



Companies Subject to The Information Security Measure Disclosure Obligation

Science, Technology & ICT Newsletter(NO.77)

The 2022 List of Companies Subject to the Information Security Measure Disclosure Obligation Have Been Finalized-Various Information Security Efforts of Companies Are Expected to be Revealed

The Ministry of Science and ICT (MSIT, Minister : Lim Hyesook) announced the "Information Security Measure Disclosure Obligation," which mandates companies to disclose the current state of their information security investment and staff.

In March, the draft list of companies subject to the obligation was posted on the website of the Korea Internet & Security Agency (KISA); a total of 603 companies were finalized after receiving objections from companies that judged themselves not obligated to disclose information and going through a review process.

※ The Act on the Promotion of Information Security Industry, which stipulates the scope and standards of the information security measure disclosure obligation, regulations of obligation exemption, and the establishment of the compliance deadlines, was enacted (Dec. 9, 2021)

Those subject to the information security measure disclosure obligation include large and medium-sized listed companies, telecommunication companies and cloud service

providers with major information and communication facilities, and online shopping and delivery service operators with a large number of users.

Those obligated to disclose their information security measures must submit a report on the current state of information security measure disclosure to the MSIT through the MSIT's electronic disclosure system by June 30, and if they violate the disclosure obligation, they can be fined up to KRW 10 million.

The MSIT prepared a revised version of the information security measure disclosure guidelines in December last year to support a smooth implementation of the disclosure, and this year, the ministry is expanding policy support, such as information protection disclosure consulting and practical training.

① Information security measure disclosure consulting

A survey to identify the demand for consulting was conducted in February to facilitate the calculation of information security measure disclosure data, such as information security measure investment and staff, and customized consulting, such as online consulting, offline group consulting, and consulting visit, is provided to 120 selected companies.

② Practical training for information security measure disclosure

To help calculate the current disclosure data, training for company staff in charge of information security measure disclosure will be provided on May 12, and training using customized textbooks will be provided on May 13; the details are available on the KISA website (www.kisa.or.kr).

Kim Jungsam, Director General of the Cyber Security and Network Policy Bureau, said, "As environmental, social, and governance (ESG) management is drawing attention, more and more companies are accelerating digital transformation, and information security capabilities are acting as a key factor for competitiveness and success of companies."

He said, "Companies need to inform users of their information security efforts through information security measure disclosure; a healthy competition between companies can be induced in this process, which can lead to more investment in information security."

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1. Going Global

1.1 MSIT Showcases the Potential of Korea's OTT Services to the World

The Ministry of Science and ICT (MSIT, Minister : Lim Hyesook) will actively support the overseas distribution of over-the-top (OTT) web series by holding "Korea Focus," a sideline event of the Fifth Cannes International Series Festival from April 4 (Monday) to April 6 (Wednesday) in France.

* Cannes International Series Festival: An international content market held every April in Cannes, France that introduces and nurtures series (TV show, etc.) from around the globe, with MIPTV, the world's largest international television market.

The event will consist of a showcase session and a screening session, and will provide Korean OTT platform companies and production companies with opportunities to promote their series and attract foreign investments.

At the "Korean OTT Drama Showcase" to be held on April 4 (Monday), Korean production companies will present new series synopses and plans for foreign series remake to overseas broadcasters, producers and investors to seek opportunities to attract overseas investment.

The synopses for new OTT series include: Mr. Subjective, a story about a teacher named Ju Gwan-sik (meaning "subjective questions") and a student named Seon Da-hyeong (meaning "multiple choices") going through a variety of events happening at school (produced by RingaRing) and Blue Revolution, an SF fantasy about human revolution in a future world ruled by artificial intelligence and humans are considered the lowest class (produced by Kang Contents). The plans for foreign series remake include User Not Found—a story about two female high school students who share the same name; when they both transfer to a new school simultaneously, hoping to use the opportunity to turn their lives around, they forge a secret contract to swap identities.

On April 6 (Wed) the Korean Fiction event will be held to promote the diversity and quality of Korean series and support export of the series.

The series that will be screened at the Festival are the ones that are drawing much attention in Korea:

- 1) Work Later, Drink Now (TVING): A story about three city-dwelling women who drink together after work talking about their everyday life from work to love.
- 2) Damn Good Company (Watcha): After a series of failed attempts, a man finally lands a job at a small enterprise and faces the harsh reality of work.
- 3) Monstrous (produced by Studio Dragon; to be aired on TVING): A supernatural thriller that takes place at a village where a cursed ancient buddhist statue was discovered

The actors of the series, Eun-Ji Jung, Sun-Bin Lee (Work Later, Drink Now), Sunghoon Kang, Hyeonwoo Nam (Damn Good Company), Dong-Yeon Kwak (Monstrous), will attend the photocall and red carpet event for promotion.

Director-General Oh Yongsoo of the Broadcasting Promotion Policy Bureau of the MSIT said, "As the competition for original content, the core of an OTT service's competitiveness, and investment is intensifying and the interest in Korean series is growing, we created a promotion opportunity at this international content market to showcase Korean OTT services' original content and Korean production companies' creative ideas to the world."

He said, "Starting this year, the MSIT is supporting the production company-OTT consortium's production of OTT content so that domestic OTT platforms can grow together with producers. The ministry is going to expand support for content planning and production and overseas distribution gradually."

Squid Game director Hwang Dong-hyuk and producer Kim Ji-yeon (Siren Pictures) have been invited to give a presentation on the potential of Korea's OTT industry at a conference session, which will be attended by creators from all over the world, and there will also be a conference on the current environment of Korea's OTT services and their history.

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1.2 Two Korean Researchers were Awarded the Human Frontier Science Program (HFSP) Research Grants for 2022

The Ministry of Science and ICT (MSIT, Minister : Lim Hyesook) announced that two Korean researchers, including Professor Hyun Ok Lee from the University of Toronto of Canada and Dr. Jeong Jinmo of the Korea Institute of Science and Technology (KIST) were awarded the Human Frontier Science Program (HFSP) research grants for 2022.

The HFSP promotes international collaboration in basic research* and was established in 1989 with a focus on supporting interdisciplinary and international collaborative research in the field of life science.

* The members of the HFSP Organization: Fifteen countries including the G7 (the United States of America, Japan, Canada, Germany, France, Italy, the United Kingdom), the European Union, Switzerland, Korea (MSIT), Australia, New Zealand, India, Singapore, and Israel

There are over 7,500 HFSP awardees* from 71 countries, and 28 HFSP awardees have gone on to win the Nobel Prize. This has given HFSP the nickname "Nobel Prize Fund"

as it has been recognized globally for being the program for supporting innovative research.

* In 2022, a total of 73 Korean researchers received support, including two HFSP awardees.

Professor Hyun Ok Lee from the University of Toronto of Canada (Biochemistry), who was selected as the HFSP Research Grant recipient* for this year, has teamed up with a Professor from University of Washington and a Professor from Wageningen University of Netherlands, under the research topic of “Agent for determining evolutionary conservation of intrinsically disordered regions in protein”, and will receive an annual funding of 380,000 dollars for three years.

* It was included in the 32 finally selected teams from the competition with a total of 716 candidate teams. (Competition rate: 22.4 to 1)

Meanwhile, for the Fellowships program, Dr. Jeong Jinmo (research guided by Dr. Yi Hyun Jung) of the KIST Center for Spintronics was finally selected.

Dr. Jeong will be funded around 60,000 dollars annually for three years from the Department of Biomedical Engineering of University of Texas at Austin, under the research topic of “Development of technologies for identifying neural network of brain using a non-surgical method by converting ultrasound signals to light.”

* Selected as top 13% in the competition with a total of 596 candidates, and the proposed research topic was introduced as a challenging idea of 2022 on the HFSP website.

Dr. Jeong did PhD in Mechanical Engineering at the Gwangju Institute of Science and Technology, with his research guided by Professor Lee Jong-Ho. With the HFSP research grants, Dr. Jeong will be able to enhance research capabilities for connecting mechanical engineering with life science.

Director General Kim Seong-gyu of International Cooperation Bureau of MSIT said, “HFSP is a great opportunity to conduct innovative and challenging research, by working together with global researchers in life science.”

Director General Kim also commented that “The MSIT will spare no effort in listening to voices from research community and supporting global collaborative research, to ensure more of Korean researchers can apply for the HFSP research grants and get selected.”

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1.3 MSIT Lets the World Know that Korea's Next-generation Broadcasting

Technology is the World's Best!

The Ministry of Science and ICT (MSIT, Minister : Lim Hyesook) takes part in the "2022 NAB Show (Apr. 23~27, 2022, Las Vegas)", which is the world's largest broadcasting and equipment exhibition, to promote the excellence of Korea's next-generation broadcasting technology (ATSC 3.0), and support the overseas expansion of Korean broadcasting and equipment companies.

"NAB Show" is the world's largest broadcasting and equipment exhibition held every year from 1923, and it is a venue where around 1,700 companies from 160 countries take part. More than 100,000 attend the event and state-of-the-art global broadcasting technologies, equipments, and services all gather in one place.

Since 2016, the MSIT has established and operated a separate thematic pavilion in the NAB exhibition hall, for members of global broadcasting community to have hands-on experience of Korea's advanced next-generation broadcasting technologies and home-grown equipments.

Korea Radio Promotion Association (RAPA), local terrestrial broadcasters (KBS and MBC), Electronics and Telecommunications Research Institute (ETRI), and Korean broadcasting and equipment companies will participate in the event this year, under the theme of "NextGen TV Korean Alliance."

The participants from Korea will showcase a total of 15 next-generation broadcasting services and related equipments, including "Real-Time Kinematic (RTK) technique", "Multimedia Disaster Information Service", and "Multiple-Input & Multiple-Output 8K-UHD service."

In particular, in the thematic pavilion, "ATSC 3.0-based Remote Education Service" will be displayed, where American public broadcasting station takes great interest in recently.

This will be helpful for bridging gap in education by being able to provide complimentary education service via terrestrial wave to students who are forced to be educated from home due to COVID-19 pandemic or students having difficulty getting access to internet, as they live far away from urban areas.

In 2017, Korea transmitted terrestrial UHD broadcasting program for the world's first time.

From 2018 to 2019, small and medium-sized broadcasting companies in Korea took part in the next-generation broadcasting test bed of U.S. broadcasting companies such as Sinclair Broadcast Group. Since 2020, a variety of services and equipments based on ATSC 3.0 are being tested through the Jeju Island test bed.

By taking this opportunity, small and medium-sized broadcasting and equipment companies developed “terrestrial UHD broadcasting standard, ATSC 3.0 transmitter” and recently signed a supply contract with a U.S. broadcasting company. As such, this has led to small and medium-sized broadcasting and equipment companies in Korea to make inroads into overseas market.

In the meantime, MSIT had meetings with major U.S. broadcasting companies such as the National Association of Broadcasters (NAB), Advanced Television Systems Committee (ATSC), and the Sinclair Broadcast Group, as well as an Indian public broadcaster. In the meetings, MSIT committed to making joint efforts to promote global expansion of ATSC 3.0-based next-generation broadcasting.

An MSIT official said, “By establishing and operating a thematic pavilion in next-generation broadcasting in NAB, which is the world’s largest broadcasting and equipment exhibition, we could once again promote Korea’s outstanding broadcasting technologies to the world. Korea also succeeded in reinforcing Korea’s standing in the international community, as a country leading in next-generation broadcasting.”

The official also commented that, “By taking this opportunity, MSIT will spare no effort in ensuring that Korean companies can successfully enter the North American market as well as emerging markets, including India and Brazil.”

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2. Global Cooperation

2.1 Initiate Joint Research and Talent Exchanges Between Korea and the U.S. in Cutting-edge Technologies

The Ministry of Science and ICT (MSIT, Minister : Lim Hyesook) announced that it signed the Project Arrangement for Cooperation to Address Public Safety and Cybersecurity and the Joint Statement of Intent for facilitating exchange of personnel in the field of Science, Technology, Engineering, and Math (STEM) with the Science and Technology Directorate of the Department of Homeland Security of the U.S

This cooperative program has been implemented as follow-up measures of the MOU on Cooperation in the Fields of Science, Technology and Information Communication Technology signed in 2019 between agencies of both countries.

This has been carried out as part of efforts to strengthen collaboration in cutting-edge technologies and expand STEM-related exchange programs, as committed by leaders of the two countries in the Korea-U.S. Summit held last year.

The Science and Technology Directorate of the Department of Homeland Security of the U.S. is tasked with supporting the development of technologies related to public safety and disaster response. This has been made possible by the proposal of the Department of Homeland Security willing to work together in research and development with MSIT, in an attempt to strengthen overseas partnership in S&T.

With the cooperative program, the agencies of the two countries pledged to launch joint research and exchange of professionals in state-of-the-art technologies.

After signing the arrangement, both sides will seek solutions together, based on science and ICT, to common issues related to public safety such as cybersecurity, by going through working-level consultations.

The two sides committed to jointly planning hands-on vocational training program to enable students in STEM to share their experiences and expand networking opportunities.

Director General Kim Seong-gyu of International Cooperation Bureau of MSIT emphasized the significance of implementing this cooperative program by mentioning that, “this is a great opportunity to demonstrate our collaboration in advanced technologies, which is a tangible outcome of the Korea-U.S. Summit held last year.”

Director General Kim went further to say that “with the implementation of this program, I look forward to facilitating exchanges and cooperation between the two countries in the field of science, technology and ICT.”

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2.2 ASEAN-ROK Award for Excellence in Science, Technology and Innovation

The Ministry of Science and ICT (MSIT, Minister: Lim Hyesook) virtually hosted the third ASEAN-ROK Award for Excellence in Science, Technology and Innovation in link with ASEAN-ROK STI workshop.

MSIT annually selects two outstanding scientists and grants Innovation Award that includes a prize of \$12,000. This year's awardees are Dr. Yanwei Lum, an assistant professor at the National University of Singapore and Dr. Muhammad Adly Rahandi Lubis, a researcher at the research Center for Biomaterials of Indonesian Institute of Sciences.

The fourth ASEAN-ROK STI workshop was followed with the theme of "Technology, Innovation and Entrepreneurship in the Post-Pandemic Economics," discussing challenges and best policies. At the workshop, Indonesia introduced its national STI policies, and innovation cases in the video gaming industry along with changes in the nation's corporate ecosystem and response measures in the post-pandemic era.

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2.3 MSIT Holds the First Korea-Philippines S&T Joint Committee Meeting

The Ministry of Science and ICT (MSIT, Minister : Lim Hyesook) announced that it virtually held the 1st Korea-Philippines Joint Committee Meeting on Science and Technology Cooperation (JCM) with the Department of Science and Technology (DOST) of the Philippines on April 28, 2022.

The MSIT signed a memorandum of understanding (MOU) with Philippines' DOST to promote S&T cooperation and pledged to pursue cooperative activities on the occasion of Korea-Philippines summit held in June 2018.

The JCM, an intergovernmental consultative body, is a follow-up to the summit that seeks to strengthen bilateral cooperation by promoting science and technology policy exchanges and discussing ways of cooperation between relevant institutions.

The Meeting was chaired by Director-General Kim Seong Gyu of International Cooperation Bureau of MSIT and Assistant Secretary Leah J. Buendia of International Cooperation Bureau of DOST*.

* Department of Science and Technology

During the JCM, the two sides shared key science and technology policies and explored ways of cooperation.

In the first session, Korea shared the Fourth National Science and Technology Basic Plan (2018~2022) and Investment Direction for 2022, and the Philippines its science and technology innovation policy, which enhanced mutual understanding of policies in science and technology and identified common interest between the two countries.

While exploring new ways of bilateral cooperation, the two sides named smart farming, and technologies to respond to climate change and changes in the ocean as promising areas of cooperation.

Korea introduced the Smart Farm Multi-Ministry Package Innovative Technology Development Project, which have completed the laboratory stage and currently progressing with the goal of demonstrating, advancing, and securing next-generation technologies ahead of demand. The two sides discussed potential cooperation on an AIoT-enabled food production and consumption tracking system.

The two countries also indicated interest in the problems caused by global warming, and proposed cooperation between researchers in fields such as climate change and the occurrence of super typhoons while discussing the way forward.

Director General Kim Seong-gyu of the International Cooperation Bureau of MSIT said "The JCM opened up new opportunities for cooperation between Korea and the Philippines by enhancing mutual understanding in science and technology policies and facilitating discussions on potential cooperation that can combine both countries' strengths."

He added, "The Ministry will expand the scope of S&T cooperation by identifying practical cooperation tasks through continuous exchanges."

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3. ICT Trends of Affiliated organizations

3.1 The Institute for Basic Science identifies the molecular mechanism of PTSD treatment

The Ministry of Science and ICT (MSIT, Minister : Lim Hyesook) announced that a research team led by Dr. Lee Boyoung from the Center for Cognition and Sociality (Director Lee Changjoon) of the Institute for Basic Science (IBS, President Noh Do-Young) identified the molecular mechanism for treatment of post-traumatic stress disorder (PTSD) for the first time through animal experiments.

The findings were published in the prominent neuroscience journal *Molecular Psychiatry* on April 14, and is expected to mark a watershed in development of treatments for PTSD for which no effective treatment was available.

To treat PTSD*, hospitals use psychiatric treatment, such as cognitive-behavioral therapy and drug treatment for depression, but the improvement rate is only about 50 percent. Various PTSD treatments are being developed, but there have been no studies revealing the treatment mechanism of such drugs.

* PTSD is a mental illness that interferes with daily life by constantly re-experiencing painful memories from serious events, such as accidents or tragic events.

The research team revealed the mechanism behind the therapeutic effect by applying Aptinyx's NYX-783* to a PTSD mouse model, which have contributed to laying down the theoretical foundation for the development of treatments and a clear strategy.

* NYX-783 is a PTSD treatment under clinical development. Aptinyx, a U.S. company, has conducted a phase 2b clinical trial for NYX-783 since December 2021.

In the study, the team injected NYX-783 into a PTSD animal model 24 hours after a traumatic situation and confirmed that the treatment suppressed the memory recurrence of the traumatic event. As a result of the analysis, the N-methyl-D-aspartate (NMDA) receptors**, including the GluN2B* subunit protein, activated in excitatory neurons in the sub-limbic medial prefrontal cortex.

* The GluN2B is one of several subunit proteins that make up the NMDA receptor

** The NMDA receptor is a membrane protein found at excitatory synapses of nerve cells, and is an ion channel that allows calcium influx. Helps modulate calcium flow so that synapses function properly, affecting gene expression in neurons.

The team found that brain-derived neurotrophic factor (BDNF)*, which is highly important for synaptic plasticity, is necessary for the extinction of memory. When the researchers suppressed BDNF activity in mice brains using antibody treatment, it blunted most of the effect of NYX-783 on inhibition of spontaneous recovery. The team identified the scientific principles behind PTSD treatment and their efficacy for the first time.

* The BDNF is a type of neurotrophic factor derived from the brain, also known as brain-derived neurotrophin or brain nerve growth factor.

Research Fellow and Principal Investigator Dr. Lee Boyoung said, "We identified the molecular mechanism of the PTSD treatment for the first time. We expect that findings from our research will propel the development of PTSD treatments targeting the NMDA protein."

Dr. Lee added that the team intends to further contribute to treating PTSD and other psychiatric disorders by applying various approaches to construct candidate substances with different mechanisms.