

Emerging Technologies in the Post COVID-19 Era

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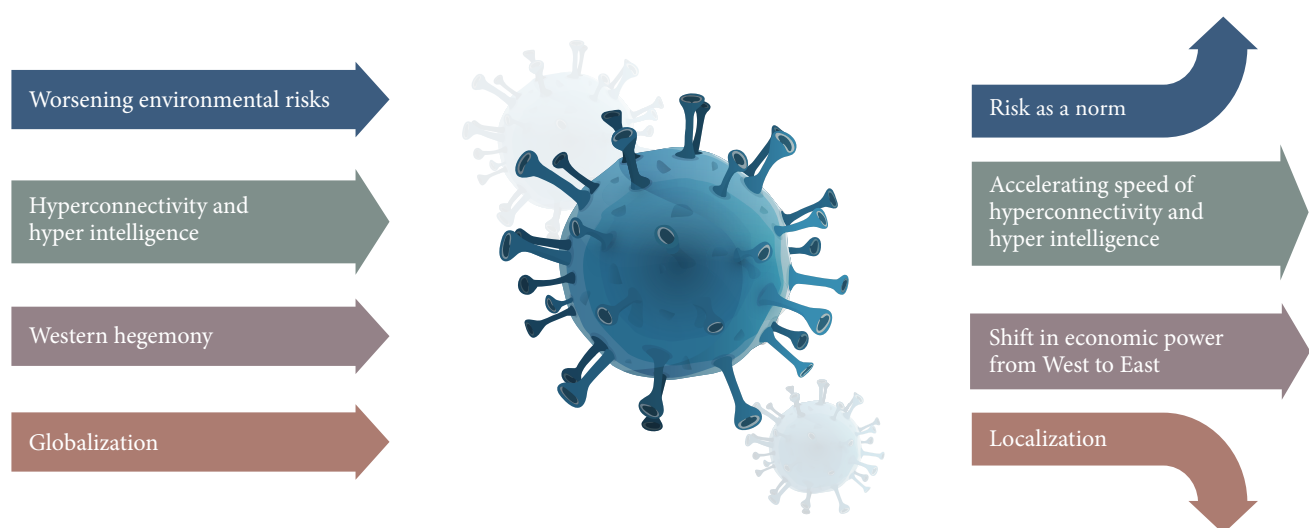
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1. Background

When we closely look at the changes in the landscape surrounding us, it is easily found that mega trends such worsening environmental risks including natural disaster and destruction of ecosystem, hyperconnectivity and hyperintelligence that are key features of the 4th industrial revolution, Western hegemony, and globalization have encountered a black swan event called COVID-19, and have begun to change to take the new forms. It is expected that risks will be everywhere, the speed

of hyperconnectivity and hyperintelligence will be accelerated, the shift in economic power from West to East will continue, and localization will replace globalization. As we move forward in the midst of such rapid and uncertain changes in our landscape, it is important to develop countermeasures based on predictions of the future. The digitalization and other scientific and technological advances are important elements leading such changes in the post COVID-19 era. Therefore, it is necessary to identify emerging technologies that will soon to be considered as important in our society and come up with measures

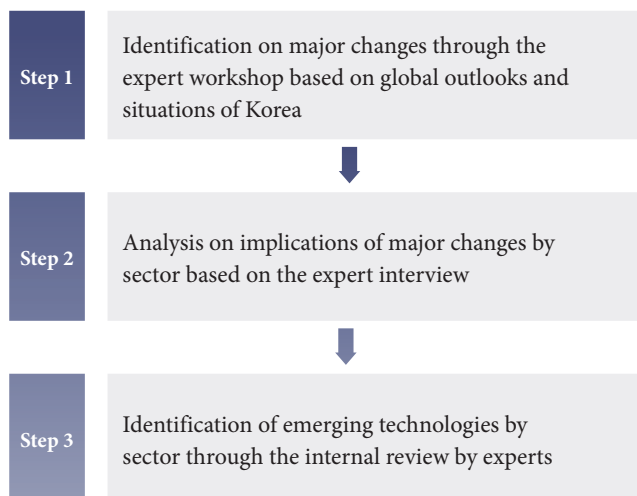


[Figure 1] Landscape changes after COVID-19

responding them in advance. In the meantime, it is expected that the government, research institutes, and companies can apply the emerging technologies identified through this research to develop their investment strategies in the post COVID-19 era.

2. Methods and procedures

To predict the future after COVID-19, the 3-phase approach using a series of methods including a workshop with the participation of experts in various areas and others was used. First, the four major changes that can be considered as important in our society within the next 5 years were identified during the expert workshop based on the global outlook for the future predicted by the world's leading research institutions and news media as well as situations in Korea. Second, researchers explored 8 sectors that the four major changes may have a significant impact in terms of science and technology, and analyzed such impact by sector through scenarios, which contain drivers (future



[Figure 2] Methods and procedures for the prediction of the future in the post COVID-19 era

issues) that should be considered as important, product/service, future outlook, expected outcome, etc. Lastly, we have identified 25 emerging technologies encompassing the 8 sectors after expert interview and internal review.

3. Major changes in the landscape of Korea

Based on the global outlook by the world's leading research institutions and media outlets and in consideration of changing domestic environment, 4 major changes that may have a significant impact on the Korean society were identified including ① Emergence of non-contact services as the norm of daily life, ② Challenges and opportunities of the biohealth market, ③ risk response as the norm, ④ Strengthening of nation-centrism.

A. Transformation into the non-contact society

As the non-contact society has become the norm through the internet, it is expected that regulations on remote medicine and other online tools will be eased. The Politico, an American daily newspaper specializing in politics, said that COVID-19 has served positively to the revitalization of remote medicine and remote learning, and the non-contact society via online will be continued after COVID-19. In addition, there will be a new type of innovation as the disease has accelerated the speed of the industry in applying to digital technologies. Copenhagen Institute for Futures Studies (CIFS) predicted that COVID-19 will promote the innovation and distribution of technologies as the disease continues to spread, and examples of such trends include blockchain-based e-voting system and using autonomous vehicles for delivery to isolation wards, etc.

[Table 1] Major changes in the landscape of Korea that may affect the country significantly after COVID-19

Forecast on the changing global landscape		+	Changing circumstances in Korea		Major changes in the landscape
Transformation into the non-contact society and relaxation of related regulations			· Changes in people's lifestyle due to the transformation into the non-contact society	➡	① Transformation into the non-contact society - Transformation into the non-contact society where products/ services without contact have become the norm
Changes in the healthcare system			· A growing importance on domestic resources and experience for the prevention and control of infectious diseases	➡	② Challenges and opportunities of the biohealth market - Activation of the biohealth market such as the development of diagnostic kits, treatment, and vaccines
New normal society that takes risk as the norm			· An emphasis on self-reliance of domestic value chain to remove foreign dependency	➡	③ Risk response as the norm of daily life - Periodic occurrence of so-called black swan event (X-Event) such as prevalence of infectious disease, etc.
Changes in the world economic order	· Localization of supply chain · Rising protectionism · Lack of global leadership · Shift in economic power to East		· Increasing roles of the government and public confidence in responding to COVID-19	➡	④ Strengthening of nation-centrism - Countries across the world took nation-centric approaches to curb the spread of COVID-19

B. Challenges and opportunities of the biohealth market

Ed Yong, a science journalist at The Atlantic, an American current affairs magazine reported that COVID-19 could last long and the US would shift its focus on the public healthcare after the global COVID-19 pandemic as it did so on counterterrorism after 9/11. CIFS, too, predicted that the healthcare system would put much emphasis on the healthcare management from the patient care after the disease and said that the collection and sharing of health data will be more important.

Domestic resources and experience with regard to the prevention and control of infectious diseases have become more important. The COVID-19 crisis has

reminded us of the importance of the management of supply and demand of medical staff (doctors, nurses, etc.), medical facilities (public/private hospitals, research institutes, etc.), and medical supplies (testing tools and equipment, diagnostic kits, negative pressure facilities, face masks, etc.). As for Korea, the past experience of responding and managing infectious diseases such as SARS, swine flu, and MERS has served as a biggest advantage in response to COVID-19¹⁾. The government has supported companies to embark on the development of diagnostic kits in the early January even before the country had its first confirmed cases of COVID-19

1) Korea Institute of S&T Evaluation and Planning (KISTEP), Future Horizon Plus, Vol.44, January, 2020.

infection and provided an approval to them promptly via the ‘emergency use authorization system’.

C. Risk response as the norm of daily life

It is predicted that we may have entered into the society of taking risk response as the norm of daily life as black swan events such as the global COVID-19 pandemic continue to occur frequently. Also, concerns over monitoring are raised along with the development of tracing and monitoring technologies to prevent the spread of infectious diseases. Ben Zimmer, an American columnist at the Wall Street Journal, pointed out that black swan was not as rare as once believed. The economist, a weekly newspaper of the UK, predicted that the big government that was needed to fight the pandemic will last for a while. Foreign Policy, an American news publication focusing on domestic and international policy, argued that drastic measures that were on the horizon during the process of overcoming the outbreak of COVID-19 had become the new normals, and which would serve to concrete the totalitarianism.

D. Strengthening of nation-centrism

It is expected that the world economy would be plunged into recession as the world has entered into a shrinking society, while facing a black swan event called COVID-19, and globalization would be in retreat due to localization of supply chain, and spread of protectionism. In its global economic outlook assessing the fallout from the COVID-19 pandemic, JP Morgan predicted that the China’s GDP will shrink by 40% in the first quarter and the US economy is projected to contract by 14% in the second half of this year.

According to Foreign Policy, it appears that self-reliant economy and protectionism will spread further as COVID-19 has revealed the weakness of global manufacturing network. It also provided the concept of G-Zero era by referring to the fact that US President Donald Trump and other global leaders were focusing on domestic politics. It went further by raising the possibility that the globalization could be led by China based on the lack of US leadership and the failure of Europe in the fight against the global COVID-19 pandemic, and predicted that the disease would accelerate the shift of power and influence from West to East. As for Korea, the country’s technological competitiveness of the materials and parts sector related to the advanced industries is evaluated to be only 66% of that of advanced countries such as Germany and Japan. As of 2017, the number of materials companies on the global 2000 list was 40 for the US and 29 for Japan, but we had only 7 materials companies on the list²⁾. In the meantime, vulnerabilities are found in domestic materials, parts, and equipment sector of the nation’s key industries such as ‘semiconductor, display, and automobiles’ compared to global value chain (GVC). Therefore, a need to foster an ecosystem of the industries and companies for the self-reliance of domestic value chain by getting away from the dependence on GVC.

2) Korea Development Institute (KDI) Economic Information Center, 「Finding ways for technology independence」, Economic Bulletin, September, 2019.

4. Future outlook by area

After reviewing detailed changes and predicting scenarios of 8 sectors through the interview with experts, major issues were found including changes in medical system focusing on healthcare

management and remote medicine, improvement of convenience, effectiveness, and security of various non-contact/remote services, and automation and intellectualization of industrial sectors such as transport, logistics, and manufacturing.

[Table 2] Major issues by sector

Sector	Major issues
Healthcare	<ul style="list-style-type: none"> · Weaknesses of healthcare system of each country and cooperative system in the global healthcare were stand out · Paradigm shift of the public healthcare system from medical treatment to prevention and management of diseases · Acceleration of digital transformation in the healthcare system (adoption of AI, automation, data sharing, etc.)
Education	<ul style="list-style-type: none"> · Confusions of schools and families over the unprecedented 'beginning of new school year with online classes' (concerns over online learning contents and infrastructure, exposure of blind spots in education/welfare including emergency care service for the marginalized groups, etc.) · A growing importance for schools to prepare for the possibility of periodic/short-term outbreak of emerging infectious diseases in advance · Changes in the work methods lead the changes in the skills needed, and which drives changes in education
Transport	<ul style="list-style-type: none"> · Spread of the non-contact culture in the modes of transport to respond to COVID-19 · More people tend to avoid to use densely-populated public transport, ride-hailing and other sharing services in urban areas · Raising awareness on climate change, the destruction of ecosystem, etc. · Increasing demand for personal mobility and micro mobility
Logistics	<ul style="list-style-type: none"> · Decline in transnational cargo demand due to closing national borders, movement restrictions, discontinuation of manufacturing across the globe · Explosive growth of e-commerce and non-contract purchase in Korea due to physical distancing practice to prevent the spread of infectious disease · Blurring boundaries among manufacturing, distribution, and logistics industries and intensifying competition due to the increasing demand for precise delivery service
Manufacturing	<ul style="list-style-type: none"> · Response to COVID-19 pandemic and expectation on economic recovery · Exposure of weakness of GVC (emergence of local value chain, etc.) · Adoption of smart technologies in manufacturing factories and smart tools (adoption of AI, digitalization, flexibilization, learning, etc.) · Constant increase of manufacturing costs (material cost, labor cost, manufacturing cost) and decline of production workers

Sector	Major issues
Environment	<ul style="list-style-type: none"> · Climate change being pushed back on the priority list and changing roles of environmental regulations due to global economic slowdown · Increasing volume of waste generated by persons infected with COVID-19, those isolated, and medical staff · Increasing use of disposable products as more consumers seek convenience along with the spread of non-contact economy · Smartization of environmental technologies converging with the latest S&T (AI, IoT, etc.)
Culture	<ul style="list-style-type: none"> · Financial damage in the cultural industry that largely takes place in physical spaces, and increase of non-contact cultural content · Acceleration of the stay-at-home economy and single economy · Changes in the production, distribution, and consumption of products and services in the culture industry · Increasing awareness on 'K-brands' based on proper response to COVID-19
Data security	<ul style="list-style-type: none"> · Expansion of non-contact services such as video conferencing, online learning, working from home, etc. · Strengthening protection of personal data and contradictions in utilizing the data upon disaster · Smartization (including AI, big data, robotics) of public security systems of a nation (defense, security, fire-fighting, etc.)

5. Emerging technologies

After predicting the future of major sectors in the post COVID-19 era, 25 emerging technologies were identified based on the performance of technological innovation and the impact on the society and economy. They were mapped onto major changes and 8 sectors and the result found that the emerging technologies were related the most to the 'transformation into the non-contact society' among major changes in the landscape.






With regard to 'healthcare', 5 emerging technologies were identified including AI-based diagnosis of disease in real-time, real-time measurement and analysis of biometric information, prediction on the spread of infectious disease and early warning, and RNA-based vaccines resistant to viruses, etc. For 'education', three technologies were explored including VR/MR technologies for immersive learning, and







high-capacity communication technology for online classes. There were 3 emerging technologies for 'transport' including personalized last mile mobility and autonomous vehicle to transport persons with suspected virus disease. The three emerging technologies were identified in the 'logistics' sector such as smartization of logistics/distribution center and autonomous driving robots. For 'manufacturing' sector, 3 promising technologies for smartization and automation were found including digital twin and human augmentation technology. When it comes to the 'environment' sector, there were 2 novel technologies including the one related to integrated management of zoonotic diseases. Sectors of 'culture' and 'data security' had 3 emerging technologies for each, including immersive broadcasting service and one to assure video conferencing security, respectively.







[Table 3] Mapping of emerging technologies onto major changes and 8 sectors





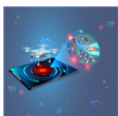
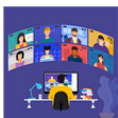
Sector	Transformation into non-contact society	Challenges and opportunities of the biohealth market	Risk response as the norm of daily life	Strengthening of nation-centrism
Healthcare		<ul style="list-style-type: none"> · Digital therapeutics · AI-based diagnosis of disease in real-time · Real-time measurement and analysis of biometric information · RNA-based vaccines resistant to viruses 	<ul style="list-style-type: none"> · Prediction on the spread of infectious disease and early warning 	
Education	<ul style="list-style-type: none"> · VR/MR technologies for immersive learning · Tailored learning technologies based on AI and big data · High-capacity communication technology for online classes 			
Transport	<ul style="list-style-type: none"> · Personalized last mile mobility · Integration of multiple modes of transport (Mobility as a Service, MaaS) 		<ul style="list-style-type: none"> · Autonomous vehicles to transport persons with suspected virus disease 	
Logistics	<ul style="list-style-type: none"> · ICT-based integrated platform of logistics data · Autonomous driving robots · Smartization of logistics/distribution center 			
Manufacturing				<ul style="list-style-type: none"> · Digital twin · Human augmentation technology · Cooperative robot
Environment		<ul style="list-style-type: none"> · Robots to collect and transport medical waste 	<ul style="list-style-type: none"> · Technologies for integrated management of zoonotic diseases 	
Culture	<ul style="list-style-type: none"> · Immersive broadcasting service · GIS mapping with drones and 3D imaging technologies 		<ul style="list-style-type: none"> · Deepfake detection techniques 	
Data security	<ul style="list-style-type: none"> · Technologies to assure video conferencing security 		<ul style="list-style-type: none"> · Quantum-encrypted video conferencing for security · Movement tracing system using homomorphic encryption (HE) 	



[Table 4] Emerging technologies by sector and description

Sector	Technology	Description
Healthcare	 <p>Digital therapeutics</p>	<p>(Definition) Contents technologies as therapeutic interventions approved by the US Food and Drug Administration (FDA) to treat a mental illness or psychiatric disorder with SW (app, game, VR, etc.) instead of medicine</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Contents technology - Immersive interactive technology - Information analysis technology - UI/UX <p>(Areas of application) Treatment of mental disorders (depression, addiction, PTSD, etc.) via non-contact interventions</p>
	 <p>AI-based diagnosis of disease in real-time</p>	<p>(Definition) SW technology to screen the disease and provide an optimum treatment method based on the analysis of medical big data</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Information analysis technology - Algorithms for automatic diagnosis - Cloud, communication technology - Data security technology <p>(Areas of application) Real-time disease diagnosis (support)</p>
	 <p>Real-time measurement and analysis of biometric information</p>	<p>(Definition) Technologies that collect and analyse biometric information of individuals regardless of time and space and constantly monitor their health condition</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Sensing technology - Information analysis technology - Alert for abnormal symptoms - UI/UX - Data security technology <p>(Areas of application) Users can constantly monitor their health condition anywhere and link the information with health management and medical treatment in hospital</p>
	 <p>Prediction on the spread of infectious disease and early warning</p>	<p>(Definition) Technologies that predict the probability of an infectious disease outbreak and provide warnings in advance based on big data including transmission path, infected patients, demographic data, etc.</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Information analysis technology - Location data tracking - Risk alert <p>(Areas of application) Response to infectious disease (in advance), epidemiological investigation</p>
	 <p>RNA-based vaccines resistant to viruses</p>	<p>(Definition) A technology that activates the immune system resistant to RNA virus to prevent or minimize the damage to human body by the infection</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Mutation prediction - Antigen identification - Mass production technology - High-efficiency delivery technology <p>(Areas of application) Prevention and treatment of diseases originated from RNA viruses</p>

Sector	Technology	Description
Education	 <p>VR/MR technologies for immersive learning</p>	<p>(Definition) Specialized technologies that converged various domains including humanities, society, arts, etc. to provide immersive learning and experience based on VR/MR</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Mixed reality MR - Big data processing - Interface - Rendering techniques <p>(Areas of application) Special education to help student overcome physical disabilities and improve cognitive ability</p>
	 <p>Tailored learning technologies based on AI and big data</p>	<p>(Definition) Technologies that provide learning contents tailored to students through real-time analysis on their big data and level adjustment with AI engine</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Learning management system (LMS) - Tailored learning SW <p>(Areas of application) System development for the collection and analysis of learning and interactive data (between student-contents, students-students, and students-lecturer)</p>
	 <p>High-capacity communication technology for online classes</p>	<p>(Definition) Network technology that distributes traffic and delivers online learning contents and other large capacity contents to users promptly and stably</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Big data transmission - Cloud-based CDN* <p>* Contents Delivery Network</p> <p>(Areas of application) Secure the infrastructure for online classes</p>
Transport	 <p>Autonomous vehicles to transport persons with suspected virus disease</p>	<p>(Definition) Unmanned autonomous driving service for the transfer of persons suspected of infection to airport, home, hospital or connecting major hubs tailored to cities</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Autonomous driving AI - Measurement sensor - Vehicular communication system <p>(Areas of application) Provide unmanned services upon the occurrence of risk situations such as natural disaster, radiation pollution, etc.</p>
	 <p>Personalized last mile mobility</p>	<p>(Definition) Service technologies linking with personal/micromobility allowing users to move to the final destination after arriving at a post by public transport such as bus and subway and shared mobility</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Micromobility - Assistance driving technology - Authentication technology <p>(Areas of application) An eco-friendly way to solve traffic congestion by providing means of transport to move a short distance quickly and conveniently</p>
	 <p>Integration of multiple modes of transport (MaaS)</p>	<p>(Definition) Service technologies that integrate various modes of transport such as car, subway, bus, taxi, etc. and provide the best tailored solution to the users based on big data (Mobility as a service)</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Platform technology - Blockchain - Traffic information service <p>(Areas of application) Strengthening the complex linkage with conventional modes of transport and provision of tailored service considering the patterns of movement</p>

Sector	Technology	Description
Logistics	 <p>ICT-based integrated platform of logistics data</p>	<p>(Definition) Technologies that convert logistics information into digital data, standardize platforms to realize the real-time prediction of delivery and inventory management based on big data, IoT, and blockchain</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Data solution - Big data - Block chain <p>(Areas of application) Applicable to the entire areas of logistics services including freight cargo, marine logistics inventory management, logistics contract</p>
	 <p>Autonomous driving robots for delivery</p>	<p>(Definition) Technologies linking autonomous driving robots for end-point delivery enabling cooperation with the drivers of living logistics trucks and smart storage</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Autonomous driving - Finding optimal routes - Smart storage <p>(Areas of application) On-demand parcel delivery service, unmanned delivery service by linking with self-driving trucks</p>
	 <p>Smartization of logistics/distribution center</p>	<p>(Definition) Technologies for automation and intellectualization of logistics process from warehousing to release of multiple items in small quantity that occur frequently in the logistics/distribution center (fulfillment)</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Automation robotics - Autonomous driving - Data processing <p>(Areas of application) Transfer of goods within the center, dealing with the movement of heavy items and risky activities in the center, optimal use of space</p>
Manufacturing	 <p>Digital twin (Advanced CPS)</p>	<p>(Definition) Technologies that creates a digital twin of a physical entity in the real world, develops simulations on circumstances that may occur in practice to predict the result (high-level design of cyber-physical system (CPS))</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Sensor technology - Digital replica or design of things - Virtual simulation <p>(Areas of application) Production design, monitoring of plant operation, prediction on workload and production loss, failure diagnosis and prediction, performance analysis</p>
	 <p>Human augmentation technology</p>	<p>(Definition) A combination of technologies including bioengineering, electronic engineering, and mechanical engineering to enhance (augment) existing or insufficient capabilities of humans by using natural or artificial methods and techniques</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Brain-computer interface (BCI) - Cognitive processing capacity - Robotics for human augmentation <p>(Areas of application) Cochlear implant, artificial vision, brain implants, prosthetic arms and legs, sleep inducement, concentration improvement, neurofeedback device, BMI technologies to implement advanced driver assistance systems (ADAS) functions</p>
	 <p>Cooperative robot</p>	<p>(Definition) Technologies that are designed to interact with humans mostly in manufacturing site, conduct simple repetitive tasks, precision or dangerous works instead so that people can work in a safe environment</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Multi-degree-of-freedom (MDOF) robot - Robot interface - Detection of cooperative space <p>(Areas of application) Vehicle assembly, cooperative robots for quality inspection, streetlight assembly, cooperative robots for plant, packaging of cosmetics products, picking & placing, cooperative robots for the manufacturing of multiple items in small quantity</p>

Sector	Technology	Description
Enviroment	 <p>Robots to collect and transport medical waste</p>	<p>(Definition) Robots that collects medical wastes such as clothes, gloves of medical staff and persons confirmed with a disease and transport them to the disposal site</p> <p>(Composition)</p> <ul style="list-style-type: none"> - AI algorithms - Robot control through mobile communication - Secondary battery <p>(Areas of application) Safe collection and transport of medical wastes occurred in medical institutions, testing/inspection institutions, etc.</p>
	 <p>Technologies for integrated management of zoonotic diseases</p>	<p>(Definition) Technologies for integrated management on detection, inspection, and response to zoonotics diseases transmitted between humans and animals</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Vaccines for animals and humans - Big data on zoonotic diseases - Prevent/control of natural reservoirs <p>(Areas of application) Disease control and management, and preventive measures for public health upon the outbreak of epidemic or pandemic</p>
Culture	 <p>Immersive broadcasting service</p>	<p>(Definition) Technologies that provide Immersive video/audio services in real-time that improve the sense of reality and immersion to present users a new experience as in the case of VR broadcasting and 3D TV</p> <p>(Composition)</p> <ul style="list-style-type: none"> - VR/AR technologies - 5G technology - Display technology to provide immersive service <p>(Areas of application) Immersive sports broadcasting, immersive worship, immersive live concert broadcasting</p>
	 <p>Deepfake detection techniques</p>	<p>(Definition) A technology that detects deepfakes* to determine whether or not the a video is deepfake-forged content</p> <p>* It refers a fake video created by using AI and facial mapping techniques, and which can be abused for fake news and scams</p> <p>(Composition)</p> <ul style="list-style-type: none"> - AI for deepfake detection - Blockchain <p>(Areas of application) To determine the authenticity of videos and voices used for scams and fake videos</p>
	 <p>GIS mapping with drones and 3D imaging technologies</p>	<p>(Definition) A technology to build GIS* by using video data from drones and converting them into 3D videos through post processing</p> <p>* GIS (Geographic Information System): It refers to the Information system that converts the necessary geographic information to digital data to utilize it efficiently</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Drone technology - AI - VR/AR <p>(Areas of application) Provision of VR and other services by converting the scenes of tourist attractions into 3D videos</p>
Data security	 <p>Technologies to assure video conferencing security</p>	<p>(Definition) Video conferencing system that detects vulnerabilities to ensure the security and provides various functions (participant authentication, safe video/data transmission, recording limitations, sending/receiving files, etc.)</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Authentication and access technologies - Technology to recognize fake calls - Data encryption on video calls <p>(Areas of application) Video conference, online class, work from home, non-contact tasks</p>

Sector	Technology	Description
Data security	 <p>Quantum-encrypted video conferencing for security</p>	<p>(Definition) A future technology for secure communication that transmits video with the quantum mechanics without a need to relay on intermediaries, solving problems of storage in the middle server and potential risk of hacking</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Quantum key distributor (QKD) technology - Video conferencing system - Transmission of quantum-encrypted video <p>(Areas of application) Hacking free video conference, data communication for quantum computing</p>
	 <p>Movement tracing system using homomorphic encryption</p>	<p>(Definition) A system of security monitoring that provides a series of functions including movement tracing upon disaster, while protecting personal data</p> <p>(Composition)</p> <ul style="list-style-type: none"> - Homomorphic encryption (HE) technology - Pseudonymisation - Security monitoring for data protection <p>(Areas of application) Tracing of travel routes while protecting personal data, remote medicine</p>

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