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|  | ASIA-PACIFIC TELECOMMUNITY |  |
| **16th APT POLICY AND REGULATORY FORUM (PRF-16)** | **Document:**  **PRF-16/OUT-02** |
| 12-14 July 2016, Tokyo, Japan | September 2016 |

Secretary General

draft Summary record of the 16th apt policy and regulatory forum (PRF-16)

1. Introduction

The 16th APT Policy and Regulatory Forum (PRF-16) was held from 12 to 14 July 2016 in Tokyo, Japan. The forum was hosted by the Ministry of Internal affairs and Communications (MIC), Government of Japan.

The agenda and the programme of the meeting are contained in Documents PRF-16/ADM-01 (Rev.2) and PRF-16/ADM-02 (Rev.6) respectively.

The Meeting was attended by 114 participants representing Members, Associate Members, Affiliate Members, International/Regional Organizations and other organizations. Document PRF-16/ADM-03 contains the list of participants of the meeting.

1. Opening Session (Tuesday, 12 July 2016, 9:30-10:00)
   1. Welcome Address by Ms. Areewan Haorangsi, Secretary General, Asia-Pacific Telecommunity

Ms. Areewan Haorangsi, Secretary General of APT delivered the Welcome Address.

The full text of Ms. Areewan’s Welcome Address can be found in document PRF-16/INP-01.

* 1. Welcome Remarks by Mr. Leong Keng Thai, Chairman of PRF-15

Mr. Leong Keng Thai, Chairman of PRF-15 delivered the Welcome Remarks.

The full text of Mr. Leong Keng Thai’s Welcome Remarks can be found in document PRF-16/INP-02.

* 1. Inaugural Address by H.E. Keiichi Koshimizu, Parliamentary Vice Minister, Ministry of Internal Affairs and Communication, Japan

H.E. Keiichi Koshimizu, Parliamentary, Vice Minister, Ministry of Internal Affairs and Communication (MIC) Japan, delivered the Inaugural Address.

The full text of H.E.’s Inaugural Address can be found in document PRF-16/INP-03.

* 1. Presentation of a token of appreciation by APT

A token of appreciation was presented to the H.E. Keiichi Koshimizu, Parliamentary Vice Minister by the Secretary General of APT.

1. Session 1 (Tuesday, 12 July 2016, 10:30-10:45)

**Chair**: Mr. Leong Keng Thai, Chairman of PRF-15

* 1. Election of Chairman of PRF-16

Secretary General of APT informed the meeting that Mr. Yasuhiko Taniwaki, Director-General of the Global ICT Strategy Bureau, Ministry of Internal Affairs and Communications (MIC) Japan was nominated from the host as Chairman of PRF.

With the acclamation of the meeting, Mr. Yasuhiko Taniwaki, MIC, Japan, was elected as the new Chairman of PRF and will continue his chairmanship until the next PRF meeting in 2017 according to the Working Methods of PRF.

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| **Decision no. 1 (PRF-16)** |
| The meeting elected Mr.Yasuhiko Taniwaki as the new Chairman of PRF. |

* 1. Remarks by the Chairman of PRF-16

Mr. Taniwaki made a short remark about his chairmanship and continued as Chairman for the following Session.

* 1. Adoption of Agenda (Document PRF-16/ADM-01 (Rev.2))

The Chairman introduced the provisional agenda of the meeting contained in document PRF-16/ADM-01 (Rev.2). Chairman sought for comments from the floor, there was no comment and objection. The meeting adopted the agenda as proposed.

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| **Decision no. 2 (PRF-16)** |
| The meeting adopted the agenda of PRF-16 meeting as proposed in document PRF-16/ADM-01 (Rev.2). |

1. Roundtable on ICT Policy and Regulatory Trends and Updates (Tuesday, 12 July 2016, 10:45-12:15)

**Chair**: Mr. Yasuhiko Taniwaki, Chairman of PRF-16

APT Secretariat introduced that the objective of this Roundtable was to invite high level Government officials and ICT Industries to address ICT Policy and Regulatory challenges and measures. The Secretariat then invited all the Panelists to the head table.

Chairman introduced all the panelists and asked them to make presentations.

* 1. Free Flow of Information and ICT Policy by H.E. Shigeki Suzuki, Vice Minister for Policy Coordination (International Affairs), MIC, Japan *(Document PRF-16/INP-04)*

H.E. Shigeki Suzuki presented the figure of increasing Mobile Cellular Subscription and number of things connecting to the internet which enabled seamless global connectivity. ICT was developing from a way to connect people, to a way to connect people and information, and now to a way to connect people/things and intelligence by creating value in various fields and industries. IoT/Big Data/AI are expected to have great economic impact in all areas. It must be continued to tackle issues such as digital divide, global connectivity, standardization of Big Data, and threat of information security. Privacy protection had been implemented in US, EU, Japan, and other countries. He highlighted that international collaboration to promote these efforts should be strengthened. He also mentioned about the ICT issues discussed in G7 ICT Ministers Meeting in April in Japan, and the OECD/Ministerial Declaration on the Digital Economy in June this year.

Chairman thanked H.E. Suzuki and summarized some key points from his presentation. He mentioned that the penetration of ICT increased the benefit to the society and economic activity, but there’s impact on cybersecurity. Personal data protection and issues of free flow of information were also important issues.

* 1. Digital Economy Challenges and the Government Response – The Case of Thailand by H.E. Pansak Siriruchatapong, Vice Minister of MICT Thailand *(Document PRF-16/INP-05)*

H.E. Pansak Siriruchatapong introduced activities concerning digital economy policy and challenges in Thailand, including digital master plan. In Thai context, instead of just digital economy, we also added “society” to be “digital technology for economic and society” to make people think that it was also their duty. He then explained about the vision to transform towards digital Thailand. For 10 years phase, 4 goals, 6 strategies had been defined. Those strategies were to build country-wide high-capacity digital infrastructure (including to reform state-owned enterprises), to boost the economy with digital technology, to create a knowledge-driven digital society, to transform into digital government, to develop workforce for the digital era, and to build trust and confidence in the use of digital technology. For the last strategy, the keyword was that we should have a law and regulation conformed to international standard.

Chairman thanked H.E. Pansak for his presentation with comprehensive explanation about Thailand and digital transformation programme. He pointed out a point about disruption by digital platform which could be discussed further.

* 1. Trends in ICT Policy and Regulation by Mr. Ilyas Ahmed, CEO of CAM Maldives *(Document PRF-16/INP-06)*

Mr. Ilyas Ahmed introduced trends for ICT development (e.g. OTT) and consequences from those trends (e.g. loss of revenue). There were global trends in ICT regulation such as collaborative regulation, attempts to regulate OTTs. Tools that countries used to address the trends included broadband policies, regulatory interventions, cybersecurity plans, re-farming and new spectrum plans, and new licenses. The presentation also covered how Maldives looked at these challenges. There were national broadband policy 2014-2018, regulatory measures regarding mobile number portability and spectrum availability, new licenses for ISP, and the new digital TV standard. Finally he explained the regulatory policies of light touch regulation where effective competition will deliver better results than regulating, and regulatory forbearance which is to focus regulation to where it’s needed and withdraw regulation from those markets and aspects where it’s no longer needed.

Chairman thanked Mr. Ilyas for his presentation. He pointed out one discussion point about regulation of OTT player, and Net Neutrality. He mentioned that we had to think about the network players and OTT players. He also highlighted that light touch regulation was the important point to promote, and it was the important topic for discussion.

* 1. Improving Lives in South-East Asia by Ms. Deevya Desai, Regional Head of Public Affairs, Grab, Singapore *(Document PRF-16/INP-07)*

Ms. Deevya Desai introduced vision of Grab which was to provide safe transportation platform and champion a safe transportation sector. Grab was developed with the specific needs of the region in mind to address safety concerns for woman, to help the government solve traffic and road safety problems, to solve the supply and demand mismatch of transport. Along with improving the lives of passengers, Grab simultaneously aims to improving the lives of drivers. Grab also aims to improve inclusivity in Transportation, and engage in social impact initiatives. Grab has partnership with World Bank to provide GPS data in real time, and put into the open traffic platform which converts GPS data into real time traffic insight. She finally presented some policies and regulations issues relevant to Grab in Singapore, Viet Nam, and Philippines.

Chairman thanked Ms. Deevya for her presentation. He mentioned that the presentation reminded him that ICT was a tool to improve social lives, and this was the example of social innovation. This kind of business model should emerged in the market and maybe it has to face with regulation. That kind of conflict was another issue that we have to discuss.

* 1. World’s Leading Internet TV Network by Mr. Yu-Chuang Kuek, Managing Director, APAC, Netflix *(Document PRF-16/INP-08)*

Mr. Yu-Chuang Kuek introduced a brief history of Netflix. Now it is a company that provides an Internet TV Streaming service. From the company perspective, it aspires to be a global company that bring regional content to a global platform which make the production value higher than traditional broadcast environment. The term “disruption” which has negative connotation was often used. Many companies are under threat with the new technology. In US, the rise of OTT service is complementary to the service that already exists and give the customer more choices. Netflix has partnership with Telecom operators in the region and hope to have more. The argument for the cost of investment for the network was that Netflix also invested a lot in the content so that people use the infrastructure that was laid out. He also mentioned that piracy usually goes down as OTT grows. When content get control, user tend to go to piracy sites.

Chairman thanked Mr. Kuek for his presentation. He mentioned that the presentation reminded him about the previous discussion on how to develop the legal framework between telecommunication service and broadcasting services.

* 1. Discussion and Q&A

Chairman mentioned that we have listened to five different presentation and each of them has different perspectives. The discussion points were also included in those presentations. He asked each panelist to make comment after listening to other panelists’ presentations.

Some key points that have been mentioned by those panelists including: regulated OTT service, de-regulation, free market and competitive price, looking at the future and change ourselves rather than working the same way we were working in a few years back, disruption as reconstruction, light touch regulation.

Chairman then opened the floor for questions.

Mr. Leong from IDA asked Mr. Pansak about the plan for the consolidation of two state enterprises and create a new company that do wholesales as well as open access, in such a model, would it have structural separation for the company to provide open access, would this wholesales also cover both fixed and mobile, what about spectrum, how would the regulation change in term of regulatory regime such as deregulate the wholesale price, etc.

Mr. Pansak answered that the problem for those state enterprises was the performance in business, which their efficiency was not so good at the moment. The infrastructure they built was good but there was low utilization. How can we use this core network to improve their performance and efficiency? Now Thailand had three big operators for mobile broadband. It’s difficult to do business on fixed broadband where the penetration was only about 30%. These two state enterprises were kind of duplication which was not the first case in Thailand. He wished to have fixed broadband according to the digital policy. State enterprise to do core network and the private to do the last mile. Currently last mile is coupled with service, how we can decouple. We will extend the fiber to the village. Right of ways was also one of the problem, such as underground, electricity pole.

Mr. Kumar from TRAI India mentioned to Netflix that in general the objective of Netflix was to reach all Internet services user of the country, but Netflix try to do user agreement with some of the telecom service provider or ISP, what is the benefit?

Mr. Kuek answered that Netflix have exclusive marketing campaign for the agreement with the ISP, when we have a new show in town for marketing, Netflix will give exclusive access to one of commercial partners. What Netflix does not do is exclusive relationship with ISP in delivering the content. Netflix fiercely objects to do any agreement where there is a situation where there is zero rating toward one particular player. This is open up to the entire sphere of video on demand players, and Netflix thinks that it’s fair. If there is a situation of one to one where company A will only zero rating content from OTT player B, it will come to the point where the new innovative is not allowed to come aboard. Netflix doesn’t want the market situation where all the deals are signed where each ISP provider already have exclusive deal with particular OTT service provider, at the end this block new entry to other player.

A delegate from Viet Nam, mentioned that there were a lot of things happened from the first PRF meeting 16 years ago in Chiang Rai. There’s a lot of challenges for policy maker and regulator, in many places we have to let market force play, but as policy maker and regulator, we have to make policy and regulation mainly for 3 reasons, first for market development, second for national security, third to protect people especially children. Then she asked question to Mr. Ilyas to give some examples for country that withdraw some regulations.

Mr. Ilyas answered that for mobile services about 10 years back, Maldives used to scrutinize all the rates that operators proposed, and it took some time to approve it. But right now Maldives doesn’t do that. But in contrast where market does not operate well like fixed line service, where is only one player. There Maldives has to look into the price and those kind of regulation still remain.

Chairman thanked all panelist and announced for break for lunch.

1. Session 2: Administrative Issues and Global Trends in ICT Policy and Regulation (Tuesday, 12 July 2016, 14:00-15:30)

**Chair**: Mr. Charles Chew, Vice-Chairman of PRF

* 1. Report of SG on the Outcomes of the 39th Session of MC and Implementation Status of the Strategic Plan of the Asia-Pacific Telecommunity 2015-2017 *(Document PRF-16/INP-09 & INP-10)*

Ms. Areewan Haorangsi, Secretary General of APT, presented the combined presentation on the outcomes of the 39th Session of the Management Committee of the APT (document PRF-16/INP-09), and Implementation Status of the Strategic Plan of the APT 2015-2017 (document PRF-16/INP-10). She highlighted the key decisions and instructions from the MC-39 to all APT Work Programme. The presentation stressed the MC instruction on the responsibility of Chairman to review the report of the Work Programme before its adoption, and to attend the APT Management Committee to represent the concerning Work Programme. MC-39 also instructed all work programme to develop tangible outcomes, and to consider the elements relevant to PRF that are necessary to be included in the draft Strategic Plan for 2018 – 2020. She also highlighted the implementation status of the Strategic Plan of the APT for 2015-2017 that were relevant to PRF. She also asked the Members to suggest the activities that could be added in the report to MC this year regarding the current Strategic Plan.

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| **Decision no. 2 (PRF-16)** |
| The meeting noted the outcomes of the 39th Session of the MC and Implementation Status of the Strategic Plan of the APT2015-2017. |

* 1. Update on Sub-regional Issues on Policy and Regulation *(Document PRF-16/INP-11, INP-12, INP-13)*

Mr. Charles Chew, Vice Chairman for Southeast Asia Sub-region presented Update on Sub-regional Issues on Policy and Regulation in Southeast Asia (Document PRF-16/INP-11). He highlighted the completion of the ASEAN ICT Masterplan 2015 (AIM2015) and the objective of the new AIM2020 with 8 focus areas of AIM2020 in 2016. The presentation showed key regulatory issues in ASEAN which included national ICT Masterplan, Cybersecurity Policy, National Broadband Policy, Auction of 1800 MHz, Re-farming of 1800 MHz, Universal Service Program, SIM card registration, 4G trial and commercial license, and spectrum allocation exercises.

Ms. Seonmin Mina Jun, Vice Chairman for East Asia Sub-region presented Update on Sub-regional Issues on Policy and Regulation in East Asia (Document PRF-16/INP-12). She introduced that IoT can be a solution for many Global Issues and key enabler to social development as well as a future engine of growth. IoT is a massive opportunity of East Asia Countries. She then presented about the activities and strategies implemented by Korea, China, Japan, and Mongolia.

Mrs. Tharalika Livera, Vice Chairman for South Asia Sub-region presented Update on Sub-regional Issues on Policy and Regulation in South Asia (Document PRF-16/INP-13). She introduced SATRC Action Plan (SAP) which consisted of Working Groups, Capacity Building, and SARTC Web Portal. Some important issues for SATRC included protection the interests of consumers, OTT services, emerging licensing framework, international connectivity, spectrum requirement for IMT, spectrum re-farming, network sharing, etc. She then highlighted relevant activities for Phase 5 of action plan for 2015-2016.

Mr. Kila Gulo-Vui, Vice Chairman for Pacific Sub-region could not attend the meeting so there was no report from the Pacific Sub-region for this year.

* 1. Sustainable Development Goals (SDGs) 2030 from ICTs perspectives *(Document PRF-16/INP-15)*

Ms. Atsuko Okuda, Chief, ICT and Development, UNESCAP, presented the document introducing SDGs and their objectives. There are 2 projects at regional level that ESCAP coordinates. There was some mapping on how SDG will relate to WSIS action. She showed various statistics, for example progress about broadband subscribers in APAC, pattern of growth by group of countries, pattern of who is moving faster for broadband growth, pattern for growth between infrastructure and services. Some countries move faster and some slower which means digital divide. She then explained about the four pillars of Information Superhighway which are connectivity, traffic/network management, e-resilience, and broadband for all. Future activities for ESCAP was presented at the end.

* 1. 2016 ITU Global Symposium for Regulators (GSR) *(Document PRF-16/INP-16)*

Dr. Jongbong Park, Director Project Development, APT, shared the outcomes of GSR in 2016 which is a neutral platform for ITU-D Sector Members. It also provides pre-events for information sharing. The outcomes for GSR are discussion papers developed to facilitate discussion among the panelists, and best practice guidelines developed by consultation with members before the meeting. GSR-16 this year had a main theme of “Be Empowered! Be Included! Building blocks for smart societies in a connected world”. There were 4 discussion papers, and the best practice guideline on Collaborative regulation for digital financial Inclusion. Documents can be downloaded from ITU website. This year focus was on digital financial inclusion. He also informed that next GSR meeting will be in the Bahamas in July 2017.

* 1. Q&A

Mr. Daniel Mah from SES asked ESCAP if they have data about GDP growth and ICT investment. Ms. Okuda answered that ESCAP was just finalizing the analysis with some questions in mind. It looked at telecom investment, GDP as well as fixed broadband extension. Preliminary findings show that mobile broadband didn’t correspond with telecom investment but fixed broadband does. The report is expected to be available in a few months.

A delegate from Cambodia shared an update that Cambodia now completely approved telecom law in December 2015.

Mr. Leong Keng Thai from IDA asked for explanation about the diagram on growth between infrastructures and services that why some of them move downward. Ms. Okuda answered that the infrastructure index never went down, they were moving from left to right, but the question was for service index. For many countries, the emphasis really went to infrastructure, and some country de-emphasized the service part because at some point there were discussion that the services were good but what’s the use when 80% of population didn’t have broadband or Internet. There were budget reallocation from service to infrastructure. ESCAP also saw how people use broadband especially mobile, it was expanded drastically but the type of information they were accessing were social network, entertainment, as well as communication which had very little connection with the development associated with the application and content. This was the flip side of the coin that in some countries, e-government were de-emphasize but people had devices and access and used them for entertainment, communication, social network purposes. This was the gap that we would like to address. With increasing number of mobile usage, then we may emphasize about service.

Ms. Sulyna from MCMC Malaysia mentioned about the importance of infrastructure and asked if ESCAP has any plan to incentivize investments into infrastructure. Ms. Okuda answered that ESCAP has been working with private sector companies and to hear from them if there are market potential, why are they not investing in this area we considered clearly as missing link. Sometimes the answer was that regulation prohibited, policies are not there. It’s not really always the money part which isn’t very hard to combat ESCAP tried to entangle different factors which prevent expansion of infrastructure including in the rural area. If it’s really the market issue we have to come up with different model to make sure that the infrastructure can be established. The IS private sector consultation meeting was organized in April, we’re trying to tackle incentive issues from multiple entry points and also brought in financial institution such as IFC. Please give us a project that they can finance.

1. Session 3: Business Dialogue on IMT-2020 (5G) (tuesday, 12 July 2016, 15:45-17:15) *(Document PRF-16/INP-17)*

**Chair**: Mr. Joe Guan, GSMA

Mr. Joe Guan made a short presentation to set the scene for Business Dialogue on IMT-2020. He showed some new applications, business model, and even industries that will need 5G. He then gave some information about WRC cycle and WRC-19 preparation for IMT-2020.

* 1. Technology Evolution toward 5G and Beyond *(Document PRF-16/INP-18)*

Mr. Seizo Onoe, CTO/EVP, NTT Docomo, started with a short video on different application that 5G will provide. 5G aims to meet requirements such as enhanced mobile broadband, massive connections for IoT, reliable communications with low latency. It is expected to invent new business models and ecosystems across the industries. He then explained about observed 5G myths e.g. 5G is a hot spot system, 5G is IMT-2020 defined by ITU, and 5G needs significant investment. Finally he covered some aspects on Docomo’s approach to realize 5G including its thought on system architecture, schedule, lesson learnt from the past generations, and experimental trials and their results.

* 1. 5G Development and Spectrum – a Manufacturer’s View *(Document PRF-16/INP-19)*

Mr. Wang Hu, Senior Manager, Huawei, presented the expected growth for mobile broadband. New usage scenarios supported by 5G are massive machine type communication, and ultra-reliable low latency communication. By supporting this new usage scenarios, Mobile network will be closely integrated with other industry sectors. He then presented the works done as well as spectrum plan for 5G which includes those above 6 GHz, below 6 GHz, and below 1 GHz. Spectrum harmonization is still important for 5G especially for high frequency. Huawei works with industry partner for 5G standards. It is important to start/engage in 5G spectrum policy discussion now.

* 1. The Role of Satellite in Delivering a 5G Future *(Document PRF-16/INP-20)*

Mr. Daniel Mah, Senior Legal & Regulatory Counsel, SES, presented the role of satellite in an integrated 5G (IMT-2020) ecosystem. He then focused on four satellite “sweet spots” which are trunking and headend feeds; backhauling and tower feeds; communications on the move; and hybrid multiplay solutions. Finally he explained benefits of integrated satellite/terrestrial architecture in term of business benefits, performance benefits, and societal benefits.

* 1. Open Discussion and Q&A

Chair asked the panelists to share their view on sharing between IMT-2020 and satellite.

Mr. Onoe mentioned that most important thing is availability. He provided information that DoCoMo also provide mobile satellite service and we need to find new spectrum.

Mr. Mah mentioned that WRC-15 identified a number of specific bands above 24 GHz for IMT. In most of those bands there were no satellite allocation at all. If sharing is not the best solution for 5G mobile operator, then perhaps the focus should be less on the spectrum that’s currently occupied by satellite and more on the other spectrum that’s been identified for study where the sharing situation may be easier to overcome.

Mr. Wang mentioned that there are many study for the new spectrum from 24-86 GHz. There are good candidate technology innovation and he thought that we can find much better solutions for sharing with incumbent services. Also ITU-R has some study for sharing with incumbent service.

A delegate from Sri Lanka mentioned about the testing of 4.5G incumbent mobile operator with Huawei as a vendor and experience 1Gb/s. She then asked Huawei what is the limitation for 4.5G. Mr. Wang mentioned that the data rate is not the only important factor for 5G but new usage scenario such as IoT. This is the rationale behind development of 4.5 G and 5G.

A delegate from Cambodia ask if there will be any impact to analog TV for changing from 4G to 5G. Mr. Onoe mentioned that there’s nothing to do with the technology but the spectrum.

1. Session 4: Issues and Use Cases of IoT and Smart Cities (Generic – Open data, Security/Privacy) (wednesday, 13 July, 9:00-10:30)

**Chair:** Mr. Harin Grewal, IDA Singapore

* 1. IoT Security (Document PRF-16/INP-21)

Mr. Takashi Michikata, Deputy Director, MIC Japan, introduced the concept of IoT. He then presented the latest cyber security threats to IoT, percentage of observed cyber-attacks to IoT, and cases on hacked IoT devices. He also explained security guidelines published by Ministry of Internal Affairs and Communications, Ministry of Economy Trade and Industry, and IoT Acceleration Consortium in Japan. The objective of the guideline is to show ways to protect IoT systems from cyber-attack and give IoT device manufacturers, the service providers, and the users opportunity to think about IoT security.

* 1. Realizing the Networked Society – Technology, Spectrum, and Policies *(Document PRF-16/INP-22)*

Dr. Hakan Ohlsen, Director, Ericsson, introduced an increasing coverage of mobile broadband and the demand for broadband access everywhere with new machine type communication needs. The interest in IoT and its capabilities for todays and future opportunities combined with a Mobile Broadband system have the possibility to transform our lives, the society and the businesses. Cellular system is the foundation for full range of solutions addressing diversity of use cases. The presentation then covered about needs for spectrum as well as some policy and regulatory challenges for the networked society with 5G/IMT2020.

* 1. IoT: Expanding new Possibilities *(Document PRF-16/INP-23)*

Mr. Guillaume Mascot, Head of Government Relations, Asia-Pacific Japan and India, Nokia, introduced that the past was about connecting people, while future is about connecting things. The explosion of possibilities and use cases is creating a huge market opportunity in the entire IoT ecosystem, nevertheless connectivity & service usage patterns varies across IoT vertical applications. The presentation then highlighted some use cases and the requirements needed. Finally, it discussed the main challenges to be addressed to fully capitalize the IoT opportunity.

* 1. Access Technology and IoT Security Challenges toward 2020 *(Document PRF-16/INP-24)*

Mr. Worapat Patram, Director of Public Policy, Intel Microelectronics (Thailand) Ltd, introduced three important components of IoT which are Things (Devices/Sensors), Network (to connect Things), and Cloud (collect data/process/return to user). IoT solution is easily deployed due to cheaper solution. IoT is fueling innovation in nearly every part of our lives. Three phases of IoT are Connected, Smart, and Autonomous. He then addressed technical and business challenges for IoT. Security issue is an important aspect for IoT and Intel work on it closely with government and industry association. Partners in IoT Ecosystem are working closely to come up with standard and protocol for IoT.

* 1. Open Discussion and Q&A

There was a question to all panelists regarding over-reliance on technology. Could it lead to potential catastrophic event if we are more dependent and trust on the internet? If we connect more and more to the Internet with automation, could it affect less educated workers such as loss of jobs?

Mr. Mascot commented that this is always the difficulty when we have new technology. For example now parents think that children are always with smartphone connecting to social media. Today parents are less flexible to let the children go out, and the social media is the way to make children connected with their friends. There would be some labors that will be destroyed. The future depends on the human what they want to do.

A delegate from Mongolia asked a question on data sovereignty and how it affect IoT development in the future.

Mr. Worapat answered that security and privacy is a big concern for a technology company like Intel as well. For technology aspect it is easy but for legal aspect we need to comply with domestic laws. It’s working with government around the world and respect sovereignty of the nation to categorize what type of data that can be stored in the country and what type of data that could be allowed to flow internationally. There was no answer right now but this is something that Intel was working with the government.

1. Session 5: Issues and Use Cases of IoT and Smart Cities (Use Cases) (wednesday, 13 July 2016, 10:45-12:15)

**Chair:** Ms. Aihua Wang, CAICT, China

* 1. Policy Framework for Adopting IoT *(Document PRF-16/INP-25)*

Mr. Harin Grewal, Cluster Director, IDA Singapore, talked about the Global Challenges, and Singapore’s vision towards a smart nation. The smart nation platform consists of 4C i.e. connect, collect, comprehend, and create. He then discussed on how IoT play key enabling role for this vision. He also presented the regulatory challenges and opportunities for policy-makers in an IoT environment. Four key IoT areas are examined to explore some of the most pressing challenges and questions related to IoT. They are security, data protection, interoperability and standards, and spectrum & resource allocation.

* 1. National Wide Initiatives of Smart City Enabled by IoT *(Document PRF-16/INP-26)*

Ms. Seonmin Mina Jun, Specialist/Coordinator of ITU-D&APT, KISDI Korea, presented the Korean case of Busan Smart City. It is a three years project started in 2015 to make Busan a Global Reference Smart City, Sustainable City, and IoT oriented Knowledge creation city. It plans to develop 30 smart city services in 4 different areas. Services are driven by not only ministry but city government and private sector. The Smart City test-bed support center in Busan was established and opened last year. Finally she talked about the prerequisites for applying smart infrastructure concept.

* 1. Internet of Things Transforming How We Live and Work *(Document PRF-16/NP-27)*

Ms. Chris Perera, Senior Director, AT&T, showed the growth trends of the connected devices in 2015 and 2020. The growth is high because it also connects machine to machine. AT&T has 7 innovation centers for IoT. The presentation covered use cases for IoT for example in healthcare, enterprise automotive, supply chain, consumer automotive, and utilities. It then talked about Smart City Framework and vertically integrated solutions. Finally the public policy considerations for Asia Pacific were discussed.

* 1. Open Discussion and Q&A

A delegate from OECD shared some outcomes of the OECD ministerial meeting in Mexico regarding the IoT. He mentioned that the panel discussed importance of IoT for provision of service in many area such as health, agriculture, transport, and road safety. It highlighted the importance of removing barrier to IoT application and ensure that global standard support the development.

Mr. Leong from IDA mentioned that one area that wasn’t so much talked about and could be a major hindrance to the adoption of IoT is that there is no new business model. IoT currently talk about using existing network like LTE but many countries still rely on existing cellular plan of business model which may not suit IoT. Another issue would be roaming, what happen to such traffic for example BMW car come to SG and start transmitting using SIM that is not from local operator. All these need to be addressed. He then asked comments from the panel. He also mentioned that Korea has announced in the previous week where SK telecom introduce nationwide IoT network with a plan of 30 cent per month of up to 100 Kilo Bytes of traffic. This will suit thing like narrowband IoT very much. If there are no international discussion on this, it may be major hindrance for adoption of IoT. He then asked for comment from panel.

Ms. Perera answered that it used 2G/3G/4G depending on application. For example for shipping application, 2G plus satellite is adequate. It depends on application in term of the bandwidth require. In term of roaming, AT&T ran a workshop last year with IDA to present something that industry has already done to address some of the concern. There’s some rules that’s already put in place.

There was a question about what kind of numbering will be used for IoT. Ms. Perera said that most of industries agreed on ITU numbering, E.164. It has to fit local regulator as well so that number not get exhausted.

There was a question from Pakistan. One point is that we have no standard for IoT, second is we are not sure about resource allocation whether there should be a license spectrum or unlicensed. And thirdly there is a growing number of attacks against IoT. What kind of policy and regulation measure that government can adopt at this point in time to promote IoT but at the same time ensure the protection of sensitive data belongs to citizen, given that we don’t have standard for IoT.

Mr. Grewal answered that there are a number of challenges and barriers before IoT really takes off. There are organization that dealing with some issues. Number of standard bodies continue to look at the issues and they are work in progress. Many users are business user to improve their business. Expertise of cyber security should extend to IoT domain.

Ms. Perera added that AT&T provide assurance to customer. It’s upto service provider you’re working with. It is something that AT&T take it very seriously to ensure security of the data.

A delegate from Viet Nam asked why Korea chose Busan as first city, not other.

Ms. Mina answered that Korea has Ubiquitous city which is Seoul and other city that’s equipped with the U City platform. Korea has some evaluation and chose Busan as test-bed and aim to apply it to other city as well.

1. The Way of Achieving Digital Inclusion for all Including Financial Inclusion (wednesday, 13 july 2016, 14:00-15:30)

**Chair:** Ms. Sulyna Abdullah, MCMC, Malaysia

* 1. A Toolkit for the Digital Economy *(Document PRF-16/INP-28)*

Ms. Lorrayne Porciuncula, Consultant – Broadband Policy, OECD, presented an overview of the OECD body of work on the Digital Economy, and more specifically on the Digital Toolkit Regional Initiatives. The presentation started with a general analysis on Southeast Asia and then introduce the OECD holistic approach for the Digital Economy. A summary of the recently launched Toolkit for Latin America and the Caribbean were made. Finally, she indicated some possibilities for future work on SEA.

* 1. ICT for Inclusive Growth *(Document PRF-16/INP-29)*

Mr. Seok Yong Yoon, Senior Public Management Specialist (eGovernance), ADB, made an introduction of ADB, its strategy 2020, and its support for inclusive growth which is a key strategic development agenda under Strategy 2020. He then discussed about key issues and barriers for digital inclusion, as well as the linkage between ICT for Development interventions and Inclusive Growth focusing on digital financial services. In term of ICT for financial inclusion, key issues were raised from the perspective of the digital infrastructure in rural areas, and some cases for digital financial services were presented.

* 1. Advancing Digital Societies in Asia: The Mobile Money Story *(Document PRF-16/INP-30)*

Mr. Austin Menyasz, Senior Manager, Public Policy, GSMA, presented on the GSMA’s two-year research project into Digital Societies in Asia, and introduced some key elements of a digital society. The presentation focused on key learnings from the 2016 Advancing Digital Societies in Asia report that countries can employ to move up the digital value chain. He then talked about the role of mobile money in a digital society and how it can be an important vehicle through which countries can improve financial inclusion.

* 1. UNCDF Initiatives on Mobile Money *(Document PRF-16/INP-31)*

Mr. Feisal Hussain, Senior Regional Technical Advisor, UNCDF, introduced that UNCDF is the investment wing of the UN. It has a strong focus and mandate on the LDC. He talked about the opportunities of mobile money and challenges especially for LDC. He then presented UNCDF’s approach to expanding digital financial services. Finally he presented some key issues e.g. concentrating market power and competition, SIM registration, and collaboration and cooperation across regulators (telecom/financial). He also raised a question whether a mobile can be free so that people can have it to access digital services.

* 1. Open Discussion and Q&A

Mr. Leong from IDA asked GSMA to comment about the statement in the presentation that Digital commerce/society equals mobile money because he thinks that the digital commerce or society is much wider than mobile. For example cashless society is more than just mobile payment.

Second questions was that mobile money seems to land itself to B to C, are there cases where mobile money is an example for B to B.

Third question was the response to Mr. Feisal suggestion that maybe we can give free mobile phone. The mobile phone price was coming down very fast, but having mobile phone in the hand of everyone was insufficient to achieve mobile commerce. There’s much larger ecosystem and more complicated than just putting mobile phone in the hand of everyone.

Mr. Austin agreed the mobile money is not the basis of digital society. Digital society is kind of end goal. Mobile commerce is one part of the puzzle but it include things like digital citizenship which have online secure identity. Mobile money is one of the stages within broader mobile commerce. We tried to simplify down to 3 key elements that government can look on. If you combine some of mobile money aspect with secure identity in the online environment then you create an ecosystem where more high value service can be delivered.

Mr. Feisal mentioned that it tried to incentivize business to start looking how to develop new business model. He gave an example of a company who tied up with commercial bank for B2B. Regarding the phone, it requires much more than that, but no matter it’s free or not but it’s the major driver for access.

A delegate from Bangladesh asked about the advantage for the concept of digital government compare to e-government. How digital government is smarter than e-government?

Ms. Lorrayne answered that E-government is more on offering services and website and making normal service just e, while digital government include more holistic approach to public policy in the sense of making public services digital from the start. It’s not just simply change back office processes and digitalizing certain procedure but rethinking the whole concept of public policy.

1. Session 7: Policy and Regulatory Impacts of Over The Top (OTT) Services: Generic Session (wednesday, 13 july 2016, 15:45-17:15)

**Chair:** Mr. Ilyas Ahmed, CAM/Maldives

* 1. Same Service Same Rules (SSSR): Equivalent Treatment as a Regulatory Response *(Document PRF-16/INP-32)*

Mr. Jonathan Yap, Head of Regulatory, Smart Axiata, made a short introduction about the company and talked about how OTT services create different impact to operators, for both threats and opportunities. Then he discussed on the issue of equivalent regulatory treatment between MNO and OTT. The presentation covered the background of SSSR principles, arguments for moving towards a level playing field in the form of equivalent regulatory treatment. Finally he presented some examples that have been discussed and considered internationally.

* 1. TRAI/India’s Approach on OTT Regulation *(Document PRF-16/INP-33)*

Mr. Arvind Kumar, Advisor, TRAI, gave an introduction for a background of OTT and different types of OTT apps. The presentation then discussed policy and regulatory challenges pertaining to OTT. He then explained about recent Regulations and Consultation paper issued by TRAI on the issue. The presentation discussed impact of OTT players on Indian Telecom Industry. Regulatory and Licensing framework for VoIP in India were also covered in the presentation.

* 1. Net Neutrality and a Competitive OTT Market (Document PRF-16/INP-34)

Dr. Toshiya Jitsuzumi, Professor, Kyushu University, introduced about the market, preconditions for market dynamism, and government intervention. The presentation showed the increasing important of OTT and discussed viewpoint of industrial policy on OTT. It then explored areas of possible policy intervention and some issues in regulating OTT. In conclusion, he recommended to first let the market decide and then design a minimum policy intervention. During that process, facilitating OTT competition should be the focus of the discussion and the net neutrality “concept” is the key.

* 1. Keeping the Internet Open to Innovation (Document PRF-16/INP-35)

Ms. Noelle Guzman, Regional Programmes Coordinator, ISOC, made a short introduction of ISOC and then talked about 3 types of OTT. She then mentioned about the shifting of discussion from “how to block them” to “how to work with them”. She also presented recent cases of how regulators in APAC have sought to resolve concerns around OTTs. The presentation contained an example case study of Singapore and highlighted some risks of regulation. Finally it offered some recommendations on how policymakers can continue to foster an open and innovative Internet while balancing the interests of various stakeholders.

* 1. Open Discussion and Q&A

A delegate from Sri Lanka ask to Mr. Kumar. What the mechanism does the regulator use or planning to use avoiding mobile operator degrading OTT application.

Mr. Kumar answered that when we talked about net neutrality or internet for everybody, there are 3 border lines, price, toggling, blocking. These are identified in the consultation paper.

A delegate from Iran asked about treatment of Same Service Same Rule (SSSR) that regulator should implement to OTT player. Most of OTT player are coming from abroad, how we can push rule and regulatory to these players.

Mr. Yap said he didn’t have definite answer for that but he shared the example he had seen. SSSR doesn’t mean that everything that Telco has need to be applied to OTT player. OTT is not only about revenue but also consumer protection, and revenue contribution to the country (tax). Certain countries, government put in place for local subsidiary to have local office.

1. Session 8: Panel Discussion on Nurturing OTT Business as a Growth Engine vs. Regulating OTT to Level Playing Field (Thursday, 14 july 2016, 9:00-10:30)

**Chair**: Mr. Leong Keng Thai, IDA Singapore

Panelists:

Mr. Arvind Kumar, TRAI/India

Mr. Guillaume Mascot, Nokia

Mr. Daniel Gelfer, Google

* 1. Discussions

Mr. Leong set the context and posed questions to the panelists. He first made a short summarize of the issues about OTT listed below:

* Same Service Same Rule (SSSR): Are we talking about same service and therefore same rules, or new service/paradigm, and therefore new rules?
* Impacts OTT to existing players: investment for long term infrastructure, taxes to local jurisdiction, competition fairness in term of content regulation/consumer protection, cannibalizes revenue versus enhances revenue, some OTT has video content then there were issues such as net neutrality, free ride
* Balance in rule making: How we balance having innovation such as OTT versus impact to traditional Telco in terms of long term investment, having critical communication infrastructure in the country, security, consumer protection
* Is there lesson to be learned because we have gone through similar thing before for VoIP?
* Is there overall country wise economic surplus as opposed to company surplus or sector surplus?

Mr. Gelfer mentioned that telecom landscape is ever changing with new technology coming out every day. New technology and digital innovation are huge enabler for all economy in APAC. By 2020 there will be a huge number of Smartphone subscription and IoT and create huge opportunity. Internet content and application has important role for economic growth in the region. Power of internet as economic tool is tremendous. A lot of time conversion is about Telco vs OTT debate, but he thought that it’s not a zero sum game. The way forward should be collaboration between Telco and OTT.

Mr. Mascot mentioned that we should be optimistic and see the bright side. The last 10 year there was disruption in telecom sector from VoIP and new type of messaging, but we need to look at the future. We should try to see what operator can do. One key issue need to be assessed is the impact on other sectors not only for telecom.

Mr. Kumar mentioned that TRAI issued consultation paper on OTT and receive a lot of comment. People are so confused about OTT and Net neutrality which should be tackled separately. Basic use of Internet is global in nature, but putting tariff plan and entering into agreement with telecom service provider, this is putting some boundary making it a closed network. We should not discriminate Internet tariff or data charges irrespective of the content. OTT provide convenient to the consumer, and Telco is doing their job to provide the pipe, and somebody is doing innovation.

Mr. Leong asked panelist to comment on SSSR whether it is too simplistic. Is it really the same? If not, what would be possible approach to deal with this new paradigm?

Mr. Kumar commented that same rules should mean what exactly you want e.g. TSP to provide CDR, traceability of the call, paying license fee. Then you put this on the list for someone who provide voice services, and that list has to be match for both TSP and OTT.

Mr. Mascot commented that it’s not the same service but what’s matter is consumer protection. For the approach we have to see based on service, Telco may also develop their own OTT application.

Mr. Gelfer commented SSSR is similar to level playing field and that it’s difficult to define. It should not mean to regulate everything online. SMS and WhatsApp are similar, but what about gaming app, dating web where people can also talk to each other. National security is concern for many countries. OTT also invest a lot in Internet infrastructure as well. Google also invest a lot in submarine cable.

* 1. Open Discussion and Q&A

Chairman open the floor for questions and comment.

Vietnam commented on SSSR that service is the same but the way of conducting business was different. Regulation for TSP are licensing, obligation such as USO, tax, national security. We cannot apply same regulation for OTT but we should apply something such as national security and issue such as child protection. The problem is that OTT Company is oversea. We need to discuss how each country can work with foreign OTT service provider and share experience.

Malaysia commented that localization is an issue. While we’re talking about having equivalence in law and policy across the region so that it’s easier for OTT to do business in the region. Also it need to take into account individual country sentiment and traditional culture.

Sri Lanka commented about licensing, quality of service, taxation, interconnection, legal intercept, infrastructure investment, however we don’t want to stop innovation because the customer get the benefit. Then she suggested about sharing revenue, or OTT as VAS.

Mr. Gelfer responded that Google tried their best to cooperate with the government no matter they have physical company or not. When it comes to content, how do we do in different markets? There is specific tool for government to raise request to them. He also mentioned about both revenue loss and revenue gain from data.

Mr. Leong summarized that there was no conclusion but to hear different views. Not all OTT are revenue cannibalization, some are enhancement. OTT is there no matter we like it or not, and it brings a lot of innovation in all economic sector. Consumer protection and national security is also some key concerns as well as cross jurisdiction both international and domestic sectors. Finally we need to have more best practice sharing and dialogue.

1. Session 9: Way Forward

**Chair:** Mr. Yasuhiko Taniwaki, Chairman of PRF-16

* 1. Issues to be Included in the Implementation Status of Strategic Plan 2015-2017 and in New Strategic Plan 2018-2020 *(Document PRF-16/INP-36)*

APT Secretariat informed that it will report the implementation status of Strategic Plan 2015-2017 relevant to PRF-16 to Management Committee. It then presented document PRF-16/INP-36 provided background information for the involvement of Members in drafting the new Strategic Plan, the issues that could be included, and the proposal to establish correspondence group for further discussion.

* 1. Revised Working Method of PRF

APT Secretariat presented the revised working method as contained in PRF-16/TMP-01 outlining the added responsibilities of Chairman as instructed by MC-39. The meeting adopted the revised working method and APT Secretariat to publish it as output document PRF-16/OUT-01 to be approved at MC-40.

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| **Decision no. 3 (PRF-16)** |
| The meeting adopted the revised working method as proposed in document PRF-16/TMP-01. APT Secretariat to publish as an output document PRF-16/OUT-01. |

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| **Action no. 1 (PRF-16)** |
| APT Secretariat will submit the revised working method to MC-40 for approval. |

* 1. Date and Venue for the PRF-17

Chairman sought views from the meeting about the host for the next PRF. There were no proposal. APT Secretariat will include PRF-17 in the APT Work Programme for 2017 and proposed to the 40th Session of the Management Committee for its final decision.

* 1. Any other matters

There were no other issues raised at the meeting.

1. Closing
   1. Address by Ms. Areewan Haorangsi, Secretary General, APT

Ms. Areewan Haorangsi delivered an address highlighted some outcomes of the meeting and thanked all delegates and speakers for their contribution.

* 1. Closing Remarks by Chairman of PRF-16

Closing remarks were delivered by Mr. Yasuhiko Taniwaki, Chairman of PRF-16. Mr. Taniwaki then declared the meeting closed.

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