Ministry of Land, Infrastructure and Transport

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MOLIT, MSIT and KCDC launch the COVID 19 data platform.
Smart city technology reinvents contact tracing method.

The official data platform to track and analyze COVID 19 cases, developed in collaboration between the Ministry of Land, Infrastructure and Transport (MOLIT), Ministry of Science and ICT (MSIT) and Centers for Disease Control and Prevention (KCDC) of Korea, will be brought into service from March 26.
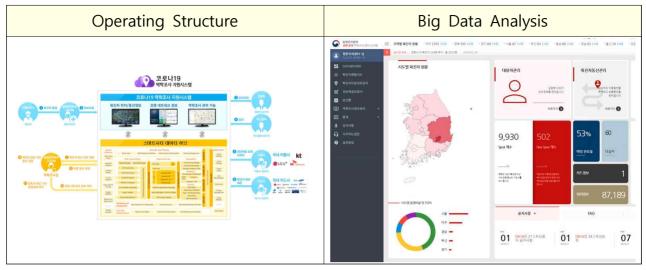
The data platform went through a ten-day pilot operation period to improve its operating system as well as the procedure on handling personal information. MOLIT will transfer operation of the system to KCDC, which will run the system in close coordination with the National Police Agency, Credit Finance Association of Korea, 3 telecommunications companies and 22 credit card companies.

The platform powered by the City Data Hub, a digital platform MOLIT developed under its smart city R&D program, will help automate the contact tracing work required under the Infectious Disease Control and Prevention Act.
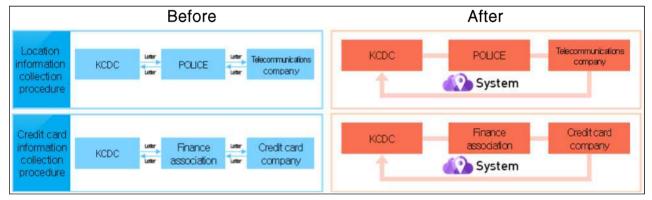
With this new digital tool in place, health officials who talk to each confirmed patient to trace their movements will be able to correlate their interview results with the data uploaded on the platform. Moreover, the Big Data analysis will give officials real-time data feeds on COVID 19 patients, including their whereabouts and the time spent on each location. From these multiple data points, the platform can detect incidents of cluster infection and show the source of transmission.

This contrasts to the conventional way of doing contact tracing, which required numerous exchanges of documents and phone conversation among 28 relevant agencies. Now, the digital data platform will streamline the data collection process and improve its speed and accuracy.

<COVID 19 Data Platform>

Operating Structure	Big Data Analysis

<Data Collection Procedure>

Benefits to be gained from a speedier data collection will be immense. The platform will dramatically cut the time consumed for contact tracing of each patient from one day to less than ten minutes. As the overall workload of health officials is reduced, a more prompt response to the disease regardless of its scale will become possible.

< Benefits of the COVID 19 Data Platform>

	Before	After
Contact tracing method (time per case)	‣ Manually tracked by health workers(one day per case)	‣ Automated tracing, (ten minutes per case)
Management of access record	‣ Writing into a paper ledger	‣ Automated tracking of log-in records
Coordination among agencies	‣ Fragmented coordination by phone, e-mail	‣ Multi-agency coordination under a central platform

Collection of the personal data of infected patients became possible after the outbreak of MERS in 2015. The epidemic built social consensus on the importance of data collection and use in epidemic response and prompted amendment of the Infectious Disease Control and Prevention Act at the National Assembly. Under the revised Act, health officials can have access to the patients' personal information in exceptional cases like containment of infectious disease.

But the scope of data collected will be kept to minimum and a due procedure should be followed in acquiring the data. First, an epidemiological surveyor should decide whether additional collection of personal information is needed. If the answer is yes, the official should seek approval from relevant authorities to get access to the data. For example, as for the location information, separate permission from the National Police Agency is required.

To protect the information gathered, access to the platform will be granted to only a few and the level of access will be differentiated according to the requirements of their duties. Under the current arrangement, KCDC officials and local government officials in charge of contact tracing have the necessary security clearance and other government agencies will be denied access to the platform.

The platform runs on a private network to shield the system from hacking and adopts advanced security technologies like double firewalls as well as the thorough log-in management system. With every user's activities put under strict surveillance, abuse of personal information can be prevented.

The platform will be operated on interim basis and all the personal data stored in it will be deleted upon ending of the official response to COVID 19. While in operation, the platform will be constantly monitored by computer security experts and the security regime for data protection will be updated too.

The City Data Hub that powers the COVID 19 data platform is an invention of the national smart city R&D program. As a tool for Big Data analysis, the platform produces insights for cities that want to launch new smart services based on its analysis of the data on traffic, energy use, environment and safety.

Daegu Province and Siheung City (a city in Gyeonggi Province) joined the smart city R&D program in 2018 and now draw on the City Data Hub as they design new urban services.
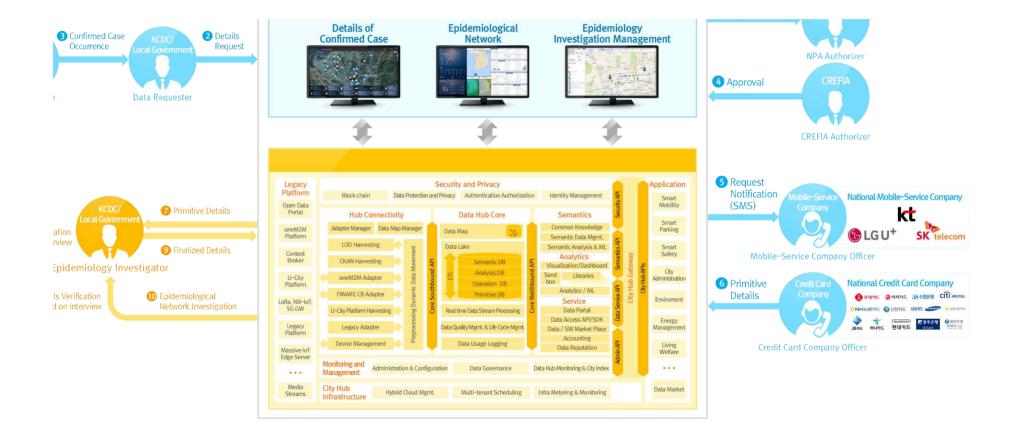
MOLIT, MSIT and KCDC, the three main ministries involved in establishment of the COVID 19 data platform, will maintain their collaboration on COVID 19 for response to future epidemics.

Minister Kim Hyun-mee of MOLIT said, "The data platform was able to be established on short notice thanks to the close cooperation among government ministries and agencies. MOLIT will continue to give its upmost support to efforts to contain the virus." She also added, "I will also look for issues or areas where smart city technologies can be utilized to meet public needs."
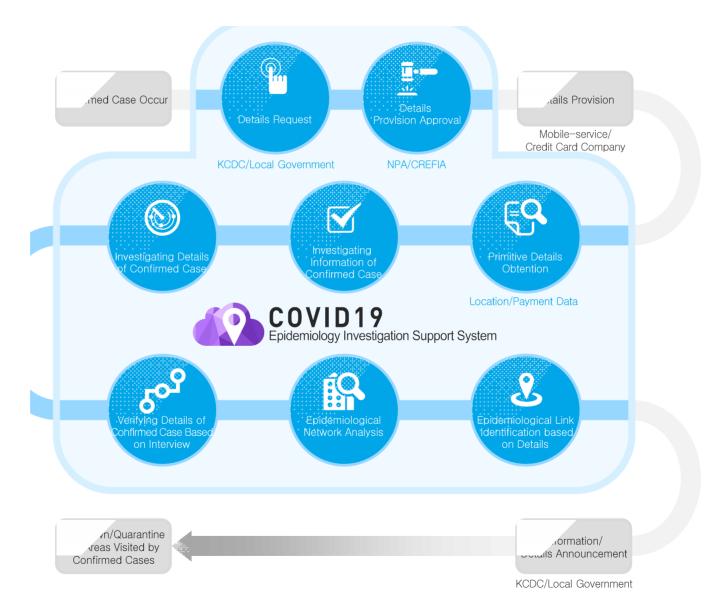
Director Jung Eun-kyung of KCDC said, "KCDC will make sure that it uses this data platform, developed with devoted support of all government agencies, efficiently and effectively. I will also make all necessary efforts to protect personal information gathered under the platform."
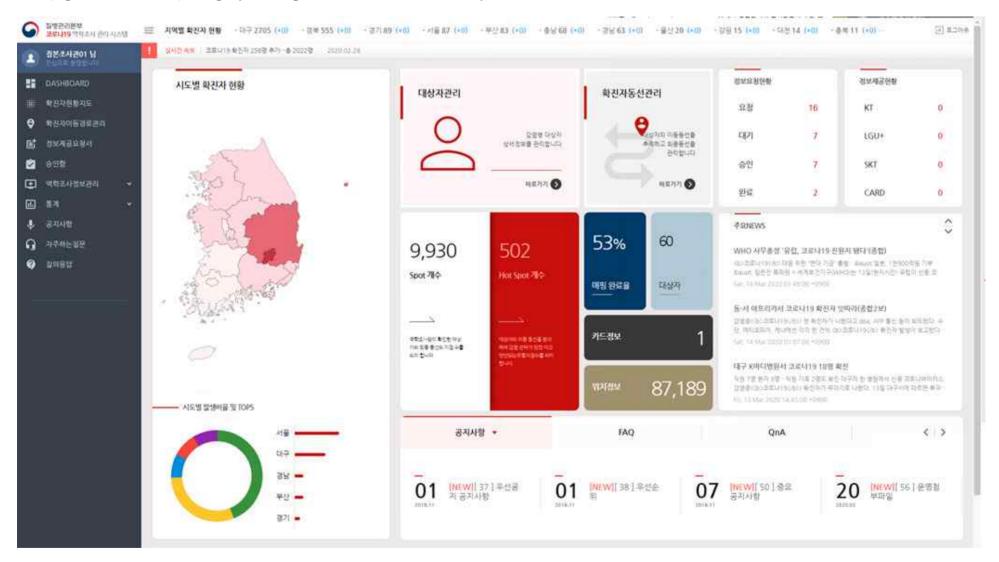
○ (Stand-alone System) It has been launched as a separate system by applying the part of data process technologies of 「Smart City Data Hub」 developed through the National Strategic Smart City Program(NSSC Program).

○ (Structure Supporting Epidemiological Investigation) The system will contribute to supporting the work for epidemiological investigation.

○ (Operation Screen) Display the operational status of the system

| **Appendix 2** | **National Strategic Smart City Program (NSSC Program)** |

※ Please refer to www.smartcities.kr for further details

☐ **(Background)** 'Smart City' has been selected as one of 「9 National Strategic Agenda*」 in the 2nd Science and Technology Strategy Council, that is the most urgent and influential project for the benefit of creating new businesses and enhancing people's life quality.

  * '9 National Strategic Agenda' includes Artificial Intelligence, Fine Dust, Carbon Resources Recovery, Virtual Augmented Reality, Light-weight Material, Precision Medicine, Biologics, Smart City and Autonomous Vehicles.

☐ **(Purpose)** To realise a Data-driven Smart City Model to enhance citizens' life quality and boost sustainable urban development

  ○ The Use Case Services to deal with urban challenges will be demonstrated in transport, safety and city administration sectors in Daegu City, whereas the Living Lab Model to create new businesses will be exercised in environment, energy and social welfare areas in Siheung City.

  * For example, commuting time is expected to be reduced by 10 minutes through smart mobility services

☐ **(Total Budget/Duration)** Approximately US$ 120 million (inclusive of Government Subsidy of US$ 76 million) / 5 years (2018 to 2022)

⟨ Total Budget of NSSC Program (Unit : US$ Million)⟩

	Government	Municipalities	Private	Total
Amount	76	20	24	120

☐ **(Program Structure)** It consists of 13 sub-projects within 3 core projects

⟨Smart City Data Hub Platform⟩

○ It represents a high-capacity platform to be used for city operation that links different systems enabling data to be converged through the process of real-time data collection and analysis based upon the advanced technologies including AI and big-data analysis.

○ The demonstration for smart city services will commence from this year in transport, safety, energy, social welfare and environment sectors of Daegu Metropolitan City and Siheung City.

○ It is jointly funded and managed by the Ministry of Land, Infrastructure and Transport(MoLIT) and the Ministry of Science and ICT(MSIT)