SUMMARY REPORT
ON
ITU-T SG5 Meeting on Environment and Climate Change

December 2014

Le Meridien / Kochi, India

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On Behalf

MALAYSIAN TECHNICAL STANDARDS FORUM BHD

Content

1. ABSTRACT

This is part of a report prepared by the Malaysian delegation team and members of MTSFB who participated in the ITU-T Study Group 5 (SG5) Meeting on Environment and Climate Change, which was held from 8th Dec to 19th Dec, 2014 in Kochi, India.

ITU-T Study Group 5 (SG5) is responsible for studies on methodologies for evaluating ICT effects on climate change and publishing guidelines for using ICTs in an eco-friendly way. Under its environmental mandate SG5 is also responsible for studying design methodologies to reduce ICTs and e-waste's adverse environmental effects, for example, through recycling of ICT facilities and equipment.

In addition to its climate-focused activities, the ITU-T Recommendations, Handbooks and other publications produced by SG5 have four main objectives. The first is to protect telecommunication equipment and installations against damage and malfunction due to electromagnetic disturbances, such as those from lightning. In this field, SG5 is one of the worlds most experienced and respected standardization bodies.

The second is to ensure safety of personnel and users of networks against current and voltages used in telecommunication networks. The third is to avoid health risks from electromagnetic fields (EMFs) produced by telecommunication devices and installations. The fourth is to guarantee a good quality of service (QoS) for high speed data services by providing requirements on characteristics of copper cables and on the coexistence of services delivered by different providers.

2. LIST OF PARTICIPANTS

No	Name / Company	Portfolio	Role in ITU-T SG5
1	Alex Kuik (Digi)	Chairman of Green ICT Solutions Sub-WG, GICT WG	Contribution paper "Malaysian Mobile Operators Green Initiatives - Sustainable Concepts to Reduce Use of Depleting Resources" Editor Q13/5 Supp.BM Editor Q13/5 Supp.EWQ Editor Q17/5 L.Green STNI Delegate WP3/5 Q13-Q18
2	Adeline Chee (MDeC)	Chairman of Green ICT Standards, Metrics and Measurement Sub-WG, GICT WG	Delegate WP3/5 Q13-Q18
3	Reza Aidid (Maxis)	Vice-Chairman of Green ICT Solutions Sub-WG, GICT WG	Editor Q15/5 L.Infrastructure Delegate WP3/5 Q13-Q18
4	Hamzah Burok (MTSFB)	General Manager, MTSFB	Delegate WP2/5 Q6-Q11
5	Mohammed Hakim Othman (MCMC)	Head, Technology Development Department, MCMC	Editor Q15/5 L.1500 Supplement Delegate WP2/5 Q6-Q11

3. INTRODUCTION/BACKGROUND

In recent years, one of SG5's best-known products has been an energy-efficient one-charger-fits-all mobile phone solution. Every mobile phone user will benefit from the new Universal Charging Solution (UCS), which enables the same charger to be used for all future handsets, regardless of make and model.

SG5 has, in addition, developed a UCS for stationary ICT devices (such as modems, set-top boxes, home networking equipment and fixed telephones) which will further reduce the number of chargers manufactured by widening the range of compatible devices, facilitating adapter reuse and recycling, and increasing build-quality and resilience to over-voltages.

SG5 work encompasses globally agreed methodologies for measuring the carbon footprint of ICTs, to facilitate measurement of the impact of ICTs on emissions and support meaningful reporting and comparisons. ITU's common methodology will help establish the business case to go green and support informed consumer choices and climate-friendly business procurement.

SG5 also studies technical frameworks for the responsible management of the ICT systems that underpin wireless communications, with resulting ITU-T Recommendations safeguarding populations' health and ensuring electromagnetic compatibility (EMC).

SG5-developed ITU-T Recommendations give operators, manufacturers and government agencies the tools required to assess EMF levels and to verify compliance with the World Health Organization (WHO) recommended human-exposure guidelines set out by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the IEEE International Committee Electromagnetic Safety (ICES).

EMC is another key component of this work, ensuring that the functionality of telecommunication equipment is not compromised by electromagnetic interference related to EMFs and conducted disturbances emitted by other electrical or communications systems. EMC is becoming particularly relevant in accounting for the convergence of telecommunication and IT equipment, as well as in ensuring the efficient operation of home networks

4.AGENDAS/TOPICS

The ITU-T Study Group 5 (SG5) Meeting on Environment and Climate Change was held from 8th Dec to 19th Dec, 2014 in Kochi, India. The meeting agenda as below:

1. Opening of the meeting
2. Adoption of the agenda
3. Document allocation
4. Highlights of Plenipotentiary 2014
5. Highlights of the last Chairmen/TSAG meetings
6. IPR roll call
7. Workshops of interest to SG5
8. Bridging the standardization gap
9. Promotion activities
10. Report of the different SG5 Regional Groups
11. Report of the Focus Group on Smart Sustainable Cities
12. Report of the Focus Group on Smart Water Management
13. Joint Coordination Activity on ICT and Climate Change
14. Working Parties meetings
15. Reports of the meetings of Working Parties
16. Consent/determination/approval/deletion of Recommendations
17. Approval of informative texts
18. Approval of Outgoing liaison statements/communications

19. Nomination of Rapporteurs, Associate Rapporteurs and Liaison Rapporteurs
20. Update of SG5 work programme
21. Future activities
22. Other business
23. Closing of the meeting

In addition the following events also took place in conjunction with ITU-T Study Group 5 meetings:
1. Joint Coordination Activity on ICT and climate change (JCA-ICT&CC) - 9 December 2014
2. WG3 of the Focus Group on Smart Sustainable Cities (FG-SSC) - 11 December 2014
3. ITU Symposium on ICTs, Environment and Climate Change - 15 December 2014
4. ITU Forum on Human Exposure to Electromagnetic Fields in India - 15 December 2014

The ITU-T Study Group 5 (SG5) structure covers three main topics managed by Working Party (WP) with 19 questions currently addressed. They are:

Working Party	Question Topic
WP1/5 Damage prevention and safety	Q1/5 Copper cables, networks and fibre-optic connection hardware for broadband access Q2/5 Protective components and assemblies Q3/5 Interference to telecommunication networks due to power systems and electrified railway systems Q4/5 Resistibility and safety in telecommunications Q5/5 Lightning protection and earthing of telecommunication systems
WP2/5 Electromagnetic fields: emission, immunity and human exposure	Q6/5 EMC issues arising from the convergence of IT and communication equipment Q7/5 Human exposure to electromagnetic fields (EMFs) due to radio systems and mobile equipment Q8/5 EMC issues in home networks Q9/5 Generic and product family EMC recommendations for telecommunication equipment Q10/5 Security of telecommunication and information systems concerning the electromagnetic environment Q11/5

	EMC requirements for the information society
WP3/5 ICT and climate change	Q12/5 Guides and terminology on environment and climate change Q13/5 Environmental impact reduction including e-waste Q14/5 Setting up a low-cost sustainable telecommunication infrastructure for rural communications in developing countries Q15/5 ICTs and adaptation to the effects of climate change Q16/5 Leveraging and enhancing the ICT environmental sustainability Q17/5 Energy efficiency for the ICT sector and harmonization of environmental standards Q18/5 Methodologies for the assessment of environmental impact of ICT Q19/5 Power feeding systems

5. FINDINGS

5.1 Structure and Organization of ITU-T

Below shows the organizational structure for ITU-T.
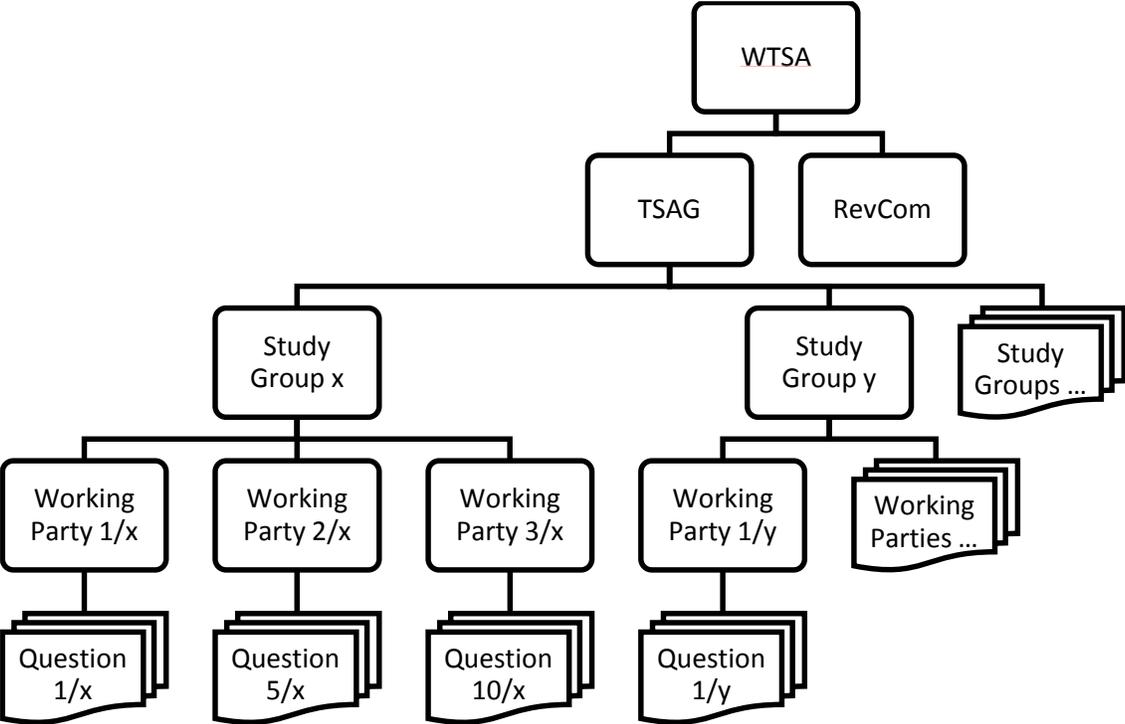
WTSA: *World Telecommunication Standardization Assembly* held every four years and defines the next period of study for ITU-T. Current study period is 2013-2016.

TSAG: *Telecommunication Standardization Advisory Group* is to act as an advisory body to the study groups, membership and staff of ITU-T and responsible for the working procedures defined in the A-series Recommendations and the organization of the ITU-T work programme.

RevCom: *Review Committee* is to review the structure and working methods of ITU's Telecommunication Standardization Sector (ITU-T) to ensure that ITU-T continues meeting the standardization needs of an evolving business environment.

Study Group: Standardization work is carried out by the technical *Study Groups (SGs)* in which representatives of the ITU-T membership develop Recommendations (standards) for the various fields of international telecommunications.

Working Party: Focusses on specific areas of consideration to develop Recommendations under the Study Group.

Questions: Specific key topics of each Working Party to develop Recommendations.

5.2 Secretariat Services
The role of the ITU-T SG5 Secretariat as below:

1. Key role: facilitate standards development
2. Administrative support and technical knowledge
3. Procedural advice
4. Meeting logistics
5. Document processing and distribution
6. Ensure quality of output standards
7. Coordinate routine study-group activities

Established contacts for SG5 related activities:

1. Ahmed Zeddam (SG5 Chairman) : ahmed.zeddam@orange.com
2. Christina Bueti (SG5 Advisor): tsbsg5@itu.int

5.3 Publications
There are two types of publications (must be approved by members):

1. Normative text
   1.1 Recommendations (international standards)
   1.2 Grouped into themed series
   1.3 Compliance only mandatory after adoption in law
   1.4 Developed at the request of membership
   1.5 Maintained through amendments, corrigenda and revisions

2. Non-normative Text
   2.1 Supplements
   2.2 Implementers' guides
   2.3 Tutorials and   technical papers
   2.4 Focus-group deliverables
   2.5 Ad-hoc publications

5.4 Summary of Discussion from WP3/5 (ICT and Climate Change)
5.4.1 Q13/5

All contributions to Q13/5 were reviewed.

Q13/5 decided to create new work items on: Business Models for e-waste management by Private Corporations; Supplement on Assessment of Quantity of E-waste in Developing Countries; Supplement on Circular Economy; Supplement on Implementation guidance for ICT SME supply chains due diligence on conflict minerals.

Q13/5 agreed to submit for approval the following deliverables:

1. Supplement on Life-cycle management of ICT goods
2. Supplement on Guidelines for developing a sustainable e-waste management system
3. Questionnaire on Best practice of e-waste management

5.4.2 Q14/5
All contributions to Q14/5 were reviewed.

Q14/5 Supplemental Guide on Setting up a low cost sustainable telecommunications infrastructure was updated.

Document TD 888 rev 1 containing draft new ITU-T Recommendation on *Requirements for Low cost sustainable telecommunications infrastructure for rural communications in developing countries*, listed a set of metrics to assess the performance of various technologies and service deployment against the reference framework in the Supplemental Guide. Q14/5 is seeking additional contributions to update the requirements in TD888 for eventual incorporation into the base document.

5.4.3 Q15/5
All contributions to Q15/5 were reviewed.

During the Kochi meeting, Q15/5 invited representatives from ITU-D and from ITU-R to make presentations on climate change adaptation and emergency telecommunications in order to synergize activities and consider opportunities for cooperation and sharing of knowledge.   In addition, Q15/5 Rapporteur moderated a session dedicated for this purpose during the 9th Symposium on the ICT, environment and climate change.

Q15/5 meetings focused on work item L. Infrastructure Adaptation and on enriching the new supplement on Adaptation effects.   Updated baseline documents for L. Infrastructure adaptation and ITU-T L.1500 Supplement were produced integrating all comments and suggestions made at the meeting. In addition, a new work item was discussed covering the Use of ICTs in the adaptation of the agricultural sector to climate change.

5.4.4 Q16/5
All contributions to Q16/5 were reviewed.

As far as the emission factors databases are concerned, a way-forward has been agreed with a possible closing of the work item in September 2015 if significant progress is not made.

Concerning the L.Eco-Rating Recommendation, progress has been made on the appendices. However, some standing issues remain to be addressed.

5.4.5 Q17/5
All contributions sent to Q17/5 were reviewed.

Forum and/or a session on "IoT and crowd sourcing for energy efficiency"

Mandat International invited ITU-T SG5 WP3 Q17 to organize an event on IoT and crowd sourcing for energy efficiency" in Geneva, Switzerland.

WP3/5 requests TSB to coordinate with Mandat International with regards to the organization of a forum and/or a session following the proposal contained in C.365.

New Recommendation ITU-T L.DC_minimum set

This draft Recommendation was consented at this meeting as contained in TD 894 rev2. This document describes a minimum set of parameters necessary to ensure an efficient monitoring of a data center in order to improve its energy efficiency.

New Recommendation ITU-T L.MandM_network

This draft Recommendation was consented at this meeting as contained in TD 814 rev2. This document was developed in collaboration with ETSI EE. This draft Recommendation serves as a useful reference whenever a test of mobile network energy efficiency over a radio access network is performed.

New Recommendation ITU-T L.model EE ICT

This draft Recommendation was consented at this meeting as contained in TD861 rev3. The document describes a reference operational model and interface for improving energy efficiency of ICT network hosts. The operational model and interface specify network proxy operation to support IPv4 ARP and DHCP in order to promote the deployment of network proxy.

New Supplements on Data Centres

A series of new Supplements was approved. The draft Supplements are contained in: TD 863r1, TD 864r1, TD 865r1, TD.866r1, TD.867r1, TD 868r1, TD .869r1 and TD.870r1.

The following work items have been created:

Draft New Recommendation L.green_mgm_DC. It was agreed to open a new work item on Functionality requirements and framework of green data center energy-saving management system

Draft New Recommendation L.EE-ARCH. It was agreed to open a new work item on Energy efficient architectures of ICT systems.

Draft New Recommendation L.Green STNI. It was agreed to open a new work item on Green ICT solutions for telecom network infrastructure

5.4.6 Q18/5
All contributions to Q18/5 were reviewed.

Contributions on the Supplement on Satellite Systems were received and presented. New contributions are encouraged.

Draft new Recommendation on Methodology for environmental impact assessment of information and communication technologies at city level was submitted for consent as contained in TD931.

5.4.7 Q19/5
All contributions to Q19/5 were reviewed.

Draft Recommendation ITU-T L.performance. This draft Recommendation was submitted for consent at this meeting as contained in TD812rev2. Several members contributed to this draft Recommendation to finalize its text with regards to performances such as efficiency, reliability/availability based on configurations described in Recommendation ITU-T L.1201.

Draft Recommendation ITU-T L.renewable. This draft Recommendation was discussed and updated as in TD929. Scope of this draft Recommendation was discussed and it was agreed to focus on interface and architecture specifications with multiple power sources.

Draft new work item L.DC marking. It was agreed to open a new work item on colour of DC cable and other associated marking. The new work item will be developed in collaboration with ETSI EE/EE2.

5.5 Malaysian contributions and new appointments
The Malaysian delegate actively participated in the Working Party discussions and contributed towards the development of telecommunication standards on ICT and Climate Change.

Two contribution papers were presented:

1. *Malaysian Mobile Operators Green Initiative – Sustainable Concepts to Reduce Use of Depleting Resources* – Alex Kuik, Q13/5
2. *Proposal for text input in ITU-T L.1500 Supplement* - Mohammed Hakim Othman, Q15/5

Four new appointments of roles were made:

1. **Alex Kuik** – Editor Q13/5 Supp.BM," "Supplement on Assessment on Best Practices for e-waste management by Private Corporations"
2. **Alex Kuik** – Editor Q13/5 Supp.EWQ,"Supplement on Assessment of Quantity of E-waste in Developing Countries"
3. **Alex Kuik** – Editor Q17/5 L.Green STNI," Green ICT solutions for telecom network infrastructure"
4. **Reza Aidid** – Editor Q15/5 L.Infrastructure Adaptation," Best practices for Adapting ICT equipment and networks to the effects of Climate Change"

6. CONCLUSION

With the exposure and knowledge gained from attending the ITU-T Study Group 5 (SG5) Meeting on Environment and Climate Change, it is recommended that:

1. MTSFB secretariat and Green ICT Working Group members to fully support MCMC in hosting future SG5 meetings in Malaysia.
2. Benchmark, review and adopt relevant best practices of ITU governance structure for development of Green ICT Standards/Guidelines in Malaysia.
3. Continue active participation in future SG5 Meetings, especially in the specific domain area, to boost Malaysian positioning in the global standardization arena.

7. ACKNOWLEDGEMENT

I would like to thank MCMC and MTSFB for giving me the opportunity to participate in this meeting and be a part of the Malaysian delegate of which much has been gained in terms of knowledge, exposure and strategic links with the international standardization community.

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