

Q1. What action have been undertaken or to be undertaken by governments in relations to each of the international Internet-related public policy issues identified in Annex 1 to Resolution 1305?

The activities and actions in respect to internet-related public policy conducted in the Republic of Korea could be described as followed.

I. Multilingualization of the Internet Including Internationalized Domain Names

The issues of Internationalized Domain Names in Korea is mentioned in ‘section III – Domain’ in this summary report.

II. International Internet Connectivity

1. Backbone Networks

IX (Internet eXchange)

These days the internet is used as a medium for distributing vast amounts of information and connecting diverse users. To achieve this, there must be direct and indirect connection among ISP (Internet Service Providers) to provide connection services. As internet use has increased, a number of ISP is created. It caused to increase line cost due to the excessive investment and traffic. In this regard, in order to ensure efficient networking, the IX (Internet eXchange) has appeared.

The IX is an internet interworking service for efficient traffic communication between ISPs. For the purpose of connecting ISPs, each provider interfaces its lines to major IX NOCs (Network Operations Center) so that line costs are lowered and network paths provided. Looking at the IX operations in Korea:

- the KTIX is connected to 18 ISPs and 2 IXs (total connection capacity approx. 1,804Gbps),
- the DIX is connected to 30 ISPs and 2 IXs (total connection capacity approx. 1,500Gbps),
- the SKBIX is connected to 12 ISPs and 3 IXs (total connection capacity approx. 1,795Gbps),
- the KINX is connected to 15 ISPs and one IX (total connection capacity approx. 371Gbps), and
- the 6NGIX, which operates on a nonprofit basis for IPv6-based traffic exchange, is connected to 5 ISPs (total connection capacity approx. 4Gbps).

Commercial Internet Networks

A total of 119 Korean Internet commercial services, including Kornet (KT), Boranet (LG U+), B-Net (SK Broadband), Sejongnet (Sejong Telecom) and Dreammax (Dreamline), receive IP addresses from KISA(Korea Internet & Security Agency), responsible for Korean internet resources, and provide services such as leased lines and high-speed connectivity for institutions and individuals using the Internet.

KORNET is a domestic infrastructure network for internet connection. This high-speed information network is short for the ‘KORea-telecom-interNET’. From June 1994 until now, KORNET has installed 2.5G~10Gbps high-speed networks in over 90 locations across the country, and built over 20 international lines including the 140Gbps line connecting with the US and provided service. BORANET is the internet communication network of LG U+. It launched a service to lease internet lines for enterprises in October 1994, and then extended the service to home users. It also provides

high-speed internet customers with triple-play service, i.e. voice, internet and broadcasting. B-Net is the internet network of SK Broadband. It launched commercial service in April 1999, introduced Korea's first IPTV service (Btv) in July 2006. Currently over 130 are accommodating subscriber section traffic around the country, and B-Net is connected to numerous foreign and major Korean service providers to provide high-quality internet service.

2. Subscriber Networks

Fixed Line Networks

Korea completed its government-led BcN(Broadband Convergence Network) project in 2010, six years after it commenced in 2004. The number of BcN subscribers using a connection faster than 50Mbps now exceeds 14.82 million, over achieving the original goal of 12 million by more than 20%. The BcN project has enabled practically all cities, towns and rural communities to use 50M~100Mbps FTTH and HFC-based broadband Internet services. For small farming and fishing villages with fewer than 50 households, for which access to broadband Internet service was not commercially practical, the farming and fishing village broadband subscriber network promotion project has been operated since 2010. The FTTH-based broadband networks were implemented for about 38% (5,002) of 13,217 villages in total by December 2012. Also, the Giga Internet project, which was launched in 2009, will offer the Giga Internet which is 10 times faster than BcN, offering speeds between 100Mbps and 1Gbps. Aiming at more than 90% of Giga coverage across the country by 2017, Korea is now developing and demonstrating technologies for enhancing next-generation subscriber networks, such as Giga Wi-Fi, 10GE-PON and the RF Overlay-based Giga Internet.

Wireless Networks

As smartphones and tablet PCs have vastly consumed, the connection to the internet has become common from anywhere and at any and all times. To handle excessive traffic in WMAN networks like WCDMA or LTE, domestic mobile carriers are actively installing Wi-Fi Aps (Access Point). To date, the three mobile carriers in Korea have installed more than 400,000 APs, and general users are increasingly installing Wi-Fi APs in their homes or offices to reduce costs and ensure faster connection. According to a March 2013 study released by IDC, Wi-Fi services of global carriers are forecast to record about USD 4.2 trillion of sales in 2013.

As APs have proliferated, excessive installation of APs caused signal interference and deteriorating transmission speed. To address this, starting in 2012, the government has been inducing the three major domestic carriers to jointly install APs in public places so that more than 2,000 APs have been installed across the country, and by the end of 2013 an additional 2,000 APs will be installed in heavy traffic areas and inner city areas around the country so that the public can have better access to the Internet.

Traffic per LTE subscriber in Korea is 1.6 times that of WCDMA subscribers, and data traffic is increasing rapidly as the number of LTE subscribers is increasing sharply. So expansion of the LTE bandwidth is being actively discussed. Unlike 3G, LTE transmission speed will improve proportionally as bandwidth is increased. In other words, if the current 10MHz width of LTE is increased to 20MHz or more, the transmission speed of LTE will be doubled. The government finished auctioning the LTE spectrum in the 1.8GHz and 2.6GHz band in August 2013, but when and how to allocate the spectrum adjacent to the 1.8GHz band owned by KT has become a heated issue.

III. Management of Internet Resource

Korea is allocated internet resource by APNIC, a regional Internet Registry that allocates IP and AS

numbers in the Asia Pacific region. Korea Internet & Security Agency (KISA)'s role as to internet resource is to manage kr domain and development of kr domain policy, to allocate and assign the Internet Protocol (IP) addresses and Autonomous System (AS) numbers, and to the operate and DNS(Domain Name Server) etc. When domestic ISPs or organizations are assigned a certain amount of IPs and then ISPs later allocates IP address to end-user (customers).

1. IPs and ASs

Korea has been making efforts to stably secure IP (Internet Protocol) addresses and AS (Autonomous System) numbers. As of the end of April 2013, Korea has 112,261,632 IPv4 addresses, No. 6 in the world, and 5,231 IPv6 addresses (/32, 2⁹⁶), No. 8 in the world, while it has 1,016 AS numbers, making it No. 11 in the world.

2. Domain

As to the domain, there are two kinds of top national domains in Korea: '.kr' and '.한국(Hankook)'. The '.kr' domain was launched as a three-tier system such as 'abc.co.kr' when introduced in 1986. The two-level 'Korean alphabet.kr' system was introduced in 2003, and the two-level English system, e.g. 'abc.kr', was introduced in 2006. By the end of December 2012, a total of 1,094,431 addresses had been registered in the '.kr' domain. Meanwhile, according to the demand of non-English speaking countries that want to use their own languages for a domain, ICANN (Internet Corporation for Assigned Names and Numbers), which establishes the global policy for the world's internet addresses, finalized its plan in October 2009 to introduce multi-language top national domains. In response, the KCC decided to use the Korean characters of '.한국' for the top national domain. In February 2011, ICANN delegated KISA as the authority responsible for managing the '.한국' domain, and registration for '.한국' domain names commenced on May 25, 2011. To smoothly introduce the '.한국' domain and prevent any confusion or conflicts likely to occur in the early stages, KISA handled the assignment of domain names in three pre-launch stages. First instituted was a registration period during which government and public institutions were given the opportunity to register domain names first, then trademark holders were added, followed by a lottery registration period during which registrants were given one registration opportunity with those having identical requests being determined by lottery. After the domain was launched, as with the '.kr' domain, domain names have been registered on a first come- first-serve basis.

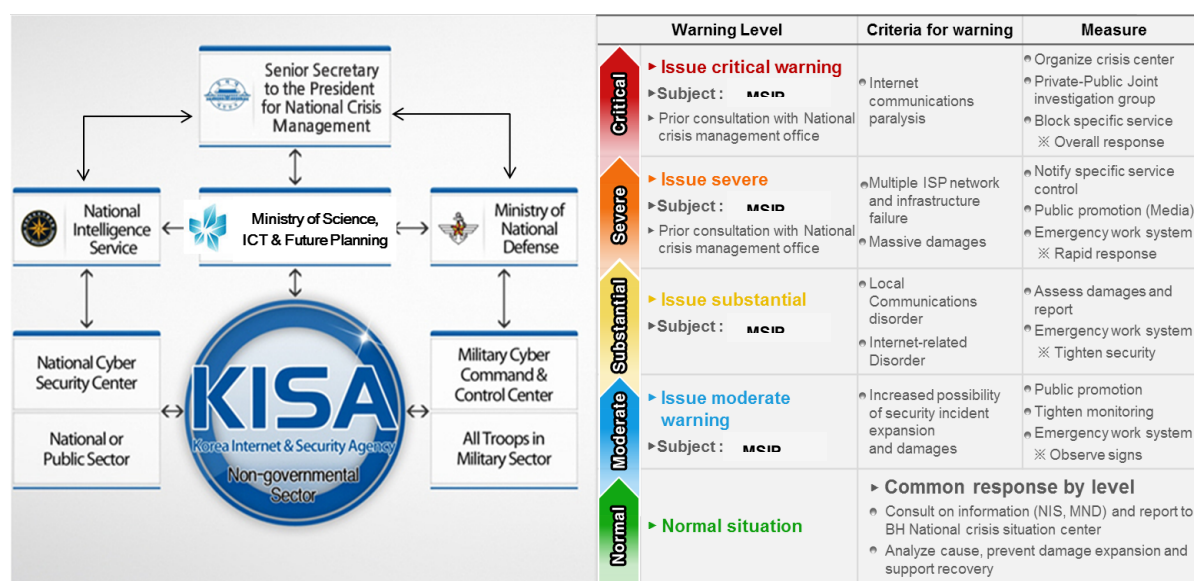
IV. The security of the Internet(Information Security in General)

2012 witnessed a variety of security threats, and intrusion incidents continuously occurred. Hacking of enterprises with the aim of stealing personal information, and DDoS (Distributed Denial of Service) attacks targeting game companies, portals and DNS servers continued throughout 2012, and sophisticated phishing attacks, which induce financial information leaks and payments, resulted in direct financial losses. Responding the internet incident requires the central government to provide situational awareness and establish a common operating picture for the entire relevant entities as appropriate, and to ensure that critical report reaches government decision makers in collaboration of relevant organization and the ISP/Vaccine firms.

To suppress such attacks, the MSIP (Ministry of Science, ICT and Future Planning) and the KISA (Korea Internet & Security Agency) operate the KrCERT/CC (Korea Computer Emergency Response Team Coordination Center) to detect, analyze and respond to signs of abnormal web traffic in advance, prevent intrusion incidents, analyze damaged systems and malicious codes, establish countermeasures, and quickly respond to intrusion incidents jointly with related agencies to prevent proliferation of

damages. Most security incidents including zombie PC occur in private sector and KISA under the MISIP is responsible for that incidents. If an incident occurred in public sector, National Cyber Security Center (NCSC) under the National Intelligence Service (NIS), military national defense sector in the under umbrella national defense has a strong drive to deal with the incident. All 3 sectors manager report to Senior Secretary to the President for National Crisis Management.

Korea also is operating Cyber Threat Warning System composed of 5 threat levels -Normal, Moderate, Substantial, Severe, and Critical- for the private sector. MSIP/KISA is in charge of issuing cyber security alarm and in each of level, the action ought to be taken is identified. Korea has issued substantial warning level but has not issued any level above severe or critical level yet.



Turning to the prevention aspect of the incident, Korea adopted a new system referring to “Information Security Management System (ISMS)” to evaluate if an organization has appropriate information security environment. Article 47 Certification of Information Security Management System in the “Act on Promotion of Information and Communications Network Utilization and Information Protection” (hereinafter ‘IT Network Act’) set out the legal basis of ISMS.

ISMS is a set of policies and procedures for systematically and continuously managing organization’s sensitive data since the risk gap grows over time without consistent management of information. As of February 18, 2013, compulsory ISMS has been operated along with voluntary ISMS. The following subjects must obtain the ISMS certificate in 2013, otherwise a certain amount of penalty (KRW 10 million) will be charged: Internet Service Providers (ISP), Internet Data Centers (IDC), and Internet Communications Services Providers with more than KRW 10 billion of total sales in previous fiscal year or more than one million users (on average) on a daily basis during last 3 months of the previous fiscal year. The certificate is valid for 3 years and required to renew it. It has been issued 151 certificates until 2012.

V. Combating Cybercrime

Recently cyber-crimes are not limited in hindering service provided in web-site but more likely to disturb the privacy and relate to the financial purpose through cyber-bullying, fraud like phishing

scam. The police has been responding and investigating by establishing 'Cyber Terror Response Center' since 2000, but it is situated in environment where a responsive action is hard to work effectively due to the various relevant organizations in dealing with cyber-crime. The domestic organizations pertaining to the cyber-crime are varied from the investigation authorities to public agency referring to Korea Internet Security Center (KISC).

VI. Dealing Effectively with Spam

Recent Spam is not only sending unsolicited advertising, but also affecting the leakage of personal information, as well as spreading malicious code. Hacking in conjunction with other malicious activities, thus, make users anxious and distress about spams is being intensified.

In Korea, Korea Communications Commission (KCC) and Korea Internet & Security Agency (KISA) have dealt with spam related grievance management since 2003 to relieve the inconvenience and discomfort of spam. A received report is under process to confirm whether the case violates the existing law. If is, administrative penalties will be imposed or further investigation will be undertaken. In addition, phone numbers for illegally sending spam, domain, IP in cooperation with internet service provider (ISP) take restrictive measures.

Corresponding to mitigate spam activities in Korea, KCC and KISA prevent the creation of a fake phone as well as the awareness toward users was promoted to restrain from using a fake phone since 2009. In addition, the amount of text message is also limited in 500 times at a time and the amount of phones to own personally is limited per capita. As a result, “phone to phone” method greatly reduces the amount of spam sent, on the other hand, companies such as through bulk SMS sending “web to phone” way to increase the amount of spam being sent through the pattern seems consistently increasing.

In line with “Comprehensive Anti-spam Measures” in 2009, an “intelligent anti-spam service” was initiated. Intelligent anti-spam services are providing a comprehensive analysis of the content, the reply code, sending patterns in the process of the transfer of text messages. It is a carrier's spam free value-added service to users and the effect to block the spams is appreciable.

Another step the Korean government took is to establish M-RBL (Mobile Real-time Blocking List) system to prevent the spread of malicious spam, through the mobile phone. A carrier with KCC and KISA interact to share and block the spam by extracting spammers number. Since 2005, in order to prevent the spread of spam email from a variety of sources collected domestic and foreign information, IP-based real-time anti-spam list, RBL(Real-time Blocking List) periodically generated through a comprehensive analysis. The list is provided to Korea's major portal, which is easily targeted at spam, as well as small mail server operating agencies.

VII. Issues pertaining to the use and misuse of the internet (including protecting children)

Without doubt internet is an important source of information, education and communication for children and young people. But it also bring threats and risks to children's safety, security and privacy by exposing children not only to harmful, violence and inappropriate content, but also to strangers and pedophiles, who sexually exploit children and expose them to online abuse such as child pornography and child prostitution. The Internet also provides avenue for harassing, stalking and bullying online that threaten the physical and emotional security as well as privacy of the children.

1. Enhancing Internet Ethics

Everyone must be aware of and practice Internet ethics so that social problems caused by the Internet can be resolved. Accordingly, the KCC and the KISA operate a youth organization to promote a sound Internet culture, prevent cyber bullying, and enhance Internet ethics. Their ‘Korea Internet Dream Star’ and ‘Beautiful Internet World’ campaigns are conducted every year.

In particular, the “Korea Internet Dream Star”, which celebrated its 3rd anniversary in 2013, selects different topics and targets every year, whereby it helps teenagers to learn Internet ethics for themselves, and use it properly. The Beautiful Internet World campaign is an Internet cultural movement for all citizens intending to create a sound Internet culture. The “Korea Internet Dream Star”, which targets elementary and middle school students who are the future leaders of the Internet society, is a youth organization that was established to develop young leaders who have a sound understanding and appreciation of high ethical values in the Internet society by operating programs that teach proper use and understanding of the Internet. Through the ‘Korea Internet Dream Star’ program, youth can develop their ability to creatively express their thoughts and properly accept others’ opinions, as well as participate in various activities (education, campaigns, experience/exploration, social contributions, etc.) to improve their ability to take the leadership in fulfilling their social responsibilities in the evolving Internet society.

On September 12, 2012, the government hosted its first ‘International Internet Ethics Symposium’ in Seoul jointly with the Korea Society of Internet Ethics to share information on the Internet ethics issues and responses of different countries. At this symposium, not only great scholars of Korea, but also famous foreign scholars in internet were invited. They all gave presentations on the emergence of internet ethics, their necessity, the internet ethics problems of different countries and their responses, and participated in panel discussions featuring open Q&A sessions.

2. Online Protection of Children

The diffusion of the Internet enriches the lives of children and youth by providing them with opportunities to access limitless information as well as enjoy a rich cultural life including online education, games, videos and music, but also exposes them to a variety of social dysfunctions and detrimental content. In the online world, children are exposed to an increasing variety of risks that are getting more serious day after day, such as distribution of illegal contents, cyber violence, pornography, online game addiction and online frauds.

To protect children and youth from illegal and harmful contents in the ever changing broadcasting and communication environment, the Korea Communications Standards Commission built its Green I-Net (www.greeninet.or.kr) in 2008, and has since been providing programs to respond to harmful information on the Internet, such as supporting the filtering of information harmful to teenagers, grading information harmful to youth, preventing infringement of cyber rights, and managing Internet information usage time.

The government also formed an emergency response hotline council consisting of 30 Internet service providers like portals, P2P and web-based storage/services to prevent the distribution of illegal and harmful information on the Internet in a bid to monitor obscenities like child pornography. As a result, Internet providers like portals reinforced their monitoring to prevent youth from uploading obscene materials, and conducted strict self-inspection to check whether affiliated contents are legal or not.

VIII. Availability, Affordability, and QoS in the Developing Countries

This section is not applicable to this summary report.

IX. Contributing to Capacity Building in Developing Countries

As Korea has been undergoing successful industrial development and informatization, Korean government is concentrating on spreading the power of ICT industries and sharing the knowledge with a global community. The main activities are focusing on digital switchover, information security, and spectrum management system

Korea has been implementing the ICT Development Consultation Program with the aim of promoting and ensuring digital opportunity in many countries. As a leading ICT think tank for the Korean government, KISDI has taken part in Korea's ICT Cooperation Projects since 2002 with the support from the Ministry of Science, ICT, and Future Planning (MSIP). The ICT Development Consultation Program includes ICT Policy Consultation Project and ICT Advisory Mission Project where 31 ICT Policy Consultation Projects and 15 Advisory Missions have been successfully completed in 22 countries since 2002. In providing prompt and immediate solutions to the partner country's needs, assigned experts with practical expertise deliver the knowledge to other countries.

The National Information Society Agency (NIA), a subsidiary organization under the Ministry of Science, ICT and Future Planning (MSIP), has tried its best in its mission to develop Korea into an information-oriented society and to reduce information gaps between individuals both domestically and internationally. Since 2002, NIA has carried out Information Access Center (IAC) project providing better access and opportunity to use ICTs for the general public in developing countries, thus contributing to improving the IT environment as well as cooperation in the ICT field. Its major task is to exchange human resource and digital contents and to establish a regional networking community share ideas and experience for sustainability and development of IAC.

A different pillar of capacity development activities for the developing countries is supporting improvement in the broadcasting environment. The International Telecommunication Union (ITU) has recommended the world to complete digital television transition by 2015. With success in completion of transition from analogue to digital TV at the end of 2012, Korea aims to share its know-how and first hand experiences on cost and time saving strategies with other countries by establishing a cooperative network with international broadcasting organizations such as Asia-Pacific Broadcasting Union (ABU), Asia-Pacific Institute for Broadcasting Development (AIBD) and ITU. Besides, South Korea plans to help these countries to reduce their burdens in completely replacing the existing analogue broadcasting equipment with digital ones.

The last one is to provide an IT specialized training. K-LINK(Korea Leader's Information Network) is an ICT expert training program presented by KISA(Korea Internet & Security Agency). The ultimate goal of K-LINK is to assist broadcasting & telecommunications experts to get insight on policy making for growth and to implement advanced policies. We believe this program will be useful to all participants and their countries ICT development. The program for K-LINK is comprised of Broadcasting, Communication, Radio Frequency, Convergence and Information Security Technology and Policy.

Aside from the K-LINK, Korea ICT Learning (KoIL) program also invites policy makers, public

officials, and experts in the ICT field to share the newest technologies and issues to be reflected on national policies and plans in order to address their social and economic challenges of using ICT tools. Participants at KoIL courses learn ICT development strategies, discuss current issues and trends, and seek means of cooperation to advance their nations' strategies on e-governance and new technology adoption. On-site courses are also available to better reflect each nation's demands and circumstances.

X. Developmental Aspects of Internet

This section is not applicable to this summary report.

XI. Respect for Privacy and the Protection of Personal Information and Data

As the amendment to the Act on Promotion of Information and Communications Network Utilization and Information Protection, Etc., which reinforces personal information protection in information and communication, went into effect in August 2012, various programs regarding personal information use and protection came into being. Accordingly, information and communication service providers are prohibited, in principle, from collecting and using the resident registration number of the user unless the personal identification authority or law permits, and various new systems, such as the personal information expiration system, the personal information usage notification system, and the notification and reporting of personal information leak to minimize the damage, were introduced. The biggest change to the personal information protection policies due to the amendment of the Act on Promotion of Information and Communications Network Utilization and Information Protection, Etc. is the prohibition of the information and communication service providers from collecting and using resident registration numbers (RRN) on the Internet. The collection and use of RRNs was prohibited from August 2012, and the RRNs already in possession were to be destroyed within two years after the date of enforcement. Accordingly, the Korea Communications Commission (KCC) and the Korea Information Security Agency (KISA) opened the 'Internet RRN Clean Center' in May 2012 to support the RRN restriction policy. They also support laws on restriction of collection and use of RRN, technology counseling, RRN conversion support for small businesses, and provision of alternative RRN.

Korea enacted "Personal Information Protection Act" in order to increase the people's rights and to ensure the protection of personal information in September 2011. The Personal Information Protection Act (PIPA) 2011 is comprehensive legislation, covering all sectors. Prior to September 2011 privacy protection was covered in part by the Act on the Protection of Personal Information Maintained by Public Agencies 1999 for Government, and Act on Promotion of Information and Communication Network Utilization and Information Protection 2001 for the private sector. This second Act only applies to the information and telecommunications industries that are providers of information and communications services such as common carriers, Internet service providers and other intermediaries, such as content providers. The Act also covers specific offline service providers such as travel agencies, airlines, hotels, and educational institutes.

PIPA identifies information pertaining to a living individual, which contains information identifying a specific person with a name, a national identification number, images, or other similar information (including information that does not, by itself, make it possible to identify a specific person but that which enables the recipient of the information to easily identify such person if combined with another information).

The relevant Korean authorities' understanding is that the construction of Personal Data under PIPA and that under IT Network Act are same in spite of subtle difference in definition wordings. The Minister of Public Administration and Security (MOPAS) is in charge of the execution of PIPA. The

KCC is in charge of the execution of the IT Network Act.

Under PIPA, Sensitive Personal Data is defined as Personal Data consisting of information relating to a living individual's: (i) thoughts or creed; (ii) history regarding membership in a political party or labor union; (iii) political views; (iv) health care and sexual life; and (v) other Personal Data stipulated under the Enforcement Decree (the Presidential Decree) which is anticipated to otherwise intrude seriously upon the privacy of the person. The Enforcement Decree of PIPA includes genetic information and criminal record as Sensitive Personal Data. IT Network Act also has a similar definition

The KISA is an executing organization of personal information protection, although complaints handling is complemented by the work of the Personal Information Dispute Mediation Committee (PICO). Aside from the PICO, KISA has been operating 24/7 call center to consult personal information breach.

Aimed at increasing the awareness that appropriate management of personal information, Korean government has introduced "Privacy Impact Assessment (PIA)" to constrain from infringing of privacy and ensuring a secure process of personal information. According to the PIPA, the impact assessment in public organization is obligatory while the assessment for relevant stakeholders in a private sector is optional.

XII. Protecting children and Young People from Abuse and Exploitation

This section is described in the Section VII (Use and Misuse of the Internet).