to efficiently develop e-Government applications

Implementation Tool

Funtions(editor, debugger, template, code generation, etc.)

Basic tools for development such as modeling(UML, DB, etc), source code editor, inspection, etc

Code generation, based on templates (homepage, portal, biz function, mobile web)

Common component (251 items) wizard for easy application

Test tool

Testing, test reporting, and coverage analysis functions

Support JUnit based unit test

Report test results in HTML/XML/Excel format

Check test coverage and code area

Configuration Management Tool

Source code and project output configuration/change management functions

subversion based source code and documentation version configuration

Support major resource change management and notification functions

Deployment Tool

Source code build and build automation functions

Maven-based build

Nexus Repository based library management

Jenkins based build automation and build result feedback

Runtime Environment

Runtime Environment is a common module consisting of 8 service groups that run funtions and provides 39 services including IoC, Spring MVC, etc.

(*) is number of services

Service Group	Service	Explanations
Presentation(5)	MVC, Validation, etc.	Interface for UI component and architecture for view implementation
Biz Logic(2)	Exception Handing, etc.	Business process including workflow control, transaction control
Persistence(4)	Data Access, etc.	Database connection and CRUD functions for SQL operation
Integration(3)	Web Service, etc.	Web Services and meta data management to interface with another system
Foundation(20)	AOP, IoC Container, etc.	Reusable common modules, as well as additional utilities, need for the

		development
Batch(3)	Batch Core, etc.	Set up and run batch data processing
Mobile Presentation(1)	UX/UI Component	Visual and pre-designed components suitable for mobile screen
Mobile Device API(1)	DeviceAPI	Fundamental device APIs based on Hybrid mobile App templates that support unique device functions

Operation Environment

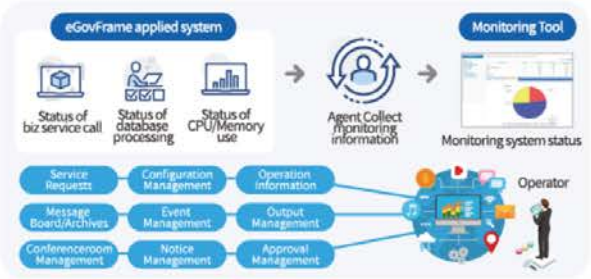
Communication tools for efficient information system and monitoring tools for eGovFrame based

Monitoring Tool

Provides status monitoring of system resources(CPU, memory, etc) as well as collecting performance log derived from the eGovFrame based application

Communication Tool

Offers various collaboration funtions for system operators to resolve various project issues



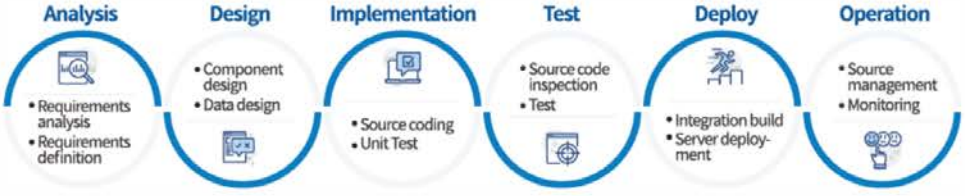
Common Components

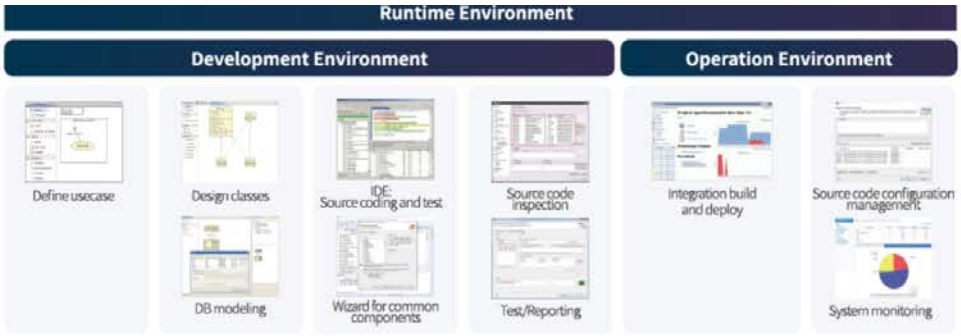
Common components are a set of reuable common modules for developing information systems.
Currently, 251 common components including mobile are provided.

	Categories	Components
136 Technical components	User authentication(3)	Integrated user authentication, general login, etc.
	Security(8)	Role/authorization, encryption/decryption, etc.
	Statistics(6)	Access statistics, etc.
	Collaboration(28)	Notice board, community management, etc.
	User support(55)	User management, FAQ/Q&A, etc.
	System management(27)	Menu, log, system management, etc.
	Integration(4)	System access, mobile open API, etc.
	Digital asset management(5)	Knowledge management, etc.
11 Mobile Technical components(11)		Mobile menu, mobile real-time notice, etc.
104 Utility components(104)		Calendar, web editor, format convertor, etc.

Lifecycle of eGovFrame

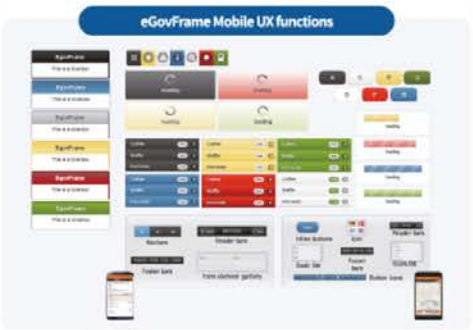
eGovFrame provides information system lifecycle management functions from build to operation

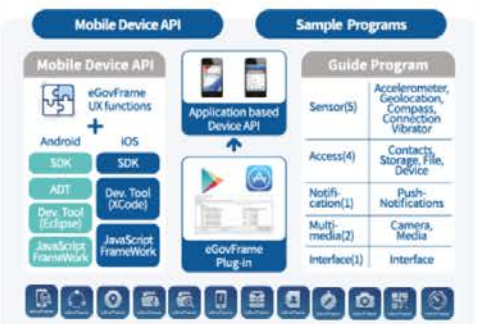




Mobile eGovFrame

eGovFrame provides mobile web UX functions and Device API for hybrid application as well as sample programs





eGovFrame Center

As an agency dedicated to eGovFrame, the center leads continuous advancement and standardization of development framework for building and managing national information systems, and provides technical assistance and training to domestic and international stakeholders

eGovFrame R&D | eGovFrame training and technical support | eGovFrame upgrade and standardization

eGovFrame Center Services

eGovFrame center offers services such as technical support, training, and compatibility verification to facilitate eGovFrame adoption

eGovFrame Portal | egovframe.go.kr

Download and utilize the eGovFrame and common components and request technical support

- **Technical Support** — eGovFrame center provides Q&A section on how to start and install, creating a sample project, developing of eGovFrame.
  Request for guide › Approval › Confirmation/ Review › Specific Support
- **Remote Consulting** — eGovFrame center provides well-organized technical support for each step including planning for public information system projects with eGovFrame.
  Consulting Request › Approval › Confirmation/ Check › Validation
- **Education Training** — eGovFrame center provides training available for stakeholders planning to implement or use the eGovFrame at the information planning stage.
  Apply for › Training › Completion

Open Community | open.egovframe.org

It aims to provide an open environment for individuals and organizations to participate and collaborate with big and SMEs, public sector and strive to advance and facilitate widespread adoption of eGovFrame.

Compatibility Verification eGovFrame center verifies compatibility of various functions with branch frameworks and commercial solutions

eGovFrame Mexico | egovframe.cinvestav.mx

eGovFrame Mexico Center branch was established in 2013 to provide services such as technical support, training, etc. in Mexico.

Content

Current Policies of Korea

Plan for the Digital Inclusion

Background

The accelerated digitization of economies and societies worldwide due to the escalation of COVID-19 and the ensuing digital divide are factors that can potentially aggravate existing socioeconomic inequalities.

⇒ Need is becoming more urgent for a policy ("Digital Inclusion") that guarantees equal access to the benefits of digital technology for all citizens, regardless of socioeconomic status, in a world that is increasingly driven by such digital technologies.

Key content

[1] Strengthen the digital capabilities of all citizens

Offline: installation of "Digital Capability Training Centers" (1,000 per year) inside everyday SOC nearest to one's home (e.g. community service center) that offer digital education* on content that citizens need in everyday life
* Utility training (train ticket reservation, mobile finance, e-government services, etc.) and adverse event training (cyber crime, etc.)

In-person visit: expanded in-person, individualized digital capability training for those with severe disabilities that make it difficult to move and/or go to training locations (4,000 in 2020 → over 10,000 in 2022)

Online: establishment of online digital education system* that can assess the digital capability level of and provide individualized training (per level of digital capability or purpose) for all citizens
* Offers comprehensive digital capability assessment, individualization of online/offline educational programs, and online education

Software/AI: expanded offering of opportunities to learn/experience software and AI for all citizens and provide island residents and teens with disabilities with experiences of and education on intelligent data/technologies
* Operation of online/offline AI curricula, Imaginary Bus, IT device experience center, etc.

[2] Create an environment that accommodates diverse digital technologies

Internet environment: expanded installation of public Wi-Fi in public locations (community service centers, village halls,

etc.; 41,000 locations) and installation of ultra-high-speed Internet in farming/fishing villages in 1,300 districts

Device/fee: provision of fee subsidies for smart devices that socially vulnerable individuals need to ensure digital accessibility
* Priority supply of 10,000 smart devices for Statistics Korea's annual Population & Housing Census (2021), consideration being given to graded expansion

Broadcast viewing: improvement of new media accessibility for hearing/vision-impaired individuals (e.g. development/trial operation of voice, caption, sign language conversion services that utilize AI technologies)
※ Provide production subsidy that is specialized per major broadcasting company (KBS, MBC, SBS) (2020) to revitalize VOD services for broadcasts for people with disabilities

Kiosk: provision of unmanned data devices, which must guarantee access for socially underprivileged groups (e.g. people with disabilities and seniors), to be gradually made mandatory in consideration of company's size and other factors
※ Law amendment and designation of scope with relevant business provider: Government/public institutions, from June 11, 2020 / Private sector, by 2021

[3] Expedite the accommodative use of digital technologies

Daily life: creation/installation of intelligent data services (e.g. height-adjustable intelligent kiosk and AR indoor navigation aid for individuals with disabilities)

Healthcare: timely response to emergency situations through the distribution of devices featuring cutting-edge health features (from 2020, 100,000 devices per year) (e.g. activity detection sensor in homes of seniors and individuals with disabilities)
※ Timely response to emergency situations at communal living facilities for seniors/individuals with disabilities by supplying such facilities with breathing, heartbeat, and activity detection sensors

Welfare: creation of platform that links public data with private services to change the operation of meal services for socially vulnerable individuals to online/contactless from offline/on-site means
※ Can assist socially vulnerable individuals without break even during a national crisis (e.g. infectious disease)

Culture: creation of audiobooks (330 in 2020) to give visually impaired individuals more opportunities to enjoy culture

Industry: creation* and provision of available data sets (2020~) that can be used by private companies to develop digital services for socially vulnerable individuals
* Conversation/voice (Korean, 2020): real-time caption service that is supplemented with audio function / Sign language: sign language interpretation/translation service at public institutions for citizens

[4] Create foundation for embracing the digital era

Law/system: launch of efforts to enact a law on embracing the digital era* that includes the government's responsibility to alleviate the digital divide and creation of implementation systems for policies and projects related to embracing the digital era (2020~)
* Creation of a ministry-wide implementation plan for embracing the digital era every five years, etc.

Content

Current Policies of Korea

Korea Data 119 Project

National data policy : Korea Data 119 Project

Vision

"The country where *data* is the most *safely* used"

Objective

Vitalize the digital economy by promoting the opening, distribution and utilization of data

Basic Directions

- 'Focus on companies and markets' for the digital transformation of all industries
- 'Focus on people and services' to promote public participation
- 'Focus on governance' to coordinate and support

11 Tasks

Private sector-centered ecosystem innovation

1. Open previously unavailable key data
2. Secure a level of data quality as requested by data users
3. Utilize private specialized companies and provide support for data purchase
4. Connect data platforms and vitalize data transaction platforms

Establish a comprehensive data policy system

5. Overhaul the national data management system
6. Redesign government activities to be data-centered
7. Stabilize new data utilization systems early on
8. Proactively respond to risks in the overall data ecosystem
9. Build a data- and science-based scientific disaster management system

---------- Special Tasks ----------

⑩ Implement a COVID-19 time-capsule project
⑪ Develop an integrated water management data system

9 Services

Create results that allow the public experience first-hand

Heath	① Personal health information in one place ② Automated private insurance claims
Living	③ Smart consumption ④ Counterfeit detection
Welfare	⑤ Continuous meal program for children ⑥ AI learning assistance
Key Foundation	⑦ AI Hunminjeongeum ⑧ K-Image Project ⑨ Smart ports

Tasks: Private Sector-Centered Data Ecosystem Innovation

1 Provide previously unavailable key data

- Provide key data, such as business registration, business opening/closure, and insurance information

Provide data through various methods

Data retrieval service	Data Safe Zone	Pseudonymization	MyData

2 Enhance quality of data as requested by users

- Solve overall complaints repeatedly raised by the private sector

Complaints raised by the private sector

Data are not standardized	Data are supplied irregularly	Data have defects (omission, etc.)	Formats are not machine-readable

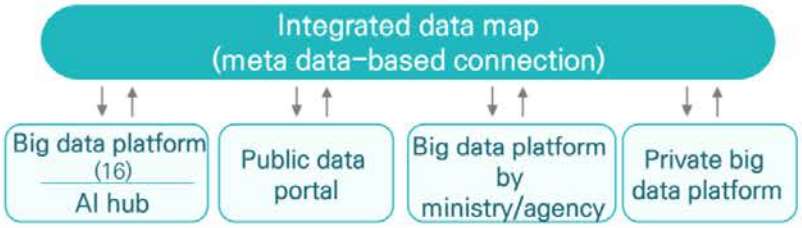
3 Utilize specialized private companies and support the purchase of data

- Use more specialized private companies to process and analyze data
- Promote the purchase of data from the private sector with a specialized digital service contract system

4 Connect data platforms and promote data transaction platforms

- Connect public and private data platforms through an

Integrated data map



Tasks: Developing a Comprehensive Data Policy System

5 Overhaul national data management system

- Get a nationwide **overview of data and develop strategies to utilize it**
- **Develop a data classification system** based on their significance and **set security policies**

Create the position of Chief Data Officer (CDO) who is responsible for developing and implementing strategies for data collection, management, analysis and utilization to create value from data

6 Redesign government activities to make them data-focused

- Realize data collection and sharing methods based on the **once-only principle***

  * The principle states the government will only ask the public the same questions once

- Introduce a **pre- planning system for data** for informatization projects
- Improve civil servants' capabilities to utilize data

7 Establish a new data utilization system early

MyData	Establish a right to data portability and create a **systemized MyData operator selection/ data collection method criteria** for each area
Pseudonymous information	Clarify **pseudonymous information processing criteria/ consolidation procedures** (with cases) and consider **improving policy related to legal responsibilities**
Personal information	Increase data utilization by improving pre-approval and common use by a third party
Public data	Improve overall regulations under each related act that deter the opening of data and utilization (e.g., confidentiality and limit in purposes)

8 Proactively respond to risks in the overall data ecosystem

- Develop management systems, including a **data risk management framework**

- Introduce rights to an explanation and to raise objections to prevent data bias

9 Build a data-based scientific disaster management

- Establish a foundation for rapidly identifying victims of disasters
- Propose response measures, including data analysis-based quarantine, evacuation and support

Task: Special Tasks

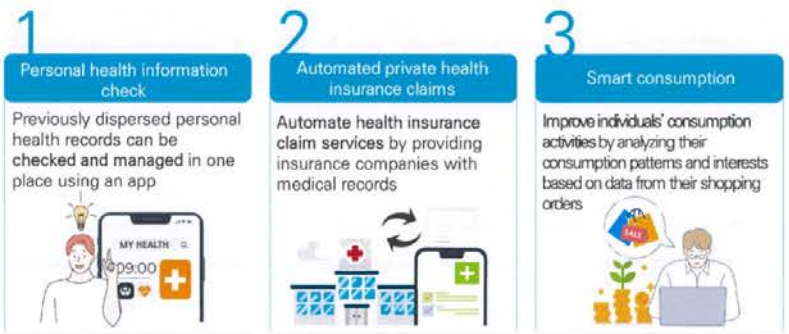
10 COVID-19 time-capsule project

- Record and store social phenomena caused by the pandemic, and analyze their social impact.

11 An integrated water management data system

- Systematically integrate currently dispersed water management data

Public Services with Tangible Effects



products and industrial design rights to **detect counterfeit products**

governments' meal support and contact-free food delivery services

narrow education gap

7 AI Hunminjeongeum

Build a large **audio/natural language database** and provide the foundation for **services** that aid in understanding the sentiment of Koreans

8 K-image project

Pursue a world-class Korean **image and video data development project**

9 Smart port

Connect and share private-public data on ports to build a system to **improve the efficiency** of import/export logistics processes

Content

Current Policies of Korea

Project to build AI training data(K-Digital New Deal)

Project to build AI training data for the Korean New Deal

The Digital New Deal aims to develop the data economy, based on Korea's robust ICT infrastructure, through projects such as the "Data Dam," development of AI-based government, digital transition of educational infrastructure, cultivation of contactless industries, and digitalization of social infrastructure.

Among these projects, the establishment of an AI training data is one of the core projects of the Digital New Deal's Data Dam. To ensure automatic AI recognition and understanding, it is necessary to build and process massive AI training datasets so that AI software can understand the relationships between things. The purpose of this project is to accumulate and make available a massive amount of quality AI data so that individuals and businesses can freely use such open data for AI research and development.

Establishment and opening of AI training datasets

Datasets established and opened in 2017 and 2018 (7 types, 16 million items)						
Patents 1.7 million items	Laws 210,000 items	Korean images 12.3 million items	General knowledge 150,000 items	Tourism 1.5 million items	Agriculture 50,000 items	Healthcare 3,000 items
Datasets opened in June 2019 (4 types, 2.5 million items)						
Korean voice 1.5 million	Korean dialog 0.5 million	Multi-modal images 50,000 items		MRC 450,000 items		
AI training datasets planned to be established in 2019 (10 types, 28 million items)						
Korean↔English bilingual corpus 1.6 million sentences	Korean object images 3.6 million items	Korean font images 6.6 million items	Pedestrians on sidewalk images 670,000 items	Multi-modal videos 100 hours		
Human motion images 200,000 items	Korean facial images 19.44 million items	X-ray images of dangerous items 480,000 items	Disease diagnosis images 30,000 items	CCTV videos of abnormal behavior 700 hours		

List of AI training data

46.5 million data items of 21 types in specialized areas with various applications were collected and made available to the public via the AI HUB (AI HUB: https://aihub.or.kr/#).

Types	Items
Laws	110,000 data items regarding laws, provisions, precedents, and legal terms related to traffic accidents, apartment building noise complaints, and licenses for startups 100,000 data items regarding laws, precedents and terms related to divorce, single-parent families, school violence, retirement benefits, etc.
Patents	1.07 million data items related to patents filed, reviewed, and registered domestically for electrical or electronic devices and patent-related technical terms 1.12 million data items regarding patent claims filed and registered in relation to electrical and electronic devices, machinery, and chemicals and patent-related technology terms
Images related to Korea	6.48 million images of Korean faces (200 persons), 150,000 images of Korean food (150 types), and 50,000 images of domestic vehicles (100 types)
General knowledge	750,000 data items of general knowledge that are listed and widely used in Korean Wikipedia
Healthcare	3,000 eyeground images with ophthalmologist's opinions regarding glaucoma, macular degeneration, and diabetic retinopathy
Tourism	1.5 million data items combining images of restaurants and facilities in Special Tourist Zones with multi-language information such as name, location, menu, tourist information, etc. in Korean, English, Chinese, and Japanese
Agriculture	30,000 images regarding information on the farming of domestic crops, consultation information, support project information, and crop damage caused by blight and pests
Korean voice	1.5 million items of voice data with free spontaneous speech and noises from surroundings for improving recognition of Korean voices
Korean dialogue	10,000 Korean standard dialogue scenarios to build Korean language chatbots used by small merchants
Multi-modal	2,000 multi-modal video clips of people's appearances, voices (intonation), speech content, etc.
MRC	450,000 items of machine reading comprehension data based on deep learning for enabling AI to derive answers to questions on a given text
Korean-English bilingual corpus	1.6 million items of Korean-English bilingual corpus data for developing and enhancing AI translation of Korean text
Object images	3.6 million images of objects, distances, buildings, landmarks, etc. for recognizing Korean objects, places, and situations
Font images	6.6 million font images (5.8 million letters) of Hangul (handwritten and printed letters) to improve Hangul OCR function
Videos of pedestrians on sidewalk	670,000 labeled videos (200 hours) of pedestrians walking on sidewalks and crosswalks and objects on sidewalks (persons, bicycles, trees, fences, etc.) for developing walking support technology for persons with visual impairments and electric wheelchair users
Multi-modal videos	6,000 videos (100 hours) of the appearances, voices, and speech of people in various situations for the development of AI emotion recognition

	various situations for the development of AI emotion recognition
Images of human motion	500,000 images of human motion (200,000 video clips) under diverse conditions for developing technology to recognize human motion, postures, and behaviors
Images of human faces	19.44 million images of Korean faces for improving facial recognition at various angles and under different lighting conditions
X-ray images of dangerous objects	480,000 X-ray images of dangerous objects, tools used by criminals, and restricted items for developing technology capable of automatically recognizing dangerous items
Disease diagnosis images	30,000 labeled images of eye diseases, breast cancer X-rays, and diagnosis results (disease vs. normal condition)
CCTV footage of abnormal behavior	8,000 video clips (700 hours) of abnormal behavior for developing intelligent detection of abnormal human behavior based on CCTV footage

DGCC Newsletter #02

Content

Message in Commemoration from National CIO

Seon Young JEONG, Director General of the Digital Government Bureau, Ministry of the Interior and Safety, Republic of Korea

Seon Young JEONG
Director General of the Digital Government Bureau
Ministry of the Interior and Safety, Republic of Korea

COVID-19 has brought many changes to society as a whole. The most notable of these changes are the rapid increase in non-contact communication, which has become the "new normal," and expansion of the economic and social roles of digital technology.

As video conferencing and teleworking have now become necessities in people's lives, everyone has realized the importance of digital technology, and an increasing number of companies are strengthening their digital capabilities to cope with the customer and market changes caused by the pandemic.

The international community's interest in digital transformation in the government and public sectors has also increased. The Digital Government Cooperation Center, which continues to expand despite the global lockdown due to COVID-19, is a good example of this. In 2020, the Digital Government Cooperation Center was newly opened in Serbia, Tunisia, and Uzbekistan, and it will be expanded to Peru, Indonesia, Cambodia, and Paraguay in 2021.

In addition, new digital technologies such as artificial intelligence (AI), big data, cloud computing, and blockchain are accelerating the digital transformation. Not long after the service environment transitioned from personal computers (PCs) and the wired Internet to mobile devices and wireless communication networks, new innovations such as AI-powered smart speakers, smart home appliances, and autonomous vehicles rapidly entered our daily lives.

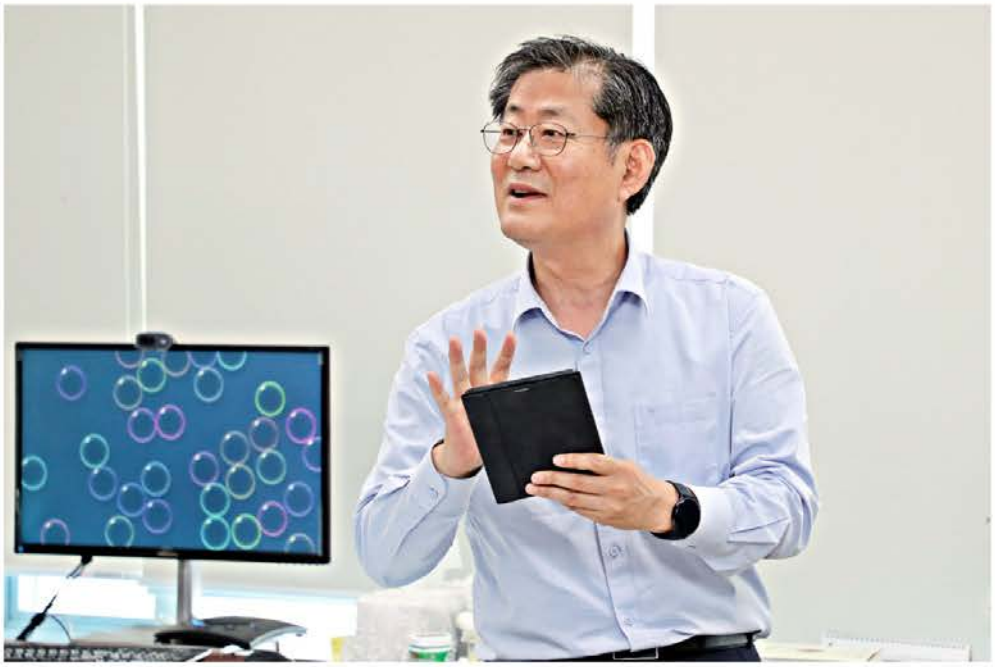
This means that we are once again approaching a point where the way the government works and provides services to its citizens is undergoing fundamental change.

Like all countries around the world, Korea faced many difficulties due to COVID-19 in 2020. The citizens and government worked together closely to overcome the global crisis, recognizing the power of digital technology once again in the process.

Digital technology allowed for the rapid sharing of infectious disease information, implementation of effective quarantine measures, and systematic treatment and management of confirmed cases through such services as online bulletin boards, mobile app for the self-diagnosis and management of people in self-quarantine (Self-Quarantine Safety Protection App),

notification of mask inventory information, various medical information systems, and disaster relief payment system.

Using the remote working system and collaboration tools that were introduced several years earlier, the employees of government agencies were able to work from home, much like employees of private companies, and they were able to carry out their existing duties without serious setbacks while coping with the COVID-19 pandemic.



To further develop digital government, which has become the driving force for overcoming the national crisis and responding to today's changing environment, the Korean government plans to announce the 2nd e-Government Master Plan for 2021-2025 in June.

The plan presents the Korean government's vision of "Digital, the Door to a Better World."

Through this, the public service will evolve into an intelligent service that identifies the services citizens need and informs them of such services even before they request them, and the government will use data to innovate the way it works and implement a transparent and trustworthy administration. In this process, we will also endeavor to develop the digital economy through organic cooperation with the private sector. Above all, we will create an environment where anyone can easily and conveniently receive help from the government, ensuring that no one is left behind.

The three highest-priority tasks of the master plan are the: virtual assistant service for the public, decentralized digital ID, and government data analysis centers.

The virtual assistant service for the public, which is powered by AI technology, will make it even easier for more citizens to use digital government services by providing new service windows that use natural language processing, such as chatbots and AI smart speakers. Through the decentralized digital ID, which utilizes blockchain technology, citizens can prove their identity more securely and conveniently and manage their personal information to prevent unnecessary leakages. Finally, the government data analysis center, based on the management and analysis of big data, will serve as the brain for the next-generation of intelligent government, which will devise rational policies based on science and data and continuously improve such policies.

Along with the innovations that these new technologies will bring, the values that must be pursued by digital government in the future are "inclusion" and "elimination of the digital divide." While it is important to embrace the different social classes within a country, narrowing the emerging digital divide in the international community is an essential task in the current era of globalization.

The Korean government will share with the international community the entire process of implementing its master plan and do its best to pursue development together with other countries. In particular, it is my firm belief that the countries participating in the Digital Government Cooperation Center Program are partners who are about to make a new leap forward in the development of digital government.

This journey will be a long one, and it will not always be smooth. Based on our mutual belief in the positive changes that digital government can bring, I hope you will all move forward together with Korea toward a new future and better government.

Thank you.

Content

Message in Commemoration from National CIO

Khaled Sellami, Director General E-governement Unit Presidency of the Government

The e-Government Unit at the Presidency of the Government of Tunisia is proud to host the Korean-Tunisian e-Government Cooperation Center aiming to enhance the exchange of experiences between the two countries in the area of digital transformation in public sector.

We are grateful to the Government of Korea for supporting such an opportunity and especially the Ministry of Interior and Safety in Korea and the National Information Society Agency.

Korea is a world leader in the area of e-Government and within the framework of this center, a number of projects will be conducted that will allow exchange of knowledge and transfer of experiences between the two countries.

Actions related to measuring the quality of online services, one stop shop services portal, criteria and standards of online services and open data inventory are undertaken this year and experts from both countries are working together on those projects. Further actions will be conducted next year.

Despite the Covid-19 pandemic the center was launched at the beginning of this year and experts from Korea traveled to Tunisia and safely conducted their work. I sincerely salute their courage and commitment.

I hope further cooperation programs in the area of e-government will be developed between our two countries in the future.

Sincerely,

Khaled Sellami
Director General
E-governement Unit
Presidency of the Government