

“An Interview with Minister Lim, South Korea’s Minister of Science and ICT,” *Science & Diplomacy*, January 18, 2022, <https://www.sciencediplomacy.org/conversation/2022/interview-minister-lim-south-koreas-minister-science-and-ict>

This copy is for non-commercial use only. More articles, perspectives, editorials, and letters can be found at www.sciencediplomacy.org. SCIENCE & DIPLOMACY is published by the Center for Science Diplomacy of the American Association for the Advancement of Science (AAAS), the world’s largest general scientific society.

An Interview with Minister Lim, South Korea’s Minister of Science and ICT

Minister Lim Hye Sook has been the Minister of Science and Information and Communication Technologies (ICT) of the Republic of Korea since May 2021. Previously, Minister Lim was the Chair of the National Research Council of Science and Technology, which oversees 25 government-funded research institutes, and was a professor of electronic and electrical engineering at Ewha Womans University, where she served as the head of the Electronics Engineering Department. Minister Lim talked with Sudip Parikh, the Chief Executive Officer of AAAS and Executive Publisher of the *Science* family of journals, during her visit to Washington, DC in December 2021.

Sudip Parikh (interviewer): *At the Presidential Summit between President Biden and President Moon in May 2021, they agreed to strengthen their partnerships in a variety of areas, including science and civil space exploration. Afterwards, you signed the Artemis Accords. Could you tell us a bit more about South Korea’s plans for space exploration, including cooperation on the development of a Korean Positioning System?*

Minister Lim: President Moon and President Biden did agree to strengthen their partnerships in civil space exploration and work together in related areas at the Summit, but also agreed to support the Republic of Korea's (ROK) development of the Korean Positioning System (KPS) and enhance its compatibility and interoperability with the U.S. GPS by signing the Joint Statement by the United States and ROK on Civil Global Navigation Satellite Systems Cooperation in May 2021.

As a follow-up to the aforementioned partnerships, the Korean government will start the development of the KPS in 2022, expecting more precise satellite navigation services to be available in the future by using both KPS and GPS on the Korean peninsula. The government is planning to allocate KRW 3.7 trillion (US\$3.1 billion) for the next fourteen years (2022–2035) to develop a total of eight satellites and ground systems.

In addition, the ROK became the tenth country to sign the Artemis Accords. As part of the Artemis program, the Korean government will launch the Korea Pathfinder Lunar Orbiter (KPLRO) in August of 2022 with NASA's ShadowCam to seek proper landing sites on the moon for the Artemis human exploration mission. The ShadowCam was successfully delivered to South Korea and mounted to the KPLRO in August 2021. Furthermore, the ROK is broadening its scope of cooperation by participating in NASA's Commercial Lunar Payload Service (CLPS) initiative under the Artemis approach. Korea's Lunar Space Environment Monitor (LUSEM) will be delivered to the moon by the CLPS lunar lander, scheduled to be launched in 2024.

Parikh: *Another point of collaboration discussed at the Presidential Summit was supporting greater interaction between STEM experts, and empowering women and girls in these fields. These are two of AAAS' priorities as well. What are the plans for increasing scientific exchanges and encouraging girls and women to pursue S&T careers? I am especially interested in your perspective since your career has included many firsts, including your current position as the first woman to be the Minister of Science and ICT.*

Minister Lim: Following the discussion at the Presidential Summit, the Ministry of Science and ICT is planning to implement the "Brain Link" program, starting next year, in a bid to increase interaction among STEM experts in key scientific areas and to carry out joint research between Korea's four main science research institutes, and their U.S. counterparts. Each research institute will plan joint research with U.S. universities and research centers, on space and artificial intelligence, among other topics, while also conducting talent exchanges. In addition, the Ministry will provide Korean researchers with a wider range of

opportunities to visit the U.S. institutes, carry out joint research, and attend workshops for scientific exchange.

As regards empowering women and girls in STEM, based on my experience as a female scientist, I am striving to foster an environment where female scientists and engineers can unlock their potential. To this end, the Ministry is encouraging the recruitment of female scientists and engineers while also expanding support for women who have paused their careers to care for their children, namely by making it easier to return to work after maternity leave. In addition, the Ministry is running a taskforce to prepare measures to provide childcare during research projects so that women can strike a balance between work and life. Furthermore, the Ministry is planning to expand training and mentoring programs to nurture female experts to become leaders in emerging industries such as artificial intelligence, software development, and carbon management technologies.

Parikh: *The Korean New Deal, which is composed of the Green and Digital New Deals, aims to transform the Korean economy. The Ministry of Science and ICT (MSIT) is administering the Digital New Deal, which involves developing state-of-the-art technologies in areas such as big data, cybersecurity, and AI. Could you elaborate on the Digital New Deal and its regional and international implications?*

Minister Lim: The Korean government has been implementing the Korean New Deal since July 2020 to overcome the financial difficulties triggered by the COVID-19 pandemic, and to lead a digital transformation across the entire economy and society. Under the Digital New Deal 2.0, the ROK is planning to invest a total of KRW 49 trillion (US\$41 billion) by 2025 in four areas: i) data, network, and AI ecosystem enhancement, ii) advancement of non-contact infrastructure, iii) nurturing emerging, hyper-connected industries, and iv) digitizing social overhead capital (SOC). The following table provides comparisons of the first and second versions of the Digital New Deal along with additional details:

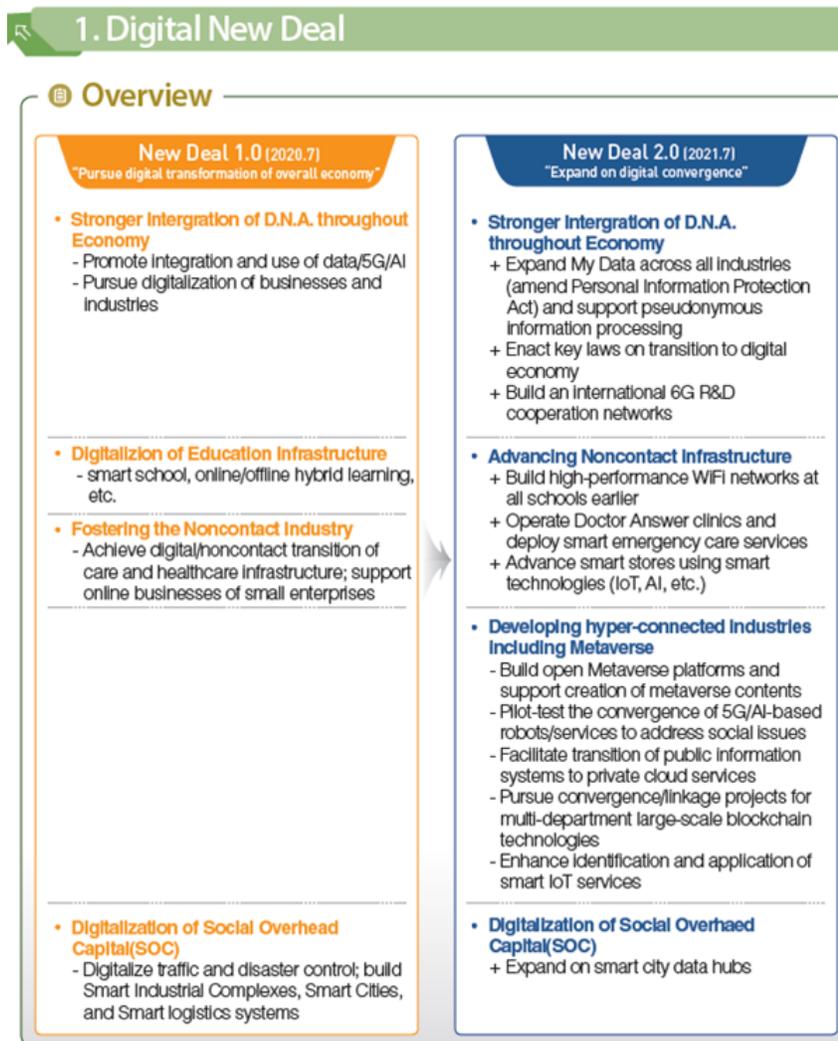


Table on South Korea's Digital New Deal. Credit: MSIT

Just as the New Deal of the 1930s accelerated the recovery of the U.S. economy, the ROK is preparing the Digital New Deal to boost the Korean economy and to accelerate its digital transformation by tapping into Korea's world-class ICT infrastructure and talent. This initiative is a steppingstone for economic recovery and innovative growth in a short period of time, thanks to public participation. With the "Data Dam" project, which allows the accumulation and use of about 4,300 types of data related to finance, transportation, culture, and healthcare, the ROK saw more than a 14% increase in the domestic data market year-over-year and a rise in the number of data and AI-based companies.

In order to facilitate a rapid digital transformation, MSIT provided vouchers to more than 120,000 small- and medium-sized companies and start-ups to access and purchase public data at a discounted rate, and helped about 8,000 smart factories and 4,000 micro-business owners to adopt new digital technologies. Further

efforts were made to nurture 30,000 digital talents, and trainings were provided to improve the digital competency of vulnerable populations such as the disabled and the elderly, so that the benefits of the transformation can be shared with everyone.

The Digital New Deal is expected to have a global impact, setting an example for countries around world and sharing lessons learned on digital policies and the experiences of digital transformation of Korea's small and big companies.

Parikh: *AAAS has robust programs on science policy and science diplomacy and is focused on integrating science into decision-making by building stronger relationships with policymakers and diplomats. How is MSIT strengthening South Korea's international cooperation in science and technology?*

Minister Lim: MSIT has created a comprehensive plan called the "Science and Technology Basic Plan" with medium to long-term goals and directions of science and technology policy. This plan addresses ways to invest in scientific progress, nurture talent, spread achievements in R&D, and secure promising and emerging technologies. The fifth five-year basic plan will commence in 2022. In addition, MSIT operates the Presidential Advisory Council on Science and Technology (PACST), which carries out activities such as deliberation on the decision-making process in relation to science, technology, and innovation policy. The Advisory Council provides consultation on and reviews key science and technology policies and systems, including the basic plan as well as research and development budgets.

In addition, MSIT is playing a central role in coordinating the government and businesses for South Korea's diplomacy in science and technology. MSIT is communicating with the science and technology communities of the private sector on a regular basis and providing diverse programs, including BrainLink, space cooperation projects, and cooperation with CERN and ITER. Understanding the importance of intra-government cooperation, MSIT is also hosting a Director-Generals' meeting in partnership with the Ministry of Foreign Affairs to discuss key agenda items regarding diplomatic cooperation.¹

*After their conversation, Minister Lim and Dr. Parikh exchanged gifts. From the South Korean delegation, Dr. Parikh received a replica of the King Diadem Ornament. In return, AAAS presented Minister Lim with a glass replica of the first printed issue of Science magazine. Both delegations emphasized the importance of scientific collaboration between the U.S. and South Korea. In addition to visiting AAAS, Minister Lim's trip to the U.S. in December 2021 included meetings with the White House Office of Science and Technology Policy, the National Science Foundation, and the Federal Communication Commission to build upon the agreements at the May 2021 Presidential Summit.² **SD***

Disclaimer

This interview has been edited for length and clarity. On January 24, 2022, the original version was edited to correct Minister Lim's previous role at Ewha Womans University.

Endnotes

1. The Director Generals' meeting between MSIT and the Ministry of Foreign Affairs became a regular, quarterly meeting in the second half of 2021. Therefore, the very first quarterly meeting was held that year.
2. Emily Hughes, "Visit from Lim Hye Sook Encourages Scientific Collaboration," AAAS, December 20, 2021, <https://www.aaas.org/news/visit-lim-hye-sook-encourages-scientific-collaboration>