SUMMARY REPORT
ON
ITU 4th Green ICT Week

22 - 26 September 2014
Beijing/China

Prepared by:

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Abstract

ITU organized the fourth Green Standards Week, from 22 to 26 September 2014 in Beijing, China. The 4th Green Standards Week 2014 was dedicated to the theme of "Smart Sustainable Cities" and was kindly hosted by Huawei in close cooperation with the China Academy of Telecommunication Research (CATR) of the Ministry of Industry and Information Technology (MIIT) of the Government of the People's Republic of China.

The Green Standards Week acted as global platform for discussion and knowledge-sharing in order to raise awareness of the importance and opportunities of using ICT to build smart sustainable cities and ensure a sustainable future. It brought together leading specialists in the field, from top policy-makers to engineers, designers, smart city planners, government officials, regulators, standards experts and others.

The following activities were programed dedicated to this year theme:

22 September 2014: Forum on "Green ICT for a sustainable resource efficient economy"

23 September 2014: Forum on "E-waste: the inconvenient truth"

24 September 2014: High-Level Forum on "Setting the vision for smart sustainable cities"

Outcome: Call to Action

25 September 2014: Forum on "Using EMF to achieve the smartest sustainable city"

26 September 2014: Regional meeting of ITU-T Study Group 5 Regional Group for Asia and the Pacific (SG5 RG-AP)

List of Participants

A total of 6 representatives attended the 4th ITU Green ICT Week 2014 represented Malaysia from various organizations listed below:

No	Name	Organization	Representation
1	Tuan Haji Aisharuddin Nuruddin	MCMC	MCMC (Head of Delegation)
2	Tuan Haji Mohammed Hakim Othman	MCMC	MCMC
3	Pn. Norzailah Mohd Yusoff	MCMC	MCMC
4	Mr. Hamzah Burok	MTSFB	MTSFB
5	Mr. Eric Ku	iTrain	MTSFB
6	Mr. Matthew Rajendra	Green Data Centre LLP	MTSFB

Introduction

ITU-T has organized and is organizing events to raise awareness of the role of ICTs with regards to the environment and climate change, as well as to the measurement concerns related to human exposure to electromagnetic fields.

As part of a major initiative on ICTs, the environment and climate change, ITU is organizing Symposia and Events to bring together key specialists in the field, from top decision-makers to engineers, designers, planners, government officials, regulators, standards experts and others. Topics presented and discussed include, inter alia, the adaptation and mitigation of the effects of climate change in the ICT sector and in other sectors, 'green' ICT policy frameworks, green ICT standards, green applications, environmental sustainability, e-waste management, the use of ICTs in climate change science and in emergency situations and also measurement concerns related to human exposure to electromagnetic fields (EMFs).

The first ITU Green Standards Week was held from 5-9 September 2011 in Rome, Italy followed by the second event from 17-21 September 2012 in Paris, France. For the third ITU Green Standards Week, ITU had chosen Madrid, Spain for the venue and took place from 16-20 September 2014. After successfully organizing the ITU Green Standards Week in three consecutive years, The ITU held the fourth event from 22-26 September 2014 in Beijing, China.

The Fourth ITU Green Standards Week was set to feature Green ICT as a catalyst in achieving a sustainable, resource-efficient economy, promoting e-waste management, examining human exposure to electromagnetic fields (EMFs), and exploring how ICTs can contribute to building smart, sustainable cities.

The Green Standards Week for 2014 was organized by ITU and hosted by Huawei in Beijing, China, 22-26 September 2014, in close cooperation with the China Academy of Telecommunication Research (CATR), a wing of the Ministry of Industry and Information Technology (MIIT), Government of the People's Republic of China along with sponsors such as China Telecom, FiberHome and Fujitsu.

The event's agenda includes a High-Level Forum on "Setting the Vision for Smart Sustainable Cities". It was held in conjunction with the Regional meeting of ITU-T Study Group 5 Regional Group for Asia and the Pacific, which took place on 26 September 2014.

The objective of the event this year was to promote green ICTs as a catalyst to achieve sustainable development: promoting e-waste management, examining human exposure to electromagnetic fields (EMFs), and exploring how ICTs can help build smart, sustainable cities.

Malaysia was given a slot during the Green ICT for a Sustainable Resource Efficient Economy Forum on 22 September 2014 to present a contribution paper titled Building Next Generation Green Data Centers with Fluid Submersion Technology

Agendas

The 2014 event was planned for 4 forums and one regional meeting as per arrangement below:

Date	Forum/Meeting	Sessions	Description
22 September 2014	Green ICT for a sustainable resource efficient economy	Session 1: Planning for climate change adaption – addressing vulnerabilities using ICT	Climate change is a complex and dynamic challenge, which countries are faced to. Providing useful tools to monitor, collect and analyze information about the changing climate and environment, ICT can help countries in strengthening adaptive capacity in order to reduce the impacts of climate change and increase resilience to future threats. The session presented the role of ICT in supporting information-gathering, decision-making, implementation and evaluation processes to respond to climate change and environmental degradation challenges and stressed the convenience of integrating ICT in national adaptation policies to help countries develop long term, creative and effective adaptation strategies. It also discussed the importance of improving the resilience of telecommunications infrastructure in extreme climate conditions.
		Session 2: Green ICT opportunity – can ICT deliver carbon mitigation goals?	Sustainable development is essential to address climate change and environmental challenges effectively. Transformational changes are therefore necessary both in technology development as well as in our patterns of production and consumption. Green ICT stands for environmentally friendly and resource efficient information and communications technology and thus for increasing efficiency and saving energy in an intelligent and sustainable manner. The session looked at the role that ICT and ICT sector could play in helping other sectors to reduce their own emissions and presented ongoing efforts undertaken by the ICT sector to reduce its own emissions

		Session 3: Green ICT standards – a path to environmental sustainability	By raising awareness of ICTs' role in tackling environmental challenges including climate change, ITU is promoting innovative ICT solutions to environmental questions and is developing green ICT standards to support a sustainable future. The session provided an overview of ITU's activities as well as work carried out by other key stakeholders to boost green ICT in order to achieve a green economy.
23 September 2014	E-Waste: The inconvenient truth	Session 1: E-waste: when will it end?	Electronic devices pervade our lives creating a trend of high consumption, and ultimately high disposal. E-waste accounts as the fastest growing component of the municipal solid waste stream. Many challenges exist in the recovery, recycling and disposal of e-waste, especially to safeguard human health and the environment. With the emergence of e-waste, used in the production of counterfeit electronic components, there is a clear need for effective and sound management if we are to build a sustainable future. The session provided an overview of ongoing efforts to tackle e-waste issues worldwide.
		Session 2: Building sustainable strategies through e-waste management: turning an e-challenge into an e-opportunity	A comprehensive waste management approach, which encompasses environmental and socio-economic considerations, is crucial to help countries and key stakeholders to adopt and improve an effective sound e-waste management. The session discussed the importance of policies, standards and regulatory frameworks on e-waste issues. It also presented ITU's activities on e-waste management.
		Session 3: Managing e-waste: a roadmap for the future	The challenges presented above provide stakeholders with countless opportunities to develop sustainable business models. Boosting comprehensive e-waste management strategies based on international standards and innovation programs can promote environmental sustainability, have the potential to generate decent employment, curb health problems, cut greenhouse gas emissions and recover a wide range of valuable metals including silver, gold, palladium, copper and indium. The session discussed extensive and economically viable solutions to the management of e-waste such as recycling and refurbishment opportunities, also encouraging public- private partnerships.

24 September 2014	Setting the vision for Smart Sustainable Cities	Session 1: Livability and Sustainability at stake: city challenges, city solutions	Cities are hubs for ideas, commerce, culture, science, productivity, social development and much more. However, the rapid pace of urbanization creates daunting challenges for municipalities and impacts their ability to effectively manage their citizens' quality of life. The session provided a platform to discuss city challenges and will highlight the role that standards, regulations and public policies play to move from concept to implementation.
		Session 2: The road towards a smart sustainable city	As part of its mandate to secure a sustainable future, ITU is championing a multi-stakeholder approach to identify the standardized frameworks needed to support the integration of ICT services in smart sustainable cities. The session provided an overview of ITU's vision and activities to build smart sustainable cities worldwide.
		Session 3: The smart sustainable city revolution: smart solution for us	Sustainable development within cities can be achieved through the proper harnessing of ICTs. The session demonstrated how ICT incorporation within cities facilitates and services – such as energy, water supply, sanitation, waste and mobility – is an effective way to manage urban infrastructures to stimulate sustainable economic growth. The session presented city solutions in the Asia Pacific region.
25 September 2014	Using EMF to achieve the smartest sustainable city	Session 1: EMF in Smart Sustainable Cities	Information and communications technologies (ICTs) provide the essential connection of our modern day devices and form the heartbeat of smart sustainable cities. The session looked at case studies where radio communications and EMF is playing a vital role in communities delivering efficient smart sustainable systems.
		Session 2: EMF Initiatives Carried Out by ICT Sector	The session looked at.initiatives with a special focus the Asia Pacific region to ensure that EMF is used transparently, safely and responsibly in smart sustainable cities. It also provided an overview of ITU's activities on human exposure to electromagnetic fields

		Session 3: How to Optimize EMF in Smart Sustainable Cities	The session explored how to optimize EMF whilst ensuring the connected devices and systems that make a smart sustainable city work, operate most efficiently.

26 September 2014	ITU-T Study Group 5 Regional Group for Asia and the Pacific	1. Opening of the meeting
		2. Adoption of the agenda
		3. Results of the last ITU-T SG5 meeting held in Lima (December 2013)
		4. Results of the Working Party 3 meeting held in Geneva (May 2014)
		5. Results of the Working Part 1 and Working Party 2 meetings (July 2014)
		6. Focus Group on Smart Sustainable Cities (FG SSC)
		7. Focus Group on Smart Water Management (FG SWM)
		8. Update on ASTAP meeting held in March 2014
		9. Topics to be presented and discussed:
		  a) Presentation on ITU's activities in Asia Pacific
		  b) Update on ITU-T's activities on ICT, Environment and Climate Change
		  c) Contributions and discussion on:
		  d) ICT and climate change (especially e-waste, rare metals, climate change adaptation)
		  e) Energy efficiency
		  f) Human Exposure to electromagnetic field (EMF)
		  g) EM environments: difference between the AP region and the other regions
			The ITU-T SG5 RGAP is tasked to promote the work of ITU-T Study Group 5 in the Asia Pacific region and efforts should be made to attract more participants in the work of ITU-T Study Group 5.
			Two (2) activities were proposed:
			A questionnaire to ITU-T membership to investigate policy, regulatory and standardization needs that will be evaluated within SG5 RG AP and that may lead to future activities in the Asia Pacific region;
			Organize the next SG5 RG AP meeting in conjunction with a Forum and a Training to increase the participation and engagement of interested experts from the Asia Pacific region.
			The following activities of the ITU-T SG5 and APT activities were presented:
			ITU-T SG5 Meeting in Lima (Dec.2013);
			WP3 Meeting in Geneva (May 2014);
			WP1 & WP2 Meetings (July 2014);
			FGSSC Meeting;
			FG SWM Meeting, and
			ASTAP 24 Meeting.

| | | 10. Organization of the work of SG5 RG-AP
11. Discussion on ITU-T SG5 RG-AP priorities
12. Work program and schedule
13. Other business | |

The Forums and Meeting Schedules for each event are as per Letter of Invitation from the ITU Secretary General.

Findings

No	Forum/Meeting	Session	Findings
1	Green ICT for a sustainable resource efficient economy	Session 1: Planning for climate change adaption – addressing vulnerabilities using ICT	There were 4 presentations on the topics which include following highlights: 1. ICT in information gathering, decision making, evaluation: 2. Temperature, Humidity, Seismic, Ambient Light, Power Monitoring, Motion, Infra-Red, Real Time Location Sensing, O2 & CO2, UVA/UVB/UVC, Ultrasound, Radiation, Rainfall, Wind, Particulate matter etc. 3. By 2050 two thirds 60-70% of People will reside in Cities. 4. The greatest challenge of the industry will face this century, is how we feed 9 billion or more people post 2050 in a world that is being pressured for arable land and portable water. 5. 80% of global economic output. 6. 70% of global energy use. 7. Realization of Sustainable City by Data Utilization. 8. Comprehensive evaluation on characterization of various cities using open data based on environment, economy & society. 9. The concept of "5-Green" strategy , build E2E total life cycle green telecommunication (Green supply chain, R&D management, product solutions, manufacturing & logistics and engineering & maintenance. 10. The power of ICT for climate change adaptation initiatives tasked to ITU-T Study Group 5 – Environment and Climate Change.
		Session 2: Green ICT opportunity – can ICT deliver carbon mitigation goals?	There were 5 presentations for the session: 1. The role of patent and patent information 2. The innovation imperative for the ICT sector - Network energy challenges and solutions 3. Green ICT actions in China – ICT and environment impact 4. IPv6, IoT and beyond for Green ICT. 5. Green Standard and Innovation of Lenovo Smart Phone
		Session 3: Green ICT standards – a path to environmental sustainability	There were 5 presentations for the session: 1. ITU-T Focus Group on Smart Sustainable Cities (FG SSC) 2. Policy & regulatory context of Green ICT and implementation mechanisms 3. United Nations Industrial Development Organization (UNIDO) as driver of the Third Industrial Revolution International solutions for E-Waste Management 4. Building Next Generation Green Data Centers with Fluid Submersion Technology 5. Recommended Practices in the Use of ICT Equipment for Energy Savings

2	E-Waste: The inconvenient truth	Session 1: E-waste: when will it end?	There were 2 presentations for the session: 1. Study on E-waste Generation and Flow in China 2. E-Waste Recycling and Intellectual Property Rights (IPR)
		Session 2: Building sustainable strategies through e-waste management: turning an e-challenge into an e-opportunity	There were 3 presentations for the session: 1. Nokia Life Cycle Thinking And Engaging Consumers – Experiences From Mobile Devices 2. Environmental impact reduction including e-waste 3. Turning the e-waste challenge into an opportunity
		Session 3: Managing e-waste: a roadmap for the future	There were 2 presentations for the session: 1. Huawei practice in E-waste management 2. E-Waste Management in Telefónica
3	Setting the vision for Smart Sustainable Cities	High Level Segment	There were 4 presentations for the session: 1. Build Smart City in Central China, Create and Make a City Happy Life 2. Face the challenge of Smart City - Binhai New Area of Tianjin 3. Fujitsu's Direction Towards Smart City 4. The Internet of Things as an Enabler for Digital Business in Smart Cities
		Session 1: Livability and Sustainability at stake: city challenges, city solutions	There were 3 presentations for the session: 1. Introduction of Government Cloud and Smart Haidian District 2. Smart Cities in Europe 3. Innovative ICT Contributes to Smart City Infrastructure Development
		Session 2: The road towards a smart sustainable city	There were 4 presentations for the session: 1. ICT Role, Definition & Roadmap for Smart Sustainable Cities – WG1 2. Smart Sustainable Cities infrastructure – WG2 3. Standardization gaps, KPIs and metrics – WG3 4. Policy & positioning (communications, liaisons and members) – WG4
		Session 3: The smart sustainable city revolution: smart solution for us	There were 4 presentations for the session: 1. Smart Cities Standardization in China 2. Integrated Energy and Environment Management for Smart City 3. Sustainable Smart City Development Strategies and Practices Based on Regional Characteristics 4. Smart Ulaanbaatar The most important deliverable for the day is the "Call for Action" document developed by the participants to ITU as per Appendix1
4	Using EMF to achieve the smartest sustainable city	Keynote Speeches	There were 2 speeches for the session: 1. RF and Health: A World Health Organization (WHO) Perspective 2. With ICTs everywhere, how safe is EMF?

		Session 1: EMF in Smart Sustainable Cities	There were 2 presentations for the session: 1. Epidemiological studies of radiofrequency fields and brain tumors – the IARC evaluation and newer evidence 2. Dosimetry of Human Exposure to the Real Telecommunication Network
		Session 2: EMF Initiatives Carried Out by ICT Sector	There were 3 presentations for the session: 1. Mobile Networks and EMF assessments in the Asia Pacific 2. EMF Safety and Actions in China Telecom 3. The New Revolution Of Urban Rail Transit Informatization
		Session 3: How to Optimize EMF in Smart Sustainable Cities	The were 3 presentations for the session: 1. Using EMF To Build the Smartest Sustainable City 2. The Action for EMF issue in China Mobile 3. Minimization of EMF Exposures and Optimization of Safety Using EMF
5	ITU-T Study Group 5 Regional Group for Asia and the Pacific	Results of the last ITU-T SG5 meeting held in Lima (December 2013)	The summary of the meeting is as per Appendix 2
		Results of the Working Party 3 meeting held in Geneva (May 2014)	The summary of the meeting is as per Appendix 3
		Results of the Working Part 1 and Working Party 2 meetings (July 2014)	The summary of the meeting is as per Appendix 4
		Focus Group on Smart Sustainable Cities (FG SSC)	The summary of the meeting is as per Appendix 5
		Focus Group on Smart Water Management (FG SWM)	The summary of the meeting is as per Appendix 6
		Update on ASTAP meeting held in March 2014	There was no update on ASTAP 24 Meeting due to the absence of the rapporteur.

Draft Questionnaire:

Theme	Tell us if you are interested in reading ITU documents on this theme	Tell us if your country has planned any projects related to this theme	Tell us if your country has carried any projects on this theme	Tell us if you are using a national or regional standard which is related to this theme	Tell us if we need to develop an international standard which is related to this theme
Copper cables, networks and fibre-optic connection hardware for broadband access					
Protective components and assemblies					
Interference to telecommunication networks due to power systems and electrified railway systems					
Resistibility and safety in telecommunications					
Lightning protection and earthing of telecommunication systems					
EMC issues arising from the convergence of IT and communication equipment					
Human exposure to electromagnetic fields (EMFs) due to radio systems and mobile equipment					
EMC issues in home networks					
Generic and product family EMC recommendations for telecommunication equipment					
Security of telecommunication and information systems concerning the electromagnetic environment					
EMC requirements for the information society					
Environmental impact reduction including e-waste					
Setting up a low-cost sustainable telecommunication infrastructure for					

rural communications in developing countries					
ICTs and adaptation to the effects of climate change					
Leveraging and enhancing the ICT environmental sustainability					
Energy efficiency for the ICT sector and harmonization of environmental standards					
Methodologies for the assessment of environmental impact of ICT					
Power feeding systems					

Conclusion

It was a great opportunity for the participants to obtain the latest development in the activities of particularly related to ITU-T Study Group 5 work items and the showcases presented in the application of the Recommendations. It was beneficial for making the decision on increasing role play in identified focus areas for future contribution. It was a memorable occasion where Malaysia was represented in the second meeting of the newly established ITU-T Study Group 5 Asia and the Pacific Regional Group.

The MTSFB delegates had the opportunity to be acquainted with new profound experts in areas of Smart Sustainable Cities (SSC), Smart Water Management (SWM), Electromagnetic Fields (emf), Green Initiatives, etc. as well as established new contacts in strategizing future action plan for standardization development of the ICT. The case studies presented reflected the diverse use of the recommendations available in satisfying the diverse and cross-sector stakeholders' requirements.

Moving forward, there are still a lot of things to be considered and plenty of avenues to participate and contribute in sharing and promoting our expertise and local deliverables. We should consider continuing our role play to actively support ITU activities through participation, contribution, sharing of expertise and information. MTSFB will coordinate with expert members in strategizing the efficient, effective, beneficial and prudent spending for the next move.

It is highly recommended that the ITU Green Standards Week will be a permanent event in the yearly calendar of MTSFB for participation. The active MTSFB GICT Working Group representatives in related work areas should be given the priority to attend the annual event.

The continuous effort will off course require the assistance and support of the MCMC for the streamlining and encompasses the vision and objective of the National Policy Objectives.

Acknowledgement

MTSFB would like to express our utmost gratitude to all stakeholders who had provided their expertise to participate and contribute in the ITU Green Standards Week under the MTSFB flag and to the expert themselves for their contribution. We hope to receive a continuous support and recognition from the MCMC and the industry for us to excel in the area of development of standardization. Thanks a million.

Appendix 1

Setting the Vision for Smart Sustainable Cities 24 September 2014, Beijing, China

Call To Action

Achieving sustainable urbanization, together with the preservation of our planet's fragile ecosystem is recognized as one of the major challenges for humanity in the coming decades.

Cities are responsible for more than 70% of global greenhouse gas emissions (GHG), and they are accountable for 60-80% of global energy consumption, contributing to environmental degradation locally, regionally and globally.

These percentages are expected to rise with the growing population rates in terms of migration and increasing birth rates. This exacerbates the pressures posed by urban poverty and marginalization, pollution, reduced natural resource availability, decaying infrastructure, increasing stress on government administration, and the impacts of climate change in cities around the globe. Within this context, sustainability has become crucial not only to overcome the environmental challenges faced by the planet, but also to achieve socio-economic development at the local, national and regional levels.

Information and Communication Technologies (ICTs) have the capacity to enable processes of urban transformation, by helping cities become "smarter" and more "sustainable". Experiences from around the world suggest that ICTs are helping to make cities more eco-friendly, providing functionally viable and economically sustainable options for various urban sectors to achieve the goal of urban sustainability. For many city inhabitants, it is nearly impossible to imagine life without ICTs. From television to smart phones, smart watches and the Internet, ICTs have been reshaping the world, fostering new ways of, learning, employment, networking, production and accessing opportunities that were unimaginable just decades ago. ICTs offer innovative approaches to managing our cities more effectively and holistically, through applications such as smart buildings, smart water management, intelligent transportation systems, modern logistics network, new efficiencies in energy consumption and waste management, and information exchange, which ultimately contribute to increasing the wellbeing of urban inhabitants. In addition to sustainable urban management, ICT enables cities to provision and offer citizen services to enhance their citizen experience or quality of life (QOL).

By fostering the design and implementation of Smart Sustainable Cities (SSCs), an important precedent in harnessing the potential of ICTs to overcome environmental degradation, improve citizens' wellbeing, and simultaneously promote sustainable economic growth can be set.

We, the participants of the 4th Green Standards Week, September 2014, call upon the ITU in collaboration with policy makers, governmental authorities, academic institutions, non-governmental organizations (NGOs) and relevant international and regional organizations, to:

1. Think sustainably: Promoting the integration of ICT applications and services into new and existing city infrastructures will foster the establishment of Smart Sustainable Cities globally. Efforts should be directed towards highlighting the benefits of ICT based systems which can effectively upgrade urban management systems including water management systems, waste management systems, healthcare systems, transportation systems, education and energy management systems which form the basis of SSCs.

2. Assess: Assessing the 'smartness' and 'sustainability' of their cities should become a key priority for policy makers and city planners. ITU is therefore called upon to develop a set of indicators to be applied to cities. This will help guide cities in their move towards becoming smarter and more sustainable.

3. Adopt: Fostering the adoption of the Internet of Things (Iot), Internet Protocol version 6 (IPv6), other international standards developed by ITU, best practices and policies, will help the establishment of smarter and more sustainable cities worldwide.

4. Act responsibly: SSCs should give top priority to meet the needs of the present and future generations. This includes improving QOL, efficiency of urban operation and services, and competitiveness by using ICTs.

5. Mobilize stakeholders: Mobilizing a wide set of stakeholders is essential to the success and the inclusiveness of SSC strategies. ITU is called upon to develop a methodology to assess the environmental impact of ICT in cities together with other concerned stakeholders (e.g. energy sector), and conduct further research on the topic of SSCs.

6. Build a green and resource efficient economy: The integration of ICT into the city's infrastructure will assist in tackling climate change impacts, enhancing energy efficiency, improving water management, strengthening emergency response, improving road safety, promoting the use of green products and reducing pollution, as part of smarter and more eco-friendly cities.

7. Boost partnerships: It is essential to enhance cooperation at international, national, regional and local levels, and between cities, organizations, research institutes, governments, industry and civil society for the establishment of SSCs. This involves the creation of new business models and multi-stakeholder partnerships to realize the SSC's vision, and the achievement of its goals. A series of technical specifications and guidelines are being developed and will be standardized by ITU in collaboration with other international, national and regional Standard Development Organizations (SDOs).

8. Raise awareness and build capacity: Adopting a city-wide perspective and a holistic approach will raise awareness about the potential of ICTs. This will serve to strengthen existing infrastructure and build new capacities across all city departments, thus ensuring the skill base needed to implement and sustain SSC strategies.

9. Demonstrate success and feasibility: Efforts should be directed towards carrying out pilot and flagship demonstration projects that support the development of SSCs, testing novel solutions, and fostering learning by benchmarking Key Performance Indicators (KPIs). This will assist in identifying strengths and weaknesses of implementation strategies and reporting on success stories, cost implications and innovative solutions used in each case. Cities, using these KPIs, can quantify their degree of achievement in accordance with their administration and development goals. 10. Articulate a common vision: Adopting a common framework for action is vital to achieve the articulated SSC strategies of assembling diverse stakeholders, ensuring the technical specifications and ICT infrastructure required to provide smart city services, measuring progress through internationally recognized performance indicators as well as adopting standards and other monitoring systems towards accountability and data security. This framework is expected to help cities incorporate ICTs into their infrastructure with the aim of reducing GHG emissions, energy consumption, and water consumption, ultimately improving citizens' wellbeing and trust in privacy friendly technologies, thus helping cities to become smarter and more sustainable.

Green Standards Week concluded calling for stronger cooperation between the energy and ICT sector and emphasizes the value of international technical standards in ensuring that smart-city solutions see the benefits of economies of scale and interoperability.

Appendix 2

Executive Summary of the ITU-T Study Group 5 Meeting

(Lima, 2-13 December 2013)

1. Statistics

Participants: 174 - The final list of participants is available in TD [460-GEN].
Contributions: 130
TDs (not counting the revisions): 276
Incoming liaison statements: 54
Outgoing liaison statements: 28

2. Main discussions and results

Question 12/5 "Guides and terminology on environment and climate change" - Summary contained in TD [467-GEN (Rev1)].

TSB Director was asked to inform Council 2014 that ITU-T Study Group 5 is of the opinion that the definition proposed by the Correspondence Group on the Elaboration of a Working Definition of the Term "ICT" is in conflict with SG5 mandate as per WTSA Resolution 2. The exclusion of services and also applications may have an impact on the environmental assessment of telecommunications. SG5 is therefore of the opinion that the proposed definition is not yet mature enough to be endorsed by Council 2014.

3. Meeting Reports

1. The final report of ITU-T Study Group 5 can be found at: http://www.itu.int/md/T13-SG05-R-0002/en
2. The draft report of Working Party 1/5 can be found in TD [444-GEN (Rev2)].
3. The draft report of Working Party 2/5 can be found in TD [446-GEN (Rev3)].
4. The draft report of Working Party 3/5 can be found in TD [440-GEN (Rev3)].

4. Working Party 1/5 – Damage prevention and safety

Working Party 1 made significant progress on its Work Programme and achieved the following key outcomes:

Consented Recommendations
K.96 (K.appl): "Surge protective components: Overview of surge mitigations functions and technologies". This new Recommendation provides a series of important concepts that will guide Operators and Manufacturers in specifying surge protective components for telecommunications network and equipment.

K.95 (K.lit): "Surge parameters of isolating transformers used in telecommunication devices and equipment". This new Recommendation is pioneer in treating an isolating transformer as a surge protective component and will likely be a reference in the design of Ethernet ports of telecommunication equipment.

K.97 (K.dbs): "Lightning protection of distributed base station". This new Recommendation provides the earthing and lightning protection procedures for the new type of base station where the base band unit (BBU) remains at ground level and the remote radio unit (RRU) is installed close to the antenna. It will greatly help Operators and Manufacturers in the design of new sites or refurbishment of existing ones.

Agreed Informative Text
K.77 (2009) Amd.1 - New Appendix III - "Characterizing thermally protected MOVs using a.c. step stress testing". This new Appendix provides the testing procedures to assess the safe operation of MOVs, so that they do not become a fire hazard. TD [376-GEN (Rev1)]

New Work Items
New Draft Recommendation K.dtr: "Lightning protection for dedicated transformer of radio base station". This new Recommendation is intended to avoid the damage of the power transformer that feeds a base station, thus preventing the disruption of the wireless service used by the public.

New Draft Recommendation K.lpca: "Assessment of the conformance of radio base station regarding lightning protection and earthing". Item created based on contribution received from SG5 African Regional Group (SG5 RG AFR), which is aligned with Resolution 76 (WTSA-12). It will be highly appreciated by the Telecommunications Authorities as it will provide an inspection procedure to assure that a base station is not increasing the risk of lightning related effects to the neighboring population.

5. Working Party 2/5 – Electromagnetic field: emission, immunity and human exposure

Working Party 2 made significant progress in the electromagnetic field emission, immunity and human exposure portfolio during the meeting and achieved the following key outcomes:

Consented Recommendation
ITU-T K.58 - Revision of ITU-T K.58 was consented during this meeting to extend the scope from the collocation of telecommunication systems to convergence of IT and communication equipment in co-located ICT installations.

Agreed Informative Texts
Information Guide on Human Exposure to EMF was agreed during the meeting: The main purpose of this document is to present in a simple way the answers to typical questions asked by the public on EMF, and to also address typical misunderstandings on EMF matters in the society. The main audiences for this document are governments, regulatory authorities and the general public. TD [253-GEN (Rev1)].

Questionnaire on EMI related to AC mains emission below 150 kHz TD [419-GEN] to be sent to ITU Membership was agreed.

Questionnaire on interference between radio device and cable or equipment connected to wired broadband networks in home to be sent to ITU Membership was agreed TD [404-GEN].

Work in progress
EMF monitoring – The experience of the administration of the Argentina, Ecuador and Colombia with implementation of the Recommendation K.83 was presented including how important the monitoring was in the region for public reassurance. Experience in other regions was also shared. It was proposed to prepare a Technical Report with information concerning implementation of the EMF monitoring systems based on the Recommendation ITU-T K.83.

EMF Guide "Web app" – A draft version of the new EMF Guide 'web app' including contents list was demonstrated and many contributions were received. This enabled the work to be advanced with agreement on the scope and simple presentation format using illustrations and basic text. A Drafting Group was established in order to accelerate the work for completion in 2014.

K.mpis – The work on the Recommendation is well advanced thanks to received contributions. Preparation was agreed on development of the new draft of this Recommendation which will be close to the final version.

K.mhn - Examples of disturbance to radio services caused by broadband transmission in coaxial cables are provided for study of K.mhn. Further information will be obtained through Questionnaire and contributions for preparation of the final version for the next meeting.

6. Working Party 3/5 – ICT and climate change

Working Party 3 made significant progress on its Work Programme and achieved the following key outcomes:

<u>**Approved Recommendation**</u>
ITU-T L.1430 - This Recommendation provides guidance for the application of a specific methodology to assess the environmental impact of information and communication technology (ICT) greenhouse gas (GHG) projects and ICT energy projects.

Consented Recommendations

<u>**E-waste management and reduction:**</u>
1. L.Green Batteries "Green batteries solution for mobile phones and other hand-held information and communication technology devices". This defines a minimum set of parameters necessary to identify a green battery solution covering: environmental compliance, safety and reliability, lifetime, and ecodesign.
2. L.RareMetal_Measurement "Measurement methods to characterize rare metals in information and communication technology goods" provides an overview of the measurement methods for rare metals contained in ICT goods. This Recommendation provides reference characterization procedures for efficient recycling of rare metals by using XRF (X-Ray Fluorescence) and ICP-MS (Inductively Coupled Plasma Mass Spectrometry) measurement methods to perform qualitative and quantitative analysis of the rare metals of ICT goods.
3. L.UPA "External universal power adapter solutions for portable information and communication technology devices". Universal power adapter solution (UPA) designed for portable ICT devices. It is complementary to [ITU-T L.1000] and [ITU-T L.1001] It describes the UPA basic configuration, general requirements for the UPA and their interfaces. All the requirements have been set with the aim to reduce the e-waste and increase the usability.
4. L.1000 Test Suite "Test suites for assessment of the Universal charger Solution" considers the creation of specific test suites to assess certain functional aspects concerning: energy efficiency, interworking, safety and electromagnetic compatibility (EMC) for Universal Charger Solution (UCS). Such testing is required to guarantee a minimum quality level of the UCS in conformance with the target basic configuration of the UCS and charger described in ITU-T L.1000.

<u>**Climate Change Adaptation**</u>
1. L.Adaptation and Infrastructure Overview "Framework on ICT and Adaptation to the effects of Climate Change" First Recommendation of a framework of Recommendations dealing with the use of ICT to help countries to the adaptation to climate change and on how ICT can adapt to the effects of climate change.

<u>**Energy Efficiency**</u>
1. L.Ref "Informative values on the energy efficiency of telecommunication equipment" reports values on the energy efficiency of different types of telecommunication network equipment and small networking equipment. These values are related to energy efficiency metrics, test procedures, methodologies and measurement profiles that have been defined in Recommendation ITU-T L.1310.
2. L.M&M_Infra "Energy efficiency measures, metrics and measurement for telecommunication infrastructure, power and cooling system" contains the general definition of metrics, test procedures, methodologies and measurement profiles. In addition, metrics and measurement methods are defined for cooling equipment such as air conditioning equipment, outdoor air cooling equipment and heat exchanging cooling equipment.

Efficient Power Feeding Solution

1. L.architecture "Architecture of power feeding systems of up to 400 VDC" defines the architecture for solution of power feeding based on L.1200 solution. It describes aspects such as configuration, redundancy, power distribution, and monitoring, in order to construct safe, reliable and manageable power feeding systems.

Agreed Informative Texts

1. Technical Paper on "Network Infrastructure Best Practices"
2. Technical Paper on "Experimental studies on plates and ducts installed at equipment inlets and outlets
3. Technical Paper on "Rationale for minimum data set for evaluating energy efficiency and for controlling data centre equipment in view of power saving
4. Technical Paper on "Potential for primary energy savings in TLC/ICT centres through free cooling
5. Technical Paper on "Verification test and feasibility study of energy and space efficient cooling systems for data centres with high density ICT devices
6. Technical Paper on "Validation test of a data centre cooling method using renewable energy in a cold region
7. Technical Paper on "Verification experiments related to increase of efficiency of air-conditioning and control technologies at a data centre
8. Technical Paper on "Case study of reduction of air-conditioning energy by optical fiber based thermometry
9. Supplement 1 to ITU-T L.1410 – Case studies
10. Supplement 1 to ITU-T L.1430 – Guidance on practical application of ITU-T L.1430 to a Real-time Navigation Service

New Activities - the meeting approved the commencement of nine new work items.

7. Dates of next SG5 meeting and interim Working Party meetings

1. The next meeting of ITU-T SG 5 is tentatively scheduled in November-December 2014.
2. A WP3 together with ETSI EE meeting is due to take place from 19-23 May 2014, in Geneva Switzerland.
3. A WP1 and WP2 meeting is due to take place from 23-29 July 2014 in Geneva, Switzerland.

8. Reports of the Regional Groups

The report of the Regional Group of SG5 for Africa (SG5 RG-AFR) can be found in TD [465-GEN] and TD [254-GEN].

The report of the Regional Group of SG5 for the Arab Region (SG5 RG-ARB) can be found in TD [334-GEN].

The report of the Regional Group of SG5 for the Americas (SG5 RG-LAC) can be found in TD [274-GEN (Rev1)] and TD [271-GEN].

The report of the Regional Group of SG5 for the Asia and the Pacific (SG5 RG-AP) can be found in TD [451-GEN].

9. Updates in the SG 5 Management Team and Rapporteurs

Peter Ulanga (Tanzania) has been appointed as Associate Rapporteur of Question 15/5.

10. Joint Coordination Activity on ICT & CC (JCA ICT & CC)

The thirteenth meeting of the JCA ICT&CC took place on 5 December 2013 and was dedicated to "Facilitating coordination with SDOs and regional organizations in the area of ICT and Climate Change".

The summary of meeting can be found in TD [361-GEN].

The next of the JCA ICT & CC will be held in conjunction with the next SG5 meeting.

11. Focus group on Smart Sustainable Cities

The third meeting of the FG SSC took place on 6 December 2013. A summary of the meeting is contained in TD [363-GEN]. SG5 agreed to extend the mandate of FG SSC until May 2015. The next meeting of the Focus Group on Smart Sustainable Cities will take place in Geneva, on 5-6 March 2014.

12. Focus group on Smart Water Management

The first meeting of the FG SWM took place on 10 December 2013. A summary of the meeting is contained in TD [454-GEN (Rev1)]. The next meeting of the Focus Group on Smart Water Management will take place in Geneva, on 3-4 March 2014.

13. Workshop on Smart Sustainable Cities

A Workshop on Smart Sustainable Cities in Latin America was held on 5 December 2013. Rapid urbanization has placed immense pressure on the existing city infrastructures to provide a high quality of life to all city inhabitants. As a result, the concept of smart sustainable cities has emerged as the remedy to this unsustainable development with Information Communication Technologies (ICTs) expected to play a key role. This workshop discussed how to define smart sustainable cities and the discourse that commonly associated with it. This workshop also looked at the role ICTs play in shaping smart sustainable cities from the ICT industry perspective.

14. Workshop on "With Information and Communication Technologies (ICT's) everywhere - How safe is EMF in Latin America?"

A workshop on EMF and ICT's was held back to back with the ITU-T Study Group 5 meeting and events in Lima. This workshop brought together leading specialists in the field, from top policy-makers to engineers, designers, planners, government officials, regulators, standards experts and other related stakeholders, and provided an overview on EMF issues with a focus on Latin America. The workshop heard from Government and industry representatives on the implementation and importance in Latin America of EMF monitoring using Recommendation ITU-T K.83.

Appendix 3

Executive Summary of the Working Party 3 of ITU-T Study Group 5 Meeting (Geneva, 19-23 May 2014)

Statistics

Participants: 87 - The final list of participants is available in TD536rev1.
Contributions: 85
TDs (not counting the revisions): 117
Incoming liaison statements: 11
Outgoing liaison statements: 19

Main discussions and results

Working Party 3/5 met in conjunction with ETSI EE from 19 to 23 May 2014, Geneva, Switzerland.
TSB and ETSI Secretariats presented TD521 which provides information on working methods for the collaboration between ETSI TC EE and ITU-T Study Group 5.

ITU-T Working Party 3/5 and ETSI plan to continue this collaboration by working on a series of technically aligned deliverables to be developed in the future.

Meeting Report:

The report of Working Party 3/5 can be found at: http://www.itu.int/md/T13-SG05-R-0003/en

Working Party 3/5 – ICT and climate change

Working Party 3 made significant progress on its Work Programme and achieved the following key outcomes:

Question 13/5 - Environmental impact reduction including e-waste

1. **Draft Recommendation ITU-T L.1002**.
   The Resolution comment meeting related to draft Recommendation ITU-T L.1002 "External universal power adapter solutions for portable information and communication technology devices" took place on 15-16 May 2014 in Geneva, Switzerland. IEC TC 100 experts were invited and provided their suggestions on how comments received during the AAP phase could be addressed. The Additional Review (AR) text was prepared and is contained in TD528 along with the results of the resolution comment meeting.

2. **Universal adapter**.
   Two new work items to develop Recommendations on test suites for the assessment of UPA development in line with ITU-T L.1001 "External universal power adapter solutions for stationary information and communication technology devices" and ITU-T L.1002 contained in (TD539rev1 and TD538rev1) were approved during the Working Party 3/5 plenary.

3. **Due diligence**.
   It was agreed to open a new work item on a due diligence system for compliance to conflict mineral regulation.

<u>Question 14/5 Setting up a low-cost sustainable telecommunication infrastructure for rural communications in developing countries</u>

Q14/5 did not finalise any Recommendations or approve any informative text at this meeting. The Q14/5 meeting agreed on the structure of possible future draft new Recommendation on setting up Low Cost Sustainable Telecommunication Infrastructure for Rural Communications in Developing Countries. The document will consist of a main body and a series of supplements. The main body of the document will contain the basic infrastructure requirements for setting up low cost telecom systems in rural areas and the supplements will comprise of best practices.

<u>Question 15/5 - ICTs and adaptation to the effects of climate change</u>

1. **Draft Recommendation ITU-T L.1500.**
   The draft Recommendation was consented in December 2013. The results of the resolution comment meeting are provided inTD507. The Additional Review text can be found in the same TD, in addition to the resolution comments table.

2. **Draft Recommendation ITU-T L.CountryAdaptation**.
   The resulting text is provided in TD569 and this draft Recommendation was consented at the WP3/5 plenary.

<u>Question 16/5 - Leveraging and enhancing the ICT environmental sustainability</u>

Draft Recommendation ITU-T L.Eco-Rating.
The main goal of this Recommendation is to deliver useful information to end users on the environmental performance of mobile phones by harmonising the existing eco-rating programs. A first list of eco-criteria was produced and future work will focus on the respective weight for each of the criteria and the handling of innovation in eco-rating programs. It is expected to consent this Recommendation in December 2014.

<u>Question 17/5 - Energy efficiency for the ICT sector and harmonization of environmental standards</u>

1. **Draft Revised Recommendation ITU-T L.1300 "Best practices for green data centres".**
   This draft Recommendation has been revised as contained in TD535rev3. It provides a set of updated rules/best practices to be referred to when undertaking improvement of existing data centres, or when planning, designing or constructing new ones. The following main areas were taken into account: ICT equipment and services; cooling and power equipment; data centre building and monitoring.

2. **Draft Revised Recommendation ITU-T L.1310 "Energy efficiency metrics and measurement for telecommunication equipment".**
   This Recommendation has been revised as contained in TD550rev3. It contains the definition of energy efficiency metrics test procedures, methodologies and measurement profiles required to assess the energy efficiency of different telecommunication equipment (DSLAM, MSAN, wireless, routers, Ethernet switches…), including also Converged Packet Optical Equipment with packet signal, TDM signal and WDM signal functions.

Question 18/5 - Methodologies for the assessment of environmental impact of ICT

1. **Draft Revised Recommendation ITU-T L.1410**.
   A standardized way to assess the direct environmental impact of ICT goods, networks and services, as well as their indirect impact on the greenhouse gas (GHG) emissions of non-ICT industry sectors, has been discussed by Q18/5 and TC ETSI EE. The outcome of this collaboration was the revision of ITU-T L.1410 "Methodology for Environmental Life Cycle Assessment (LCA) of Information and Communication (ICT) Goods, Networks and Services" consented on 23 May 2014 (TD500rev1). This Recommendation has been created in acknowledgement of the importance of providing industry with tools to provide a lifecycle assessment of the environmental impact of its activities. The collaboration was, in part, driven by a need to avoid a proliferation of methodologies which would cause confusion to the industry. The text of this draft Recommendation is technically aligned to ETSI TS 103 199.

2. **Draft Recommendation ITU-T L.methodology_ICT in cities**.
   Progress was made to advance the development of this draft Recommendation, as contained in TD584.

Question 19/5 - Power feeding systems

1. **Draft Recommendation ITU-T L.performance**.
   L.performance was updated with contributions received from several members in particular with regards to reliability and efficiency based on configurations described in Recommendation ITU-T L.1201 "Architecture of power feeding systems of up to 400 VDC". Work on this draft Recommendation progressed well and is contained in TD502rev1.

2. **Draft Recommendation ITU-T L.renewable**
   L.renewable is being developed in collaboration with ETSI EE as contained in TD503rev1. It was discussed and updated in order to make its scope clearer and more focused on interface and architecture specification with multiple power sources to up to 400V DC power feeding systems.

New Work Items

1. A printing label format to provide rare metals information of ICT goods. (TD531rev3)
2. Implementation guidelines for ICT supply chains due diligence on conflict minerals. (TD551rev1)
3. Test suites for assessment of the External universal power adapter solutions for portable information and communication technology devices. (TD538rev1)
4. Test suites for assessment of the External universal power adapter solutions for stationary information and communication technology devices. (TD539rev1)
5. Supplement on setting up a low cost sustainable telecommunications infrastructure for rural communications in developing countries using Fiber Optic Cable.
6. Supplement on setting up a low cost sustainable telecommunications infrastructure for rural communications in developing countries.
7. Draft Recommendation to provide a framework of general requirements for low cost sustainable infrastructure for developing countries. (TD556rev1)
8. Using ICTs in assisting cities adapt to the effects of Climate Change. (TD549rev1)
9. Supplement to ITU-T L.1500 series Recommendations on effects and possible impact of climate change.
10. Assessment of Energy Consumption of Telecommunication Services. (TD529rev1)
11. Reference operational model and interface for improving energy efficiency of ICT network devices. (TD537rev2)

12. Supplement on Analysis of the Energy Efficiency of Telecommunication Services used for the needs of Smart Grid applications. (TD540rev2)
13. Draft Recommendation on Standardization terms and trends in energy efficiency. (TD574)
14. Supplement to Recommendation ITU-T L.1410 on Assessment of GHG emissions from Satellite-based services. (TD555rev1)

Dates of next SG5 meeting and interim Working Party meetings

The next meeting of ITU-T SG 5 will take place in Kochi from 8 to 19 December 2014 in India.
A WP1 and WP2 meeting took place from 23-29 July 2014 in Geneva, Switzerland.

Results in terms of Recommendations and Other Publications

1. Recommendations Consented by SG 5 for Last Call (AAP - Recommendation A.8)

1.1 Revised Recommendations

ITU-T Rec. Number	Title	Question
L.1410	Methodology for Environmental Life Cycle Assessment (LCA) of information and communication (ICT) goods, networks and services (TD500Rev1)	18/5
L.1300	Best practices for green data centres (TD535Rev3)	17/5
L.1310	Energy efficiency metrics and measurement for telecommunication equipment (TD550Rev3)	17/5

1.2 New Recommendations

ITU-T Rec. Number	Title	Question
L.1501	Best practices on how countries can utilize ICTs to adapt to the effects of climate change (ex L.Countries Adaptation) (TD569)	15/5

Appendix 4

Executive Summary of the Working Party 1 and Working Party 2 of ITU-T Study Group 5 Meeting (Geneva, 23-29 July 2014)

Statistics

Participants: 70 - The final list of participants is available in TD645rev2.
Contributions: 50
TDs (not counting the revisions): 104
Incoming liaison statements: 11
Outgoing liaison statements: 6

Main discussions and results

Working Party 1/5 and Working Party 2/5 met from 23 to 29 July 2014, in Geneva, Switzerland. SG5 Chairman provide a brief overview of the last TSAG and Review Committee meetings.

TSB Secretariat announced the creation of a new collaboration tool for delegates, based on a SharePoint platform (https://extranet.itu.int/ITU-T/2013-2016/sg5), as contained in TD602. This tool can offer many collaboration mechanism using Web2.0 technologies. Delegates are invited to use the site, provide comments and suggest improvements in order to make it more useful and adapted to expectations and needs of the SG5 experts.

Meeting Reports:

The Report of Working Party 1/5 can be found at: http://www.itu.int/md/T13-SG05-R-0004/en

The Report of Working Party 2/5 can be found at: http://www.itu.int/md/T13-SG05-R-0005/en

Working Party 1/5 – Damage prevention and safety

Working Party 1 made significant progress on its Work Programme and achieved the following key outcomes:

Question 1/5 - Copper cables, networks and fibre-optic connection hardware for broadband access

1. No progress was made at this meeting. Considering that this Question does not receive many contributions, the SG5 Chairman proposed to delete Q1/5. A final decision will be taken during the next SG5 meeting scheduled for December 2014 in India.
2. It was also discussed the possibility to amend the text of Q12/5 in order to ensure the maintenance of existing Recommendations.

Question 2/5 - Protective components and assemblies

1. Significant progress was made on Draft Recommendation ITU-T K.appl1 during this meeting. This draft Recommendation contained in TD655rev1 was consented by WP1/5.
2. Significant progress was made on Draft Recommendation ITU-T K.thy during this meeting. This draft Recommendation contained in TD658rev1 was consented by WP1/5.

3. A base text for ITU-T K.spd was presented at the meeting (C350) and it is expected that a draft Recommendation will be submitted for consent in 2015.
4. It was also discussed the implications of the new waveshape definition contained in IEC 61000-4-5 Ed.3 on the ITU-T K Series Recommendations.
5. Detailed information on the activities carried out by Q2/5 can be found in TD683.

Question 3/5 - Interference to telecommunication networks due to power systems and electrified railway systems

1. Significant progress was made on Draft Recommendation ITU-T K.hvps1. It is expected that this draft Recommendation contained in TD612rev2 will be submitted for consent at the next SG5 meeting.
2. Significant progress was made on Draft Recommendation ITU-T K.hvps2. It is expected that this draft Recommendation contained in TD648rev1 will be submitted for consent at the next SG5 meeting.
3. It was agreed to revise Recommendation ITU-T K.5 and to include it in the Work Program of Question 3/5.
4. Detailed information on the activities carried out by Q3/5 can be found in TD679.

Question 4/5 - Resistibility and safety in telecommunications

1. Significant progress was made on Draft Recommendation ITU-T K.ovp. This draft Recommendation contained in TD610rev4 was consented by WP1/5. Q4/5 wishes to thank Philip Day, ex-WP1 Chairman, for his extensive contribution to the creation of ITU-T K.ovp.
2. Draft revised Recommendations ITU-T K.20, ITU-T K.21, and ITU-T K.45 were discussed during this meeting. It is expected that these revised draft Recommendations will be consented at the next meeting.
3. Detailed information on the activities carried out by Q4/5 can be found in TD684rev2.

Question 5/5 - Lightning protection and earthing of telecommunication systems

1. Significant progress was made on Draft Recommendation ITU-T K.sf. This draft Recommendation contained in TD596 was consented by WP1/5.
2. The revision of Recommendation ITU-T K.27 progressed significantly during this meeting and it is expected that it will be consented at the next meeting.
3. Significant progress was made on draft new Recommendations ITU-T K.tot, ITU-T K.ntt, ITU-T K.ldt, and ITU-T K.acrb. As a result of the analysis of draft Recommendation ITU-T K.tot, it was agreed to have the information related to lightning protection of solar power supply systems as a stand-alone Recommendation.
4. Detailed information on the activities carried out by Q5/5 can be found in TD680rev1.

New Work Items

WP1/5 approved the creation of the following work items:

1. A new draft Recommendation ITU-T K.lsr (Lightning protection of solar power supply system feeding radio base station) was included in the work programme of Q5/5.
2. It was agreed to revise Recommendation ITU-T K.5 (Joint use of poles for electricity distribution and for telecommunications) and to include it in the work programme of Q3/5.

Working Party 2/5 – Electromagnetic fields: emissions, immunity and human exposure

Working Party 2 made significant progress on its Work Programme and achieved the following key outcomes:

Question 6/5 - EMC issues arising from the convergence of IT and communication equipment

Eight incoming Liaison Statements were received and examined during this meeting. Seven incoming liaison statements are related to Recommendation ITU-T K.60 "Emission levels and test methods for wireline telecommunication networks to minimize electromagnetic disturbance of radio services".

No significant progress was made on work items under the responsibility of Q6/5.

Question 7/5 - Human exposure to electromagnetic fields (EMFs) due to radio systems and mobile equipment

1. Q7/5 had a successful meeting and principally discussed the Guide on Electromagnetic Field and Health. The objective of the ITU EMF Guide is to answer the common questions on EMF asked by the public, and to address related concerns. The EMF Guide will:

a. Provide education and information: promoting EMF information and education resources suitable for all communities, stakeholders and governments.
b. Support clarification of the science: referencing the WHO and other stakeholders providing information most useful in helping clarify scientific uncertainties e.g. in the areas of Radio Frequency technology, infrastructure implementation, usage, and consequential EMF exposure.

2. The Guide was approved as "Supplement 1 to ITU-T K.91" by WP2/5 as contained in TD638rev4.
3. Draft Recommendation ITU-T K.mips "Measurement of radio frequency electromagnetic fields to determine compliance with human exposure limits when a base station is put into service" has been reviewed and consented at this meeting as contained in TD618rev2.
4. Draft Recommendation ITU-T K.52 "Guidance on complying with limits for human exposure to electromagnetic fields" was reviewed and consented as contained inTD664.
5. Amendment 1 to Recommendation ITU-T K.83 "Monitoring of electromagnetic field levels" was reviewed and approved.

Question 8/5 - EMC issues in home networks

1. Q8/5 had a successful meeting and made good progress on:

a. **Draft revised Recommendation ITU-T K.74 (TD651rev1)**.
   It is expected that it will be consented at the next SG5 meeting scheduled to take place in December 2014.

b. **Draft Recommendation ITU-T K.mhn (TD652rev1).**
   It is expected that it will be consented at the next SG5 meeting scheduled to take place in December 2014.

c. A Questionnaire on interference between radio services and broadband transmissions on cables in home was agreed by WP2/5 (TD613).

Question 9/5 - Generic and product family EMC recommendations for telecommunication equipment

1. Q9/5 had a successful meeting.
2. A Questionnaire on EMI related to emission on AC mains below 150 kHz" (TD653) was agreed by WP2/5.
3. The meeting agreed to initiate a new work item for a Draft Recommendation ITU-T K.e_faci "Emission requirements for electrical equipment in the telecommunication facilities".

Question 10/5 - Security of telecommunication and information systems concerning the electromagnetic environment

1. Q10/5 had a successful meeting. Recommendation ITU-T K.84 "Test methods and guide against information leaks through unintentional electromagnetic emissions" was approved as contained in (TD622rev1).
2. Revised Recommendation ITU-T K.81 "High-power electromagnetic immunity guide for telecommunication systems" was consented at this meeting as contained in (TD621rev1).
3. Amendment 1 to ITU-T K. 84 - Test methods and guide against information leaks through unintentional electromagnetic emissions was approved.
4. Progress was made on Draft Recommendation ITU-T K.secmiti and it is expected that it will be consented at the next SG5 meeting scheduled to take place in December 2014.

Question 11/5 - EMC requirements for the information society

1. Q11/5 had a good meeting. It was agreed to revise the scope of Revised Draft Recommendation ITU-T K.79 (TD673rev1).
2. A first Draft Recommendation ITU-T K.term_emc (TD672rev1) was presented and discussed at this meeting.

New Work Items

WP2/5 approved the creation of the following work items:

1. New Draft Recommendation ITU-T K.maps: Maps of RF EMF
2. New Draft Recommendation ITU-T K.env: Guidance on the Environmental Management for Electromagnetic Radiation from Radiocommunication Base Stations
3. New Draft Recommendation ITU-T K.e_faci: Emission requirements for electrical equipment in the telecommunication facilities

Dates of next SG5 meeting and interim Working Party meetings

No face-to-face meetings are planned for WP1 and WP2 before the next SG5 meeting. The next meeting of ITU-T SG5 is planned to take place from 8 to 19 December 2014 in Kochi, India.

Meetings of the Regional Groups of SG5
The next meetings of the regional groups will be held as follows:

1. SG5 RG AP: 26 September 2014, Beijing, China
2. SG5 RG AMR: 1 October 2014, Merida, Mexico
3. SG5 RG ARB: 25 November 2014, Kuwait, Kuwait

Focus Group on Smart Sustainable Cities (FG-SSC)

A technical report on "EMF Considerations "is being developed within the Focus Group on Smart Sustainable Cities. An e-meeting to discuss this technical report took place on 25 July 2014 in conjunction with WP2/5.

Appendix 5

The Focus Group on Smart Sustainable Cities (FG-SSC) held its fifth meeting **on 19-20 June 2014 in Genoa, Italy preceded by a Forum on "**The city we want: smart and sustainable**".**

About 45 participants attended the meeting.

The agenda was approved as contained in [fg-ssc-0148-r7].

94 input documents were received, presented and discussed during the meeting.

Main discussions:

Technical Report on KPIs for Smart Sustainable Cities

An ad-hoc group was set up and chaired by Ramy Ahmed Fathy (Egypt) to find a compromise solution between the proposal submitted by Ericsson and the proposal submitted by WG3 Coordinator.

As a result of the meeting, it was agreed:

1. The dimensions of KPIs shall change from 5 to 6 dimensions reflecting the alignment with UN-Habitat's city prosperity index. See below:

New Proposal	Original Proposal
1. Information and Communication Technology	1. Information and Communication Technology
2. Productivity	2. Energy, natural resources and environment
3. Quality of Life	3. Innovation and economy
4. Infrastructure development – non-ICT	4. Governance and public service
5. Environmental sustainability	5. Humanity and society
6. Equity and social inclusion	

2. The figure describing the 6 dimensions shall be based on the original figure, by adding a new dimension, and using the titles of the 6 dimension listed above.

3. The set of indicators of a new version of the KPIs document [fg-ssc-0162-r3] will map the indicators of [fg-ssc-0162-r2] to the 6 dimensions.

4. The new version [fg-ssc-0162-r3] will be prepared by the Editors' team during an e-meeting on 10 July 2014 (14-17h CEST).

Agreed Definition of Smart Sustainable City

FG-SSC reviewed the contributions received and the agreed definition reads as follows:

"A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social and environmental aspects".

The agreed definition will be posted on the FG-SSC website.

Appointments:

1. Michael Mulquin, IS Communications Ltd, appointed as Co-Leader of the Technical Report on Standardization Activities and Gaps for SSC and Suggestions to SG5.

2. Motsomi Maletjane, UNFCCC Secretariat, appointed as Co-Leader of the Technical Report on Climate Change Adaptation in Cities.

3. Cristobal Irazoqui, European Commission, appointed as Leader of the Technical Report on Assessment of Energy and GHG Emission from ICT in Cities.

Next steps concerning working group deliverables:

It was agreed to proceed as follows:

Chairman's Proposal

1. Roadmap for Smart Sustainable Cities

1.1 Document [fg-ssc-0184] was presented and reviewed.
1.2 Document [fg-ssc-0184] to be posted for comments on 23 June 2014.
1.3 Deadline for comments is 13 July 2014.
1.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
1.5 Future e-meeting to be held on 30 July 2014, from 14h to 16h (CEST).
1.6 Approval to be sought in December 2014.

2. Agreed Definition of Smart Sustainable City

2.1 Document [fg-ssc-0146] was presented and reviewed.
2.2 The definition of smart sustainable city was agreed at this meeting and is contained in [fg-ssc-0146-r1].

Deliverables of Working Group 1

1. Technical Report on Overview of SSC and the Role of ICT
1.1 Document [fg-ssc-0029-r6] was presented and reviewed.
1.2 Document [fg-ssc-0029-r6] to be posted for comments on 23 June 2014.
1.3 Deadline for comments is 11 July 2014.
1.4 Revised draft to be circulated to the FG-SSC mailing list on 8 August 2014.
1.5 Future e-meeting to be held on 22 August 2014, from 14h to 16h (CEST).
1.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

2 Technical Report on Definitions and Attributes of a Smart Sustainable City
2.1 Document [fg-ssc-0100-r3] was presented and reviewed.
2.2 Document [fg-ssc-0100-r3] to be posted for comments on 23 June 2014.
2.3 Deadline for comments is 11 July 2014.
2.4 Revised draft to be circulated to the FG-SSC mailing list on 8 August 2014.
2.5 Future e-meeting to be held on 22 August 2014, from 14h to 16h (CEST).
2.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

Deliverables of Working Group 2

1. Technical Report on Smart Water Management for Smart Sustainable Cities
1.1 Document [fg-ssc-0122-r3] was presented and reviewed.
1.2 Document [fg-ssc-0122-r3] to be posted for comments on 23 June 2014.
1.3 Deadline for comments is 13 July 2014.
1.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
1.5 Future e-meeting to be held on 7 August 2014, from 14h to 16h (CEST).
1.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

2. Technical Report on ICTs for Climate Change Adaptation in cities
   2.1 Document [fg-ssc-0107-r2] was presented and reviewed.
   2.2 Document [fg-ssc-0107-r2] to be posted for comments on 23 June 2014.
   2.3 Deadline for comments is 13 July 2014.
   2.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
   2.5 Future e-meeting to be held on 12 August 2014, from 14h to 17h (CEST).
   2.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

3. Technical Report on Smart Sustainable Cities Infrastructure
   3.1 Document [fg-ssc-0097-r3] was presented and reviewed.
   3.2 Document [fg-ssc-0097-r3] to be posted for comments on 23 June 2014.
   3.3 Deadline for comments is 13 July 2014.
   3.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
   3.5 Future e-meeting to be held on 4 August 2014, from 15h to 17h (CEST).
   3.6 Approval to be sought at the next FG-SSC meeting to be held 14-16 October 2014.

4. Technical Report on Smart Sustainable Buildings for Smart Sustainable Cities
   4.1 Document [fg-ssc-0136-r1] was presented and reviewed.
   4.2 Document [fg-ssc-0136-r1] to be posted for comments on 23 June 2014.
   4.3 Deadline for comments is 13 July 2014.
   4.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
   4.5 Future e-meeting to be held on 6 August 2014, from 15h to 17h (CEST).
   4.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

5. Technical Report on Cyber-Security, Data Protection and Cyber-Resilience in Smart Sustainable Cities
   5.1 Document [fg-ssc-0090-r3] was presented and reviewed.
   5.2 Document [fg-ssc-0090-r3] to be posted for comments on 23 June 2014.
   5.3 Deadline for comments is 13 July 2014.
   5.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
   5.5 Future e-meeting to be held on 25 August 2014, from 14h to 15h30 (CEST).
   5.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

6. Technical Report on EMF Considerations in Smart Sustainable Cities
   6.1 Document [fg-ssc-0089-r3] was presented and discussed.
   6.2 Document [fg-ssc-0089-r4] to be posted for comments on 26 June 2014.
   6.3 Deadline for comments is 13 July 2014.
   6.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
   6.5 Future e-meeting to be held on 25 July 2014, from 9h30 to 11h (CEST).
   6.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

7. Technical Report on Integrated Management for Smart Sustainable Cities
   7.1 Contribution [fg-ssc-0193] was presented and reviewed.
   7.2 Document [fg-ssc-0210] to be posted for comments on 23 June 2014.
   7.3 Deadline for comments is 13 July 2014.
   7.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
   7.5 Future e-meeting to be held on 5 August 2014, from 11h to 13h (CEST).
   7.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.
   7.7 Leader to be appointed at the next FG-SSC meeting to be held on 14-16 October 2014.
   7.8 Editors: Nengcheng Chen (Wuhan University) and Ziqin Sang (Fiberhome Technologies Group).

8. Technical Report on Anonymization Infrastructure and Open Data for Smart Sustainable Cities
   8.1 Draft table of contents to be shared via FG-SSC mailing list on 5 August 2014.
   8.2 E-meeting to be held on 13 August 2014, from 14h to 15h (CEST).
   8.3 First draft to be shared via FG-SSC mailing list on 26 September 2014.

8.4 Approval to be expected in February/March 2015.
8.5 Leader to be appointed at the next FG-SSC meeting to be held on 14-16 October 2014.
8.6 Editors: Jie Chang (China Telecom) and Hiroaki Nishi (Keio University).

Deliverables of Working Group 3

1. Technical Report on Standardization Activities and Gaps for SSC and Suggestions to SG5
1.1 Document [fg-ssc-0110] was presented and discussed.
1.2 Document [fg-ssc-0110-r1] to be posted for comments on 30 June 2014.
1.3 Deadline for comments is 30 July 2014.
1.4 Revised draft to be circulated to the FG-SSC mailing list on 8 August 2014.
1.5 Future e-meeting to be held on 25 August 2014, from 11h to 13h (CEST).
1.6 Approval to be sought at the next FG-SSC meeting to be held in December 2014.

2. Technical Report on KPIs for Smart Sustainable Cities
2.1 Document [fg-ssc-0162-r2] was presented and reviewed.
2.2 E-meeting to be held on 10 July 2014 (14-17 hours CEST) to prepare the new version [fg-ssc-0162-r3] by the Editors' team according to the agreement of ad-hoc meeting in Genoa (for Editors only).
2.3 Document [fg-ssc-0162-r3] to be posted for comments on 28 July 2014.
2.4 Deadline for comments is 19 August 2014.
2.5 Revised draft to be circulated to the FG-SSC mailing list on 29 August 2014.
2.6 Future e-meeting to be held on 4 September 2014, from 14h to 16h (CEST).
2.7 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

3. Technical Report on Metrics and Evaluation of KPIs for Smart Sustainable Cities
3.1 Document [fg-ssc-0199] was presented and reviewed.
3.2 Document [fg-ssc-0199] to be posted for comments on 23 June 2014.
3.3 Deadline for comments is 13 July 2014.
3.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
3.5 Future e-meeting to be held on 13 August 2014, from 11h to 13h (CEST).
3.6 Approval to be sought at the FG-SSC meeting to be held in December 2014.

Deliverables of Working Group 4

1. Technical Report on Smart Sustainable Cities Stakeholders
1.1 Document [fg-ssc-0113-r5] was presented and reviewed.
1.2 Document [fg-ssc-0113-r5] to be posted for comments on 23 June 2014.
1.3 Deadline for comments is 13 July 2014.
1.4 Revised draft to be circulated to the FG-SSC mailing list on 23 July 2014.
1.5 Future e-meeting to be held on 8 August 2014, from 14h to 17h (CEST).
1.6 Approval to be sought at the next FG-SSC meeting to be held on 14-16 October 2014.

2. Technical Report on Assessment of Energy and GHG Emission from ICT in Cities
Leader appointed: Cristobal Irazoqui (European Commission).

Appendix 6

The Focus Group on Smart Water Management (FG SWM) held its third meeting on 27 June 2014 in Kampala, Uganda.

32 participants attended the meeting and continued planning the future work of the FG SWM. 14 contributions were received and were reviewed.

1. Agenda (Document 33R1)

The agenda for the meeting was approved.

2. Incoming Liaison Statements

Two incoming liaison statements were considered:

r. [43] FG SSC - LS 25, Activities of the Focus Group on Smart Sustainable Cities, FG SSC
s. [32] IoT-Roadmap, IoT-work program, contacts and invitation to participate in IoT-GSI events, JCA IoT

Members were invited to submit comments on Document [43] FG SSC - LS 25 by the end of August 2014 for onwards transmission to FG SSC before the deadline of 15 September 2014.

Members were invited to send their interest by e-mail to him, to represent FG SWM in the JCA-IoT and contribute to the roadmap for IoT.

3. FG Lifetime Extension

The Chairman proposed that an extension to the FG lifetime be considered. The first meeting of the FG was in December 2013 and the FG was set up for a period of one year, which will lapse in December 2014.

Given that the amount of deliverables, which has been more or less formulated quite during the first two meetings are immense (20 Deliverable), and that only currently 2 out of the 20 deliverables have been drafted (in a good shape) so far; it will not be possible to complete all the deliverables by end of the year. It was noted that there are many contributions that can be allocated to draft many of the deliverables, and that editing and harnessing all the inputs together is needed to accomplish this task. It was agreed in principle to extend the lifetime of the FG SWM because of the workload and the strategic importance of the topic. However, the length for the extension (6 months or 1 year) would be determined at the last meeting of the FG SWM in December 2014 (India) based on the exact status and progress of the deliverables at that time. The Chairman communicated that it is targeted to accomplish around 50% of the deliverables by the end of this year, and thus it is imperative that the delegates work together to accomplish the deliverables on time.

4. ITU IPR Guidelines

The Chairman mentioned the ITU IPR Guidelines which participants need to adhere to when submitting contributions to the meeting. The chairman asked if anyone has knowledge of patents, or SW copyrights; the use of which may be required to implement the deliverable being considered. No affirmative response was obtained.

5. Document allocations from previous meetings of FG SWM

Documents	Working Group Allocated
Mobile Coverage Provisioning for Uncovered Rural Areas of India : GREEN TELECOM USO Initiatives, DoT, India	WG 1
Informatics Blueprint for Integrated Water Resources Planning and Management at grassroots level, Ministry of	WG 1 and WG3

Communications and Information Technology, India	
Best practices on smart water management, Oxford University	WG 2 and linked to WG 3 (Oxford interested to host global portal on ICTs for SWM)
Luxor Call to Action, TSB	WG 3
Introduction to the Smart Water Grid (SWG) project of Korea *(*Presentation*)*, Korea	WG 1 (initiatives) and WG 2 (2nd deliverable : Technical report on architectural framework and solutions for SWM)
A study issue for the water footprint of ICT goods, networks and services, (Presentation), Korea	WG 2: Technical report on methodologies for assessing the impact of ICTs for improving SWM
A holistic knowledge based ICT solution to improve matching between supply and demand over the water supply distribution chain, Barcelona Digital Centre	WG 2: Technical report on architectural framework and solutions for SWM
OGC and WaterML2 , OGC	WG 2 : Technical report on Standardization Activities and Gaps for SWM
Socio-Economic Impact Assessments of Smart Water Management Technologies, Policies, and Services **,** NTRA Egypt	WG 2: Technical report on Standardization Activities and Gaps for SWM
UNESCO's activities on smart water management **,** UNESCO	WG 1: Initiatives and WG 3: Developing international stakeholders map
ISO/TC 224 - Work program & Scope, ISO	WG 1: Initiatives WG 2: Technical report on Standardization Activities and Gaps for SWM and WG 3: Developing international stakeholders map
Overview of IBM activities on Smart Water Management, IBM	WG 2
Proposal of two work items from Fiberhome Technologies, Dr Sang Ziqin, Fiberhome Technologies Ltd	WG 2: Technical report on water quality sensing and early warning systems
Role of the WMO in Water Management, Bruce Stewart, WMO	WG 1: Initiatives WG 2: Technical report on Standardization Activities and Gaps for SWM and WG 3: Developing international stakeholders map
Participation of FG SWM for the 7th World Water Forum (WWF), Yooshin Engineering Corporation, Korea	WG 3
Technical Report on Smart Water Management for Smart Sustainable Cities, FG SSC	WG 2 : Technical report on architectural framework and solutions for SWM) WG 1: Role of ICTs for SWM

6.   Draft Deliverables
6.1 Role of ICT in Water Resource Management

The document was presented and there would be an e-meeting to finalise the document.

6.2 Technical report on requirements for water sensing and early warning systems

The Chairman presented the contents of the report on requirements for water sensing and early warning systems. Dr F. Cao proposed that the document highlights two main categories: electrochemical methods, and photometric methods. The Chairman commented that sensors based on sound and electromagnetic field interaction are not related to these two categories, and there was consensus on structuring the report to include three main categories: electrochemical methods, photometric methods, and sensors based on sound and electromagnetic field interaction and other novel techniques. Dr F. Cao would be the person responsible for this report. Document 47 would be the baseline document for this technical report.

7. Contributions
7.1 UN Documentation Centre on water and sanitation (UNDCWS)

Mrs Pilar Gonzalez from UNW-DPAC made a presentation of contribution 34. UNW-DPAC is interested in joining the ITU focus group on smart water management and could particularly contribute to the following working groups

WG2. Standardization gaps, KPIs, metrics and efficient ICT and Smart Water Management
1. Mapping ongoing standardization activities, mainly within the UN system, and identifying gaps.

WG3. Communications, liaisons and members' engagement
1. Establishing formal communications and liaisons with UN-Water members and partners;
2. Contributing to promotional and outreach plans for achieving global, regional, and local interaction in a simplified and appealing format.

A liaison statement to be sent to UNDCWS that the FG welcome the contribution and would like to invite UNDCWS to participate in the working groups related to standardization gaps and KPIs (WG2) in the FG SWM and to contribute to the development of the international stakeholder map for water related to WG3.

UNDCWS invited FG SWM to consider the standard for basins in its activities. This could be submitted by end September 2014 as a contribution for the next meeting of the FG SWM.

7.2 ICT Standardization Strategy for SWM

The document summarised the current ICT requirements for smart water management and the related activities in the Smart Water Grid Research Group of Korea. It was suggested that the FG should also study the work being done in Question 15 of ITU-T SG15 with regards to the Smart Grid. The document is submitted as an input to WG 2.

7.3 Information Systems for Water Resources Management in Korea

The document summarises the three water resources management information systems in Korea; namely, Water Management Information System (WAMIS), River Management Geographic Information System (RIMGIS) and the Water Management Information Networking System (WINS). The document is submitted as an input to WG 1.

7.4 Outline of Technical report on the KPI to assess the impact of the use of ICT in SWM

Dr Ziqin Sang presented the contribution. The document will describe the scope of smart water management and the role of ICTs in smart water management and will align itself with the deliverable of

WG1 on Role of ICTs in Smart Water Management. A list of KPIs which will be considered in the report was also presented.

It was highlighted that the community impacts indicators mentioned in the report are related to the city or location and the social impact is related to the people. One other important dimension which could be added is the ecological impact dimension.

The document should also include sanitation services and water conservation KPIs. It was proposed to include them in the water environment. It was proposed to link the KPIs to the sensing techniques which would be in another technical report of the Focus Group. Another indicator, the complexity of the water system, should be also captured in the KPI list to reflect the fact that managing complex water systems is differentiated than less complex systems.

7.5 Water Accounting +

Water accounting (WA) integrates hydrological processes with land use, managed water flows and the services that result from water consumption in river basins. Its objective is to strive to achieve equitable and transparent water governance for all water users and a sustainable water balance. Water accounting has been developed originally by Dr. David Molden from the International Water Management Institute (IWMI). This has been modified and upgraded with inputs from the Delft University of Technology. The water accounting + (WA+) is a multi-institutional effort from IWMI, UNESCO-IHE an FAO. WA+ provides an independent estimates op water flows, fluxes, stock, consumption and services.

The aim is to reach the water policy makers, and support them with their fact based decision making. This is especially relevant in disputed basins, and in situations that negotiations on water transfer and water allocation are based on objective views, not being supported by data.

The framework that is being developed by IWMI, Unesco-IHE and FAO for WA+ consist of 10 sheets each which represent a particular theme in the WA+ framework. Different datasources are used as input for the framework.

1. Rainfall (TRMM, GPCP, FEWSNET, PERSIANN, CMORPH, Aphrodite, CRU, ECMWF, WMO gauges)
2. Evapotranspiration (GLEAM, SSEB, MOD16, Landsaf)
3. Hydrological models (PCR-GlobWB, SPHY, WaterGap, LPJml)
4. Land use (Globcover, AfriCover, MIRCA, Corine)
5. AquaStat (FAO)
6. WaterStat database (waterfootprint.org; worldwater.org; world water assessment program)
7. Global runoff data centre
8. more public domain data

The 10 sheets provide potential users of the data and good visual overview of the situation in the basin.

The contribution is allocated to WG 1 for documentation on initiatives at international level and WG 2 Technical Report on standardization gaps. Mr Maarten Van Ekelen was invited to contribute to the next meeting of the FG.

7.6 Proposal for foundational framework for defining new aspects related to characterizing Smart Water Management (SWM)

The document proposed a possible foundational framework that can be used to define new aspects related to SWM. The following aspects along with the reference framework can be used to specify the attributes of smart water management, and hence its characteristics, expected functionalities, objectives, and definition. The proposed option to explore as a foundational reference framework was, to define and characterize the

aspects and attributes of SWM based on studies and terminologies addressed in cognitive sciences, cognitive neurosciences, and cognitive informatics.

A statement reflecting the characteristics of a SWM that is in line with the proposed possible framework is proposed for consideration as follows:

SWM is a process that uses information and communication technologies, cognitive, and/or other means to realize the coordinated and integrated effective and efficient; development and management of the water ecosystem in order to improve ecological and economic welfare in an equitable manner without compromising the sustainability of dependent ecosystems.

It was suggested that the word "management of the water ecosystem" could be changed to "utilization of the water ecosystem". It was also proposed that instead of developing a dictionary definition, it is possible to propose a more logical definition.

The Chairman highlighted that such a statement and furthermore resulting formal definition of a SWM will impact the foreseen underdevelopment architecture of the SWM. An example isthat Case based reasoning and expert systems are considered candidate AI tools and technologies that can be embedded in water management Decision Support Systems (DSS) based on how 'smart' the water management is interpreted, specified and defined.

7.7 Proposal for a new technical report on ICT infrastructure for resilience & security in SWM

Egypt proposed a new technical report on ICT infrastructure for resilience & security in SWM for Working Group 2. This was agreed by the members.

7.8 Proposal for a new technical report on definitions and attributes of smart water management

Egypt proposed a new technical report on definitions and attributes of smart water management for Working Group 1. This was agreed by the members.

7.9 Roadmap for implementing Smart Water Management

This contribution from Egypt was presented by the FG Chairman. A nine step roadmap that can be followed by the water stakeholders interested to adopt to implement Smart Water Management (SWM) is presented. The document was allocated to Working Group 2.

7.10 Questionnaire on Smart Water Management Initiatives

As was approved in the 2nd meeting, FG-SWM is undertaking a survey on initiatives in countries and activities related to standards development in the area of smart water management. Vijay Mauree, TSB presented the draft questionnaire. The questionnaire would be made available online and a circular would be sent by ITU to all Member States inviting them to contact the relevant stakeholders for water management to complete it. It was agreed to include in the questionnaire what the FG SWM considers are initiatives of smart water management.

The following text below was added and due to lack of time, the questionnaire would be modified and circulated by TSB on the mailing list to finalise the document:
Aspects of smart water management include the integrated effective and efficient governance of the whole water ecosystem which would encompass amongst others

1. Enhanced distribution of water resources
2. Efficient monitoring of water consumption and supply in real time

3. Monitoring of water quality in real time
4. Just in time irrigation
5. Optimization of water resource utilization in landscaping and tourism sectors
6. Minimize water losses through leakages in the distribution system

8 Status of Deliverables and Work Plan

Working Group	Deliverables	Status	Future Meetings (GVA time)	Final Delivery Date	Bas
Working Group 1 (WG1). ICTs role and roadmap for Smart Water Management ***Coordinator(s):*** Jorge Grandi and Zelmira May, UNESCO	1. Technical Report on Definitions and Attributes of a Smart Water Management	Contributions expected until (1st October, 2014) 2nd draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss the 1st Draft on (TBD) July 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	2. Technical Report on Building Smart Water Eco-Systems	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss the 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	3. Technical Report on SWM Initiatives	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) July 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	4. Technical Report on the Use Cases and the Role of ICTs in Smart Water Management	1st draft presented in Geneva on 3-4 March 2014 <mark>2nd draft presented</mark> in (Kampala, Uganda) on (27th June, 2014)	E-meeting to discuss 2nd Draft on (TBD) July 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	Role o Water Resou Manag

Working Group	Deliverables	Status	Future Meetings (GVA time)	Final Delivery Date	Bas
Working Group 2 (WG2). Standardization gaps, KPIs, metrics and efficient ICT and Smart Water Management *Coordinator:* Ziqin Sang, Fiberhome, China	1. Technical Report on Standardization Activities and Gaps for SWM and suggestions to SG5 Leader ()	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) August 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	2. Technical report on architectural framework and solutions for efficient SWM a. Information Systems b. Communication Systems c. Method of evaluation of ICT needs to the actual technical requirements of a SWM system		E-meeting to discuss 1st Draft on (TBD) August 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	3. Technical Report on the KPI to assess the impact of the use of ICT in SWM (How smart your water management is)	<mark>Draft Table of contents</mark> – (Kampala, Uganda) on (27th June, 2014)	E-meeting to discuss 1st Draft on (TBD) August 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	4. Technical report on the methodologies to assess the impact of ICTs on improving water management (Water Footprint & how ICT can help	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	

Working Group	Deliverables	Status	Future Meetings (GVA time)	Final Delivery Date	Bas
	addressing water conservation)				
	5. Technical Report on the requirements for water sensing and early warning systems (Infrastructure elements and Meters)	1st Draft presented in Kampala 27th June 2014 2st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 2st Draft on (TBD) August 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	Techn report water sensir early v systen
	6. Technical Report on ICT Infrastructure for Resilience & Security	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	7. Technical Report on the prediction and mitigation of water related hazards (e.g. floods, tsunamis etc.) (Modeling and Sensing and PPDR/Adaptation)	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	8. Technical Report on smart water networks (smart piping, pressure management etc)	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	

Working Group	Deliverables	Status	Future Meetings (GVA time)	Final Delivery Date	Bas
	9. Methodologies to evaluate the social and economic impacts of ICTs from smart drinking water supply systems	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
Working Group 3 (WG3) : Communications, liaisons and members' engagement ***Coordinator:*** Ick Hwan Ko. Yooshin Engineering Cooperation, Korea (Republic of)	1. Development of an international stakeholders map	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	2. Stakeholder requirements and challenges for sustainable SWM	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	3. ICT And Water for All	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	4. Position paper based on the Luxor Call to Action	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	5. Establishment of online media presence	Contributions expected until (1st October, 2014) 1st draft to be	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for*	

Working Group	Deliverables	Status	Future Meetings (GVA time)	Final Delivery Date	Bas
		presented on (17th of October, 2014) in Reading, United Kingdom		*approval in 2014*	
	6. Awareness campaign	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	
	7. Launch of a SWM Application Challenge	Contributions expected until (1st October, 2014) 1st draft to be presented on (17th of October, 2014) in Reading, United Kingdom	E-meeting to discuss 1st Draft on (TBD) November 2014 (TBD – TBD) hours	(December 2014) *To be sent to FG SWM for approval* *To be sent to SG5 for approval in 2014*	

9   Future Meetings

Collocated meeting of the FG SWM was proposed to be held with the African Regional Group Meetings of SG 5 and 12 in the week of 13-17 April 2015. Guy Michel Kouakou, Chairman of ITU-T SG 5 Regional Group for Africa supported the proposal. An invitation was also received by Dr Ko (Korea) to conduct a session in the next Smart Water Grid International Conference (SWGIC) in Korea next November.
The Chairman welcomed the proposal and mentioned that such an activity is in line with the deliverables and objectives of WG3 and that it will be planned in accordance with the time schedule of the management team and relevant experts.

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