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Economic and Social Commission for Asia and the Pacific

# First Session of the Asia-Pacific Information Superhighway Steering Committee
# Dhaka, Bangladesh
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## REPORT

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**Item 1: Opening of the First Session of the Asia-Pacific Information Superhighway (AP-IS)**

1. The meeting began with the opening session.

2. Mr. Banamali Bhowmick, Director General (Additional Secretary) of Department of Information and Communication Technology (DoICT), Government of Bangladesh welcomed the participants to the city of Dhaka. He underlined the critical role of information and communications technology in socio-economic development of the region and the department's continued and expanded support towards AP-IS and wished participants fruitful deliberation.

3. Mr. Hongjoo Hahm, Deputy Executive Secretary of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), thanked the Government of Bangladesh for its generous contributions and support in the organization of the meeting, and emphasized the importance of concerted efforts to address the widening digital divide and bottlenecks in the emerging landscape of artificial intelligence. Mr. Hahm outlined the objectives of the meeting to a) collectively discuss the operationalization of the AP-IS governance structure, as stipulated in its Master Plan; b) discuss regional and sub-regional implementation plans of the AP-IS initiative and to identify challenges and opportunities in implementing the initiative; c) develop partnerships with relevant international and regional organizations; and d) provide an update on the state of ICT at regional and subregional levels to support the deliberations. He also underlined that one way of achieving cost effective deployment of fiber optical cables is co-deployment along passive infrastructure such as highways, railways and power grids. He reiterated the unique role that ESCAP can play in encouraging countries to adopt such practices.

4. On behalf of the Government of Bangladesh, Mr. Abu Saeed Khan, Senior Fellow, LIRNEasia reiterated its longstanding support to AP-IS since its inception during his keynote speech. The Government of Bangladesh provided continued recognition of AP-IS as one of the most important regional initiatives which would shape the future of the region. ICT has gained special attention as an effective means of facilitating growth, and ICT infrastructure is emerging as a crucial factor for achieving the SDGs. He believes that the AP-IS was a very timely initiative in this context. Despite achieving remarkable economic growth and social development, the Asia-Pacific region continued to face a significant digital divide. He further stated that it was hard to achieve continuous development in a knowledge and information-based society without access to information.

5. Mr. Md. Mofazzel Hossain, Secretary-in-Charge of Ministry of Railways and Mr. Md. Nazrul Islam, Secretary of Road Transport and Highways Division delivered their speech as the special guest, emphasizing on the role of transport infrastructure and co-deployment between ICT and transport to bring substantive savings and efficiency gains.

6. In delivering his address as Chair, Mr. Zunaid Ahmed Palak MP, Honorable State Minister, Information and Communication Technology Division (ICTD), Government of the People's Republic of Bangladesh introduced Bangladesh's efforts to enhance broadband connectivity in the country and highlighted suggestions to forming a policy on exchange skilled manpower.

7. In the address of the Chief Guest, Mr. Abul Maal A Muhith, Honorable Finance Minister, Ministry of Finance, Government of Bangladesh shared his view that expanding trade and investment required better market integration which in turn depended on seamless connectivity in information and communications technology in the region.

8. In concluding the session, the Government of Bangladesh showcased the state of broadband connectivity and ICT initiatives in Bangladesh using hologram technology.

**Item 2: Election of the Bureau and Adoption of the Agenda**

9. Ms. Atsuko Okuda, Chief of the ICT and Development Section of ESCAP, opened the session by outlining the objectives and structure of the meeting which was a) to discuss the operationalization of the governance structure, as stipulated in the AP-IS Master Plan ; b) to discuss regional and sub-regional implementation plans of the AP-IS initiative and to identify challenges and opportunities in implementing the initiative; c) to develop partnerships with relevant international and regional organizations for the implementation of the AP-IS Master Plan.

10. After her presentation, the AP-IS Steering Committee members, international and regional partners, private sector companies, and other institutions introduced themselves (refer to Annex 1 for Participant's list).

11. Under this agenda item, the election of the Bureau was conducted. The Steering Committee meeting participants unanimously agreed on the following Bureau composition until the next session of the Steering Committee elects the new Bureau:

    - Chair: Mr. Banamali Bhowmick, Additional Secretary, Director General, Department of ICT, ICT Division, Ministry of Posts, Telecommunications & Information Technology, Bangladesh;
    - Vice Chairs: (1). Mr. Ziping Liu, Deputy Director-General, Department of International Cooperation, Ministry of Industry and Information Technology, PR China; (2). Mr. Souliya Sengdalavong, Deputy Director General of Information Technology Department, Ministry of Science and Technology, Lao PDR:
    - Rapporteurs : (1). Mr. Azamat Kozhanov, Expert, Foreign Economic Cooperation Department, Ministry for Investments and Development, Kazakhstan (2). Mr. Andrew Toimoana, Director of Information and Technology, Ministry of Meteorology, Energy, Information, Disaster Management, Climate Change and Communications.

12. The Agenda (Annex 2) for the meeting was adopted.

**Item 3: AP-IS Governance Structure**

13. Under this agenda item, introductory remarks were made by Ms. Atsuko Okuda on the composition and terms of reference of the AP-IS Steering Committee, Steering Group, and Implementation Group along with the monitoring, coordination and advisory functions of the Steering Committee.

14. The ESCAP representative then introduced ESCAP resolution 73/6 which accorded priority to the implementation of the Master Plan for the AP-IS including the support to members and associate members for their implementation; encouraged the participation of various stakeholders in the implementation of activities of the Master Plan; called conducting research and analysis, and capacity development to identify challenges and opportunities

associated with the four pillars of the AP-IS initiative; seek to maximize opportunities for collaboration with ESCAP's subregional offices and regional institutes; and reporting the progress on implementation to the Committee on Information and Communications Technology & Science, Technology and Innovation (CICTSTI) in 2018 and 75th Commission session in 2019.

15. The ESCAP representative then introduced the AP-IS Governance Structure within the context of the ESCAP's intergovernmental processes and how the AP-IS Steering Committee related to the AP-IS Pillars and subregional Steering Groups. The operationalization of governance in the Master Plan was then introduced, including activities that will be developed around the four pillars which should support the implementation of subregional and national ICT initiatives. During the discussion, it was agreed that membership of the Steering Group was open to all ESCAP member States under the guidance of the Steering Committee.

16. The Steering Committee terms of reference (ToR) includes membership open to all member States of ESCAP, non-profit organizations and research institutes with policy and technical expertise and experts from member countries. The Bureau is to be elected by Steering Committee members for one year and the Steering Committee to meet once a year. The Chair of the Steering Committee will be elected by the members of the Steering Committee which will monitor the implementation of the Master Plan and Regional Cooperation Framework Document, coordinate subregional work and provide policy guidance. The Bureau will represent the AP-IS Steering Committee at various international and regional venues, if and when necessary and inform the members of the outcomes at the next appropriate occasion. The Steering Committee may set up a technical advisory group, if needed.

17. The proposed ToR is intended to ensure that each year, members and partners will have an opportunity to report on 1) activities which were undertaken along the four pillars and strategic initiatives, 2) activities which could be considered as strategic initiatives and along pillars in the coming years, 3) and proposed partnerships, to be presented to the Steering Committee. The ESCAP secretariat prepares the consolidated report of each Pillar and for each subregion. The Steering Committee will also review issues, recommendations and needed actions from Pillar representatives and Steering Group Chairs. At the end of the implementation year (2018), the governance structure and progress of implementation will be assessed and discussed at the Steering Committee meeting. This assessment would be the basis for an update of the Master Plan for the next four years.

18. Activities for each Pillar invited Member countries and partners to participate in the online communities with an online leader identified for each Pillar. Online communities aimed to 1) share information, news, articles, reports on the topic of a particular Pillar; 2) encourage interactions among participants as well as among Pillars, 3) identify possible regional-level issues, solutions and approaches, 4) serve as a window to Steering Group and Implementation Group on specific subregional issues. The online leader reports to the Steering Committee meeting on the progress of activities. The online communities are supported by the ESCAP secretariat.

19. The Steering Group membership will be open to all ESCAP member States interested in subregional work. The Bureau of each Steering Group will be elected by the Steering Group Member States for one year. The Chair of each Steering Group will report to the Steering Committee on the progress. The Steering Group will monitor the implementation of subregional ICT projects, provide policy guidance and, if necessary, set up an

Implementation Group consisting of telecom operators and other private sector entities. The composition and terms of membership of the Implementation Group will be determined by the Steering Group based on the guiding principles of the AP-IS Master Plan and Regional Cooperation Framework Document.

20. The invitation to the Steering Group membership will be sent after the first Steering Committee meeting to all member countries, coordinated by the ESCAP secretariat. The Steering Group memberships will be announced or updated at Steering Committee meetings. The venue of Steering Group meetings will be decided by the Steering Group members and ESCAP secretariat, in conjunction with existing subregional meetings and structures, including that of ESCAP subregional offices. The Steering Group will support existing regional and subregional initiatives through the implementation of the subregional implementation plans.

21. The main substantive deliverables will take the form of an AP-IS Master Plan at the regional level (overseen by the Steering Committee), pre-feasibility study at the subregional level (overseen by the Steering Group) and feasibility study at the level of implementing entities (or Implementation Group).

22. A pre-feasibility study for each sub-region intends to:

    - provide a high-level overview of the sub-region's ICT connectivity development and digital divide;
    - identify gaps, challenges and opportunities;
    - identify synergies with existing initiatives; and
    - prepare for a feasibility study with scope and focus.

    The development of a pre-feasibility study would be implemented and coordinated with subregional organizations or member countries in the sub-region with the involvement of Steering Group and Implementation Group members, including financial institutions. The outcomes are expected to contribute to the implementation of the Master Plan and way forward at the regional level.

23. A feasibility study will:

    - examine a specific project, as highlighted by the pre-feasibility study findings,
    - identify opportunities and challenges to assist with project proposals;
    - facilitate implementation and partnerships that are aligned with priorities determined by the Steering Group; and
    - ✓ be site specific and address specific challenges, such as physical infrastructure, including detailed design and topology, costing, resource requirements (including capacity), policy and regulatory updates, technology options, duration, financing options and implementing partners.

24. Under this agenda items the meeting participants discussed the ToR of Steering Committee and Steering Group, role of Pillar lead, need for broad-based engagements with the private sector, academia and Civil Society Organizations (CSOs), plans and proposals for the 2017-2018 implementation plans as well as other matters including the second Steering Committee meeting proposed in Bangkok as a back to back meeting to the second session of the CICTSTI in August 2018. The meeting participants were also encouraged to submit

their comments, suggestions and proposals on the agenda item after the meeting in case of a need for consultations in the respective ministries in the capitals[1].

**Item 4: Emerging Trends, opportunities and proposed activities (Regional Dimensions)**

*Pillar 1: Connectivity*

25. The session on Pillar 1 began with a presentation by Mr. Rajendra Singh, Senior Regulatory Specialist of the World Bank, on regional telecommunication connectivity. Recognizing that broadband contributes to growth, employment, innovation, trade, among others, he mentioned that a 10 per cent increase in broadband penetration yields at least 1 per cent increase in Gross Domestic Product (GDP) growth; a 1 per cent increase in Internet penetration correlates with 4.3 per cent export growth, with 20 per cent of all jobs to be contracted online 2020. SMEs that integrated the Internet into their businesses created twice as many jobs as the average. Broadband also enabled smart infrastructure, including Intelligent Transport Systems, and Smart Grids with health and education programmes (distance learning, eHealth, digital technologies for learning). He emphasized that telecom networks underpin a majority of global trade in goods and services. Further, the representative also shared World Bank's connectivity programmes in the Pacific, while noting that now is a good time for regional cooperation particularly in Central Asia for pushing IT programs to foster growth in the region.

26. The representative of the China Academy on Information and Communications Technology (CAICT), Mr. Hui Chen, Deputy Director, provided an overview of the current situation on improving international connectivity in the Asia-Pacific region, the advantages and problems of the use of terrestrial cable and demand for increasing the international connectivity through increased connectivity by terrestrial cable. The representative also touched on the work that needs to be done to develop standards and rules regarding the transit charges on trans-multi-country terrestrial cables. For example, large quantities of spare domestic terrestrial cables can be used in carrying the international Internet traffic and maximize the utilization of spare domestic backbone networks of many countries.

27. As a way forward, Mr. Chen presented proposals for promoting the work of AP-IS and encouraging all parties involved in AP-IS to participate in the study of ITU-T SG3 Q.13. He also encouraged ESCAP member countries to enhance the support for innovation in technology and business models from the policy-setting perspective. Further, he encouraged operators and relevant stakeholders in ESCAP member countries to participate actively in the development of AP-IS initiatives and provide successful cases for implementing AP-IS, in particular Pillar 1. He expressed support to the principle of co-deployment and infrastructure sharing in the development of trans-multi-country terrestrial cable and promotion of international connectivity within the Asia-Pacific region. In this context, he suggested enhanced support to coordination, cooperation and interactions among various sectors (such as railway, highway, energy) in an effort to facilitate cross-sectoral international connectivity. In achieving the objective, he also underlined the importance of facilitating information sharing and detailed discussions on the above-mentioned proposals in relevant sub-regions and report the results to the next Steering Committee meeting as appropriate.

1 The ESCAP secretariat received comments from China. The suggested addition to the AP-IS governance structure include that the Steering Group members sign an MOU when agreeing to conduct feasibility studies at the subregional level, while MOU be signed by operators at the Implementation Group level for the actual activity implementation.

28. Mr. Carlos Katsuya, Europe, Middle East and North Africa /Asia Regional Lead of the International Financial Corporation (IFC), delivered a presentation on the IFC's Digital Infrastructure Initiative. He started the presentation by sharing what his organization does, including providing investment and advice as well as undertaking resource mobilization. The IFC is owned by 184 countries and has an AAA credit rating with a total portfolio of USD55 billion. Further, he highlighted that the IFC is the largest global development institution focused exclusively on the private sector in developing countries. On investing in digital infrastructure, the IFC supports expansion of mobile operators in Frontier countries, supports increased universal and affordable access to the Internet, bridges infrastructure gaps and supports use of technology and shared resources to provide increased efficiency and competitiveness. It also encourages open access models. IFC's role is to help mitigate political risk, provide longer term financing and mobilize other financial investors. It also funds existing projects that include growth capital expenditures and some acquisition finance. The IFC also co-develops projects and helps support spinoff of underutilized assets to provide open access to infrastructure.

29. The representative then shared the IFC's Digital Infrastructure Initiative (DII) that was implemented to reach the estimated 4 billion people who were without Internet access and were disproportionately rural, low income, elderly, illiterate and female. Even when access was present, affordability and consumer readiness restricted the population's inclusion into the digital economy. Therefore, to overcome this challenge, the IFC identified four key enablers for greater Internet adoption as follows: (i) infrastructure, (ii) affordability, (iii) consumer readiness, and (iv) content. Through its DII leveraging resources, the IFC catalysed private and public sectors to improve the existing digital infrastructure. The IFC representative then detailed how the public and private sectors can work together, its digital economy strategy, financing and investment products and criteria that was customized to meet clients' needs. The IFC looked for high quality sponsors, financial and economic stability, technical execution and capacity, a clear regulatory environment and financing terms and conditions.

30. Dr. KE Seetha Ram of Asian Development Bank Institute and Visiting Professor, University of Tokyo, presented on the topic, "Improving Access to Information and Communication in Asia and the Pacific Reflections on various initiatives by the Asian Development Bank and ADB Institute". ADBI focused on recognizing the development benefits of ICT, addressed risks of digital divides, enabled policy and regulatory frameworks, invest in infrastructure (including connectivity) and facilitated applications (including contents and services) with capacity development. The ADBI has projects that covered investment on ICT components and provided ICT infrastructure and related technical assistance. For example, ADBI worked to support ICT in key sectors such as distance learning for student and teacher training as well as professional development.

31. Dr. Ram also highlighted ADB's work on the Tonga-Fiji Submarine cable project, micro-finance and employment project in Papua New Guinea, and setting up ICT centres to bring the benefits of computers and the Internet to underserved rural communities. ADB provided satellite-based environmental information and innovative solutions that could provide new ways to serve and address development challenges.

32. Mr. Michael Ruddy, Director at Terabit Consulting, shared its role in promoting AP-IS that includes completed detailed analyses of broadband infrastructure and markets on behalf of ESCAP, covering a total of 29 countries in the Asia-Pacific region. Among constraints in the region, he noted that the continent's long-haul terrestrial fiber infrastructure is low-capacity, geographically-limited, high-cost and unreliable; there are no coherent, cost-

effective, pan-regional fiber optic networks. International connectivity consisted almost entirely of bilateral, point-to-point, closed-access trans-border links. Landlocked countries were at the mercy of bandwidth-rich coastal neighbours and coastal countries also suffered because bandwidth is concentrated on vulnerable submarine cable routes including those that cross Egypt. Mr. Ruddy noted that the global telecommunications industry was desperate for a cost-effective solution that would avoid undersea choke points, and that terrestrial coverage would be viable. He then covered the key drivers for demand in bandwidth and content providers, and the region's weak and expensive connectivity. He concluded by recommending strategies to ensure successful network development for ESCAP which included improved regional fiber connectivity, immediate benefits and opportunities for operators and deployment of multinational fiber networks along linear infrastructure.

33. The representative of the International Development Research Centre (IDRC), Mr. Phet Sayo, Senior Program Officer, shared an overview of the organization, its programme focus, its representation in the Asia-Pacific region and its ICT development work in Viet Nam, Mongolia among other countries. Most recently, the IDRC worked in Myanmar with LIRNEasia on demand usage and with the government on telecom reform as well as regional work with community focus. The presentation also provided information on the Information Society Innovation Fund and research on the legal provisions in compulsory licensing of standards in manufacturing mobiles (hardware and software) focusing on the Indian and Chinese ICT markets.

*Informal Interactive Session*

34. The meeting had an informal interactive session during the lunch break to share broadband related initiatives of the private sector to support the deliberations of the Steering Committee meeting. The session generated active questions and answers after the intervention of each presenter.

35. Ms. Suparna Roy, the representative of Microsoft Bangladesh, commenced the informal interactive session with her intervention. She highlighted how the company has been supporting the training of 5,000 women entrepreneurs at digital centres around Bangladesh on both hardware and software skills to help better link them to markets. This was an example of what access to affordable and accessible Internet for all could do.

36. Mr. Rabah Ghezali, the representative of VEON, stated that they were an emerging markets company that covered telco, tech and digital markets. They offered a personal Internet platform as a means of connectivity and empowerment on various industry sectors to expand their footprints in the digital economy. The representative also noted their role in digital finance. He provided an example on how connectivity and government, connectivity and rural communities, and an eco-system approach for connectivity have prompted ICT development in Bangladesh.

37. Mr. Siamak Hossein Khalaj and Ms. Sanaz Hosseini of Monenco made a presentation on their activities. The company was a consulting firm based in Iran, Oman, Nigeria, Germany, India and various other countries. It provided technical support for the deployment of fiber optic cables, provides analyses and feasibility studies and consults governments on best practices for ICT infrastructure development, among others. The Monenco representatives

quoted ESCAP analysis in agreement that the Pacific islands, Central and North Asia and South Asia were in great need of catching up with the rest of the region in developing ICT.

38. Through their analysis, Monenco found that the quality and speed of broadband was directly related to the rate of adoption of ICT and that upper and middle income countries had greater digital inclusion. The presentation also covered Monenco's work in Iran, informing the Steering Committee that there was a large divide between urban and rural population's access to ICT. The lack of ICT services in Iran provided an opportunity to investments in the region. It will be supported by Iran's own goals of providing e-government services, increasing local content and connecting rural areas to the Internet by expanding the 5000 km of ICT fiber cables that are already under implementation through 77 routes. The consulting firm welcomed countries to engage in providing support, funds and positive policy environment to expand ICT connection and reassured them that the firm is ready to provide its expertise and services.

*Pillar 2: Internet Traffic & Network Management*

39. The discussions on Pillar 2 - Internet traffic and network management - under this agenda item started with the presentation by Mr. Rajnesh Singh, Managing Director, Internet Society Asia-Pacific. He shared their background, their Internet Engineering Task Force (IETF) as the premiere Internet standards organization; their policies, grants and rewards, and the Internet Society's key initiatives around the AP-IS that addresses each pillar. Mr. Singh talked about ISOC's initiatives to create community networks that discuss issues and gaps related to the Internet before divulging in its technical activities under Pillar 2 of AP-IS through the Asia-Pacific Internet Exchange Point (IXP) Mapping Project. ISOC has mapped all active IXP's in South Asia, Southeast Asia, North/East Asia and the Pacific, pointing out major cities that would benefit from an IXP and welcomed contributors to this ongoing project. He also noted that they provide assistance to local communities and collaborate and coordinate with local stakeholders and partners to establish a neutral IXP. In addition, the representative talked about routing security based on mutually agreed norms. It is a commitment by network operators to improve the security of global routing systems through filtering, anti-spoofing, coordination and global validation with an ultimate goal of improving a country's and the region's Internet infrastructure.

40. Mr. Duncan Macintosh, the representative of Asia-Pacific Network Information Centre (APNIC), informed the meeting participants that his organization managed Internet number resources including IPv4, IPv6 and Autonomous System Numbers (ASN). The representative then shared an overview of the organization and noted that APNIC provides training on and technical assistance (IXPs and IPv6) and IXP support around the Asia-Pacific region. He stated that IvP6 is no longer experimental and ready to deploy now to offload traffic from Carrier-grade NAT, improve performance, and simplify network management. In conclusion, the representative stated that within 5 years, 75 per cent of user devices may be IPv6 capable. Mr. Duncan shared past initiatives and planned activities for any participants interested to get involved.

41. Ms. Joyce Chen, representing the Internet Corporation for Assigned Names and Numbers (ICANN) shared that its mission is to ensure the stable and secure operation of the Internet's unique identifier systems. ICANN calls for bold action noting that telecoms infrastructure needs investment of $4 to $5 billion per annum in Southeast Asia alone which can boost GDP by 2-3 per cent. The organization has a regional office in Singapore, a partnership

centre in Seoul and an engagement centre in Beijing. Via its Supporting Organizations (SOs) in the ICANN community, ICANN advocates for policy recommendations on issues such as IP addresses, generic top-level domains (gTLDs), country code top-level domains (ccTLD) among others.

42. ICANN facilitated conversations through various platforms such as the Asia Pacific Internet Governance Academy (APIGA). It contributed to a secure Internet through capacity development, L-root deployment, and Domain Name System Security Extensions (DNSSEC) deployment. ICANN managed root server operations with Anycast instances, standard Internet routing that will bring the queries to the nearest server and provide better service to more users. L-Root ensures geographical diversity via Anycast with 160 dedicated servers and a presence on every continent at an average of 15 ~ 25 kbps and is app 2 billion Domain Name System (DNS) queries a day. The representative wrapped up by sharing their up-coming events and how to get involved.

*Pillar 3: E-resilience*

43. Pillar 3 (E-resilience) presentations and discussions followed under this agenda item. Mr. Jeffry Llanto of CVISNET Foundation shared their initiative and planned activities. Started as a government project in providing Internet connection in 1997 and registered by the Securities and Exchange Commission as a non-profit foundation, CVISNET vision is to support government agencies in delivering fast and efficient services through ICT. To address communications failures after disasters, the Movable and Deployable ICT Resource Unit (MDRU) was developed to provide voice, Internet access and virtual networks for victims, local governments and enterprises at a time of disasters. He updated the participants that a single unit covers an area of 500m radius and 5,000 people. The aim of the MDRU project is to provide and establish an immediate communications infrastructure using ICT as the method to response to disasters through mobile ICT resources.

*Pillar 4: Broadband for all*

44. Under this agenda item, Mr. Jian Xi Teng of the United Nations Educational, Scientific and Cultural Organization (UNESCO) touched upon the importance of ICT in education as well as UNESCO's work in Asia and the Pacific. He mentioned that a considerable number of schools still lack basic electricity in the region, which results in limited ICT update and infrastructure. He reported that more than 90 per cent of schools in Kyrgyzstan, Nepal, Bangladesh and Cambodia lack Internet connectivity. Because of the importance, 15 out of 26 Asia-Pacific member States have a stand-alone ICT component in their Education Master Plans for primary and lower secondary education. On collaboration for AP-IS, he referred to creating synergies between ESCAP and UNESCO: AP-IS leads infrastructure development and UNESCO, on its part, engages with governments on ICT in education policy making. In this regard, he proposed that UNESCO can produce regional or national case studies of effective ICT infrastructure development and education, which can help harness the transformative capabilities of Internet to provide inclusive and quality education to citizens of the Asia-Pacific.

45. Mr. Basheerhamad Shadrach of the Alliance for Affordable Internet informed the participants that the Alliance is the world's broadest technology sector alliance working to drive down the price of broadband by transforming policy and regulatory frameworks. The

representative stated that the Alliance works in Bangladesh and Myanmar in the ESCAP region. They have developed an Affordability Drivers Index (ADI) that does not directly measure affordability, but measured the extent to which countries have implemented policies to improve Internet affordability. The Alliance also explored the extent of gender digital divide and found that women were 50 per cent less likely than men to use the Internet in poor urban communities. He mentioned that in Asia, only 49 per cent of the population was online, with 41 per cent mobile broadband penetration and a 17 per cent Internet use gender gap in the region. Furthermore, findings on affordability in Asia showed that 1GB of data cost an average citizen nearly 3 per cent of their monthly income. Overall, half of the countries that A4AI studied in the region needed policy improvements. The representative shared a number of measures that needed to be taken to make affordability a reality in Asia.

46. Mr. Rohan Samarajiva of LIRNEasia shared the findings of research that his organization conducted on Myanmar. LIRNEAsia was a think tank that conducts qualitative and quantitative studies on the demand of ICT in Asia and beyond. He began his presentation with an overview of the population of Myanmar and noted that 97% of households in Myanmar were aged between 15 and65. He noted that the population of Myanmar was relatively young and working-age. Among the people who owned mobile phones, 78% owned smartphones and almost half the population now owned a smartphone and utilized data services. This was also observed in the mobile data usage in rural areas of Myanmar. Most people used data for social media, searching for information and digital content such as photos, video and music. He also provided insights on Internet speeds by time of the day and noted that for all three telecom operators in the region (Ooredoo, Telenor and MPT) both 3G and 4G services were the fastest in the evenings. According to LIRNEAsia's research, latency was different in various locations and operators; some regions have better coverage than others and enjoy faster browsing and download services.

**Item 5: The AP-IS Steering Committee Implementation Plan 2017 – 2018**

47. Due to a lack of time, Item 5 (The AP-IS Steering Committee Implementation Plan 2017-2018) of the agenda was postponed and discussed in conjunction with Item 7 (Outcome and the way forward of the AP-IS implementation).

**Item 6: Proposed Activities and Implementation for AP-IS (Sub-regional dimensions)**

48. An ESCAP representative announced that the presentations on subregional overviews were made available on the meeting website, together with the consolidated submission and proposals by member countries and partners. In light of time constraint, these presentations/submissions will be presented in a follow-up meeting which was scheduled in Bangkok on 12 December 2018.

49. Mr. Yeong Ro Lee of the National Information Society Agency (NIA) of the Republic of Korea presented the findings of the ongoing study he was conducting on broadband connectivity in Cambodia, Lao PDR, Myanmar and Viet Nam (CLMV). He discussed the state of existing physical networks of terrestrial fibre cables and Internet traffic routes. In particular, the results of the technical tests his team conducted on the efficiency of Internet traffic management among CLMV countries. As to the broadband network quality, download speed in Viet Nam was found to be the highest and Lao PDR the lowest. Based on these preliminary findings, he concluded that there was no need for additional cross-

border physical fibre cable connectivity among the CLMV countries, as existing capacities might be sufficient and under-utilized.

50. Mr. Lee continued that the support for CLMV countries would be required for more efficient Internet traffic and network management. For example, most of the intra-regional traffic, was found to go through higher tier operators. He further noted that although the Government of Viet Nam established neutral IXPs in three regions for the direct exchange of Internet traffic between domestic ISPs, it seemed that Cambodia, Lao PDR and Myanmar did not have Carrier Neutral IXP (Lao PDR, Myanmar) or limited interconnection (Cambodia). He also found that broadband quality was relatively low compared to that of other regions mainly due to the fact that mobile-based Internet was dominant. Mr. Lee continued that the CLMV countries were in need of both nation-wide deployment of wired network and direct peering/transit between countries to reduce transit cost and to improve speed and latency.

51. After the presentations, a participant asked Mr. Lee about the financing model of carrier-neutral IXPs promoted in his presentation. Mr. Lee proposed a client contribution model among others, but this would need to be tailored to the context.

52. Mr. Kiyoung Ko of Korea Telecom made a presentation on the ongoing research. After an overview of KT's work in Bangladesh, he shared with the meeting participants the preliminary findings of detailed research he and his team were conducting on improving broadband connectivity for target countries as KT's planned contribution to AP-IS and cost-benefit analysis of co-deployment of fibre optical cables along the transport infrastructure, such as highways. Additionally, he proposed that KT would provide a case study on a construction methodology standard for co-deployment along a utility corridor, and share the Republic of Korea's regulations and mechanisms for co-deployment as a template to use in other countries.

53. In response to the presentation made by Mr. Koh, participants asked about technologies (GiGa Wire) used in transmission in Bangladesh as well as the cost of last mile devices. Mr. Koh replied that GiGA Wire was referenced as 60 per cent less costly, but less speed compared with Fiber to the Home (FTTH).

54. As a contribution to the subregional implementation plan for Southeast Asia, the CVISNET Foundation representative, Mr. Jeffrey Llanto, shared with participants the results of the ICT Disaster Response Conference 2017[2]. The conference was organized in the Philippines to raise awareness on the need to reduce the effects of natural and man-made disasters. The conference showcased different ICT solutions as instruments for disaster preparedness, response and communication. The resource persons and speakers for the event came from Japan, Thailand, Singapore, the United States of America, Denmark, Australia and the Philippines.

55. He also volunteered to lead and coordinate the AP-IS E-resilience Pillar, in collaboration with other relevant stakeholders in the region. In response to his commitment, ESCAP proposed CVISNET to coordinate an E-resilience event such as ICT Disaster Response Conference 2018 in collaboration with ESCAP, as a back to back meeting with the second session of the AP-IS Steering Committee, tentatively scheduled for 27-28 August 2018. Mr. Llanto also elaborated in response to a question that his organization aimed to elevate the mentioned conference to be the platform on e-resilience for AP-IS in the future. In

2 For more information: http://www.ictdrconference.ph/.

relation to emergency communication and Pillar 3, the representative of the Republic of Korea referred to the ITU-R recommendations.

56. Mr. Samarajiva of LIRNEasia informed the meeting that his organization had produced several reports on e-resilience within the framework of AP-IS. He also underlined the demand side and network quality issues, originating from poor international connectivity. In this context, Mr. Samarajiva proposed joint studies with ESCAP and partners to implement the strategic initiatives and advance the implementation of the AP-IS.

57. A representative of the International Centre for Integrated Mountain Development (ICOMOD), Mr. Sushil Raj Pandey, shared with the participants their experiences during the major earthquakes in Nepal and emphasized the need to build capacity among operators, after sharing with the participants the work of his organization.

58. The International Institute for Trade and Development (ITD) representative, Ms. Duangthip Chomprang, shared that the main objective of ITD was to link digital connectivity and trade for SDGs. She shared the status of e-commerce law in the Association of Southeast Asian Nations (ASEAN), and touched upon national digital economy development plans and ASEAN intra-trade trends, noting that the Asia-Pacific has many free trade agreements. The representative shared that the cross-border trade in developing countries are dominated by women today. On global value chains (GVC), she mentioned that the Asia-Pacific region was the world's largest GVC for ICT product and services as well as the largest consumers of ICT products and services. She then touched upon paperless trade and national single windows, citing the World Customs Organization (WCO) Report on Cross-Border E-commerce. On the frequency of paperless trade in regional trade agreement (RTA), ITD found that 90 of 138 RTAs (65 per cent) contained at least one paperless trade measure. Thirty RTAs (22 per cent) had a dedicated "Paperless Trading" or "Paperless Trade Administration" provision. She also highlighted that frictionless and digital trade led development depends on the availability of reliable and robust broadband connectivity, which falls under AP-IS Pillar 1 Connectivity (hardware and software); but also depended on Pillar 2 Traffic and Network Management (cross-border data exchange); Pillar 3 Broadband for All (socio-economic inclusive development, &SME); and Pillar 4 e-Resilience (security).

59. As a contribution to subregional implementation plans in Central Asia and South Asia, Mr. Rajendra Singh, the World Bank representative, touched upon the general reasons for poor Internet quality and expensive connectivity, including incomplete policy and regulatory environments, geographical predicaments, global Internet traffic bypassing Central Asia, limited regional integration, limited use of ICT and low level of private investment. The representative then shared the World Bank's OPGW (Optical Ground Wire) and other cross-sector infrastructure sharing projects including gas pipeline, as part of the global programme of the World Bank to develop ICT infrastructure.

60. In response to the presentations, a representative of Armenia, H.E. Mr. Boris Demirkhanyan, shared with the participants the difficulties to negotiate termination rates for cost-based transit. He pointed out that the focus on existing international communication facilities with the shortest round-ways for the data traffic from/to Asia-Pacific to Europe, especially current options as Iran (marine) through Armenia (terrestrial) and Black Sea (marine) loop to be considered as an alternative route for the traffic. To enable this route as well as to introduce other options it was important to develop overlay transnational approach for special pricing to apply on any transnational connectivity within the AP-IS initiative for transit capacities. This was important and may support quicker

implementation of AP-IS. Furthermore, it was worth noting the role of peering - if neighbouring networks were open to exchange traffic and not to transit it might contribute virtual coast effective selective "pipeline" within the AP-IS initiative. In addition, landing traffic close to the consumer may be key driver for optimizing capacity and content requirements within the AP-IS concept. He further noted that It wass important to combine connecting capacities with the data storage and processing facilities to be created to bring data closer to the end user as well as to ensure bilateral data usage from data exchange and processing facilities. The representative of ISOC also shared various reports, including policy briefs on disabilities and accessibility in relation to Pillar 4.

61. In response to the question raised by Armenia and as a contribution to the subregional implementation plans, Mr. Hui Chen of the China Academy on Information and Communication Technology (CAICT) made a presentation on the proposed settlement scheme which had been discussed at an ITU-T study group. He emphasized the point that such a scheme would be helpful in further developing cross-border connectivity, especially for the implementation of AP-IS.

62. Mr. Kisione Wesley Finau, the representative from the University of the South Pacific (USP) provided an overview of the Council of Regional Organizations in the Pacific (CROP). The primary objective was to enhance sectoral coordination and strengthened integration, synergy and collaboration for advancing sustainable development. The ICT Working Group of CROP was chaired by USP (Vice Chancellor & President). The CROP's ICT initiative was based on a number of pillars including connectivity and disaster management. He stated that for 2017, the ICT Working Group focused on implementing the Pacific Regional ICT Strategic Action Plan (PRISA) and cyber security. The representative shared a number of ICT updates in the Pacific region including the Tui – Samoa cable, and Tonga's Inter-island fiber (Tongatapu – Ha'apai- Vava'u island groups) to be ready by 2018. On other ICT development in the Pacific, the participants were informed that the University of Hawaii at Manoa was leading an international initiative to establish an Open Research and Education (R&E) exchange in Guam. On ways forward, the representative highlighted that it was very critical to collaborate and work together to address the needs of the people in the Pacific.

63. The representative of APNIC, Mr. Duncan Macintosh, highlighted the work of his organization in Pacific island countries - Fiji, Samoa, Tonga, and Vanuatu. The representative elaborated the organization's cybersecurity initiatives, national CERT support, e-learning courses, and its efforts at multi-stakeholder engagement including community activities. Mr. Macintosh suggested that the Pacific Region Infrastructure Facility (PRIF), an investment fund with an ICT working group, could be approached by AP-IS for potential funding and partnership.

64. Mr. Marc Lipton, Research Director, Pacific ICT Regulatory Resource Centre (PIRRC), delivered his presentation by sharing some background on PIRRC. It was formerly a World Bank-ADB joint project and now is a World Bank project with funding of USD $5 million over three years, directly benefiting nine Pacific Island Countries: the Federated States of Micronesia, Kiribati, Marshall Islands, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. The project was administered by USP, with a Steering Committee of representative beneficiaries recommending the work plan. PIRRC acted as a Centre of Excellence for data gathering, policy research, capacity building and is staffed with industry experts rather than programme administrators.

65. PIRRC's activities to date included a Disaster Management Workshop and template, the Spectrum Management System for Developing Countries (SMS4DC) training, information notes on Net Neutrality and review of literature on economic impact of broadband in developing economies, among other activities. Mr. Lipton then identified activities that were relevant to the AP-IS Capacity Building such as identifying the need for availability of more spectrum noting that digital transition has freed up some, but not enough for the long term. He stated that PIRRC will co-host with APT and ITU a conference on spectrum harmonization/management[3] on 28-30 November 2017 in Nadi, Fiji.

66. He also shared activities of interest to AP-IS, such as PIRRC's Open Access Initiative, identified likely scarcity of capital for operators, noting that as operator debt goes up, so do interest rates, which was passed on to consumers through increased rates. He stressed that open access should reduce the need for capital expenditures. Additionally, once passive infrastructure was no longer strategic, it could be spun off, eliminating operator's need to earn a return on the assets. He also shared that infrastructure companies could efficiently monetize neutral infrastructure, allowing new areas to be built out. Mr. Lipton also informed the participants that the PIRRC is to conduct a survey on rural Internet use in Samoa to better estimate rural broadband penetration and Internet usage patterns.

67. Mr. Sione Veikoso, President of Pacific Islands Telecommunications Association (PITA), shared an overview of the situation in the Pacific, and briefly shared some background about PITA which served as a platform for exchanging and development of telecommunication solutions for Pacific Islands and collaboration with international and regional development partners. The representative noted that isolation, cost, and lack of resources and technology were major challenges in the region. Regarding connectivity, the participants noted the submarine cables that were now in part linking islands and the satellite footprints that cover the PITA region.

68. After the presentation, H.E. Mr. Kolinio Gata Takali, Fiji's Permanent Representative to the ESCAP updated the participants of the results of an informal meeting which took place among the Pacific island countries' participants for subregional implementation plan. The informal meeting agreed that the priority challenges for Pacific member countries were 1) cybersecurity and associated policies, 2) capacity building on ICT challenges, 3) connectivity and access to isolated/rural communities and 4) infrastructure sharing policy. As a concrete way forward, the Pacific representatives proposed that the AP-IS subregional meeting in the Pacific take place in conjunction with planned activities of PITA.

**Item 7: Outcome and the way forward on AP-IS implementation**

69. A representative of ESCAP, Ms. Atsuko Okuda, shared the findings of the organization's latest State of ICT Report which focuses on Artificial Intelligence (AI). She stressed that AI is one of the forces behind the fourth Industrial Revolution and a potential enabler of sustainable development. Explosive growth in research and applications in AI, particularly in machine learning, the Internet of Things (IoT), cloud and cognitive computing were key ingredients that would fuel AI. Faster and versatile connectivity provided citizens with unprecedented opportunities and challenges that impacted social, economic and environmental development in the Asia-Pacific. The report "Artificial Intelligence and Broadband Divide: the State of ICT Connectivity in Asia and the Pacific 2017" identified positive correlations between the quality and quantity of AI research and economic

3 https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/Pages/Events/2017/Nov-P.HSU/Presentations.aspx

development, such as GDP, ICT service investment and broadband infrastructure development in Asia and the Pacific region.

70. She further stated that despite the likely benefits from AI, there were formidable challenges ahead for the majority of ESCAP member countries. Firstly broadband connectivity was a prerequisite for AI development and uptake, but the region was struggling with a widening digital divide. Secondly, human and institutional capacity were needed to be in place to respond to opportunities from AI technology and to keep up with the technological development. Thirdly, investment and research in AI called for a shift to AI enabling education, infrastructure and investment. Finally, on cybersecurity, due to the enhanced sophistication assisted by AI, vulnerability and data breaches could become more common and therefore needed urgent attention.

71. Ms. Okuda explained that comments, suggestions and proposals could be sent after the meeting with a deadline for further submissions. The ESCAP secretariat was to draft the report after receiving comments, suggestions and proposals and send the draft report to all the participants for their review. Furthermore, nomination and expression of interest in pillar and subregional activities were also encouraged. The ESCAP secretariat was planning a follow-up AP-IS Steering Group meeting as a back-to-back meeting with the Asian Highway Working Group meeting in December 2017, and participants were encouraged to attend the meeting.

72. Further, participants were also encouraged to discuss with focal points of transport ministries the request submitted by the Government of Bangladesh for the amendment to the Asian Highway Agreement which will be discussed at the December meeting. The presentations and reports submitted by the countries and partners was to be uploaded to the meeting's website. The country and partner submissions will still be accepted after the meeting until the report is finalized. The participants were also encouraged to visit the ICT and DRR Gateway of ESCAP and share news, initiatives and events related to AP-IS to be announced on the Gateway. The ESCAP secretariat would share the outcomes of the meeting with other UN agencies and partners for partnerships and cross-sectorial synergies.

73. Ms. Okuda then provided a summary of proposed future actions from several organizations to be reflected in AP-IS strategic initiatives:

a) The Monenco representatives proposed that a pre-feasibility study be conducted for Central, West-Asia and neighbouring countries and emphasized their willingness to take part in such initiatives;
b) The UNV representative proposed a partnership programme for the implementation of AP-IS at various levels, including at the subregional level, using the UNV modality;
c) The Indian Institute of Management (IIM) representative proposed the establishment of an AP-IS Academia Network and forming a task force to further develop the ToR;
d) The representative of Global Energy Interconnection Development and Cooperation (GEIDCO) further proposed to explore co-deployment opportunities with the energy sector through joint research on technology, regulations and benefits as well as pilot initiatives in Myanmar and Bangladesh;
e) The representative of CVISNET proposed to coordinate interested organizations and countries, such as Nepal and PNG on e-resilience and co-host e-resilience meetings as discussed during the meeting;

f) The representative of PITA proposed that the subregional meeting in the Pacific could be organized in 2018 jointly with AP-IS and USP to address the common issues of cost sharing among others;
g) In response to a question from the private sector (SAMCO) representative, it was agreed that the participants will review the AP-IS transmission map and inform the secretariat of any new development and adjustments;
h) The ISOC representative suggested that AP-IS could capitalize on the IXP mapping server which is made available by the organization, together with IXP toolkit;
i) The representative of NIA suggested that IXP associations be invited to the next meeting to engage them for the implementation of Pillar 2 activities. NIA expressed interest in working with ESCAP on the development of Internet Exchange Points (IXP) among CLMV countries based on recommendations outlined in an in-depth study on Asia Pacific Information Superhighway in these countries. In addition, NIA proposed to a take a lead for the implementation of Pillar 2 activities including developing a regional framework of principles and norms on seamless ICT connectivity;
j) The representative of UNESCO proposed to conduct a case study on ICT and education;
k) The delegate of Mongolia proposed to discuss possible collaboration with the research institute for landlocked countries;
l) The collaboration with LIRNEasia could include a joint academia conference and joint studies;
m) Pacific subregional implementation plans, RIRRC proposal on spectrum management capacity development; and
n) The representative of APNIC suggested that the ESCAP secretariat contact the Pacific Region Infrastructure Facility (PRIF) for collaboration and partnerships.

**Item 8: Closing**

74. After the arrival of the Chief Guest and participants, the representative of ESCAP, Ms Tiziana Bonapace, thanked the newly formed members of the AP-IS Steering Committee Bureau and participants for their fruitful discussions, inputs and support towards the implementation of the AP-IS initiative. The participants were also informed that the second session of the Committee on Information and Communications Technology and Science, Technology and Innovation (CICTSTI) is scheduled for August 2018 and delegates and partners will be invited to join the session to discuss emerging issues and contribute to the regional consensus building.

75. Mr. Zunaid Ahmed Palak MP. Honorable Minister, Information and Communication Technology Division (ICTD), Government of Bangladesh, expressed sincere thanks to all Steering Committee members and partners for their commitments on moving ahead under the auspices of the AP-IS initiative to ensure that no one is left behind. He reiterated the importance of the AP-IS initiative for improvements in regional broadband connectivity not only for Bangladesh but also for the entire region. In particular, in improving the quality of their lives (youth empowerment through ICT) though improved access to broadband.

76. The meeting closed.

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Annex 1

**UNITED NATIONS**

**ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC**

**First session of the Asia-Pacific Information Superhighway (AP-IS) Steering Committee**

31 October -2 November 2017

Dhaka, Bangladesh

## MEMBER

## AFGHANISTAN

Mr. Shah Walli Nasiry, Head of Development, Multilateral and International Financial Organizations, General Directorate for Economic Cooperation, Ministry of Foreign Affairs, Kabul

## ARMENIA

H.E. Mr. Boris Demirkhanyan, Deputy Minister of Transport, Communication and Information Technologies, Ministry of Transport, Communication and Information Technologies, Yerevan

## AZERBAIJAN

Mr. Nariman Hajiyev, Manager, Ministry of Telecommunications and High Technologies, Baku

## BANGLADESH

Mr. Banamali Bhowmick, Director General (Additional Secretary), Department of ICT, ICT Division, Ministry of Posts, Telecommunications and Information Technology

Ms. Mahbooba Panna, Deputy Secretary, ICT Division

Ms. Rokeya Khaton, Deputy Secretary, Economic Relations Division, Ministry of Finance

Md. Rafiqul Islam, Joint Secretary, Ministry of Railways

Md. Rashadul Islam, Additional Secretary, ICT Division

Dr. Khandoker Azizul Islam, Deputy Secretary, ICT Division

Col. Md. Mustafa Kamal, Director General, Engineering & Operations Division, Bangladesh Telecommunication Regulatory Commission (BTRC)

Mr. Abu Ayuhal Md. Moyashir, Additional Director General (Technical), Department of Telecommunications

Mr. Mohammod Abul Hashem, Deputy Director (Planning and Development), Department of ICT

Mrs, Maliha Nargis, Joint Secretary, Department of ICT

Md. Mohsinul Alam, System Manager (Joint Secretary), Department of ICT

Mr. Nasir Uddin Ahmed, Chief Signal & Telecommunication, Ministry of Railways

Mr. Mohammad Bulbul Hossain, Executive Engineer (CC), Roads & Highways Department (RHD)

Mr. Abdullah Al Mahmud Faruk, Deputy Controller (ICT), Office of the Controller of Certifying Authorities

Engr. Mohammad Enamul Kabir, Director (Training & Development), Bangladesh Computer Council

**BHUTAN**

Mr. Jigme Tenzing, Chief ICT Officer, Department of Information Technology & Telecom, Ministry of Information & Communications, Thimphu

**CHINA**

Mr. Ziping Liu, Deputy Director-General, Department of International Cooperation, Ministry of Industry and Information Technology of China, Beijing

Mr. Guolei Cai, Chief, Department of International Cooperation, Ministry of Industry and Information Technology of China, Beijing

Ms. Qing Tao, Chief, Department of Information and Communication Development, Ministry of Industry and Information Technology of China, Beijing

Mr. Hui Chen, Deputy Director, Industry and Planning Research Institute, China Academy of Information and Communications Technology, Beijing

Ms. Li Zhao, Senior Engineer, Industry and Planning Research Institute, China Academy of Information and Communications Technology

**FIJI**

H.E. Mr. Kolinio Gata Takali, High Commissioner of Fiji to Malaysia, Fiji's Ambassador to The Kingdom of Thailand, Fiji's Permanent Representative to the ESCAP, Government of Fiji

**GEORGIA**

Mr. Giorgi Dapkviashvili, Head of Electronic Communications and Information Technologies Development Division of the Communications, Information and Modern Technologies Department of the Ministry of Economy and Sustainable Development, Tbilisi

**KAZAKHSTAN**

Mr. Azamat Kozhanov, Expert, Foreign Economic Cooperation Department, Ministry for Investments and Development, Astana

**KIRIBATI**

Mr. Timi Kaiekieki, Director of Planning, Ministry of Information, Communication, Transport & Tourism Development, Tarawa

**LAO PDR**

Mr. Thavisak Manodham, Director General of ICT Department, Ministry of Posts and Telecommunications, Vientiane

Mr. Souliya Sengdalavong, Deputy Director General of Information Technology Department, Ministry of Science and Technology, Vientiane

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Mr. Odkhuu Tsolmondelger, Chief Strategist, Communications and Information Technology Authority, Ulaanbaatar

**PAPUA NEW GUINEA**

Mr. Maisen Roy Windu, Advisor-Integrated Government Information System, Department of Communication and Information, Port Moresby

**REPUBLIC OF KOREA**

Mr. Youngnam Koh, Assistant Director, Ministry of Science and ICT, Seoul

**RUSSIAN FEDERATION**

Mrs. Khristina Boyko, First Secretary, Embassy of the Russian federation in Bangladesh

**SAMOA**

Mr. Taimane Tony Sa'aga, Acting CEO, ICT Secretariat, Ministry of Communications and Information Technology, Apia

**SRI LANKA**

Mr. Mohamed Fawaz Ashraff, Director-Operations, Information and Communication Technology Agency, Colombo

**TAJIKISTAN**

Mr. Arshur Asadulloev, General Director, Tochikombayl OJSC (Tajikmobile), Dushanbe

Mr. Sherhonov Yrozali, General Director of JSC of Tajiktelecom, Dushanbe

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Ms. Molruedee Puangngern, Director, Regional Cooperation Group, International Affairs Division, Ministry of Digital Economy and Society, Bangkok

Ms. Nathaleeya Narash, Foreign Relations Officer, International Affairs Division, Ministry of Digital Economy and Society, Bangkok

Mr. Kamphol Boongsri, Manager, Internet Gateway Operations Division, International Business Department), CAT Telecom Public Company Limited, Bangkok

**TONGA**

Mr. Andrew Toimoana, Director of Information and Technology, Ministry of Meteorology, Energy, Information, Disaster Management, Climate Change and Communications, Nuku'alofa

**TURKMENISTAN**

Mr. Ishanguly Atayev, Director of Center for International Accounts and Agreements, Center for International Accounts and Agreements, Ministry of Communication, Ashgabat

Mr. Durdyly Atayev, Deputy Director General, Turkmentelecom, State Company of Telecommunications, Ministry of Communication, Ashgabat

**VANUATU**

Mr. Jackson Miake, ICT Programme Manager, Office of the Government, Chief Information Officer, Port Vila

**VIET NAM**

Mr. Nguyen Thanh Thao, Head of Division Plan, The Authority of Information Technology Application, Ministry of Information and Communications, Hanoi

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**SPECIALIZED AGENCIES AND RELATED ORGANIZATIONS**

**United Nations Educational, Scientific and Cultural Organization (UNESCO)**

Mr. Jian Xi Teng, Programme Officer, ICT in Education, Bangkok

**UN Volunteers**

Ms. Jane Elizabeth Lawson, UNV Regional Office Officer-in-Charge (Peacebuilding and Crisis Response Specialist), Bangkok

**World Bank**

Mr. Rajendra Singh, a Senior Regulatory Specialist, ICT Policy Division, Washington DC, USA

**World Bank - International Financial Corporation (IFC)**

Mr. Carlos Katsuya, EMENA/Asia Regional Lead, IFC Singapore Office

Ms. Tugay Yilmaz, Investment Officer, Asia, Europe and MENA, Telecom Media and Technology

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**INTERGOVERNMENTAL ORGANIZATIONS**

**SAARC Agriculture Center (SAC)**

Dr. S.M. Bokhtiar, Director, SAARC Agriculture Center (SAC)

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**OTHER INTERNATIONAL ORGANIZATIONS**

**Asian Development Bank Institute (ADBI)**

Mr. Ke Seetha Ram, Advisor to Dean, Tokyo, Japan

**Asian Disaster Preparedness Center (ADPC)**

Mr. MD Noor Ahmed, Country Manager, Dhaka, Bangladesh

**APNIC Foundation**

Mr. Duncan Macintosh, CEO and Executive Director, Brisbane, Australia

**Bangladesh Association of Software and Information Services (BASIS)**

Mr. Syed Almas Kabir, Director, Bangladesh Association of Software and Information Services (BASIS)

**Bangladesh Women in Technology (BWIT)**

Ms. Luna Shamsuddoha, President, Bangladesh Women in Technology (BWIT)

**Bangladesh University of Engineering and Technology (BUET)**

Dr. Mohammad Faisal, Professor, Dept. of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology (BUET)

**Center of Excellence in Public Policy and Government**

Professor Baharul Islam, Fellow, Indian Institute of Management, Kashipur, India

**CVISNET Foundation Inc.**

Mr. Jeffry Llanto, Executive Director, Manila, Philippines

**Global Energy Interconnection Development and Cooperation Organization (GEIDCO)**

Mr. Li Longfei, Senior Manager, Southeast Asia Office, Strategy & Planning Division, Beijing, China

**Internet Corporation for Assigned Names and Numbers (ICANN)**

Ms. Joyce Chen, GSE Strategy & Development Senior Manager Asia Pacific, Singapore

**International Centre for Integrated Mountain Development (ICIMOD)**

Mr. Sushil Raj Pandey, Knowledge Management Specialist, ICT for Development, Kathmandu

**International Development Research Centre (IDRC)**

Mr. Phet Sayo, Senior Program Officer, Networked Economies, Delhi, India

**International Institute for Trade and Development (ITD)**

Ms. Duangthip Chomprang, Director, Office of Regional Cooperation and Support, Bangkok

**Internet Society**

Mr. Rajnesh Singh, Managing Director, Internet Society Asia-Pacific, Singapore

**LIRNEasia**

Mr. Rohan Samarajiva, Chairman, Colombo, Sri Lanka

Mr. Abu Saeed Khan, Senior Policy Fellow, Dhaka, Bangladesh

**Pacific ICT Regulatory Resource Centre**

Mr. Marc Lipton, Research Director, Pacific ICT Regulatory Resource Centre, Suva

**Pacific Islands Telecommunications Association (PITA)**

Mr. Sione Veikoso, President, Tonga

**The Export-Import Bank of Korea**

Mr. Hye Cheol Shin, Representative of Dhaka Office, The Export-Import (EXIM) Bank of Korea

**World Wide Web Foundation**

Mr. Basheerhamad Shadrach, Asia Coordinator, Alliance for Affordable Internet, New Delhi, India

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**PRIVATE SECTORS**

**Bangladesh Submarine Cable Company Limited**

Mr. Mohhamad Zakirul Alam, Deputy General Manager (Development), Bangladesh Submarine Cable Company Limited (BSCCL)

Mr. Mashiur Rahman, Managing Director, Bangladesh Submarine Cable Company Limited

**BD Link Communication Ltd.**

Mohd. Mokhlesur Rahman, CEO, BD Link Communication Ltd.

**BTCL**

A K M Shahnewaj Chowdhury, Divisional Engineer, BTCL

**China Telecom**

Mr. Xinyu Liu, China Telecom, Beijing

**David Butcher and Associates**

Mr. David Butcher, Principal Consultant, Wellington, New Zealand

**Fiber@Home Limited**

Mr. Muhhammad Khairul Alam Sabuz, Business Development Specialist, Govt./Regulatory Affairs & ICT Business Development, Fiber@Home Limited

**Korea Telecom (KT)**

Mr. Kiyoung Ko, Executive Vice President, Head of UN Cooperation and Global Consulting, Seoul, Republic of Korea

Mr. Jihan Na, Korea Telecom Network Consultant, Seoul

**Microsoft Bangladesh Ltd.**

Ms. Suparna Roy, Public Sector Head, Dhaka

**Monenco Iran Consulting Engineers**

Mr. Siamak Hossein Khalaj, Director, Dispatching, Information & Telecommunication, Tehran, Iran

Ms. Sanaz Hosseini, International Business Development Expert, Tehran, Iran

**Power Grid Company of Bangladesh Ltd.**

Mr. Mohammad Ashraf Hossain, Director, (OPGW), Power Grid Company of Bangladesh Ltd.

**Summit Communications Limited**

Mr. Mahabub-A-Rasul, Senior Manager, Summit Communications Limited

**Telenor International Center**

Mr. Hans Martin Hoegh Henrichsen, Chief Representative Officer, Dhaka, Bangladesh

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Mr. Md. Anwar Hossain, General Manager, Dhaka

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**EXPERTS**

Mr. Kisione Wesley Finau, Director, IT Services/Japan Pacific ICT Centre, The University of The South Pacific, Suva, Fiji

Mr. Yeong Ro Lee, Senior ICT Advisor, National Information Society Agency, Daegu, Republic of Korea

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**ESCAP SECRETARIAT**

| | |
|---|---|
| Mr. Hong Joo Hahm | Deputy Executive Secretary for Programmes |
| Ms. Tiziana Bonapace | Director, ICT and Disaster Risk Reduction Division, IDD |

| | |
|---|---|
| Ms. Atsuko Okuda | Chief, ICT and Development Section, ICT and Disaster Risk Reduction Division, IDD |
| Mr. Dong Jung Lee | Expert on ICT, ICT and Development Section, ICT and Disaster Risk Reduction Division, IDD |
| Mr. Siope Vakataki ‘Ofa | Economic Affairs Officer, ICT and Development Section, ICT and Disaster Risk Reduction Division, IDD |
| Ms. Anna Adodina | Interpreter, ICT and Disaster Risk Reduction Division, IDD |
| Mr. Timur Nurpeissov | Interpreter, ICT and Disaster Risk Reduction Division, IDD |

Annex 2

**First session of the Asia-Pacific Information Superhighway (AP-IS) Steering Committee**

**1-2 November 2017**

**AGENDA**

**Venue:** Pan Pacific Sonargaon Dhaka, Bangladesh.

| **Day 0: Tuesday 31 October 2017**<br>**Surma Hall** | |
|---|---|
| 13:30-18:00 | **Preparatory Meeting**<br>• **Introduction remarks** by ESCAP<br>• **Discussion with Steering Committee members and partners** (Terms of reference, plans and proposals for the 2017-2018 implementation plans)<br>• **Discussion on Subregional Steering Group and Implementation Group** (Terms of reference, composition, plans and proposals for the 2017-2018 implementation plans)<br>• **Ms. Jane Elizabeth Lawson, UNV Regional Office Officer-in-Charge (Peacebuilding and Crisis Response Specialist), UN Volunteers, *"Building Capacity for the Asia-Pacific Information Superhighway through Volunteerism and South-South Cooperation"*** |
| *19:00 – 20:00* | *Welcome Dinner at Pan Pacific Sonargaon Hotel (Government of Bangladesh)* |

| **Day 1 : Wednesday 01 November 2017**<br>**Session 1**: **Inaugural Ceremony**<br>**Grand Ballroom** | |
|---|---|
| 08:30 – 08:55 | Arrival of Participants and Guests and Registration |
| 08:55 – 09:00 | Arrival of the Chief Guest : Mr. Abul Maal A Muhith, Honorable Finance Minister, Ministry of Finance, Government of the People's Republic of Bangladesh |
| 09:05 – 09:10 | Welcome Address by Mr. Banamali Bhowmick, Director General, Department of ICT, ICT Division, Ministry of Posts, Telecommunications & Information Technology |
| 09:10 – 09:15 | Opening Remarks by Mr. Hong Joo Hahm, Deputy Executive Secretary for Programmes on behalf of Dr. Shamshad Akhtar, Under-Secretary-General of the United Nations and Executive Secretary of ESCAP |
| 09:15 – 09:25 | Keynote Presentation On behalf of the Government of Bangladesh : Mr. Abu Saeed Khan, Senior Policy Fellow, LIRNEasia. |
| 09:25 – 09:30 | Address by Guest of Honor |

| | |
|---|---|
| 09:30 – 09:50 | Address by Special Guests<br>• Mr. Md. Mofazzel Hossain, Secretary-in-Charge, Ministry of Railways<br>• Mr. Md. Nazrul Islam, Secretary, Road Transport and Highways Division |
| 09:50 – 10:00 | **Address by Chair**<br>❖ **Mr. Zunaid Ahmed Palak MP, Honorable State Minister, Information and Communication Technology Division (ICTD), Government of the People's Republic of Bangladesh** |
| 10:00 – 10:15 | **Address by Chief Guest**<br>❖ **Mr. Abul Maal A Muhith, Honorable Finance Minister, Ministry of Finance, Government of the People's Republic of Bangladesh** |
| *10.15 – 10:30* | *Group Photo and Refreshment* |
| 10:30 – 10:40 | **Session 2: Election of Bureau and Adoption of the Agenda**<br>• Introduction to ESCAP Resolution 73/6, sponsored by Bangladesh<br>• Objectives and structure of the meeting: by ESCAP<br>• Introduction of Participants<br>• Election of Bureau<br>• Adoption of the Agenda |
| 10:40 – 11:30 | **Session 3: AP-IS Governance Structure**<br>**Moderator:** Chair of AP-IS Steering Committee<br>• **Introductory remarks** by ESCAP: Composition and Terms of reference - Steering Committee, Steering Group and Implementation Group, monitoring, coordination and advisory functions of the Steering Group<br>• Discussion |
| **11:30 – 12:30** | **Session 4**: **Emerging trends, opportunities and proposed activities for AP-IS**<br>**Moderator:** Mr. Rohan Samarajiva, Chairman, LIRNEasia.<br>**Regional Dimensions**<br>❖ State of ICT in Asia and the Pacific 2017: by ESCAP<br>❖ ***Pillar 1 (Connectivity)****:*<br>❖ ***Mr. Rajendra Singh, Senior Regulatory Specialist, World Bank, "ICT Connectivity"***<br>❖ ***Mr. Carlos Katsuya, EMENA/Asia Regional Lead, International Corporation Fund (IFC) Singapore Office*** |

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| | ❖ ***Mr. Ke Seetha Ram, Advisor to Dean, Asia Development Bank Institute, "Initiatives at the ADB for Improving Access to Information and Communication in Asia and the Pacific".***<br>❖ ***Mr. Michael Ruddy, Director of International Research Terabit Consulting, "Overview of Broadband Market in Asia-Pacific"***<br>❖ ***Mr. Phet Sayo, Senior Program Officer, Networked Economies, International Development Research Centre (IDRC).***<br><br>• Discussion |
| ***12:30 – 14:30*** | ***Lunch*** *(Government of Bangladesh)*<br><br>***Informal Interactive Session: AP-IS Partner's Initiatives (13:15 – 14:30), Grand Ballroom.***<br><br>***Moderator****: Ms. Duangthip Chomprang, Director, Office of Regional Cooperation and Support, International Institute for Trade and Development.*<br><br>***Speakers :***<br>❖ ***Ms. Suparna Roy, Public Sector Head, Microsoft Bangladesh***<br>❖ ***Mr. Rabah Gehzali, Group Director Public Policy, Veon. Netherlands***<br>❖ ***Ms. Sanaz Hosseini, International Business Development Expert, Monenco Iran Consulting Engineers, Tehran, Iran. (To be confirmed)*** |
| 14:30 – 16:00 | **Session 4**: Continued<br><br>**Moderator:** Mr. Phet Sayo, Senior Program Officer, Networked Economies, International Development Research Centre (IDRC).<br><br>**Regional Dimensions**<br><br>• ***Pillar 2 (Internet Traffic & Network Management)***:<br>❖ ***Mr. Rajnesh Singh, Managing Director, Internet Society Asia-Pacific.***<br>❖ ***Mr. Duncan Macintosh, CEO and Executive Director, APNIC Foundation, "IXPs and IPv6 in Asia-Pacific"***<br>❖ ***Ms. Joyce Chen, GSE Strategy & Development Senior Manager Asia Pacific, Internet Corporation for Assigned Names and Numbers (ICANN).***<br>• Discussion<br><br>• ***Pillar 3 (E-resilience)****:*<br>❖ ***Mr. Jeffry Llanto, Executive Director, CVISNET Foundation Inc., "The Moveable and Deployable ICT Resource Unit Project (MDRU-Project)"***<br>• Discussion |

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| | • ***<u>Pillar 4 (Broadband for all)</u>:***<br>❖ ***Mr. Jian Xi Teng, Programme Officer, ICT in Education, UNESCO, Bangkok, Thailand.***<br>❖ ***Mr. Basheerhamad Shadrach, Asia Coordinator, Alliance for Affordable Internet, World Wide Web Foundation, "Broadband affordability"***<br>❖ ***Mr. Rohan Samarajiva, Chairman, LIRNEasia.***<br>❖ ***Chat Garcia Ramilo, Executive Director, Association for Progressive Communications (APC), Philippines (TBC).***<br>• Discussion |
| ***16:00 – 16:15*** | ***Tea/Coffee Break*** |
| 16:15 – 16:30 | **Session 5**: **AP-IS Steering Committee Implementation Plan 2017-2018**<br><br>**Moderator:** Mr. Kabir Ahmed, Economic Counsellor, and Alternate Permanent Representative of Bangladesh to the UNESCAP<br><br>• Summary discussion and consolidation of proposed activities<br>• Input from AP-IS Partners<br>• Modalities of implementation |
| *19:00 – 20:00* | *Dinner at Pan Pacific Sonargaon Hotel & Cultural Function (Government of Bangladesh)* |

| **Day 2 Thursday 02 November 2017**<br>**Venue: Surma Hall** | |
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| 09:00 – 9:15 | **Session 6: Proposed Activities and Implementation for AP-IS**<br><br>**Moderator:** Vice Chair of AP-IS Steering Committee<br><br>**Subregional Dimensions:**<br>• Organization of Subregional Steering Groups and Implementation Groups: by ESCAP<br><br>i. Identifying membership and subregional/national connectivity projects<br>ii. Challenges and opportunities<br>iii. Setting priorities and implementation plan |
| 9:15 – 10:15 | **Session 6: South-East Asia**<br><br>**Moderator:** Mr. Michael Ruddy, Director of International Research Terabit Consulting<br><br>• **Subregional overview:** by ESCAP |

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| | ❖ ***Mr. Lee Yeong Ro, Executive Researcher, National Information Society Agency (NIA), "Internet traffic and network management in CLMV countries"***<br>❖ ***Mr. Kiyoung Ko, Executive Vice President, Head of UN Cooperation and Global Consulting, Korea Telecom, "Codeployment"***<br>❖ ***Mr. Jeffry Llanto, Executive Director, CVISNET Foundation Inc., "The result and impact of the "International Conference on Information Communication Technology on Disaster Preparedness and Response"***<br>❖ ***Ms. Duangthip Chomprang, Director, Office of Regional Cooperation and Support, International Institute for Trade and Development, "Digital Trade"***<br>• Initiatives, proposals and plans by member countries<br>• Modalities of coordination and implementation<br>• Discussions |
| ***10:15 – 10:30*** | ***Tea/Coffee Break*** |
| 10:30 – 11:30 | **Session 6: South and South-West Asia**<br><br>**Moderator:** Mr. Basheerhamad Shadrach, Asia Coordinator, Alliance for Affordable Internet, World Wide Web Foundation<br><br>• **Subregional overview:** by ESCAP<br>❖ ***Mr. Rajendra Singh, Senior Regulatory Specialist, World Bank, "Digital CASA"***<br>❖ ***Mr. Rajnesh Singh, Managing Director, Internet Society Asia-Pacific.***<br>• Initiatives, proposals and plans by member countries<br>• Modalities of coordination and implementation<br>• Discussions |
| 11:30 – 12:30 | **Session 6: North and Central Asia and East and North-East Asia**<br><br>**Moderator:** H.E. Mr. Boris Demirkhanyan, Deputy Minister of Transport, Communication and Information Technologies, Ministry of Transport, Communication and Information Technologies<br><br>• **Subregional overview:** by ESCAP<br><br>❖ ***Mr. Hui Chen, Deputy Director, Industry and Planning Research Institute, China Academy of Information and Communications Technology***<br><br>• Initiatives, proposals and plans by member countries<br>• Modalities of coordination and implementation<br>• Discussions |
| ***12:30 – 14:30*** | ***Lunch*** *(Government of Bangladesh)* |

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| 14:30 – 15:30 | **Session 6: Pacific**<br><br>**Moderator:** Mr. David Butcher, David Butcher and Associates, New Zealand<br><br>❖ **Subregional overview:** by ESCAP<br>❖ ***Mr. Kisione Wesley Finau, Director, IT Services/Japan Pacific ICT Centre, The University of The South Pacific, "ICT Connectivity in the Pacific Island Countries"***<br>❖ ***Mr. Duncan Macintosh, CEO and Executive Director, APNIC Foundation, "Cyber Security & Computer Emergency Response Teams in the Pacific"***<br>❖ ***Mr. Marc Lipton, Research Director, Pacific ICT Regulatory Resource Centre***<br>❖ ***Mr. Sione Veikoso, President, Pacific Islands Telecommunication Association (PITA) (To be confirmed)***<br>• Initiatives, proposals and plans by member countries<br>• Modalities of coordination and implementation<br>• Discussions |
| ***15:30 - 16:00*** | ***Tea/Coffee Break*** |
| 16:00 – 17:00 | **Session 7: Outcome and the way forward of the AP-IS implementation**<br><br>**Moderator:** Ms. Tiziana Bonapace, Director, Information and Communications Technology and Disaster Risk Reduction Division, ESCAP<br><br>• Summary of subregional Steering Groups and Implementation Groups discussions<br>• The way forward |
| **Session 8: Closing Ceremony**<br>**Surma Hall** | |
| 17:00 – 17:05 | Arrival of Chief Guest and Participants |
| 17:05 – 17:15 | Closing Remarks by Ms. Tiziana Bonapace, Director, Information and Communications Technology and Disaster Risk Reduction Division, ESCAP |
| 17:15 – 17:25 | Closing Remarks by the Government of Bangladesh |
| 17:25 – 17:35 | Address by Chair |
| 17:35 – 17:45 | Address by Chief Guest |